FINAL

REMEDIAL INVESTIGATION REPORT FOR SITE FTMM-05

FORT MONMOUTH, OCEANPORT, MONMOUTH COUNTY, NEW JERSEY

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TABLE OF CONTENTS

List of Tables iv
List of Figures v
List of Appendices v
List of Acronyms vi
EXECUTIVE SUMMARY E-1
E.1 Site Description E-1
E.2 Geology and Hydrogeology E-1
E.3 Remedial Actions E-1
E.4 Soil Sampling Results E-1
E.5 Groundwater Sampling Results E-2
E.6 Surface Water Sampling Results E-3
E.7 Sediment Sampling Results E-3
E.8 Contaminant Fate and Transport E-3
E.9 Risk Assessment E-3
E.10 Conclusions E-4
SECTION 1 INTRODUCTION 1-1
1.1 Project Authorization 1-1
1.2 Purpose and Scope 1-1
1.3 Site Background Information 1-1
1.3.1 Site Location and Description 1-1
1.3.2 Site History 1-2
1.4 Report Organization 1-6
SECTION 2 PREVIOUS INVESTIGATIONS AND INTERIM REMEDIAL ACTIONS 2-1
2.1 Geologic/Hydrogeologic Investigations 2-1
2.2 Soil and Vadose Zone Investigations 2-1
2.3 Groundwater Investigations and Remedial Actions 2-1
2.4 Surface Water Investigations 2-3
2.5 Sediment Investigations 2-4
2.6 Ecological Investigations 2-4

2.7 Previous Investigations of Background Soil, Groundwater, and Surface Water Quality 2-4
2.7.1 Weston (1995) Background Investigation 2-4
2.7.2 Brinkerhoff (2011b) Background Evaluation 2-5
2.7.3 Base-Wide Glauconitic Soil Sampling Report 2-5
SECTION 3 PHYSICAL CHARACTERISTICS OF THE SITE 3-1
3.1 Surface Features 3-1
3.2 Surface-Water Hydrology 3-1
3.3 Geology and Hydrogeology 3-1
3.3.1 Regional Geology and Hydrogeology 3-1
3.3.2 Site-Specific Geology and Hydrogeology 3-2
3.4 Land Use 3-3
3.5 Ecology 3-4
SECTION 4 NATURE AND EXTENT OF CONTAMINATION 4-1
4.1 Soil Quality 4-1
4.1.1 Summary of Comparison Criteria Exceedances in Soil 4-2
4.1.2 COPCs in Soil 4-4
4.2 Groundwater Quality 4-5
4.2.1 Summary of Historical Groundwater Sampling Results from 1997 to 2008 4-6
4.2.2 Summary of Groundwater Sampling Results From Eight Quarterly Sampling Events and 2013 and 2014 Sampling Events 4-6
4.2.3 COPCs in Groundwater 4-7
4.3 Surface Water 4-9
4.3.1 Summary of Surface Water Sampling Results from Most Recent Eight Quarterly Sampling Events 4-10
4.3.2 COPCs in Surface Water 4-11
4.4 Sediment 4-11
SECTION 5 CONTAMINANT FATE AND TRANSPORT 5-1
5.1 Potential Routes of Migration 5-1
5.2 Contaminant Persistence in Soil 5-1
5.2.1 VOCs 5-1
5.2.2 SVOCs 5-2
5.2.3 Pesticides/PCBs 5-2

5.2.4 Metals 5-2
5.3 Contaminant Persistence in Groundwater 5-2
5.4 Contaminant Migration in Soil 5-3
5.4.1 VOCs 5-3
5.4.2 SVOCs 5-3
5.4.3 Pesticides/PCBs 5-3
5.4.4 Metals 5-3
5.5 Contaminant Migration in Groundwater 5-4
5.6 Summary 5-4
SECTION 6 BASELINE RISK ASSESSMENT 6-1
6.1 Risk Assessment Process 6-1
6.1.1 Summary of Available Data for FTMM-05 6-1
6.1.2 General HHRA Approach and Guidance Documents 6-1
6.1.3 Organization of the HHRA 6-4
6.2 Data Evaluation and Identification of Chemicals of Potential Concern 6-4
6.2.1 Risk Ratio Approach 6-5
6.2.2 Soil Samples 6-7
6.2.3 Groundwater Samples 6-7
6.2.4 Surface Water Samples 6-7
6.2.5 Sediment Samples 6-8
6.3 Exposure Assessment 6-8
6.3.1 Conceptual Site Model 6-8
6.3.2 Potential Receptors and Exposure Pathways 6-8
6.3.3 Exposure Pathways 6-10
6.4 Risk Ratio and Screening Criteria Assessment 6-11
6.4.1 Risk Ratio Assessment 6-11
6.4.2 Risk Ratio Equations 6-12
6.4.3 Screening Criteria 6-13
6.5 Risk Assessment Results and Uncertainties 6-13
6.5.1 Estimated Risks for Soil 6-14
6.5.2 Estimated Risks for Groundwater 6-14
6.5.3 Risk Assessment Uncertainties 6-14
6.5.4 Conclusions 6-18

SECTION 7 REMEDIAL INVESTIGATION SUMMARY 7-1
7.1 Nature and Extent of Contamination 7-1
7.1.1 Soil 7-1
7.1.2 Groundwater 7-2
7.1.3 Surface Water 7-2
7.1.4 Sediment 7-3
7.2 Contaminant Fate and Transport 7-3
7.3 Baseline Risk Assessment 7-3
SECTION 8 CONCLUSION 8-1
SECTION 9 REFERENCES 9-1

LIST OF TABLES

Table 1.1 Chronology of Events
Table 2.1 Well Construction Summary
Table 2.2 Groundwater Sampling Summary
Table 2.3 Surface Water Sampling Summary
Table 4.1 Soil Sampling Summary Results – Comparison to NJDEP Standards
Table 4.2 Soil Sampling Summary Results – Comparison to USEPA Criteria
Table 4.3 Soil Sampling Summary of Exceedances
Table 4.4 Groundwater Sampling Summary Results for March 2008 to August 2011
Table 4.5 Groundwater Sampling Results for August 2013 and December 2014
Table 4.6 Groundwater Sampling Summary of Exceedances for November 2009 to August 2013
Table 4.7 Surface Water Sampling Summary Results
Table 4.8 Surface Water Sampling Summary of Exceedances for December 2008 to September 2010
Table 4.9 Sediment PCB Results
Table 6.1 Risk Ratio Calculations for Potential Exposure to Soil by a Current/Future Outdoor Worker
Table 6.2 Risk Ratio Calculations for Potential Exposure to Soil by a Future Utility Worker
Table 6.3 Risk Ratio Calculations for Potential Exposure to Soil by a Future Recreational User

Table 6.4 Risk Ratio Calculations for Potential Exposure to Groundwater by a Future Utility Worker

LIST OF FIGURES

Figure 1.1 Fort Monmouth Location
Figure 1.2 FTMM-05 Location
Figure 1.3 Layout of FTMM-05
Figure 2.1 FTMM-05 Soil Sample Locations
Figure 2.2 FTMM-05 Remedial Activity Injection Areas
Figure 2.3 FTMM-05 Surface Water and Sediment Sample Locations
Figure 4.1 Summary of Method to Determine COPCs
Figure 6.1 Evaluation of Risk to Human Receptors
Figure 6.2 Human Health Conceptual Site Model

LIST OF APPENDICES

Appendix A Key Historical Reports and Background Information (included electronically on CD)
Appendix B Utility Worker and Recreational User Exposure Parameters; Utility Worker and Recreational User Screening Level Calculations; ProUCL Output (included electronically on CD)
Appendix C Cost Estimate

LIST OF ACRONYMS

ACRONYM	DEFINITION
µg/dL	micrograms per deciliter
µg/L	micrograms per liter
ALM	adult lead model
API	American Petroleum Institute
BEE	baseline ecological evaluation
bgs	below ground surface
BRAC	Base Realignment and Closure
Brinkerhoff	Brinkerhoff Environmental Services, Inc.
CEA	Classification Exception Area
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COPC	constituents of potential concern
CSM	conceptual site model
CWA	Charles Wood Area
DCE	cis-1,2-dichloroethene
DD	Decision Document
DoD	Department of Defense
DPW	Directorate of Public Works
EA	Evans Area
EC	engineering controls
ECP	Environmental Condition of Property
EPC	exposure point concentration
FMERPA	Fort Monmouth Economic Redevelopment Planning Authority
FMETL	Fort Monmouth Environmental Testing Laboratory
FS	feasibility study
ft/day	feet per day
ft/ft	foot per foot
FTMM	Fort Monmouth
GIS	Geographic information system
gpd/ft^2	gallons per day per square foot
GWQS	Ground Water Quality Standard(s)
HHRA	human health risk assessment
HRC®	Hydrogen Releasing Compound
HSDB	Hazardous Substances Data Bank
HTRW	hazardous, toxic, and radiological waste
IC	institutional controls
IGW	Impact to Ground Water
IRP	Installation Restoration Program
K_d	soil/water distribution coefficient
KM	Kaplan-Meier
K_{oc}	organic carbon/water partition coefficient
LFPS	low flow purging and sampling

ACRONYM	DEFINITION
LUC	land use controls
MCL	maximum contaminant level
mg/kg	milligrams per kilogram
MP	Main Post
NCP	National Contingency Plan
NHANES	National Health and Nutrition Examination Survey
N.J.A.C.	New Jersey Administrative Code
NJDEP	New Jersey Department of Environmental Protection
NJPDES	New Jersey Pollutant Discharge Elimination System
NRDCSRS	Non-residential direct contact soil remediation standard
NRWQC	National Recommended Water Quality Criteria
PAHs	polynuclear aromatic hydrocarbons
Parsons	Parsons Government Services Inc.
PCBs	polychlorinated biphenyls
PCE	Tetrachloroethene
PDB	passive diffusion bag
PRG	preliminary remediation goal
QA/QC	quality assurance/quality control
R&D	research and development
RAGS	Risk Assessment Guidance for Superfund
RAPR	Remedial Action Progress Report
RAWP	Remedial Action Work Plan
RCRA	Resource Conservation and Recovery Act
RDCSCC	Residential Direct Contact Soil Clean-up Criteria
RDCSRS	Residential Direct Contact Soil Remediation Standard
redox	reduction-oxidation
RI	remedial investigation
RI/FS	remedial investigation/feasibility study
RSL	regional screening level
Sd	standard deviation
SE	Saline
SI	site investigation
SL	screening level
SVOCs	semi volatile organic compounds
SWQS	surface water quality standard
TAL	target analyte list
TCE	Trichloroethene
THQ	target hazard quotient
TICs	tentatively identified compound
TMV	toxicity, mobility, and volume
TO	task order
TPV	total present value
TR	target risk

ACRONYM	DEFINITION
TRSR	Technical Requirements for Site Remediation
UCL	upper confidence limit
USACE	U.S. Army Corps of Engineers
USAEHA	U.S. Army Environmental Hygiene Agency
USAESCH	U.S. Army Engineering and Support Center, Huntsville
USATHAMA	U.S. Army Toxic and Hazardous Materials Agency
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
VC	Vinyl Chloride
VOCs	volatile organic compounds
WERS	Worldwide Environmental Restoration Services
WRA	Well Restriction Area

EXECUTIVE SUMMARY

E.1 SITE DESCRIPTION

Fort Monmouth Landfill 5 (FTMM-05) is located in the north-central portion of the Fort Monmouth (FTMM) Main Post (MP) at the intersection of North Drive and Wilson Avenue. The approximately 3.2-acre landfill site is bordered by Mill Creek, Lafetra Creek, and Parkers Creek to the west, Wilson Avenue to the east, North Drive to the south and the FTMM Landfill 8 (FTMM-08) to the north. The landfill reportedly contains domestic and industrial wastes. Based on historical information, the period of operation of FTMM-05 was approximately 1952 to 1959. Since that time a stable vegetative cover has developed on the surface of the landfill. The FTMM Reuse and Redevelopment Plan indicates that the anticipated future land use at FTMM-05 is open space. FTMM (MP and Charles Wood Area) was selected for closure by the Base Realignment and Closure Commission in 2005, and officially closed on September 15, 2011.

E.2 GEOLOGY AND HYDROGEOLOGY

The landfill soil cover material ranges in thickness from 0 to 72 inches below ground surface (bgs) and averages 24 inches thick. The soil cover is composed primarily of topsoil and tan and brown silty sand with root fragments. Deeper soil below the fill material is composed primarily of gray and brown silty sand and brown and red sand. The fill material encountered during intrusive investigation activities has consisted of coal, glass, concrete rubble, wood, metal, ash/cinders and plastic fragments sometimes intermixed with a silty, coarse to fine sand. Native soil encountered below the fill material consisted of brown/orange, gray, and tan sand and silty sand, transitioning to clayey sand and sandy clay with increasing depth. The depth to groundwater at FTMM-05 ranges from 6 to 11 feet bgs. Groundwater migrates in a westerly to northwesterly direction toward Mill and Parkers Creeks; the calculated average advective groundwater seepage velocity is 0.22 feet per day (ft/day) (82 feet per year). Groundwater beneath the northernmost portion of FTMM-05 likely migrates beneath the southern portion of adjacent landfill site FTMM-08 prior to discharging to Parkers Creek.

E.3 REMEDIAL ACTIONS

Historical investigations indicate that tetrachloroethene (PCE) was present in groundwater at FTMM-05 that emanated from one or more upgradient sources. The specific location(s) of the PCE source area(s) are unknown at this time, and will be addressed separately from this report. Injections of Hydrogen Releasing Compound (HRC®) were performed in seven distinct areas in and around FTMM-05 where elevated concentrations of PCE were detected in shallow groundwater. Three of the injection areas are located within FTMM-05. The injections were performed over multiple 3- to 6-month time periods in 2000, 2002, 2003, 2004, and 2005 to facilitate the enhanced anaerobic degradation of PCE in groundwater. To further enhance degradation of PCE concentrations in groundwater, RegenOx® injections were conducted in four areas during two separate events in 2011; two of the injection areas were located within FTMM-05.

E.4 SOIL SAMPLING RESULTS

Soil samples were collected at FTMM-05 in 1998; sample depths ranged from 6 to 40 inches bgs Soil samples collected between 6 and 12 inches bgs were analyzed for metals, semivolatile organic compounds (SVOCs), pesticides, and polychlorinated biphenyl (PCB) compounds. Most

samples for analysis of volatile organic compounds (VOCs) were collected at 24 inches bgs, but some were collected from deeper intervals ranging up to 40 inches bgs. Detected analyte concentrations were compared to Federal and State residential, nonresidential, and impact to groundwater screening criteria as well as FTMM-specific background concentrations for metals. Residential criteria were used to support identification of constituents of potential concern (COPCs), but were not used to evaluate risk (Section E.8).

Concentrations of two VOCS, eight SVOCs (all of which are polynuclear aromatic hydrocarbons [PAHs]), seven pesticides, one PCB, and 15 metals exceeded their current New Jersey Department of Environmental Protection (NJDEP) Residential Direct Contact Soil Remediation Standard (RDCSRS) and/or U.S. Environmental Protection Agency (USEPA) Residential Regional Screening Level (RSL) in at least one soil sample. Concentrations of five PAHs, two pesticides, one PCB, and eight metals exceeded their NJDEP Non-Residential Direct Contact Soil Remediation Standard (NRDCSRS) and/or USEPA industrial RSL in at least one soil sample. Concentrations of five VOCs, 21 SVOCs (mostly PAHs), 10 pesticides, one PCB, and 18 metals exceeded their NJDEP Impact to Ground Water (IGW) Screening Level (SL) and/or USEPA Protection of Groundwater RSL in at least one soil sample.

The maximum detected concentrations of the metals targeted for analysis in soil samples exceeded the maximum background concentrations for the MP presented in the Weston Site Investigation Report (1995), except for chromium, magnesium, and potassium.

COPCs in soil that were evaluated in the risk assessment include one VOC, eight SVOCs, five pesticides, one PCB, and 13 metals.

E.5 GROUNDWATER SAMPLING RESULTS

Quarterly groundwater monitoring occurred at FTMM-05 from 1997 to 2011 using a network of up to 13 monitoring wells. Additional groundwater monitoring was performed in August 2013 and December 2014. Previous reports identified PCE and its degradation products (trichloroethene [TCE] and cis-1,2-dichloroethene [cis-1,2-DCE]) as the primary constituents of concern in FTMM-05 groundwater. These chlorinated VOCs have primarily been detected in groundwater in the northern portion of FTMM-05 as well as hydraulically upgradient to crossgradient of the site. PCE has historically been detected at the highest concentrations and at the most locations. Data from eight quarters of groundwater monitoring extending from November 2009 to August 2011, the August 2013 baseline sampling event, and the December 2014 annual monitoring event are evaluated in detail in this report. Detected analyte concentrations were compared to Federal and State screening criteria for potable water, as well as FTMM-specific background concentrations for metals to identify COPCs. During this period, concentrations of six VOCs and 17 metals exceeded the NJDEP Ground Water Quality Standard (GWQS) and/or USEPA Tapwater RSL in at least one sample.

Metals detected in groundwater at concentrations exceeding the USEPA Tapwater RSL and also the maximum background concentration for the MP established by Weston (1995) include barium, manganese, mercury, and zinc. Some VOCs in groundwater were determined to be insignificant or attributed to an upgradient source. However, higher concentrations of PCE, TCE, and cis-1,2-DCE were typically encountered within or downgradient of FTMM-05 relative to upgradient concentrations, including in 2013 and 2014. Given that PCE was detected in FTMM-05 soil samples at concentrations in excess of the NJDEP IGW SL and USEPA Protection of

Groundwater RSL, and TCE and cis-1,2-DCE are biological degradation products of PCE, the potential for FTMM-05 to contribute to PCE, TCE, and 1,2-DCE contamination of groundwater cannot be discounted. Upgradient source(s) of chlorinated VOC contamination in groundwater (which are currently not well defined) will be addressed during a separate investigation. COPCs in groundwater that were evaluated in the risk assessment include three chlorinated VOCs.

E.6 SURFACE WATER SAMPLING RESULTS

Surface water samples were collected at three to five locations in Mill Creek and Parkers Creek from October 1996 to September 2010. These sampling stations have historically been associated with FTMM-05 and are located upstream, adjacent to, and downstream of FTMM-05. Two VOCs (PCE and TCE) were previously identified as the primary constituents exceeding NJDEP surface water quality standards (SWQS) in surface water samples collected from the upstream and adjacent locations.

Eight quarters of surface water monitoring data extending from December 2008 to September 2010 are evaluated in detail in this report. PCE was the only VOC that exceeded NJDEP SWQS, and cis-1,2-DCE was the only VOC that exceeded the USEPA human health criterion. Upstream data indicate that concentrations of these VOCs detected in Mill Creek surface water originated from an upstream, offsite source. Metals that exceeded NJDEP SWQS and/or USEPA human health criteria (arsenic and mercury) were also detected at the upstream sampling location and are not associated with FTMM-05. No COPCs were identified for surface water for inclusion in the risk assessment.

E.7 SEDIMENT SAMPLING RESULTS

Sediment sampling was conducted in April 2000 in Mill Creek to evaluate potential PCB-related impacts to stream sediments associated with FTMM-05. In the absence of sediment-specific screening criteria, soil criteria were used. One PCB (Aroclor 1254) was detected in one of six samples at a concentration less than the NJDEP RDCSRS for total PCBs and the USEPA Residential RSL for Aroclor 1254. No COPCs were identified for sediment for inclusion in the risk assessment.

E.8 CONTAMINANT FATE AND TRANSPORT

VOCs in vadose zone soil are expected to have a relatively low persistence and moderate to high mobility in vadose zone soil. In contrast, SVOCs, pesticides, PCBs, and metals in near-surface soil at FTMM-05 are expected to be relatively persistent and immobile, limiting their impact on groundwater quality.

VOCs that dissolve into groundwater are expected to be moderately to highly mobile and transported laterally with advective groundwater flow, although some sorption to aquifer matrix materials will occur. Highly chlorinated solvents such as PCE have a higher sorption potential than less chlorinated solvents such as VC, and the migration of PCE in groundwater will be more retarded as a result. VOC concentrations in the saturated zone will attenuate over time as a result of destructive and non-destructive attenuation mechanisms.

E.9 RISK ASSESSMENT

According to the Baseline Ecological Evaluation (BEE), exceedances of ecological screening criteria have been sufficiently evaluated and addressed for ecological consideration,

and no additional ecological evaluation is necessary. Therefore, further ecological risk evaluation was not conducted for FTMM-05.

An evaluation of the potential risk resulting from human exposure to soil, surface water, sediment, and groundwater was conducted as part of this remedial investigation (RI). No COPCs were identified in surface water or sediment. Therefore, further evaluation of surface water and sediment in the baseline risk assessment was not conducted and no unacceptable risks are expected from human exposure to surface water or sediment. The human health risk assessment (HHRA) evaluates the exposure of current/future outdoor workers, future utility workers, and future recreational users to COPCs in soil through dermal contact, incidental ingestion, and inhalation of particulates. The HHRA evaluates the exposure of future utility workers to COPCs in groundwater through dermal contact and incidental ingestion. The HHRA used an exposure point concentration based on the maximum detected concentration or the 95 percent upper confidence limit on the mean (95% UCL) for soil, and the maximum detected concentration from any well for groundwater. Lead in soil was evaluated separately from carcinogenic and non-carcinogenic COPCs.

For outdoor workers exposed to soil at FTMM-05, the cumulative carcinogenic risk of 4×10^{-5} is within the cumulative risk goal of 1×10^{-4} to 1×10^{-6}. The cumulative non-carcinogenic hazard is 0.9, which is less than the cumulative hazard goal of 1. The hazard quotient for lead in soil is 0.4, which is less than 1. Therefore, no potential non-carcinogenic or carcinogenic effects or effects due to exposure to lead for outdoor workers are expected from exposure to soil at FTMM-05.

For utility workers exposed to soil at FTMM-05, the cumulative carcinogenic risk of 6×10^{-7} is less than the cumulative risk goal of 1×10^{-4} to 1×10^{-6}. The cumulative non-carcinogenic hazard is 0.3, which is less than the cumulative hazard goal of 1. The hazard quotient for lead in soil is 0.2, which is less than 1. Therefore, no potential non-carcinogenic or carcinogenic effects or effects due to exposure to lead for utility workers are expected from exposure to soil at FTMM-05.

For recreational users exposed to soil at FTMM-05, the cumulative carcinogenic risk of 1×10^{-5} is within the cumulative risk goal of 1×10^{-4} to 1×10^{-6}. The cumulative non-carcinogenic hazard is 0.1, which is less than the cumulative hazard goal of 1. The hazard quotient for lead in soil is 0.1, which is less than 1. Therefore, no potential non-carcinogenic or carcinogenic effects or effects due to exposure to lead for recreational users are expected from exposure to soil at FTMM-05.

For utility workers exposed to groundwater, the cumulative carcinogenic risks for all wells is 8×10^{-9}, which is less than the cumulative risk goal of 1×10^{-4} to 1×10^{-6}. The cumulative non-carcinogenic hazard for all wells is 0.04, which is less than the cumulative hazard goal of 1. Therefore, no potential non-carcinogenic or carcinogenic effects to utility workers are expected from exposure to groundwater at FTMM-05.

E.10 CONCLUSIONS

The RI concluded that risks to human health and the environment from soil and groundwater are within acceptable ranges. A feasibility study (FS) was not performed for FTMM-05. No further action is required at FTMM-05 under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

To address safety concerns, a vegetated soil cover will be placed over the landfill area to provide safety protection for future non-residential use and improve drainage. The soil cover with be placed consistent with the NJDEP Solid Waste regulations (New Jersey Administrative Code [N.J.A.C.] 7:26-2A). Additional soil will be added to the existing soil cover to provide a minimum of two feet of soil between the ground surface and landfill debris.

Prior to designing and placing the cap, the landfill boundary will be refined to investigate the data gaps identified in this RI. The refinement of landfill boundaries is on-going; field work was completed in September 2015 and the results will be presented under separate cover. The existing landfill surface will be clear cut and regraded prior to the installation of a vegetated native soil cover. The vegetated cover will offer safety protection to non-residents from future exposure to solid waste at the landfill and control surface water runoff and erosion.

Institutional Controls (ICs) to maintain the soil cover and prevent residential land use will also be implemented at FTMM-05. The Army will prepare a Land Use Control Implementation Plan during the remedial design phase to document the location of the engineering control and identify procedural responsibilities including landfill cover inspections, monitoring and reporting, and long-term management requirements. The Army will be responsible for documenting and implementing the ICs through the filing of a deed notice, and will also be responsible to conduct biennial reviews to ensure that the ICs remain protective of human health and the environment. However, the Army will not be responsible for obtaining a remedial action permit under New Jersey Technical Requirements for Site Remediation (TRSR). When the property is transferred to private ownership, the ICs will be incorporated into the title and the new owner will be responsible for complying with the ICs. Although the Army may later transfer its procedural responsibilities to another party by contract, property transfer agreement, or through other means, the Army shall retain ultimate responsibility for remedial integrity.

In addition, a Classification Exception Area (CEA) will be established pursuant to NJDEP's TRSR (N.J.A.C. 7:26E) and Administrative Requirements for the Remediation of Contaminated Sites (N.J.A.C. 7:26C). The CEA is a groundwater use restriction to protect a hypothetical residential user from potential risk associated with groundwater as a potable water source. The CEA will remain in place until NJDEP GWQS are achieved at the site.

SECTION 1
INTRODUCTION

1.1 PROJECT AUTHORIZATION

Parsons Government Services Inc. (Parsons) is serving as the prime contractor to the U.S. Army Corps of Engineers New York District and U.S. Army Engineering and Support Center, Huntsville (USAESCH) for preparation of Remedial Investigation (RI) or Remedial Investigation/Feasibility Study (RI/FS) reports to achieve acceptance of Decision Documents (DDs) at Fort Monmouth (FTMM) in Oceanport, Monmouth County, New Jersey. This project is being performed under task order (TO) 0012 issued under the Worldwide Environmental Restoration Services (WERS) contract number W912DY-09-D-0062.

This TO was issued to address a number of environmental sites at FTMM that are in various stages of hazardous, toxic, and radiological waste (HTRW) investigation and remediation. Specific activities that will be performed under this TO include:

1. Performance of RIs and FSs and preparation of RI or RI/FS reports to achieve acceptance of DDs in compliance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); National Contingency Plan (NCP); and 40 Code of Federal Regulations (CFR) Part 300; and to the extent possible to meet the substantive remedial requirements of New Jersey Administrative Code (N.J.A.C.) 7:26E Technical Requirements for Site Remediation (TRSR); and
2. Supporting the closure of environmental sites to facilitate the efficient transfer of real property to other parties.

1.2 PURPOSE AND SCOPE

Parsons has prepared this RI report for landfill site FTMM-05 based on historical site characterization activities performed from 1993 to 2014. This report provides relevant site background information, characterizes the nature and extent of site-related contamination, evaluates the potential risk to human health and the environment, and if needed evaluates remedial alternatives, and provides a comparative analysis of remedial alternatives. The overall goal of this process is to obtain stakeholder concurrence on a final report for each site, and if appropriate, provide sufficient data to facilitate future remedial action or administrative closure. The New Jersey Department of Environmental Protection (NJDEP) is the lead regulatory agency for FTMM and will provide regulatory review of this document.

1.3 SITE BACKGROUND INFORMATION

The following sections describe the site background. Included is a description of the site location, site history, background investigations, and summary of previous technical reports.

1.3.1 Site Location and Description

FTMM is located in the central-eastern portion of New Jersey in Monmouth County, approximately 45 miles south of New York City, New York; 70 miles northeast of Philadelphia, Pennsylvania; and 40 miles east of Trenton, New Jersey. The Atlantic Ocean is approximately three miles to the east. FTMM was comprised of three areas: the Main Post (MP), the Charles Wood Area (CWA) and the Evans Area (EA) (**Figure 1.1**). The areas of the MP and CWA are

637 acres and 489 acres, respectively. FTMM's MP and CWA were selected for closure by the Base Realignment and Closure (BRAC) Commission in 2005, and officially closed on September 15, 2011. The EA (not shown on **Figure 1.1**) was located approximately eight miles to the south of the MP and CWA and was formerly used for administrative, research and development (R&D), and some training. The EA was closed under BRAC 1998 and has been transferred from FTMM. FTMM falls within the Boroughs of Eatontown, Oceanport, and Tinton Falls. The MP is in the Eatontown and Oceanport Boroughs. The CWA is in the Eatontown and Tinton Falls Boroughs.

Figure 1.2 shows the location of the FTMM-05 landfill, which is in the north-central portion of the MP at the intersection of North Drive and Wilson Avenue. The site is bordered by Mill Creek, Lafetra Creek, and Parkers Creek to the west, Wilson Avenue to the east, North Drive to the south, and Landfill FTMM-08 to the north. The site layout is depicted on **Figure 1.3**. FTMM-05 has also been referred to as Landfill 5 and Landfill M-5 in historical documents.

1.3.2 Site History

FTMM-05 was used as a general purpose disposal area for domestic and industrial wastes. FTMM-05 was in operation from approximately 1952 to 1959 (U.S. Army Toxic and Hazardous Materials Agency (USATHAMA), 1980). A chronological summary of events related to the environmental characterization and remediation of FTMM-05 is provided in **Table 1.1** and detailed in this subsection.

Suspected hazardous waste sites were initially identified at FTMM in a report prepared by USATHAMA (1980). The purpose of the report was to assess the environmental quality of FTMM with regard to the use, storage, treatment, and disposal of toxic and hazardous materials. Thirty-seven sites at the MP, CWA, and EA were identified as having known or suspected waste material, including FTMM-05. The report recommended that FTMM perform surface water and groundwater sampling at the installation's landfills and report the results to USATHAMA.

A U.S. Army Environmental Hygiene Agency (USAEHA) water quality engineering study was conducted in 1984 to determine if landfill leachate was forming and entering streams. Surface water samples were collected in Mill Creek adjacent to FTMM-05. The sampling results indicated that the landfill's impacts to the stream were minimal (USATHAMA, 1988). It was recommended that the results be presented to the NJDEP in compliance with the New Jersey Pollutant Discharge Elimination System (NJPDES).

A follow-up evaluation was completed by USATHAMA (1988) to determine if environmental/hazardous waste disposal conditions at FTMM (including the landfills) had changed since the assessment in 1980 (USATHAMA, 1980). Based on an assessment of available data, it was recommended that USATHAMA not conduct a site investigation (SI), but surface water and groundwater sampling at the MP landfill areas should be continued (USATHAMA, 1988).

A site investigation (SI) was performed by Roy F. Weston, Inc. (Weston, 1995 provided in **Appendix A**) at FTMM-05 which included the installation of two shallow groundwater monitoring wells (M5MW10 and M5MW11) in 1994, and performance of two rounds of groundwater sampling in February and March 1995. The results of the groundwater sampling were presented in the SI report (Weston, 1995). The SI report presented a proposal for long-term groundwater and surface water monitoring that utilized the existing groundwater monitoring

wells and surface water sampling locations to monitor and document downgradient surface water and groundwater quality conditions over time.

An expanded SI was requested by the NJDEP. As part of the expanded SI, three additional groundwater monitoring wells (M5MW12, M5MW13, and M5MW14) were installed in August 1998 (ATC Associates, Inc. [ATC], 2000). The expanded SI resulted in the performance of a RI including soil and groundwater characterization to determine the extent of tetrachloroethene (PCE) at the site.

Groundwater sampling was performed from 1997 to 1998 in the two wells installed at FTMM-05 in 1994, and sampling of the three wells installed in 1998 was initiated in 1998. In 1999, a RI was conducted (ATC. 2000), and nine additional monitoring wells were installed in and around FTMM-05 and adjacent site FTMM-08 in March 1999. Seven of these nine wells were associated with FTMM-05, including M5MW15 (now abandoned), M5MW16, M5MW18, M5MW19, M5MW20, M5MW23, and M5MW25 (now abandoned). Quarterly groundwater sampling was conducted using a network of 10 to 12 monitoring wells. In 2010, an additional monitoring well (M5MW09) was installed near FTMM-05, and was sampled twice in 2011. **Figure 1.3** shows the locations of groundwater monitoring wells associated with FTMM-05; sampling data for other nearby wells associated with adjacent sites (e.g., FTMM-08) are not presented in this RI report.

Quarterly surface water sampling was recommended (Weston. 1995) and conducted in Mill Creek at four locations from 1996 through 2000. In 2000, an additional surface water sampling location was included, and surface water samples were collected from three to five surface water sample locations from 2000 to 2010.

An RI of the FTMM-05 landfill and nearby areas was performed between 1995 and 1999, and involved the drilling of 261 Geoprobe® borings (B1 through B197 and B254 through B318) to a maximum depth of approximately 10-12 feet below ground surface (bgs) between April and December 1998 for the collection of soil and groundwater samples (ATC, 2000). Only 113 of the 261 Geoprobe® borings were within the footprint of the FTMM-05 landfill as currently defined; the remaining borings were located north, northeast, and east of FTMM-05. One soil sample and one groundwater sample was collected from each boring and analyzed for VOCs. To determine the vertical extent of identified soil contamination (primarily PCE), two deeper soil borings (M5SB17 and M5SB20) were drilled to a depth of approximately 60 feet bgs and one additional deeper boring (M5SB23) was drilled to a depth of 42 feet bgs in March 1999 (ATC, 2000). Of these three deeper borings, only M5SB20 and M5SB23 were located within the footprint of FTMM-05 as currently defined; the other deep boring was located more than 300 feet east of FTMM-05.

ATC (2000) developed a Remedial Action Work Plan (RAWP) to initiate an active groundwater remediation program to address PCE impacts. Although PCE concentrations were expected to naturally attenuate to acceptable levels within five years, the RAWP initiated injections of Hydrogen Releasing Compound (HRC®) into groundwater to shorten the process for compliance with NJDEP Ground Water Quality Criteria (GWQC).

Near-surface soils were characterized by analyzing soil samples collected from 254 shallow Geoprobe® borings (B1 to B254) advanced on a grid pattern at FTMM-05 between April and August 1998. Soil samples were collected to a maximum depth of approximately 24 inches bgs.

The stated sampling objective was to demonstrate compliance equivalence of the existing soil cover over the FTMM-05 landfill with respect to the Solid Waste Disposal Act of 1965. The results of near-surface soil sampling were documented in an RI Report (Versar. 2004b). This near-surface soil sampling program was performed during the same timeframe as the soil sampling program documented by ATC (2000) and described above, during which samples were collected from mostly deeper intervals. The two sampling programs (ATC, 2000 and Versar, 2004b) appear to have been coordinated given that many boring locations coincided between the two programs, and in many instances soil samples were collected from the same borings on the same day, but at different depths. For example, ATC (2000) documents that a soil sample was collected from boring B-4 at a depth of 40 inches bgs and submitted to Fort Monmouth Environmental Testing Laboratory (FMETL) on April 9, 1998 for VOC analysis. Versar (2004b) documents that soil samples were collected from boring B-4 at 6-12 inches and 24 inches bgs and submitted to FMETL on April 9, 1998 for analysis of VOCs, SVOCs, metals, PCBs, and pesticides. It appears that the soil sampling programs described by ATC (2000) and Versar (2004b) were actually one single program, but the sampling results were split between two different reports that had different objectives (i.e., near-surface soil results were used by Versar [2004b] to assess the existing soil cover as described above, and deeper soil results were used by ATC [2000] to assess contamination in deeper soil, primarily below the surficial soil cover).

A classification exception area (CEA) report for FTMM-05 was prepared by ATC (2001) due to concentrations of PCE in groundwater samples that exceeded NJDEP GWQC. The CEA extended to a depth of 23 feet bgs, which is the maximum depth below grade at which a compentent clay layer begins; the clay layer extends to at least 60 feet bgs. The projected duration of the CEA was 5 years. The CEA was never approved by the NJDEP.

Versar (2003) prepared a Remedial Action Progress Report (RAPR) to document groundwater and surface water conditions at FTMM-05. The Versar report provides data for sampling events conducted from October 1999 through March 2002, after the first and second HRC® injections.

Other studies conducted at nearby MP landfill sites FTMM-02 and FTMM-08 found PCB-containing materials disposed of in each landfill. Therefore, assuming other landfills on the MP had received similar waste materials; a sediment sampling investigation was performed in 2000 to evaluate potential impacts to stream sediments in creeks and brooks adjacent to FTMM, including Mill Creek adjacent to FTMM-05 (Versar, 2004a).

Versar (2005) prepared a RAPR after the third HRC® injection event to document groundwater and surface water conditions at FTMM-05. The Versar report provides data for sampling events conducted from September 2002 through August 2003.

A second CEA report for FTMM-05 was prepared by Versar (2008) due to concentrations of PCE, trichloroethene (TCE), and cis-1,2-dichloroethene (cis-1,2-DCE) in groundwater samples that exceeded the NJDEP GWQS. The CEA report/application was subsequently withdrawn by FTMM and was never reviewed/approved by the NJDEP.

FTMM-05 landfill boundaries were initially determined through review of aerial photographs of the MP from 1940 to 1974. The boundary was reassessed during a 2010 investigation program undertaken by FTMM and consisted of excavating 11 test pits and

advancing one auger boring to determine the presence or absence of landfill debris and the thickness of the cover material. The investigation was undertaken in order to more precisely delineate the perimeter of the landfill. Test pit depths ranged from 2 to 8 feet bgs. The thickness of cover material at 254 locations ranged from 0 to 72 inches and averaged 24.6 inches (see U.S. Army, 2012 in **Appendix A**). Waste material observed immediately below the cover material included cement, concrete rubble, plastic debris, glass, ash/cinders, coal fragments, wood, clapboard, metal, shoe fragments, household items, ash, particle board, and unspecified refuse and garbage. Based on the investigation results, the southern boundary of FTMM-05 was extended outward toward North Drive, and the northern boundary was extended farther to the north (**Figure 1.3 and Appendix A**).

The landfill boundaries were reexamined by Parsons in 2015 using the available test pit and soil boring data, as well as historical aerial photographs (**Appendix A**). Following the reexamination in 2015, the boundaries of Landfill FTMM-05 were refined in a few areas as shown on **Figure 1.3**, but remain generally similar to how they were defined in 2010. The most significant refinement was made to the northern boundary of the landfill. Test pits 7, 8, and 9, along the northern boundary of FTMM-05, all contained debris, as did the test pits along the southern boundary of adjacent site FTMM-08. Additionally, debris was observed in borings in the northwestern portion of the site (in particular borings B-55, B-56, and B-57 (see **Figure 2.1** in Section 2 for test pit and boring locations) as well as at monitoring well M5MW09. All borings along the western edge of the previously defined landfill boundary, except the southern most boring (B-254), contained debris, and borings B-250 through B-254 near the southern boundary did not. Therefore the northern and western boundaries of the landfill established in 2010 were moved farther to the north and west to coincide with the southern boundary of FTMM-08 and the eastern edge of Parkers and Mill Creeks; these revisions are consistent with observations of the landfill boundary made during the 2015 review of a series of aerial photographs dated 1940, 1947, 1957, 1963, and 1969. Based on the lack of debris in borings B-250 through B-254, the southern boundary was moved to the north, which is consistent with the presence of low brush and trees observed in this area in aerial photographs. These photographs depict the progression of suspected filling activities that occurred to produce the FTMM-05 landfill (**Appendix A**). Additionally, test pit 5 was previously misidentified as not containing debris, and based on the debris logged in this pit, the landfill boundary was moved slightly east near test pit 5 to match the curve of Wilson Avenue which pre-dates the landfill based on the aerial photographs. The 2015 revised boundary is shown on **Figure 1.3**, and historical boring and test pit locations are shown on **Figure 2.1** in Section 2. Data gaps in the landfill boundary delineation remain along Mill Creek and at test pit 5 and will be addressed during a landfill refinement investigation. Field work for the refinement of landfill boundaries was performed in September 2015 and results will be documented under separate cover.

VEETech (2009b) prepared a RAPR after the fourth HRC® injection event to document groundwater and surface water conditions at FTMM-05. The report provides data for sampling events conducted from October 2005 through September 2006.

VEETech (2010) prepared a RAPR after the fifth HRC® injection to document groundwater and surface water conditions at FTMM-05. The VEETech report provides data for sampling events conducted from October 2006 through December 2008.

In accordance with an NJDEP-approved Permit-by-Rule, approximately 23,880 pounds of RegenOx® solution were injected into the subsurface at four targeted areas at FTMM-05 between February and July 2011 in an effort to remediate VOC concentrations in groundwater.

A final RAPR (US Army, 2012) was prepared to summarize groundwater and surface water sampling results from February 2009 through the September 2010.

Environmental investigations performed at FTMM-05 are summarized in greater detail in Section 2, and the nature and extent of contamination detected during the environmental investigations are summarized in Section 4.

1.4 REPORT ORGANIZATION

This RI report is organized to be compliant with relevant portions of the outline presented in the *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA* (USEPA, 1988).

- Introduction: Section 1 details the overall scope and objective of the project, presents the organization of the report, and presents an overview of the site and its history, including previous investigations;
- Previous Investigations and Interim Remedial Actions: Section 2 details the site characterization field activities and interim remedial actions that have been performed;
- Physical Characteristics of the Site: Section 3 describes the physical setting of the site, including surface features, surface water hydrology, geology and hydrogeology, land use, and ecological setting;
- Nature and Extent of Contamination: Section 4 summarizes the degree to which sampled media (i.e., soil, groundwater, surface water, and sediment) have been impacted by site-related contamination, and identifies those constituents that were detected above applicable cleanup criteria but are believed to be representative of natural background concentrations;
- Contaminant Fate and Transport: Section 5 describes the migration and fate of selected constituents present in the subsurface based upon site-specific data, the geologic and hydrogeologic characteristics of the site, and the physicochemical properties of the constituents;
- Baseline Risk Assessment: Section 6 provides a quantitative assessment of the risk posed by site-related COPCs to potential human receptors;
- Remedial Investigation Summary: Section 7 summarizes the main findings of the RI;
- Conclusions: Section 8 presents the conclusion and details reasons why a FS is not necessary for FTMM-05; and
- References: Section 9 includes a list of references used in the preparation of this report.

Additional information is attached to this report as appendices:

- **Appendix A** – Key Historical Reports and Background Information (included electronically on CD);
- **Appendix B** – Utility Worker and Recreational User Exposure Parameters; Utility Worker and Recreational User Screening Level Calculations; ProUCL Output (included electronically on CD); and
- **Appendix C** – Cost Estimate.

SECTION 2
PREVIOUS INVESTIGATIONS AND INTERIM REMEDIAL ACTIONS

2.1 GEOLOGIC/HYDROGEOLOGIC INVESTIGATIONS

The geologic and hydrogeologic characteristics of FTMM have been investigated during numerous historical installation-wide and site-specific environmental studies. The primary methods of geologic/hydrogeologic investigation at FTMM-05 have consisted of describing soils encountered during soil boring and monitoring well drilling and test pit operations, measuring water levels in site monitoring wells, and constructing potentiometric surface (i.e., groundwater surface elevation contour) maps indicating the direction and magnitude of the horizontal hydraulic gradient.

2.2 SOIL AND VADOSE ZONE INVESTIGATIONS

ATC (2000) characterized soil quality from April to December 1998. A total of 113 soil borings were advanced within the FTMM-05 footprint, and one soil sample was collected from each boring in the 6-interval above the water table; sample depths ranged from 17 to 40 inches bgs. Soil samples were analyzed for VOCs. Laboratory analyses were conducted at the FMETL, a New Jersey certified laboratory (Certification No. 13461).

Near-surface soils were characterized between April and August 1998 by advancing 254 shallow soil borings throughout the site (Versar, 2004b). Each of the soil samples, except those collected for VOC analysis, were collected between approximately 6 and 12 inches bgs. VOC samples were collected at approximately 24 inches bgs since surface soils would not be expected to retain volatile constituents over time. In addition to analysis for VOCs, samples were analyzed for SVOCs, pesticides, PCBs, and Target Analyte List (TAL) metals. Laboratory analyses were conducted at the FMETL.

The 2015 landfill site boundary (**Figure 1.3**) is based on the near-surface soil RI report (Versar, 2004), a landfill cover requirements report (Brinkerhoff, 2011), and a review of historical data and aerial photos by Parsons in 2015. **Figure 2.1** also depicts the current understanding of the FTMM-05 landfill boundary, the soil boring locations, and the test pit locations used for the delineation of the landfill boundary.

2.3 GROUNDWATER INVESTIGATIONS AND REMEDIAL ACTIONS

Groundwater monitoring wells were initially installed at and near FTMM-05 to determine if leachate from the landfill was impacting groundwater quality. In 1994, as part of a SI, two shallow groundwater wells (M5MW10 [downgradient] and M5MW11) were installed and two rounds of groundwater sampling were conducted in February and March 1995 (Weston, 1995). Groundwater samples were analyzed for TAL metals, VOCs, SVOCs, pesticides, sulfate, and cyanide. The results of the groundwater sampling were presented in the SI report (Weston. 1995). Based on the findings of the SI, the Army implemented a long-term groundwater monitoring program.

ATC (2000) characterized groundwater quality from April to December 1998. A total of 113 soil borings were advanced within the FTMM-05 footprint using a Geoprobe®, and one groundwater sample was collected from each boring. The purpose of collecting groundwater samples using the Geoprobe® was to provide a screening tool for determining the gross

distribution of groundwater impacts, with subsequent confirmation data provided through the installation of permanent monitoring wells. In an attempt to delineate groundwater contamination in the direction of Mill Creek, the potential receptor, three additional groundwater monitoring wells (M5MW12, M5MW13, and M5MW14) were installed in August 1998. The three new monitoring wells were sampled for TAL metals, VOCs and tentatively identified compounds (TICs), SVOCs and TICs, and pesticides.

The results of the SI (Weston, 1995) were used to develop the scope of the RI (ATC, 2000). In order to confirm the results of the Geoprobe® groundwater investigation performed in 1998, seven additional monitoring wells (M5MW15, M5MW16, M5MW18, M5MW19, M5MW20, M5MW23, and M5MW25) were installed on and in the immediate vicinity of FTMM-05 in March 1999. Wells were sampled as part of the RI (ATC, 2000), and samples were analyzed for TAL metals, VOCs and TICs, SVOCs and TICs, and pesticides. Sampling results indicated that shallow groundwater contained PCE concentrations in excess of the NJDEP GWQS. Although PCE concentrations in groundwater were expected to gradually decrease through natural attenuation, the FTMM Directorate of Public Works (DPW) initiated an anaerobic bioremediation program to actively address the PCE groundwater contamination at FTMM-05. The anaerobic bioremediation program involved treating the groundwater with HRC®, as described in the RAWP (ATC, 2000). The locations of the monitoring wells are shown on **Figure 1.3**, well construction details are provided in **Table 2.1,** and the scope of the groundwater monitoring program from 1997 to 2014 is summarized in **Table 2.2**

Injections of HRC® were performed in seven distinct areas in and around FTMM-05 where elevated concentrations of PCE were detected in shallow groundwater. Multiple injection points ranging in number from 6 to 59 were established within each injection area during each injection event. Three of the injection sites were located within the FTMM-05 landfill footprint near monitoring wells M5MW11, M5MW20, and M5MW23 (**Figure 2.2**). The injections were performed over multiple 3- to 6-month time periods in 2000, 2002, 2003, 2004, and 2005 to facilitate the enhanced anaerobic degradation of PCE in groundwater. Injection areas HRC-1 and HRC-2 (**Figure 2.2**) are associated with the adjacent landfill site FTMM-08. Groundwater beneath the northernmost portion of FTMM-05 likely migrates beneath the southern portion of FTMM-08 prior to discharge to Parkers Creek. HRC® is a proprietary slow-release compound that provides a steady hydrogen source to groundwater. Under anaerobic conditions, naturally occurring microorganisms use the hydrogen to progressively remove chlorine atoms from chlorinated hydrocarbons via reductive dechlorination, transforming them to non-toxic compounds. Quarterly groundwater monitoring of the effects of HRC® injections has been conducted at 12 groundwater monitoring wells present in and near FTMM-05. Groundwater samples were analyzed for TAL metals, VOCs and TICs, SVOCs and TICs, and pesticides until 2003. In 2003, quarterly sampling of M5MW15 ceased, and samples from the remaining 11 wells were analyzed only for VOCs (**Table 2.2**).

In 2010, the quarterly groundwater samples were analyzed for VOCs and metals, and an additional groundwater monitoring well (M5MW09) was installed, but was not sampled until 2011. In 2010 through February 2011, sampling was conducted at 10 monitoring wells, and the samples were analyzed for VOCs and metals. In March 2011, only monitoring well M5MW09 was sampled, and samples were analyzed for VOCs and metals. In April 2011, samples collected from M5MW11, M5MW16, and M5MW23 were analyzed for VOCs and metals. In June 2011 and August 2011, the monitoring wells (except the abandoned wells M5MW15 and M5MW25)

were sampled and analyzed for VOCs and metals. In July and August 2011, monitoring wells M5MW11, M5MW16, and M5MW23 were sampled and analyzed for VOCs and metals (**Table 2.2**). The results of quarterly groundwater monitoring are presented in a series of RAPRs, and are summarized in Section 4.

In accordance with an NJDEP-approved Permit-by-Rule (October 28 and November 9, 2010 letter approvals), approximately 23,880 lbs of RegenOx® solution were injected into the subsurface in four areas at and near FTMM-05 between February and July 2011. Three of the injection areas were located in the immediate vicinities of monitoring wells M5MW11, M5MW16, and M5MW23. The fourth area was east of the northern portion of FTMM-05, approximately 150 feet southeast of well M5MW23 (**Figure 2.2**). The oxidant solution was injected via 12 Geoprobe® borings in each area. RegenOx® is a proprietary reagent that is applied *in-situ* to chemically oxidize contaminants. Performance groundwater monitoring was conducted during the injection events, including recording of field parameters (pH, conductivity, dissolved oxygen, ORP, and headspace measurements) and groundwater sample collection and laboratory analysis for VOCs, iron, manganese, alkalinity, hydrogen peroxide, and hexavalent chromium.

In August 2013, groundwater samples were collected from 10 monitoring wells at FTMM-05 and analyzed for VOCs to re-establish baseline conditions following temporary suspension of the sampling program in 2011. Analytical results were also used to evaluate the site's long-term groundwater sampling program and the potential for removal of monitoring wells or analytes from long-term monitoring by comparison to historical groundwater sampling results. The results of the 2013 groundwater monitoring event are summarized in Section 4. NJDEP accepted the recommendation of the August 2013 Baseline Sampling Report to continue annual groundwater monitoring at select wells (M5MW11, M5MW16, M5MW20, and M5MW23) for VOCs (NJDEP, 2015). The results of the most recent (December 2014) groundwater sampling event at FTMM-05 are also summarized in Section 4.

Groundwater monitoring results indicate that one or more sources of PCE groundwater contamination exist to the east of FTMM-05 and groundwater containing PCE migrates beneath the landfill. The specific location(s) of the PCE source area(s) are unknown at this time, and will be addressed separately from this RI. Monitoring wells to the east have historically been associated with FTMM-05; however, in this report, only the sample results directly associated with the FTMM-05 landfill have been evaluated as COPCs in the risk assessment.

2.4 SURFACE WATER INVESTIGATIONS

Surface water samples have been collected from two upstream sampling locations on Mill Creek (SS-16 and SS-15) and two downstream sampling locations on Parkers Creek (SS-4 and SS-27 (**Figure 2.3**). One location along the western boundary of FTMM-05 (SS-5) has also been sampled. Surface water in the reach of Mill Creek adjacent to FTMM-05 is tidally–influenced, and high-tide salinity measurements presented in the Baseline Ecological Evaluation (BEE) Report (Shaw. 2012) indicate that the reach of Mill Creek adjacent to FTMM-05 has an overall site average high tide salinity of 8.2 parts per thousand (ppt), which classifies it as saline. Samples were collected from 1996 to 2010 and analyzed at FMETL for various combinations of VOCs, pesticides and PCBs, and metals; the scope of the historical sampling program is summarized in **Table 2.3**. Sampling results have been reported by ATC (2000), Versar (2003, 2005a), VEETech (2009a, 2009b, 2010); and U.S. Army (2012).

2.5 SEDIMENT INVESTIGATIONS

Studies conducted at similar MP landfill sites (FTMM-02 and FTMM-08) found PCB-containing materials (e.g., electrical ballasts) disposed of in each landfill. In addition, PCBs were detected in soil and/or groundwater at both of these landfill sites. Therefore, assuming that other landfills on the MP may have received similar waste materials, the FTMM DPW initiated a sediment sampling investigation in the second quarter of 2000 to evaluate potential impacts to stream sediments adjacent to the MP landfill sites. FTMM-05 was included in the sediment sampling program to supplement previous characterization results for soil, surface water, and groundwater (Versar, 2004a; provided in **Appendix A**).

To determine potential PCB-related impacts to sediments in Mill Creek associated with FTMM-05, the Army collected 16 surface and near-surface sediment samples in Mill Creek in April 2000, including three duplicate samples for quality assurance/quality control (QA/QC) purposes. The 16 sediment samples were collected at six locations (B-1 through B-6) along the 570-foot-long section of the creek that borders FTMM-05 (two to three depth intervals sampled per location) (**Figure 2.3**). The 16 sediment samples were analyzed for PCBs and compared to sediment sampling guidance concentrations defined in the NJDEP's (1998) *Guidance for Sediment Quality Evaluations*.

2.6 ECOLOGICAL INVESTIGATIONS

A BEE (Shaw, 2012) was performed at the MP and CWA to fulfill requirements set forth in NJDEP's TRSR (N.J.A.C. 7:26E-5.3). The BEE is Tier I of the ecological evaluation and ecological risk assessment process as developed by the Site Remediation Program, and is defined in the TRSR and Site Remediation News (NJDEP, 1997). The objective of the BEE at FTMM was to examine each of 23 identified sites (eight Environmental Condition of Property [ECP] parcels and 15 Installation Restoration Program [IRP] sites). The BEE was developed to be an efficient and cost-effective screening process. As such, the results of a BEE are used to determine whether potential ecological impacts are negligible or whether more site-specific ecological evaluation is warranted.

The NJDEP has accepted the 2012 BEE report's recommendations and conclusions and concurs that no further evaluation of ecological risk is required (NJDEP letter dated August 27, 2012). Therefore, based on the recommendation of the 2012 BEE report, no further ecological risk assessment was conducted for FTMM-05. Additional ecological information pertinent to this site was obtained from the BEE report and is summarized in Section 3.5.

2.7 PREVIOUS INVESTIGATIONS OF BACKGROUND SOIL, GROUNDWATER, AND SURFACE WATER QUALITY

2.7.1 Weston (1995) Background Investigation

Weston (1995) collected 10 soil and 10 groundwater samples on both the CWA and MP to determine concentrations of constituents that occur naturally or as a result of activities unrelated to FTMM. Background sampling locations were selected as specified in the document *Investigations of Suspected Hazardous Waste Sites at Fort Monmouth, New Jersey* (Weston, 1993), which was approved by NJDEP. The resulting background data set was found to be neither normally or log-normally distributed; therefore, the tolerance interval method for determining representative background concentrations described in the then-current version of

the USEPA document *Statistical Analysis of Groundwater Monitoring Activities at RCRA Facilities* was not used. Weston (1995) states that nonparametric methods that are similar to the tolerance interval method involve selecting the data value that is at the 95th percentile of the data set. Because there were 10 data points, the equivalent method for the FTMM background data set was to use the maximum value. An outlier screening was conducted to identify background concentrations that were inconsistent with the rest of the data set. Based on the screening, outliers were identified for beryllium, chromium, cobalt, lead, vanadium, and zinc in the MP groundwater, and for manganese in the CWA soil. These outliers were eliminated from the data set.

In addition, Weston (1995) identified maximum background values for Monmouth County based on published data. The Monmouth County background concentrations for soils were based on analyses of samples from the vicinity of FTMM.

Weston (1995) also provides results for two background surface water and sediment samples that were collected at the MP in areas not expected to be affected by base activities. These samples were collected from Mill and Lafetra creeks at the western (upstream) edge of the MP.

2.7.2 Brinkerhoff (2011b) Background Evaluation

Brinkerhoff Environmental Services, Inc. (Brinkerhoff. 2011b) performed an evaluation to achieve the following objectives:

- Document the presence of naturally occurring metals in groundwater;
- Identify various conditions which are likely to have resulted in exceedances of NJDEP GWQS by concentrations of various total metals (from unfiltered samples) detected in groundwater at FTMM; and
- Develop a strategy for determining which sites contain metal concentrations in groundwater that represent site-related contamination.

For FTMM-05, Brinkerhoff (2011b) calculated the 90th percentile values for total metals using groundwater quality data collected from March to September 2010, and determined that the 90th percentile values for barium, beryllium, cadmium, chromium, copper, lead, and nickel were less than the GWQS for these metals. Based on this calculation, Brinkerhoff (2011b) recommended no further sampling of groundwater for these metals (**Appendix A**).

2.7.3 Base-Wide Glauconitic Soil Sampling Report

Previous studies have documented the presence of elevated naturally-occurring metal concentrations (e.g., arsenic, beryllium, lead) in glauconitic soils such as those present within the New Jersey Coastal Plain physiographic province (Dooley, 2001; USGS, 1984). In an effort to confirm and document that select metals detected in groundwater on the MP are naturally associated with glauconitic soils, the FTMM DPW (FTMM. 2011) conducted a soil and groundwater sampling investigation to determine whether naturally occurring metals in soil are causing metal concentrations in groundwater to exceed the NJDEP GWQS. According to Jablonski (1968), the Red Bank and Tinton Sands that outcrop at the MP contain glauconite. Minard (1969) states that glauconite may comprise 60 to 80 percent of the sand fraction in the upper portion of the Tinton Sand.

Six co-located soil and groundwater samples were collected at three sites and analyzed for TAL metals. The study concluded that arsenic and lead co-exist as naturally occurring metals that are unrelated to any documented source at any of the sampled sites. The study also concluded that arsenic in groundwater, which was detected at concentrations exceeding the NJDEP GWQS of 3 micrograms per liter (µg/L) in three of the six samples, is due to natural conditions rather than man-made/anthropogenic sources (FTMM, 2011).

SECTION 3
PHYSICAL CHARACTERISTICS OF THE SITE

3.1 SURFACE FEATURES

FTMM-05 is located adjacent to Mill Creek, Lafetra Creek, and Parkers Creek (**Figure 1.3**). The site is covered with grass and other vegetation (trees, shrubs, etc.) The ground surface topography is flat, with elevations of less than 20 feet above mean sea level.

3.2 SURFACE-WATER HYDROLOGY

Three creeks (Mill, Lafetra, and Parkers) converge at the western boundary of FTMM-05. Both Mill Creek and Lafetra Creek originate outside the FTMM boundary. Mill Creek initially flows along the southern boundary of the MP and then turns north just south of FTMM-05, eventually forming the western boundary of FTMM-05. Lafetra Creek initially forms the northern boundary of the MP and joins Mill Creek near the north end of FTMM-05 to form Parkers Creek. Parkers Creek flows eastward along the northern boundary of the MP. Surface water runoff from FTMM-05 would drain into both Mill and Parkers Creeks, although Mill Creek would likely receive most of the runoff given that it comprises the majority of the western boundary of the site (**Figure 1.3**).

3.3 GEOLOGY AND HYDROGEOLOGY

3.3.1 Regional Geology and Hydrogeology

The MP and CWA are situated on coastal plain deposits that thicken to the southeast. The regional geologic and hydrogeologic framework for the New Jersey coastal plain is described by Zapecza (1989), who identified 15 regional hydrogeologic units, including nine aquifers and six confining units. An early regional geologic cross-section for the FTMM vicinity based on the work of Zapecza (1989), and presented in Versar (2005b), is provided in **Appendix A**. This cross-section indicates that the depth to crystalline bedrock at FTMM is approximately 1,000 feet. In 2010, the understanding of the geology in the area around FTMM was refined by Sanford and Sugarman of the New Jersey Geological Survey. They describe the unconsolidated material in the coastal plain as consisting of sand, silt, clay, and glauconitic clay laid down in coastal, nearshore-marine, and continental shelf settings between 95 and 10 million years ago. The sediments are grouped into 19 formations and members.

The geology of the Long Branch Quadrangle (Stanford and Sugarman. 2010) indicates that the Hornerstown, Vincentown, and Tinton formations are the unconsolidated units that outcrop or occur close to the ground surface in the area of FTMM. There is a relatively thin veneer of surficial deposits that covers most of the unconsolidated material, according to the Surficial Geology of the Long Branch Quadrangle (Stanford. 2000). The 2010 bedrock geologic map provides a geologic cross-section (A-A') through FTMM that is more refined than the one developed by Zapecza (1989); this refined cross section is also included in **Appendix A**. Regressive, upward-coarsening deposits are usually aquifers (e.g., Englishtown and Kirkwood Formations and the Cohansey Sand), while the transgressive deposits act as confining units (e.g., the Merchantville, Marshalltown, Navesink, and Hornerstown Formations). The individual thicknesses for these units varies greatly from several tens of feet to several hundred feet.

The Hornerstown Formation, which underlies much of the MP and the northern portion of the CWA, consists of glauconitic (>50%) clay and silty clay. This unstratified formation is olive, dark green and black where unweathered and olive-brown with brown to reddish-brown mottles where weathered (Stanford and Sugarman. 2010). The Hornerstown Formation is 25 to 30 feet thick. The Vincentown Formation, which unconformably overlies the Hornerstown Formation, consists of glauconitic (5-20%), silty, medium-to-coarse, quartz sand; some fine-to-medium sand; and some very coarse sand to very fine pebbles. This formation is yellow, reddish-yellow, olive yellow, or olive-brown in color and has a total thickness of 180 feet.

The Tinton (Sand) Formation unconformably underlies the Hornerstown Formation and conformably overlies the Red Bank Sand and consists of glauconitic (5-30%), silty, medium-to-coarse and fine-to-medium, quartz sand. The color is reddish-brown, reddish-yellow, yellowish-brown where weathered, and grayish-brown, brown, and olive-brown where unweathered. It is commonly iron-cemented into beds and masses as much as 15 feet thick. The uppermost 4 to 6 feet, just below the contact with the Hornerstown Formation, is a brown to olive-gray, glauconitic, clayey silt to sandy or silty clay (Stanford and Sugarman, 2010).

The water table aquifer in the MP and CWA areas is identified as part of the "Navesink-Hornerstown Confining Units," or minor aquifers. The minor aquifers include the Navesink Formation, Red Bank Sand, Tinton Sand, Hornerstown Sand, Vincentown Formation, Manasquan Formation, Shark River Formation, Piney Point Formation, and the basal clay of the Kirkwood Formation. These geologic formations comprise a "Composite Confining Bed" for the underlying Wenonah Mount Laurel Aquifer (Zapecza, 1989 as reported by Versar, 2005b) (see regional geologic cross-section in **Appendix A**). The Composite Confining Bed is estimated to be approximately 125 feet thick at FTMM (Versar, 2005b). Wells installed in the Red Bank and Tinton Sands produce 2 to 25 gallons per minute (gpm) (Jablonski, 1968). The shallow water table conditions in the Tinton and Red Bank Sands, and the similar composition of these sands within the Kirkwood Formation, suggest that the Tinton-Red Bank-Kirkwood sequence forms a single, laterally continuous aquifer. Regionally, groundwater in this water table aquifer flows east towards the Atlantic Ocean. However, local topography tends to deflect the flow toward local depressions (Versar, 2005b).

A pumping test performed at FTMM in 1992 yielded a hydraulic conductivity of 32 gallons per day per square foot (gpd/ft^2) (4.3 ft/day) (Groundwater & Environmental Services, Inc. [GES] 1999). The location of the pumping test and the geologic unit tested are not known. Additional hydraulic conductivity information for the MP area is provided in Appendix IV of the *MODFLOW Groundwater Modeling Report* prepared by Brinkerhoff (2010). Twenty-one hydraulic conductivity values derived from slug tests performed in monitoring wells installed at various building areas ranged from 0.3 ft/day to 31.7 ft/day with a geometric mean value of 3.2 ft/day.

3.3.2 Site-Specific Geology and Hydrogeology

Soil types identified to a depth of 8 feet bgs on test pit logs excavated in 2009 during a landfill boundary delineation project (Section 1.3.2) include brown/orange, gray, and tan sand, silty sand, and clay. Monitoring wells at FTMM-05 were installed at depths ranging from 15 to 20 feet bgs (**Table 2.1**). The borehole logs for these wells indicate that the shallow soil is composed of dark gray, silty sand with clay and root fragments. Deeper soil is composed of greenish, orange, and gray sandy clay with a trace of gravel. Borehole logs for two deeper soil

borings (M5SB20 and M5SB23) drilled within the FTMM-05 footprint in 1999 indicate primarily silty sand to depths of 16 to 18 feet bgs, transitioning to clayey sand and then to sandy clay with increasing depth (ATC, 2000). Sandy clay was encountered from 19 to 42 feet bgs at M5SB20 and from 25 to 60 feet bgs at M5SB23. Brinkerhoff (2011a) states that the depth of soil cover at FTMM-05 varies from 0 to 72 inches and averages 24 inches. The fill material encountered during intrusive investigation activities has consisted of coal, glass, concrete rubble, wood, metal, ash/cinders and plastic fragments sometimes intermixed with a silty, coarse to fine sand.

The depth to groundwater at the MP typically ranges from approximately 2 to 9 feet bgs. At FTMM-05, the groundwater depth ranges from 6 to 11 feet bgs based on multiple years of water level depth measurements (2000-2012) reported by Versar (2003, 2005a) and VEETech (2009a, 2009b, 2010). Groundwater migrates toward the west and northwest (i.e., toward Mill and Parkers Creeks, **Figure 1.3**) with a horizontal hydraulic gradient of approximately 0.014 foot per foot (ft/ft) based on potentiometric surface maps contained in VEETech (2010). Groundwater beneath the northernmost portion of FTMM-05 likely migrates beneath the southern portion of adjacent site FTMM-08 prior to discharge to Parkers Creek.

A short-term aquifer pumping test was performed by ATC (2000) to determine aquifer parameters (transmissivity and storativity) by pumping MW-19 and measuring water level drawdown in several observation wells. Monitoring well MW-19 was pumped continuously at an average rate of approximately 2.5 gallons per minute for a period of 150 minutes. The recovery of the water level in the pumping well was measured for 33 minutes. However, drawdown recorded in the observation wells did not exceed 0.01 foot and the aquifer storativity could not be determined. Based on the test results, ATC (2000) concluded that the aquifer transmissivity calculated using the recovery test data (23.1 square feet per day) was most representative of the shallow unconfined aquifer.

An average advective groundwater seepage velocity for FTMM-05 was calculated using the following equation:

$$V = Ki/n_e$$

Where:

V = seepage velocity

K = hydraulic conductivity = 3.2 ft/day (the geometric mean value determined from slug tests at FTMM)

i = hydraulic gradient = 0.014 ft/ft (measured from the site-specific potentiometric surface map for November 10, 2008 prepared by VEETech (2010) [see **Appendix A** of this report])

n_e = effective porosity = 0.20 or 20% (estimated value for silty sand)

The calculated average advective groundwater seepage velocity is 0.22 ft/day (82 feet per per year).

3.4 LAND USE

The FTMM-05 has reportedly been inactive since 1959. Since then there has been steady growth and stabilization of vegetation (grass, trees, and bushes) at the site. The anticipated future

land use at FTMM-05 is passive open space (Edaw, Inc. 2008) (see Land Use Plan in **Appendix A**). Land planned for use as "open space" is expected to remain undeveloped, with only occasional maintenance activities (e.g., grounds keeping), utility work associated with underground or overhead utilities that may be present within the site boundary, and recreational activity (e.g., hiking and biking on established trails).

3.5 ECOLOGY

Major vegetation zones at FTMM consist of landscaped areas, estuarine and fresh water wetlands, riparian areas, upland forests, and old field habitats. Much of the upland areas of the MP and CWA consist of extensive areas of regularly mowed lawns and landscaped areas (Shaw, 2012). FTMM-05 consists of an undeveloped, vegetated (grass, shrubs, trees) area that is only partially maintained (the eastern portion is mowed). The BEE report (Shaw, 2012) indicates that no significant habitats exist in the vicinity of FTMM-05 according to the geographic information system (GIS) digital data provided by NJDEP.

Except for occasional transient species, no federally-listed or proposed threatened or endangered flora or fauna are known to exist at FTMM. There was one observance in 1992 of a New Jersey-listed endangered species, the clustered sedge. No federal- or state-listed species were observed during the BEE site visit conducted on the MP and CWA in September 2009.

SECTION 4
NATURE AND EXTENT OF CONTAMINATION

Environmental sampling results for soil, groundwater, surface water, and sediment at and adjacent to FTMM-05 are described in this section.

4.1 SOIL QUALITY

Soil quality results obtained during the 1998 soil sampling program described in Versar (2004b) are summarized in the following subsections. In addition, analytical results for PCE in soil described in ATC (2000) are summarized. Only soil data obtained within the FTMM-05 footprint are summarized. ATC (2000) presents PCE data for 113 soil samples collected within the FTMM-05 footprint at depths of 17 to 40 inches bgs. Versar (2004b) presents VOC data for 183 soil samples collected at a depth of 24 inches bgs; SVOC, pesticide, and PCB data for 182 soil samples collected from 6-12 inches bgs; and metals data for 181 soil samples collected from 6-12 inches bgs. As described in Section 1.3.2, the two sampling programs (ATC, 2000 and Versar, 2004b) appear to have been related given that boring locations were generally coincided between the two programs, and in many instances soil samples were collected from the same borings on the same day, but at different depths.

In addition to the samples discussed above, two additional deep soil borings were advanced at FTMM-05 in March 1999 to vertically delineate PCE concentrations in soil. Borings M5SB20 and M5SB23 were drilled to depths of approximately 60 feet and 42 feet bgs, respectively. Soil samples for VOC analysis were collected from M5SB23 at various depths between 9 and 42 feet bgs. ATC (2000) reported that acetone and methylene chloride were detected in soil at concentrations that exceeded their respective NJDEP IGW SLs; however, these analytes were also detected at similar concentrations in associated method and trip blanks. No other analytes were detected at levels exceeding the then-current NJDEP IGW SLs. No other information for these deeper soil samples, including specific laboratory analytical results, could be located. Therefore, these deeper soil samples are not discussed further in this section.

Locations of soil samples collected within the FTMM-05 footprint are shown on **Figure 2.1**. This figure shows locations of samples presented in Versar (2004b). Soil samples locations presented in ATC (2000) are shown in **Appendix A**; however, these locations appear to be coincident with a subset of the locations shown on **Figure 2.1**. **Tables 4.1 and 4.2** show the sampling results for detected analytes presented in Versar (2004b) and also show selected NJDEP and background comparison criteria (**Table 4.1**) and USEPA (**Table 4.2**) comparison criteria, including:

- NJDEP Residential Direct Contact Soil Remediation Standards (RDCSRS), Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS), and Impact to Groundwater (IGW) soil SLs;
- USEPA RSLs (target risk [TR] = $1x10^{-6}$ and target hazard quotient [THQ] = 0.1) for residential and industrial soil and protection of groundwater (the latter being analogous to the NJDEP IGW soil SLs), published November 2013; and
- Maximum MP background concentrations presented by Weston (1995).

PCE results for soil samples presented in ATC (2000) are not shown in **Tables 4.1 and 4.2**, but are described in narrative form below.

Site concentrations were compared to NJDEP criteria. Both residential and non-residential criteria are used to provide context for NJDEP to evaluate potential future land use.

Comparison of site concentrations to USEPA RSLs was also performed because the U.S Army is tasked with completing a CERCLA-compliant RI (including risk assessment). Therefore, RSLs are used to identify those chemicals that are present at a sufficient concentration to justify inclusion as constituents of potential concern (COPCs) and consideration in the quantitative baseline risk assessment. Any analyte present at a concentration greater than both the residential soil RSL based on a target risk of $1x10^{-6}$ and a THQ of 0.1 and the range of FTMM-specific background concentrations for metals (Weston, 1995) is considered a COPC (except for metals considered essential human nutrients) and included for further evaluation in the baseline risk assessment. Any analyte that is present at concentrations less than these residential criteria are not expected to pose a risk to human receptors under any future land use, and so are not included in the baseline risk assessment. A comparison to residential criteria is not meant to imply that residential land use is expected or planned at the site. Residential criteria are simply used as a tool to identify COPCs.

Table 4.3 summarizes the number of times detected analyte concentrations were greater than one or more NJDEP or USEPA comparison criteria, and the number of times that detected metal concentrations were greater than maximum background concentrations presented by Weston (1995). This table also identifies COPCs for inclusion in the risk assessment, and accompanying rationale. **Table 4.3** is based on data from Versar (2004b) and also on PCE data from ATC (2000).

4.1.1 Summary of Comparison Criteria Exceedances in Soil

Concentrations of VOCs, SVOCs, pesticides and PCBs, and metals were detected in soil that exceeds NJDEP and/or USEPA comparison criteria. Figures showing sampling results on site maps are presented in the *Remedial Investigation Report for Near-Surface Soils* (Versar. 2004b) and the *Remedial Action Work Plan* (ATC, 2000), which are contained in **Appendix A** of this report.

Versar (2004b) reported that analysis of the soil sampling results did not define a source area or level of contamination that necessitated the identification and evaluation of potential remedial actions. For many of the analytical results that exceeded the then-current Residential Direct Contact Soil Clean-up Criteria (RDCSCC), the “compliance averaging” approach was used by Versar (2004b) to determine compliance with NJDEP technical requirements. Compliance averaging uses the average contaminant concentration in an area of concern rather than the contaminant concentration of individual samples for comparison to applicable soil cleanup criteria. In most cases, either the calculated compliance average was below the respective RDCSCC or the exceedance was considered marginal. For the analytes that were not eliminated based on compliance averaging, Versar (2004b) reported that a document equivalent to a Declaration of Environmental Restriction would be incorporated into the FTMM Master Plan for soils containing these exceedances, and recommended no further action for near-surface soil at FTMM-05. A Declaration of Environmental Restriction is similar to the current “Deed Notice” in the NJDEP regulations.

4.1.1.1 Summary of Exceedances of Residential Direct Contact Comparison Criteria

Concentrations of the following constituents presented in Versar (2004b) exceeded the current NJDEP RDCSRS and/or USEPA residential RSL in at least 1 of the 183 soil samples analyzed for VOCs (collected 24 inches bgs), 182 soil samples analyzed for SVOCs and pesticides/PCBs (collected 6-12 inches bgs) , or 181 soil samples analyzed for metals (collected 6-12 inches bgs) (**Tables 4.1** through **4.3**).

- The VOCs PCE and chloroform;
- The SVOCs (classified as PAHs) naphthalene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and dibenz(a,h)anthracene;
- The pesticides heptachlor epoxide, 4,4'-DDE, dieldrin, 4,4'-DDD, 4,4'-DDT, gamma-chlordane, alpha-chlordane, and the PCB Aroclor 1254; and
- The metals aluminum, antimony, arsenic, cadmium, cobalt, copper, iron, lead, manganese, mercury, nickel, selenium, thallium, vanadium, and zinc.

Only one of the PCE concentrations detected in soil samples collected at depths ranging from 24 to 40 inches bgs and reported in ATC (2000) exceeded the current NJDEP RDCSRS and/or USEPA residential RSL. The sample was collected from boring B69 at a depth of 30 inches bgs (**Figure 2.1** and **Appendix A**), and had a PCE concentration of 3.3 mg/kg.

4.1.1.2 Summary of Exceedances of Non-Residential Direct Contact Comparison Criteria

Concentrations of the following constituents presented in Versar (2004b) exceeded the current NJDEP NRDCSRS and/or USEPA industrial RSL in at least 1 of the 183 soil samples analyzed for VOCs (collected 24 inches bgs), 182 soil samples analyzed for SVOCs and pesticides/PCBs (collected 6-12 inches bgs) or 181 soil samples analyzed for metals (collected 6-12 inches bgs) (**Tables 4.1** through **4.3**).

- The SVOCs (classified as PAHs) benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and dibenz(a,h)anthracene;
- The pesticides heptachlor epoxide and 4,4'-DDT, and the PCB Aroclor 1254; and
- The metals arsenic, cadmium, cobalt, iron, lead, manganese, mercury, and thallium.

None of the PCE concentrations detected in soil samples collected at depths ranging from 24 to 40 inches bgs and reported in ATC (2000) exceeded the current NJDEP NRDCSRS and/or USEPA industrial RSL.

4.1.1.3 Summary of Exceedances of Impact to Groundwater Comparison Criteria

Concentrations of the following constituents presented in Versar (2004b) exceeded the current NJDEP IGW SL and/or USEPA protection of groundwater RSL in at least one of the 183 soil samples analyzed for VOCs (collected 24 inches bgs), 182 soil samples analyzed for SVOCs and pesticides/PCBs (collected 6-12 inches bgs), or 181 soil samples analyzed for metals (collected 6-12 inches bgs) (**Tables 4.1 through 4.3**).

- The VOCs methylene chloride, benzene, PCE, chloroform, and ethylbenzene;

- The SVOCs naphthalene, n-nitrosodiphenylamine, 2-methylnaphthalene, 4-methylphenol, acenaphthene, dibenzofuran, fluorene, anthracene, di-n-butylphthalate, fluoranthene, pyrene, pyridine, benzo(a)anthracene, 3,3'-dichlorobenzidine, chrysene, bis(2-ethylhexyl)phthalate, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and dibenz(a,h)anthracene;
- The pesticides heptachlor, heptachlor epoxide, 4,4'-DDE, dieldrin, endrin, 4,4'-DDD, 4,4'-DDT, endosulfan-sulfate, gamma-chlordane, alpha-chlordane, and the PCB Aroclor 1254; and
- The metals aluminum, antimony, arsenic, barium, beryllium, cadmium, cobalt, copper, iron, lead, manganese, mercury, nickel, selenium, silver, thallium, vanadium, and zinc.

Nine of the PCE concentrations detected in soil samples collected at depths ranging from 24 to 40 inches bgs and reported in ATC (2000) exceeded the current NJDEP IGW SL and/or USEPA Protection of Groundwater RSL. The locations, concentrations, and depths (bgs) included B16 (0.78 mg/kg at 40 inches), B24 (0.44 mg/kg at 39 inches), B30 (0.32 mg/kg at 40 inches), B39 (1.1 mg/kg at 30 inches), B40 (1.0 mg/kg at 36 inches), B69 (3.3 mg/kg at 30 inches), B70 (1.4 mg/kg at 30 inches), B71 (1.5 mg/kg at 30 inches), and B76 (0.77 mg/kg at 24 inches). Sample locations are shown on **Figure 2.1** and in the ATC (2000) report in **Appendix A**.

4.1.1.4 Identification of Background Constituents

Metals concentrations in soils were compared to maximum background concentrations for the MP presented by Weston (1995) (**Tables 4.1 through 4.3**). The maximum-detected concentrations of all the metals targeted for analysis in soil samples exceed the maximum background concentrations for the MP presented in Weston (1995) except for chromium, magnesium, and potassium. Additionally, aluminum exceeded background only once at a similar (within approximately 3%) concentration to background. Therefore, only these four metals are considered to be representative of natural background conditions throughout the site.

4.1.2 COPCs in Soil

Following USEPA (1989) guidance, data with J, E or ER, and D qualifiers were treated as detects and usable for COPC identification purposes. U and UJ qualified data were considered to be nondetects but usable for COPC identification. B and BJ qualified data were treated as nondetects because the analyte was detected in the associated blank and the estimated chemical concentration in the sample was not five or ten times greater than the concentration in the associated blank (USEPA, 1989). Detections flagged with B and BJ are not otherwise usable for COPC identification purposes as the detections may be associated with laboratory contamination.

COPCs in soil were identified by comparing the maximum detected concentration of each analyte to the USEPA residential RSL (TR = $1x10^{-6}$ and THQ = 0.1). If organic chemicals were detected at concentrations greater than USEPA residential RSLs in at least one sample, they were considered COPCs. Metals detected at concentrations exceeding the residential RSL were then compared to the maximum background concentration (Weston, 1995). If the maximum concentration of a metal was greater than both the USEPA residential RSL and the maximum background concentration in at least one sample, that metal was considered to be a COPC. If the

maximum concentration was greater than the USEPA residential RSL but less than the maximum background concentration, it was not considered a COPC. However, metals that are considered to be essential human nutrients (calcium, iron, magnesium, potassium, and sodium) were not considered to be COPCs. This decision logic is presented on **Figure 4.1.**

COPCs in soil (**Table 4.3**) include chloroform, naphthalene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenz(a,h)anthracene, heptachlor epoxide, 4,4'-DDE, dieldrin, 4,4'-DDD, 4,4'-DDT, Aroclor 1254, antimony, arsenic, cadmium, cobalt, copper, lead, manganese, mercury, nickel, selenium, thallium, vanadium, and zinc.

4.2 GROUNDWATER QUALITY

The scope of the groundwater monitoring program implemented from May 1997 to August 2011, and the sampling performed in August 2013 and December 2014 is summarized in **Table 2.2**. Sampling for VOCs was continued annually for select monitoring wells at FTMM-05 and was discontinued for the remaining wells in 2014 following the 2013 baseline sampling event, with the concurrence of the NJDEP as stated in the following approval letter: *Re: November 26, 2014 Response to Comments – on the Final Baseline Ground Water Sampling Report* (August 2013) dated February 5, 2015. (A copy of the letter is provided in **Appendix A**.) Monitoring well locations are shown on **Figure 1.3**.

Groundwater sampling results are summarized in this subsection. Information was obtained from the following sources:

- Summary sampling results for data collected from May 1997 to September 2010 received from the U.S. Army (starting with data collected in March 2008);
- RAPR (Versar. 2003) for fourth quarter 1999 through third quarter 2002;
- RAPR (Versar. 2005) for fourth quarter 2002 through third quarter 2003;
- RAPR (VEETech. 2009a) for fourth quarter 2003 through third quarter 2005;
- RAPR (VEETech. 2009b) for fourth quarter 2005 through third quarter 2006;
- RAPR (VEETech. 2010) for fourth quarter 2006 through fourth quarter 2008;
- RAPR (U.S. Army. 2012) for first quarter 2009 through third quarter 2010;
- Unpublished FMETL laboratory data reports for quarterly sampling events performed from January 2011 to August 2011; and
- Sampling results from the August 2013 Baseline Groundwater Sampling Report and laboratory data for the December 2014 sampling event.

Quarterly groundwater sampling of site monitoring wells was conducted from the 2nd quarter 1997 through the 3rd quarter 2011, and additional sampling was performed in August 2013 and December 2014. Groundwater sampling results obtained from March 2008 to August 2011 are presented in **Table 4.4**, and sampling results from the August 2013 and December 2014 sampling events are presented in **Table 4.5**. More comprehensive summary tables that provide groundwater quality data from May 1997 through September 2010 are provided in **Appendix A**. The RAPR reports are provided in **Appendix A**. **Tables 4.4 and 4.5** also show both the NJDEP GWQS and USEPA Tapwater RSLs to facilitate comparison of sampling results to criteria

developed to be protective of groundwater for use as a potable water source. Maximum background concentrations for metals in groundwater as presented by Weston (1995) are also provided in the tables.

4.2.1 Summary of Historical Groundwater Sampling Results from 1997 to 2008

Between April and December 1998, a total of 113 groundwater samples were collected within the footprint FTMM-05 using a Geoprobe® (ATC, 2000; see **Appendix A**). The purpose of this sampling effort was to provide a screening tool for determining the gross distribution of groundwater impacts. Samples were analyzed for VOCs, and TCE, PCE, and benzene were present at levels that exceeded their respective (then-current) NJDEP GWQS. PCE concentrations ranging from 1.03 µg/L to 167.22 µg/L were detected at 48 locations. PCE was the most widespread VOC detected. TCE was detected at 3 locations at concentrations ranging from 1.52 to 2.65 µg/L,cis-1,2-DCE was detected at 7 locations at concentrations ranging from 1.34 to 9.07 µg/L, benzene was detected at 3 locations at concentrations ranging from 1.13 to 2.67 µg/L, toluene was detected at 6 locations at concentrations ranging from 1.61 to 10.48 µg/L, ethylbenzene was detected at 1 location at a concentrations of 2.0 µg/L, and total xylenes was detected at 4 locations at concentrations ranging from 8.79 to 16.82 µg/L. Based on direct push and monitoring well sampling, ATC (2000) concluded that PCE was the only contaminant of concern at FTMM-05 and was localized in seven areas of concern. Historically, a decrease in PCE concentrations was noted in all sampled monitoring wells at FTMM-05 except M5MW15.

Quarterly groundwater samples were collected from May 1997 to November 2008; samples were analyzed for various combinations of VOCs, SVOCs, pesticides, PCBs, and TAL metals. From May 1997 to September 1999, groundwater concentrations of PCE, TCE, and vinyl chloride exceeded NJDEP GWQS (ATC, 2000). After multiple rounds of HRC® injections, groundwater sampling results for 4th quarter 1999 through 3rd quarter 2006 indicated a decreasing trend for PCE and an increase of degradation byproduct concentrations. The HRC® injection program was continued throughout this timeframe (Versar, 2003; 2005; and 2009).

Quarterly groundwater sampling results from monitoring wells obtained from 4th quarter 2006 to 4th quarter 2008 were reported by Versar (2010). Six wells contained PCE concentrations that exceeded the NJDEP GWQS. The PCE degradation byproducts TCE and vinyl chloride were also identified at concentrations that exceeded NJDEP GWQS in multiple wells. Starting in October 2003, FTMM-05 groundwater samples were analyzed for VOCs or VOCs and metals due to lack of significant detections of SVOCs and pesticides/PCBs in site groundwater.

4.2.2 Summary of Groundwater Sampling Results From Eight Quarterly Sampling Events and 2013 and 2014 Sampling Events

The results of the eight quarters of groundwater monitoring extending from November 2009 to August 2011 (including results obtained during this timeframe from wells sampled more often than quarterly), the August 2013 baseline event, and the December 2014 sampling event, are evaluated in greater detail in this subsection. Both NJDEP and USEPA comparison criteria were used for the reasons described for soil in Section 4.1. USEPA Tapwater RSLs incorporate a TR of $1x10^{-6}$ and a THQ of 0.1. During the groundwater monitoring events, concentrations of VOCs and metals were detected above the NJDEP GWQS and/or USEPA Tapwater RSL (**Tables 4.4 and 4.5**). **Table 4.6** presents the number of times concentrations of a detected analyte were greater than the NJDEP GWQS and/or USEPA Tapwater RSL, and the number of times detected

metal concentrations exceeded the maximum background concentration presented by Weston (1995).

4.2.1.1 Summary of Exceedances of NJDEP and USEPA Comparison Criteria

Concentrations of the following constituents exceeded the current NJDEP GWQS and/or USEPA Tapwater RSL in at least one of the 150 samples collected during the eight quarters of groundwater monitoring extending from November 2009 to August 2011 (**Table 4.4**) and (in the case of VOCs) the August 2013 and the December 2014 sampling events (**Table 4.5**):

- The VOCs bromodichloromethane, chloroform, cis-1,2-DCE, PCE, TCE, and VC; and
- The metals aluminum, antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, iron, lead, manganese, mercury, nickel, selenium, sodium, thallium, and zinc.

4.2.1.2 Identification of Background Constituents

The metals detected at concentrations exceeding their NJDEP GWQS and/or USEPA Tapwater RSL and also the maximum background concentration for the MP established by Weston (1995) included antimony, barium, manganese, mercury, selenium, sodium, and zinc. These exceedances are addressed below:

- Exceedances of maximum background concentrations of antimony, barium, mercury, and zinc occurred in only 1 to 3 of 82 samples and are not representative of the dataset. The maximum detected concentrations of antimony (30.1 µg/L), barium (817 µg/L), and mercury (0.46 µg/L) only slightly exceeded the maximum background concentrations of these metals (20.7 µg/L, 699 µg/L, and 0.26 µg/L, respectively), and exceedances of maximum background concentrations were followed by multiple sample events where concentrations were less than maximum background. Therefore, detected concentrations of antimony, barium, mercury, and zinc are considered to be consistent with background concentrations, and these four metals are not identified as COPCs.
- Selenium background exceedances occurred during the March 2010 sampling event in five separate wells (1 exceedance per well), and were followed by multiple non-detected results at each well; therefore, selenium is not identified as a COPC.
- Historical remediation efforts at the site have included HRC® and RegenOx® injections, which may explain the variable concentrations of the reduction-oxidation (redox)-sensitive metal manganese in FTMM-05 groundwater over time. However, manganese concentrations during the eight quarterly sampling events evaluated were close to or below the maximum background concentration; therefore manganese is not identified as a COPC.
- Sodium, as an essential nutrient, was not evaluated as a COPC.

In summary, no metals are evaluated as COPCs for FTMM-05 in Section 6.

4.2.3 COPCs in Groundwater

As shown on **Figure 4.1**, COPCs in groundwater were identified by comparing the maximum detected concentration during the recent sampling events (November 2009 to August

2011, August 2013, and December 2014) to the USEPA Tapwater RSL (TR = $1x10^{-6}$ and THQ = 0.1). Organic chemicals that were detected at concentrations greater than USEPA Tapwater RSLs were considered COPCs. Metals that were detected at concentrations exceeding the Tapwater RSL were then compared to the maximum detected background concentration (Weston. 1995). Detected analytes that also exceeded the maximum background concentration (Weston. 1995) were then assessed more holistically to determine whether background exceedances were representative of site-related contamination, or were due to other factors such as turbidity or upgradient sources. Metals exceeding background were exempted from being identified as COPCs as a result of this holistic assessment if any of the following conditions were met:

- There were only a small number of background exceedances during the most recent sampling events such that the exceedances were anomalous outliers and not representative of the vast majority of the data;
- The background exceedances occurred early in the time period encompassed by the most recent sampling events, and concentrations in subsequent samples were below the maximum background concentration;
- The background exceedances only occurred in an upgradient monitoring well; and/or
- Background exceedances cannot be plausibly related to potential site-related sources of contamination.

In each of the scenarios listed above, the metals were considered representative of background conditions as described earlier in this subsection. In addition, metals that are essential human nutrients (calcium, iron, magnesium, potassium, and sodium) were not evaluated as COPCs in the risk assessment.

SVOCs, pesticides, and PCBs were previously eliminated from the sampling program in 2003, and determined not to be COPCs in site groundwater. Therefore, no SVOCs, pesticides, or PCBs were identified as COPCs in groundwater for FTMM-05.

VOCs that exceeded their USEPA Tapwater RSL in groundwater at FTMM-05 (**Table 4.6**) have been identified as bromodichloromethane, chloroform, cis-1,2-DCE, PCE, TCE, and VC. However, the following VOCs were subsequently eliminated as COPCs based on additional assessment, as described below:

- The bromodichloromethane exceedance was a single detection in 2011, and this compound is a common byproduct of the chlorination process in municipally treated water. Therefore this anomalous occurrence is not representative of groundwater at site FTMM-05.
- Six of the eight chloroform RSL exceedances occurred in upgradient wells, and the remaining 2 exceedances were detected in well M5MW20 near the upgradient site boundary. The highest concentrations of chloroform were in upgradient wells M5MW19 and M5MW16. Therefore chloroform is attributed to an upgradient source, and is not a COPC.
- All of the vinyl chloride RSL exceedances occurred in distant-upgradient well M5MW16. Therefore vinyl chloride is attributed to an upgradient source, and is not a COPC.

Based on the information presented above, COPCs retained for evaluation in the risk assessment (Section 6) include PCE, TCE and cis-1,2-DCE. There is also an upgradient source of PCE in groundwater that contributes to VOC contamination of FTMM-05 groundwater. However, higher concentrations of PCE, TCE, and cis-1,2-DCE were typically encountered either within the landfill (wells M5MW11 and M5MW20) or downgradient of the landfill (M5MW23), rather than upgradient of FTMM-05. Further, PCE was detected in landfill soil borings at concentrations in excess of the NJDEP IGW SL (**Table 4.1**) and USEPA RSL Groundwater Protection criterion (**Table 4.2**). Also, TCE and cis-1,2-DCE are biological degradation products of PCE. Therefore, the potential for FTMM-05 to contribute to PCE, TCE, and cis-1,2-DCE contamination of groundwater cannot be discounted and these compounds are evaluated as COPCs.

4.3 SURFACE WATER

The scope of the surface water monitoring program implemented from October 1996 to September 2010 is summarized in **Table 2.3**, and sampling locations historically associated with FTMM-05 are shown on **Figure 2.3**. Surface water sampling results are summarized in the following subsections. Information was obtained from previous RAPRs (**Appendix A**) and summary sampling results tables for data collected from October 1996 to September 2010 received from the U.S. Army. Data for March 2007 to September 2010 have been reproduced in this report as **Table 4.7.** The table also shows NJDEP saline water (SE) SWQS and USEPA criteria for protection of human health for VOCs, metals, and selected wet chemistry constituents for comparison purposes. The surface water sampling locations in Mill and Parkers Creeks that have historically been associated with FTMM-05 are located in reaches of the creeks that are properly classified as saline based on salinity measurements presented in the BEE (Shaw. 2012). Both NJDEP and USEPA comparison criteria were used for the reasons described for soil in Section 4.1. A hierarchy of USEPA human health criteria were used in the priority shown below. For example, if the highest priority criterion was not available for a particular analyte, the second priority criterion was used, and so on down the line.

1. National Recommended Water Quality Criteria (NRWQC) (organism only),
2. NRWQC (water + organism),
3. Tapwater RSLs,
4. Maximum Contaminant Levels (MCLs).

The locations of surface water samples historically associated with FTMM-05 have changed over time. VEETech (2009a) presents a surface water sampling summary table for the period from October 1996 to September 2005 that lists sampling locations SS-4, SS-5, SS-15, and SS-16 as being sampled in association with FTMM-05 (**Figure 2.3**). VEETech (2010) indicates that, in addition to SS-4, SS-5, SS-15, and SS-16, data for SS-27 were also associated with FTMM-05 beginning in June 2000. The most recent RAPR (U.S. Army. 2012) associates data from SS-5, SS-24, and SS-28 with FTMM-05. As summarized in **Table 2.3**, this RI report provides sampling data for locations SS-4, SS-5, SS-15, SS-16, and SS-27, which is consistent with most of the historical reports. The locations of these five surface water sampling stations are described below in order from upstream to downstream.

SS-15 is located upstream of FTMM-05 at the upstream boundary of FTMM where Mill Creek first enters the MP, and is indicative of water quality entering the MP. SS-16 is located at the upstream end of the adjacent landfill to the south (FTMM-04) and is the closest upstream sampling location to FTMM-05. SS-5 is located adjacent to FTMM-05 and is appropriately situated to indicate the quality of surface water in Mill Creek that has received discharge of groundwater from the southern and central portions of FTMM-05. SS-4 is located approximately 330 feet downstream (north) of SS-5 on Parkers Creek, and SS-27 is located much farther downstream on Parkers Creek. As shown in **Table 2.3**, SS-4 and SS-16 have not been sampled since August 2004.

VEETech (2010) stated that constituents of concern were not detected above SWQS at the sampling location immediately adjacent to FTMM-05 on Mill Creek (SS-5) or at the farthest downstream surface water sampling location on Parker's Creek (SS-27) during the reporting period (4^{th} quarter 2006 through 4^{th} quarter 2008).

The U.S. Army (2012) stated that PCE concentrations exceeded NJDEP SWQS at SS-5, SS-24, and SS-28 (**Figure 2.3**), and that TCE concentrations exceeded NJDEP SWQS at SS-24. The RAPR concluded that, although PCE and TCE were detected at concentrations exceeding NJDEP SWQS, the location and distribution of constituents of concern suggested that FTMM-05 was not the probable source for these VOCs.

The most recent eight quarters of surface water monitoring data (December 2008 through September 2010) are evaluated in greater detail in the following subsections as being representative of recent conditions.

4.3.1 Summary of Surface Water Sampling Results from Most Recent Eight Quarterly Sampling Events

Recent surface water monitoring data is available for samples SS-15 (upstream of FTMM-05), SS-5 (adjacent to FTMM-05), and SS-27 (far downstream of FTMM-05) (**Table 4.7**). During the eight most recent sampling events (December 2008 to September 2010), PCE was the only VOC detected in surface water at concentrations exceeding the NJDEP SE criterion. The NJDEP SE criterion for PCE (1.6 µg/L) was exceeded during one of eight sampling events at location SS-5 (March 2010, 2.19 µg/L) and during five of eight sampling events at upstream location SS-15 (maximum 3.03 µg/L). For every sample event, the PCE result for upstream location SS-15 (at FTMM's MP boundary) is higher than the corresponding PCE result for location SS-5 (**Table 4.7**). PCE concentrations at distant downstream location SS-27 were below the NJDEP SE criterion during the most recent eight quarterly sampling events. PCE concentrations did not exceed the USEPA human health criterion (3.3 µg/L). The concentration of cis-1,2-DCE slightly exceeded the USEPA human health criterion (2.8 µg/L) during one of eight events at upstream location SS-15 (maximum 2.81 µg/L in September 2010).

Metals data for the most recent eight quarterly sampling events are available for upstream location SS-15 and distant-downstream location SS-27. None of the other surface water sampling locations associated with FTMM-05 have been sampled for metals (**Table 2.3**). Exceedances of comparison criteria are summarized in **Table 4.8** and described below.

- Arsenic concentrations exceeded both the USEPA human health criterion (0.014 µg/L) and the NJDEP SE criterion (0.061 µg/L) during five of eight sampling

events at SS-15 (maximum 66.6 µg/L in March 2009), and seven of eight events at SS-27 (maximum 56 µg/L in March 2009); and

- Mercury concentrations at SS-15 exceeded both the USEPA human health criterion (0.06 µg/L) and the NJDEP SE criterion (0.051 µg/L) during one of eight events at SS-15 (0.18 µg/L in December 2009), and two of eight events at SS-27 (maximum 0.17 µg/L in September 2010).

There were no exceedances of the USEPA human health criterion for nitrates at any of the three sampled locations during the last 8 sampling events, and the pH measurements were within the USEPA-specified range of five to nine (**Table 4.7**).

4.3.2 COPCs in Surface Water

COPCs were identified in surface water by comparing the maximum detected concentration to the hierarchy of USEPA human health criteria described above in Section 4.3. Detected analytes that exceeded their USEPA human health criterion in surface water samples were considered COPCs unless the analyte was also detected upstream of the site at a similar or greater concentration.

During the most recent eight quarters of surface water sampling, cis-1,2-DCE was the only VOC that exceeded the USEPA human health criterion; however, cis-1,2-DCE may be related to upstream sources beyond the boundary of FTMM. Since similar concentrations exceeding USEPA human health criteria were detected at surface water sampling point SS-15 (located upstream, at FTMM's MP boundary), the cis-1,2-DCE concentrations detected in Mill Creek surface water adjacent to FTMM-05 likely originated from one or more unknown sources that are upstream of (and unrelated to) FTMM. Therefore, there are no volatile organic COPCs for surface water.

Metals that exceeded their USEPA human health criterion were limited to arsenic and mercury, which were detected at the upstream sampling location SS-15 and are not associated with FTMM-05. The same metals were detected at the distant-downstream location SS-27 at concentrations exceeding the USEPA criteria, but arsenic and mercury cannot be related to FTMM-05 with any confidence given that SS-27 is located approximately 2,000 feet downstream from FTMM-05, and other streams drain into Parkers Creek between FTMM-05 and SS-27. Given that arsenic and mercury could not be attributed to FTMM-05, there are no metal COPCs for surface water.

4.4 SEDIMENT

Sediment sampling was conducted in April 2000 in Mill Creek to evaluate PCB-related impacts to stream sediments associated with FTMM-05 (locations B-1 through B-6, **Figure 2.3**). Sediment sampling results were compared to both NJDEP and USEPA criteria for the reasons described for soil in Section 4.1. Human health-based criteria for soil are used for comparison purposes to support identification of COPCs. One PCB (Aroclor 1254) was detected in one of six samples collected (B-2) at a concentration of 0.054 mg/kg. This concentration is less than the NJDEP RDCSRS of 0.2 mg/kg for total PCBs and the USEPA residential soil RSL for Aroclor 1254 of 0.11 mg/kg (**Table 4.9**). Therefore, there were no exceedances of comparison criteria in sediment samples and no COPCs for sediment.

SECTION 5
CONTAMINANT FATE AND TRANSPORT

This section addresses the fate and transport of VOCs, SVOCs, pesticides/PCBs, and metals detected in soil and VOCs in groundwater at FTMM-05 at concentrations exceeding one or more NJDEP or USEPA comparison criteria and (in the case of metals) maximum background concentrations reported in Weston (1995) (see Sections 4.1.1 for soil and 4.2.1.2 for groundwater). The fate and transport of detected constituents in surface water are not addressed because sampling data indicate that surface water quality has not been significantly impacted by FTMM-05. The fate and transport of detected PCBs in sediment are not addressed because there were no exceedances of NJDEP or USEPA comparison criteria in sediment samples.

The environmental fate and transport of a contaminant is controlled by the contaminant's physical and chemical properties and the nature of the subsurface media through which the contaminant is migrating (USEPA. 1998).

Unless otherwise indicated in the text, the fate and transport information presented in this section was derived from three primary sources:

1. The online Toxnet Hazardous Substances Data Bank (HSDB; http://toxnet.nlm.nih.gov/cgi-bin/sis/search);
2. Toxicological profiles prepared by the Agency for Toxic Substances and Disease Registry (http://www.atsdr.cdc.gov/toxprofiles/index.asp); and
3. The Framework for Metals Risk Assessment (USEPA. 2007).

5.1 POTENTIAL ROUTES OF MIGRATION

Potential migration routes for contaminants detected in soil and groundwater at FTMM-05 include the following:

- Dissolution of soluble residual contamination in near-surface soil into infiltrating precipitation that percolates through the vadose zone to the water table; and
- Primarily lateral migration of contaminants dissolved in groundwater toward Mill Creek and Parkers Creek.

5.2 CONTAMINANT PERSISTENCE IN SOIL

5.2.1 VOCs

The mobility of VOCs in soil will depend largely on the following factors (USEPA. 1998):

- Chemical-specific soil/water distribution coefficient (Kd) and organic carbon/water partition coefficient (Koc) impacting the tendency of the constituent to sorb to soil particles;
- Water solubility; and
- Vapor pressure and Henry's Law constant (impacting the tendency to volatilize into air).

In general, VOCs such as chloroform and PCE in soil are subject to volatilization, biodegradation, and vertical migration toward the water table in percolating recharge water. Therefore, these VOCs are expected to have a relatively low degree of persistence in vadose zone soil at FTMM-05.

5.2.2 SVOCs

The SVOCs identified as COPCs in soil, including naphthalene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and dibenz(a,h)anthracene, are PAHs. As hydrocarbons approach a size of approximately 15 - 20 carbon atoms, their vapor pressures and water solubilities become negligible, and partitioning to air or dissolution in water is unimportant (American Petroleum Institute [API]. 2012). API (2012) generally classifies petroleum substances in the C9 to C25 range as "not readily biodegradable" because their biodegradation rates are typically slower than lighter, more volatile fuels, such as gasoline or jet fuel. Therefore, PAHs are expected to be relatively persistent in vadose zone soil at FTMM-05.

5.2.3 Pesticides/PCBs

Pesticides that are classified as persistent organic pollutants (such as those detected at FTMM-05) are compounds that are generally insoluble in water, adsorb strongly to soil particles, and are resistant to biodegradation. However, some volatilization may occur, enabling them to move long distances before atmospheric deposition occurs. Overall, organic pesticides are expected to be relatively persistent in vadose zone soil at FTMM-05. Similarly, PCBs are expected to have little to no mobility in soil. The lower the degree of chlorination, the more water soluble a PCB compound will be. However, PCBs may be volatilized from soil surfaces into the atmosphere and subsequently removed from the atmosphere by wet or dry deposition.

5.2.4 Metals

Metals are subject to various transformation processes in soil. For example, metals can exist in the environment in several valence forms, and they can also exist as organometallic compounds that have a metal-carbon bond. Metal transformation processes, such as metal methylation, occur through interactions with other chemicals and biota in the environment. In general however, metals are resistant to natural degradation in the environment and therefore are expected to be relatively persistent in vadose zone soil at FTMM-05.

5.3 CONTAMINANT PERSISTENCE IN GROUNDWATER

Highly chlorinated VOCs such as PCE and TCE tend to be relatively resistant to degradation in aerobic, oxidizing environments, but can degrade more readily in anaerobic, reducing environments. Available information indicates that shallow groundwater at FTMM-05 tends to be more oxidizing than reducing, and therefore PCE and TCE will tend to persist. In contrast, less-chlorinated VOCs such as VC tend to be readily degradable in aerobic environments and will be less persistent. Intermediate compounds such as *cis*-1,2-DCE tend not to be highly degradable in either aerobic or anaerobic environments, but can degrade at low to moderate rates. *cis*-1,2-DCE is expected to be more persistent in shallow groundwater at FTMM-05 than VC and less persistent than PCE and TCE. Despite their differing susceptibilities to destructive attenuation processes such as biodegradation, each of these VOCs will be subject to non-

destructive attenuation processes in the saturated zone (i.e., diffusion, dilution, dispersion, volatilization) and therefore will decrease in concentration over time.

5.4 CONTAMINANT MIGRATION IN SOIL

5.4.1 VOCs

VOCs such as chloroform and PCE are expected to be moderately to highly mobile in vadose zone soil, and the potential for substantial vertical migration to groundwater exists.

5.4.2 SVOCs

For the reasons described in Section 5.2.2, PAHs identified in near-surface soil at FTMM-05 are expected to be relatively immobile and will not readily leach to groundwater.

5.4.3 Pesticides/PCBs

For the reasons described in Section 5.2.3, the organic pollutant pesticides present at FTMM-05 are expected to be strongly sorbed to soil particles and have little to no mobility in soil. Therefore, they will not readily leach to groundwater.

5.4.4 Metals

Because the behavior of metals in the environment defies simple generalities, understanding the chemistry of the particular metal and the environment of concern is necessary to assess the metal's behavior in the environment in a detailed fashion. However, the factors that control metal chemistry and the environmental characteristics used to produce estimates of metal fate and effects can be generalized. The pH of the host medium is probably the single most important variable that influences the behavior of metals in the environment; most complexation and precipitation reactions are pH dependent.

Movement of metals through soils is dependent on the chemical properties controlling speciation, the presence of ligands that control complexation of metals within pore water and adsorption onto mineral surfaces, and the rate of water flux through the soil. Metals are lost from the soil by leaching into groundwater and through metal-specific uptake by plants. As metals age in soils, they decrease in bioavailability.

In the soil environment, metals can exist as cations (having a positive charge), anions (having a negative charge), or neutral species (having a zero charge). Their form significantly affects their sorption, solubility, and mobility. For example, most soils are chiefly negatively charged; thus, metal cations have a higher propensity to be sorbed by soil particles than do metal anions. For most soils in the U.S., negatively charged sites are more plentiful; less than 5% of the total available charge on the soil surface is positively charged. Metals existing as cationic species have a greater propensity to associate with such soils, making them less bioavailable. Anionic metals generally move into pore water —and so are more bioavailable— but leach out of the system much more rapidly. In summary, soil pH and availability of charged sites on soil surfaces are the primary soil factors controlling release of metals to pore water and, subsequently, bioavailability.

Metals are usually cations, including those listed in Section 4.1.2 except for selenium. The HSDB states that selenium has sorptive affinity for hydrous metal oxides, clays, and organic materials. Therefore, metals in vadose zone soil at FTMM-05 are expected to be relatively immobile.

5.5 CONTAMINANT MIGRATION IN GROUNDWATER

Chlorinated VOCs such as PCE, TCE, *cis*-1,2-DCE, and VC are capable of migrating substantial distances in the saturated zone with advective groundwater flow. Their mobility tends to increase as the degree of chlorination decreases (i.e., PCE will be the least mobile and most highly retarded due to sorption to aquifer matrix materials, and VC will be most mobile and least retarded due to sorption). However, migration distances for these VOCs are limited by the operation of destructive and non-destructive attenuation processes that decrease their concentration in groundwater.

5.6 SUMMARY

The contaminant fate and transport information presented above indicates that VOCs in vadose zone soil are expected to have a relatively low persistence and moderate to high mobility in vadose zone soil. In contrast, SVOCs, pesticides, PCBs, and metals in near-surface soil at FTMM-05 are expected to be relatively persistent and immobile, limiting their impact on groundwater quality.

VOCs that dissolve into groundwater are expected to be moderately to highly mobile and transported laterally with advective groundwater flow, although some sorption to aquifer matrix materials will occur. Highly chlorinated solvents such as PCE have a higher sorption potential than less chlorinated solvents such as VC, and the migration of PCE in groundwater will be more retarded as a result. VOC concentrations in the saturated zone will attenuate over time as a result of destructive and non-destructive attenuation mechanisms.

SECTION 6
BASELINE RISK ASSESSMENT

The objective of this baseline HHRA is to provide a quantitative evaluation of the risk associated with exposure to soil, surface water, sediment, and groundwater at FTMM-05. The HHRA will determine if there is potential unacceptable risk to human health associated with exposure to contaminants present in these environmental media. The streamlined method to assess human health risk at FTMM-05 was developed as a component of a presumptive remedial strategy for the landfills at FTMM. The streamlined method was developed without consultation with the U.S. Army Public Health Command. However, as discussed below, the resulting quantitative risk estimates are comparable to those resulting from conventional risk assessment methods defined in the *Risk Assessment Guidance for Superfund* (RAGS; USEPA, 1989) and U.S. Army Corps of Engineers' (USACE) *Risk Assessment Handbook* (EM 200-1-4) (USACE, 1999) for the purpose of evaluating risk at a landfill site where a presumptive remedy will be implemented.

In a letter to Ms. Wanda Green, BRAC Environmental Coordinator at FTMM, dated August 27, 2012, NJDEP accepted the revised BEE submittal (Shaw. 2012), agreed that "all exceedances have been sufficiently evaluated and addressed for ecological receptor considerations", and stated that "no additional ecological evaluation or assessment is necessary for the Main Post and Charles Wood Area." Therefore, additional ecological risk evaluation was not performed for FTMM-05.

6.1 RISK ASSESSMENT PROCESS

6.1.1 Summary of Available Data for FTMM-05

This quantitative HHRA for FTMM-05 was based on the data collected during the investigations summarized in Section 2 of this RI. As described in Section 2, environmental sampling at the site included surface soil, sediment, surface water, and groundwater.

The analytical results for chemicals detected in each environmental medium at FTMM-05 are provided in data summary tables in Section 4 of this RI (**Tables 4.1 and 4.2** [soil], **Tables 4.4 and 4.5** [groundwater], **Table 4.7** [surface water], **and Table 4.9** [sediment]). COPCs were identified in soil (**Table 4.4**), and groundwater (**Table 4.6**). No COPCs were identified in surface water (**Table 4.8**) or sediment (**Table 4.9**).

6.1.2 General HHRA Approach and Guidance Documents

Techniques and methods developed or recognized by the USACE and the USEPA were used for this HHRA. This quantitative HHRA used a risk ratio approach (which is further described in Section 6.2.1 below) to quantify potential carcinogenic risk and non-carcinogenic hazards. This streamlined approach, rather than the traditional risk assessment approach, was selected for use at the landfill sites because there is already a presumptive remedy of containment that will be implemented. Use of the streamlined approach will reduce costs associated with the risk assessment process by reducing the risk assessment effort, rapidly identifying the need for corrective action, and supporting property transfer and redevelopment plans. In the case of the landfill sites at FTMM, where a presumptive remedy of containment will be implemented, the streamlined risk assessment is appropriate. See *Conducting Remedial Investigations/Feasibility Studies for CERCLA Municipal Landfill Sites* (USEPA, 1991). Additionally, USEPA guidance

states "One method for establishing risk using a streamlined approach is to compare contaminant concentration levels (if available) to standards that are potential chemical-specific applicable or relevant and appropriate requirements (ARARs) for the given action." (USEPA, 2015a. *Presumptive Remedy for CERCLA Municipal Landfill Sites*, viewed at: http://www.epa.gov/superfund/policy/remedy/presump/clms.htm (last accessed January 30, 2015).

The risk ratio approach is a useful surrogate for the RAGS analysis because, as discussed in detail below, there is a direct relationship between the COPC concentration and risk, and therefore cancer and non-cancer risk can be estimated as the ratio of site concentrations to RSLs. The risk ratio approach encompasses the principles and procedures included in USEPA guidance, while streamlining them for evaluating risk and determining the need for corrective action at FTMM landfill sites. The risk assessment process used in this document incorporates the four steps that define a human health risk assessment according to USEPA (1989) (i.e., data evaluation and identification of COPCs, exposure assessment, toxicity assessment, and risk evaluation), as summarized below.

Data Evaluation and Identification of COPCs: This step of the risk assessment process was conducted in a manner consistent with RAGS and the Risk Assessment Handbook. COPCs were identified in environmental media following comparison to published medium-specific screening values and FTMM-specific background concentrations. Those analytes that were detected at the site at concentrations greater than appropriate screening values and that are attributable to site activities were identified as COPCs and included in the risk assessment.

Exposure Assessment: This step of the risk assessment includes identification of relevant receptors and potential exposure pathways. Once relevant receptors and exposure pathways and a potential source of contamination are identified, a conceptual site model (CSM) is developed to define the potential for exposure. Exposure pathways for various media and exposure routes (i.e., ingestion, dermal contact, inhalation) that coincide are determined to be potentially complete and are evaluated in the risk assessment. In this case, exposure pathways may be complete for current and future outdoor workers, future utility workers, and potential future recreational users (as defined by project stakeholders).

The USEPA RSLs are risk-based concentrations that were developed by USEPA to rapidly identify chemicals that have the potential to present human health risks as a result of exposure. The exposures of concern for FTMM-05 include inhalation, ingestion, and dermal contact of outdoor workers, utility workers, and recreational users to COPCs. Site-specific screening levels (SLs) for exposure of utility workers and recreational users to soil were calculated to support this risk evaluation.

The streamlined risk assessment approach for the FTMM landfills incorporates exposure parameters and toxicity values inherent to the RSLs, along with observed site concentrations, to calculate risks or hazards associated with identified COPCs at the site. The intent is for the conclusions of the risk assessment to represent likely future land use at FTMM.

Toxicity Assessment: This step of the risk assessment identifies toxicity factors that will be used when calculating the risk or hazard associated with exposure to COPCs at the site. In this case the toxicity factors are those either established or used by USEPA to calculate risk estimates and RSLs. Therefore, there are no differences in the toxicity values used in a conventional

RAGS-based approach and the USEPA risk ratio approach conducted for FTMM-05 as described in this report.

Risk Characterization: Cancer risk estimates and noncancer hazard quotients are calculated based on site concentrations, exposure assumptions, and toxicity factors. The RSLs for a given exposure scenario can be used to rapidly determine site-specific cancer risks or hazard estimates for that scenario. RSLs are medium-specific concentrations corresponding to predetermined cancer risk or noncancer hazard estimates (see RSL supporting documentation for further details on calculation of RSLs). A COPC concentration in soil equal to the USEPA RSL will result in a 1 x 10^{-6} cancer risk and/or a HQ of 1. Because there is a direct relationship between COPC concentrations and risk, cancer risks and/or noncancer hazard quotients can be estimated as the ratio of site concentrations to RSLs. This approach is extended to calculated receptor specific screening levels (i.e., recreational user and utility worker screening levels [SLs]). Cumulative cancer risk and hazard index estimates resulting from multiple COPCs may then be resolved by summing the ratios. As a streamlined approach, the risk ratio approach does not specifically express the contribution of specific routes of exposure (e.g., ingestion, dermal contact, inhalation) to overall risk, and the risk estimates are limited to the inherent exposure parameters (such as days per year exposed) used in calculating the screening values that are used in calculating the risk ratios. This approach can limit the flexibility of the risk manager in making risk management decisions. The resulting risk estimates do, however, incorporate the noted multiple exposure routes, and are appropriate for making health-based determinations for the landfills.

Comparison of Traditional and Streamlined Risk Assessment Approach

Streamlined Risk Assessment Approach	Traditional Risk Assessment Approach
• Appropriate for simple sites, when generic exposure assumptions are appropriate, and summary risk estimates are sufficient	• Appropriate for complex sites, when site-specific exposure assumptions, and exposure-route specific risk estimates are needed for risk management decisions
• Provides chemical-specific risk estimates that are identical to traditional calculations, when exposure assumptions are the same, and all exposure routes are combined	• Exposure routes (i.e., ingestion, inhalation, dermal) can be evaluated separately
• Streamlined, using simple calculations requiring minimal documentation to support the calculations	• Calculations are more complex and require a greater amount of supporting documentation. However, there is greater flexibility to calculate risk only for those scenarios that are directly applicable to the site.
• Exposure assumptions used in the calculations are consistent with those favored by USEPA	• Allows the use of site-specific exposure assumptions allowing the risk calculations to be tailored to the exact exposure scenarios expected at the site

6.1.3 Organization of the HHRA

The overall risk assessment process consists of four key steps: data evaluation, exposure assessment, toxicity assessment, and risk characterization. These four steps of risk assessment provide the general outline of a quantitative risk assessment report. Because this HHRA uses the risk ratio approach, the outline and overall format is slightly modified from the traditional HHRA. This HHRA is still consistent with USEPA guidelines as presented in RAGS (USEPA. 1989) and supporting supplemental guidance including the Standard Scopes of Work for HTRW Risk Assessments (USACE. 2001). This HHRA is organized into five sections (including this one), as outlined below.

6.1 Risk Assessment Process;

6.2 Data Evaluation and Identification of Chemicals of Potential Concern;

6.3 Exposure Assessment;

6.4 Risk Ratio and Screening Criteria Assessment; and

6.5 Risk Assessment Results and Uncertainties.

6.2 DATA EVALUATION AND IDENTIFICATION OF CHEMICALS OF POTENTIAL CONCERN

Soil data included in the risk assessment were collected in 1998 (Versar. 2004b). Surface water and groundwater data are included from the eight sampling events; and the August 2013 and December 2014 samplings events for groundwater. Sediment data are included from April 2000 (Versar. 2004a). The validated data were evaluated in the selection of COPCs. Data validation classified the data through the use of several qualifiers. Data without qualifiers were considered appropriate for risk assessment purposes. Following USEPA guidance (1989), data with J, E or ER, and D qualifiers were treated as detects and used for risk assessment purposes. U and UJ qualified data were considered to be nondetected, but usable for risk assessment purposes. B and BJ qualified data were treated as nondetected chemicals because the chemical was detected in the associated blank and the estimated chemical concentration in the sample was less than five or ten times the concentration in the associated blank (USEPA. 1989). R qualified data were excluded from this risk assessment (USEPA, 1989).

Calcium, iron, magnesium, potassium, and sodium were not evaluated in the HHRA because they are essential nutrients and are not expected to pose a risk to human health.

COPCs at FTMM-05 are those site-related chemicals for which there is evidence of a potential release due to site activities. COPCs are evaluated for their potential to pose a risk to human health. Soil, groundwater, surface water, and sediment have been sampled at the site. Sampling results for the chemicals detected in each environmental medium are summarized in **Tables 4.1** and **4.2** (soil), **Tables 4.4** and **4.5** (groundwater), **Table 4.7** (surface water), and **Table 4.9** (sediment). COPCs identified in soil include specific VOCs, SVOCs, pesticides/ PCBs, and metals as listed in **Table 4.3**. COPCs identified in groundwater include specific VOCs listed in **Table 4.6**. No COPCs were identified in surface water (**Table 4.8**) or sediment (**Table 4.9**), therefore surface water and sediment will not be evaluated further in the risk assessment.

6.2.1 Risk Ratio Approach

The quantitative HHRA uses a risk ratio approach to quantify the potential carcinogenic risk and non-carcinogenic hazard for COPCs in each contaminated medium. The general risk assessment process for FTMM-05 is summarized in **Figure 6.1**.

Exposure point concentrations (EPC) are the concentrations of chemicals in a given medium to which a receptor may be exposed at a specific location known as the "exposure point."

To calculate a risk ratio, the EPC is divided by the appropriate screening level for the environmental medium to determine the ratio of the site concentration to a risk-based health protective concentration. Risk ratios for soil are calculated for outdoor workers, utility workers, and recreational users (Section 6.5.1), for utility workers exposed to groundwater (Section 6.5.2). The criteria used to calculate the risk ratios for soil are the USEPA industrial soil RSLs (TR = 1 x 10^{-6}; THQ = 1.0) while site-specific screening levels calculated in support of this project were used to calculate the risk ratios for utility worker and recreational user exposed to soil. The criteria used to calculate the risk ratios for groundwater are the site-specific groundwater screening levels calculated in supports of this project. The site-specific screening levels for utility workers and recreational users are presented in **Appendix B**.

The cumulative risk at FTMM-05 is calculated using the maximum detected concentration from any well. If the cumulative carcinogenic risk for all groundwater samples was within or less than the USEPA acceptable range of 1 x 10^{-4} to 1 x 10^{-6} or if the non-carcinogenic hazard quotient was less than 1, no further evaluation was conducted. If cumulative risk or hazard is outside of the USEPA acceptable range, the risk estimate is further refined to calculate the risk at individual wells. Evaluation of risk for individual wells provides a more accurate representation of exposure, since potential future exposure to groundwater would assume that a utility worker would excavate and encounter groundwater at a specific point, represented by a single well.

After calculating the risk ratios for individual COPCs, the ratios are then summed to determine the cumulative risk at the site. Cumulative non-carcinogenic risk ratios greater than one indicate a potential unacceptable non-carcinogenic risk. Cumulative carcinogenic risk ratios greater than USEPA's acceptable risk range of 1 x 10^{-4} to 1 x 10^{-6} indicate a potential unacceptable carcinogenic risk.

After the cumulative carcinogenic risk or non-carcinogenic hazards were calculated for soil, the COPCs posing the greatest risk or hazard were identified. These COPCs are the primary contributors to cumulative risk. Initially, the maximum detected concentration of each COPC was used as the EPC. Use of maximum concentrations generally provides a conservative (i.e., health-protective) estimate of exposure to that chemical. However, the use of maximum detected concentrations overestimates the potential exposure, if elevated concentrations of a contaminant are limited to a small portion of a potential exposure area. Therefore, an average site concentration, represented by the 95% UCL on the mean, can be used as the EPC. The 95% UCL better represents the concentration that a receptor may be exposed to in a given area over an extended exposure duration. To provide a more accurate estimate of exposure, the 95% UCL is calculated for each primary contributor to cumulative risk. The cumulative risk is then calculated using the 95% UCL in place of the maximum detected concentration for all primary risk drivers. The selected EPCs (maximum detected concentration or the 95% UCL) are identified on the risk ratio tables.

Generally, use of 95% UCL on the mean provides a conservative (i.e., health-protective) estimate of exposure to that chemical, but better represents the concentration that a receptor may be exposed to over a period of time. Therefore, the 95% UCL is less likely to overestimate the potential exposure. The 95% UCL (for soil or individual groundwater wells) was calculated using parametric methods (for a normal or lognormal distribution) or nonparametric methods if data are not normally or lognormally distributed (USEPA. 2002). Data distribution is tested using the Shapiro-Wilk test prior to calculating the 95% UCL. Statistical evaluation was conducted for all soil samples, or for the eight quarterly groundwater samples plus the groundwater samples collected as part of the 2013 baseline groundwater survey. Statistical evaluation is not conducted for analytes with fewer than eight detected concentrations in a data set. 95% UCLs are calculated using ProUCL (Version 5.0) (USEPA. 2013a). ProUCL output, including summary statistics, graphic representations of the data distribution (quantile plot) and outlier tests are provided in **Appendix B**.

Lead is not included in the cumulative risk ratios. Following USEPA guidance, lead is evaluated based on the potential for exposure to increase blood lead levels and not the potential for carcinogenic or non-carcinogenic risks. Therefore, lead concentrations (either the maximum detected concentration or the 95% UCL, as appropriate) are directly compared to the screening level. For soil, the industrial soil RSL (TR = 1 x 10^{-6}; THQ = 1.0) was used to calculate a risk ratio for the outdoor worker, while site-specific SLs calculated in support of this project were used to calculate the risk ratios for utility worker and recreational user exposed to soil If lead concentrations at the site exceed the screening level, then unacceptable risk is assumed. However, if lead concentrations are less than the screening level, then further evaluation of the risk associated with exposure to lead is not required and further management of the risk associated with exposure to lead will not be required.

USEPA's Adult Lead Model (ALM) is the recommended approach for assessing nonresidential adult risks and uses a set of equations that relate soil lead concentrations to blood lead concentrations in women of child-bearing age and their fetuses as a result of chronic exposure (USEPA, 2003a). To determine the screening level for utility workers, the ALM was used, assuming that the utility worker is onsite for 30 days per year, and assumed to have a soil ingestion rate of 330 mg/day. However, recreational users are expected to have intermittent exposures to lead in soil at the site, rather than chronic exposures. Therefore, to determine the appropriate screening level for recreational users at the site, the ALM was modified to address the adolescent and adult (USEPA, 2003b). Recreational users at the site are assumed to be onsite one day per week for 50 weeks of the year. Adolescent recreational users (from ages 6 to <16) are assumed to have a soil ingestion rate of 100 mg/day. Adult recreational users have a soil ingestion rate of 50 mg/day. The ALM output is provided in **Appendix B**.

The ALM assumes a baseline blood lead level to ensure that exposure does not result in exceedances of a target blood lead level when considered additively. The ALM references two different National Health and Nutrition Examination Survey (NHANES) studies that estimated baseline blood lead levels in adults. To determine a soil concentration that would not result in a blood lead level (considering a baseline blood lead level) greater than 10 micrograms per deciliter (µg/dL), the soil concentration is adjusted until the model returns a blood lead level of 10 µg/dL. The ALM can also calculate a preliminary remediation goal (PRG) for women of child-bearing age, assuming a fetal blood lead level of 10 µg/dL. The screening level for the utility worker, is based on the lowest (most conservative) PRG that attains a target fetal blood

lead level of 10 µg/dL (1,400 mg/kg). The ALM was also used to calculate a PRG assuming that a pregnant adolescent recreational user contacted lead contaminated soil at the site. This is a conservative approach, since the probability of a pregnant recreational user contacting soil at the site in a manner consistent with the exposure assumptions used in this calculation is quite low. The lowest (most conservative) PRG that attains a target fetal blood lead level of 10 µg/dL is 2,700 mg/kg, which is protective of the pregnant adolescent recreational user. Therefore, this PRG is used as the screening level for recreational users exposed to lead in soil at the site. If lead concentrations at the site exceed the screening level, then unacceptable risk is possible. However, if lead concentrations are less than the screening level, then further evaluation of the risk associated with exposure to lead is not required and further management of the risk associated with exposure to lead will not be required.

6.2.2 Soil Samples

This HHRA evaluates chemicals identified as COPCs, which includes those analytes attributed to site activities for which there is evidence of a release to environmental media. Organic compounds detected at concentrations greater than screening levels, and metals detected at concentrations greater than screening levels and greater than background concentrations, were identified as COPCs and included in the risk assessment. Surface soil at the site is defined as soil collected at depths less than 2 feet from the surface and would include exposure pathways with no, or very minor, soil disturbance (e.g., wind dispersion of surface soil, landscaping/grounds keeping activities in surface soil). Surface soil samples were collected in 1998 (Versar. 2004b). Each of the soil samples, except those prepared for VOC analysis, were collected between approximately 6 and 12 inches bgs. VOC samples were taken at approximately 24 inches bgs since surface soils would not be expected to retain volatile constituents over time. **Tables 4.1 and 4.2** provide the sampling depths and analytical results, and **Figure 2.1** shows the soil sampling locations. **Table 4.3** identifies the COPCs in soil that are evaluated in the HHRA.

6.2.3 Groundwater Samples

Multiple rounds of groundwater samples were collected from monitoring wells at FTMM-05 (**Figure 1.3**). Many of these samples were collected at the same wells during different time frames and not all sampling activities included analyses for a complete suite of analytes.

The locations of groundwater monitoring wells at FTMM-05 are provided on **Figure 1.3**. **Tables 2.1 and 2.2** present the well construction summary and groundwater sampling summary. Groundwater sampling results for data from 2008 through 2011 are presented in **Table 4.4** and groundwater sample results for data from 2013 and 2014 are presented in **Table 4.5**. This HHRA evaluates chemicals identified as COPCs, which includes those analytes attributed to site activities for which there is evidence of a release to environmental media. Organic compounds detected at concentrations greater than screening levels, and metals detected at concentrations greater than screening levels and greater than background concentrations, were identified as COPCs (**Table 4.6**) and included in the risk assessment.

6.2.4 Surface Water Samples

Recent surface water monitoring data is available for samples SS-15 (upstream of FTMM-05), SS-5 (adjacent to FTMM-05), and SS-27 (far downstream of FTMM-05) (**Table 4.7**). During the eight most recent sampling events (December 2008 to September 2010), No COPCs were identified in surface water at FTMM-05 (**Table 4.7**). Therefore, there are no complete

exposure pathways for surface water, and no unacceptable risks due to exposure to surface water are expected.

6.2.5 Sediment Samples

Sediment sampling was conducted in April 2000 on Mill Creek to evaluate PCB-related impacts to stream sediments associated with FTMM-05 (locations B-1 through B-6 as shown in **Table 4.9**), No COPCs were identified in sediment at FTMM-05 (**Table 4.9**). Therefore, there are no complete exposure pathways for sediment, and no unacceptable risks due to exposure to sediment are expected.

6.3 EXPOSURE ASSESSMENT

The objective of the exposure assessment is to estimate the type and magnitude of potential exposures to COPCs at the site. The exposure assessment includes identification of potential exposure pathways, receptors, and exposure scenarios, as well as quantification of exposure. Characterization of the exposure setting and identification of potentially exposed receptors and exposure pathways are discussed in this section. A CSM showing results of the exposure assessment is shown on **Figure 6.2**. Quantification of exposure involves quantifying the magnitude, frequency, and duration of exposure for the receptors and exposure pathways of concern.

Soil and groundwater were evaluated as the environmental media of concern at FTMM-05. The exposure pathways relevant to the site are described in this exposure assessment of the HHRA and shown in the CSM.

6.3.1 Conceptual Site Model

A CSM is an effective tool for defining site dynamics, streamlining risk assessments, establishing exposure hypotheses, and developing appropriate corrective actions. The CSM for FTMM-05 is provided as **Figure 6.2**. CSMs are useful for identifying complete exposure pathways between contaminated media and potential receptors. The purpose of the CSM is to aid in understanding and describing a site and presents the assumptions regarding:

- Suspected sources and types of contaminants present;
- Contaminant release and transport mechanisms;
- Affected media;
- Potential receptors that could come in contact with site-related contaminants in affected media under current and future land use scenarios; and
- Potential routes of exposure.

An overall description of contaminant sources, affected media, and removal actions has been provided in previous Sections. Potential receptors and complete exposure pathways are discussed in the following subsections.

6.3.2 Potential Receptors and Exposure Pathways

Potential human receptors are defined as individuals who may be exposed to site-related contaminants in environmental media. Consistent with USEPA RAGS (1989) guidance, current and reasonably anticipated land uses were considered in the receptor selection process.

USEPA (1989) defines an exposure pathway as: "The course a chemical or physical agent takes from a source to an exposed organism. An exposure pathway describes a unique mechanism by which an individual or population is exposed to chemicals or physical agents at or originating from a site. Each exposure pathway includes a source or release from a source, an exposure point, and an exposure route. If the exposure point differs from the source, a transport/exposure medium (e.g., air) or media (in cases of intermedia transfer) is also included."

A review of potential exposure pathways links the sources, locations, and types of environmental releases with receptor locations and activity patterns to determine the significant pathways of concern.

Observations and reasonable assumptions for the potential human receptors for FTMM-05 are listed below, and summarized in **Figure 6.2**.

- **Current Receptors** – FTMM-05 is a landfill that was used for domestic and industrial waste disposal. The Fort Monmouth Economic Redevelopment Planning Authority (FMERPA) reuse plan calls for FTMM-18 to be designated as passive open space (Edaw, Inc., 2008). It is currently vacant and unused. FTMM-05 is undeveloped and there are no new development activities occurring or planned. Current activities at the site include infrequent visits, such as those that would be performed during routine landscaping/mowing, resulting in exposure to COPCs in soil through incidental ingestion, dermal contact, and inhalation of volatiles and particulates. Exposure to soil by an outdoor worker was assumed for this current land use scenario. However, this calculation assumes an exposure frequency of 225 days per year and an exposure duration of 25 years. Thus, it provides a conservative evaluation for a potential current outdoor worker who would be expected to have less frequent exposure at this particular site. Mill Creek flows north along the western border of FTMM-05. The surface water is not used as a potable water supply. Incidental ingestion of surface water/sediment, inhalation of volatiles from surface water and dermal contact with surface water/sediment were assumed for this current land use scenario. However, no COPCs were identified in surface water or sediment at the site. Therefore, current exposure to surface water and sediment is an incomplete pathway.

- **Future Receptors –** The Evaluation of the outdoor worker as a current receptor would be protective of future outdoor industrial workers as well and is not re-evaluated for the future scenario. Evaluation of the outdoor worker would also protect future indoor industrial worker because indoor industrial worker exposure to soil would be much less than the outdoor industrial worker. Thus, the indoor industrial worker exposure scenario was considered to be conservatively evaluated by the above current industrial outdoor worker. Future utility workers may be present on the site, involved in single short-term excavation projects at a given location, such as would be expected to be associated with repair or installation of utility lines. The calculation of the exposure of a utility worker to soil assumes that the utility crew would not return to the same location to conduct additional repairs, installation, or maintenance of underground utility lines. Utility workers are assumed to be on-site for 30 days of the year, for one year and would be expected to come in contact with soil and shallow groundwater during excavation activities. Utility workers may also come in contact

with surface water and sediment. However, surface water and sediment pathways are evaluated for the outdoor worker, which would be protective of the utility worker, since the exposure duration for outdoor workers is longer than for utility workers. No COPCs were identified in surface water or sediment at the site. Therefore, future exposure to surface water and sediment is an incomplete pathway for all receptors. FMERPA reuse plan calls for FTMM-05 to be designated as passive open space. Because the site is planned to be passive open space, a future recreational user could be exposed to COPCs in the soil. The calculation of the exposure of a recreational user to soil assumed that the person is onsite once a week for 50 weeks of the year, for 2 hours a day, for 24 years. Further, the site-specific screening value for the recreational user assumes that a portion of the time is spent on the site as an adolescent (age 6 to <16) and a portion as an adult (age 16 to 30). This provides a conservative evaluation for a future recreational user that is not likely to be onsite every week of the year. The site is not residential and no plans are in place to convert it to residential use. Therefore, the future residential scenario was not further evaluated.

- **Current Exposure to Groundwater –** Site groundwater is not used by current outdoor workers, because municipal water is provided for use by current outdoor workers. Therefore, there are no current exposures to groundwater.

- **Future Exposure to Groundwater** – In areas with shallow groundwater (i.e., groundwater present at depths less than 15 ft bgs), utility workers may also be exposed to contaminants present in groundwater. Future utility workers may be present on the site, involved in single short-term excavation projects at a given location, such as would be expected to be associated with repair or installation of utility lines. The calculation of the exposure of a utility worker to groundwater assumes that the utility crew would not return in subsequent years to the same location to conduct additional repairs, installation, or maintenance of underground utility lines. Utility workers are assumed to be on-site for 30 days of the year, for one year. Therefore, utility worker exposure to groundwater is an incomplete pathway and is not further evaluated. Outdoor workers, indoor workers, and recreational users are not exposed to groundwater. Therefore, the outdoor worker, indoor worker, and recreational user groundwater exposure pathways are incomplete. The site is not planned for future residential use. Therefore, future residential exposure to groundwater is an incomplete exposure pathway.

6.3.3 Exposure Pathways

6.3.3.1 Soil Exposure Pathways

Exposure to site soil occurs by direct contact (ingestion and dermal contact) with site soil and wind dispersion of soil resulting in inhalation of contaminants. The receptors and pathways evaluated for soil are listed below.

- Incidental ingestion of soil, inhalation of volatiles and particulates from soil, and dermal contact with soil by a current outdoor worker. This calculation assumes an exposure frequency of 225 days per year and an exposure duration of 25 years (USEPA. 2013b). Thus, it provides a very conservative evaluation for a potential

current outdoor worker who would be expected to have much less exposure at this particular site;

- Incidental ingestion of soil, inhalation of volatiles and particulates from soil, and dermal contact with soil by a future outdoor worker. This is a potentially complete exposure pathway, but is not included in the risk ratio analysis because it is assumed to be conservatively evaluated under the current outdoor worker scenario (based on the exposure frequency and exposure duration);
- Incidental ingestion of soil, inhalation of volatiles and particulates from soil, and dermal contact with soil by a future utility worker. This calculation assumes an exposure frequency of 30 days per year, and an exposure duration of one year; and,
- Incidental ingestion of soil, inhalation of volatiles and particulates from soil, and dermal contact with soil by a future recreational user. This calculation assumes an exposure frequency of 50 days per year (one time per week), for 24 years. Further, the calculation assumes that a portion of the recreational user exposure occurs as an adolescent (age 6-<16) and a portion as an adult (age 16-30). Thus, it provides a conservative evaluation for a future recreational user that is expected to be onsite less frequently that one time per week.

6.3.3.2 Groundwater Exposure Pathways

Exposure to groundwater can occur through direct contact (ingestion and dermal contact) and through inhalation of volatile COPCs present in groundwater. FTMM-05 is currently vacant and unused and there are no plans for development of the land, and there are no supply wells present on-site and none are planned. All potable water is provided through municipal water supplies. However, future utility workers may encounter shallow groundwater during excavation activities, and be exposed to COPCs in groundwater through incidental ingestion of groundwater and dermal contact. This calculation assumes an exposure frequency of 30 days per year, and an exposure duration of one year. The USEPA calculator used to develop groundwater screening levels for utility workers does not include a pathway for inhalation of volatiles present in groundwater.

6.3.3.3 Surface Water and Sediment Exposure Pathways

Mill Creek flows north along the western border of FTMM-05. The surface water is not used as a potable water supply. No COPCs were identified in surface water or sediment at the site, so all surface water and sediment exposure pathways are incomplete.

6.4 RISK RATIO AND SCREENING CRITERIA ASSESSMENT

This HHRA used a risk ratio approach to quantify potential carcinogenic risk and non-carcinogenic hazard for each chemical identified as a COPC. This section describes the risk ratio and screening level assessment used in this HHRA.

6.4.1 Risk Ratio Assessment

The risk ratio method considered risk due to exposure to soil and groundwater at FTMM-05. For the risk ratio assessment, the EPC, either the maximum detected concentrations or the 95% UCL (as defined in Section 6.2.1), was used to calculate risk for soil and groundwater.

In the risk ratio analysis, the EPC was divided by the appropriate screening level for the environmental medium to calculate the risk ratio. The risk ratio for soil was calculated for outdoor workers, utility workers, and recreational users. The risk ratio screening values for soil are the USEPA Industrial Soil RSLs (TR = 1 x 10^{-6}; THQ = 1.0) for outdoor workers, site-specific SLs for utility workers, and site-specific SLs for recreational users. The risk ratio for groundwater was calculated using the site-specific SLs for utility workers.

Following calculation of the risk ratios for individual chemicals, the ratios were then summed to determine the cumulative risk due to exposure to each medium. Cumulative non-carcinogenic risk ratios greater than 1 (one) indicate a potential unacceptable non-carcinogenic risk. Cumulative carcinogenic risk ratios greater than the upper end of USEPA's acceptable risk range of 1 x 10^{-4} to 1 x 10^{-6} indicate a potential unacceptable carcinogenic risk.

6.4.2 Risk Ratio Equations

Carcinogenic risks were estimated using the following equation.

$$\text{Cumulative Risk} = \sum (TR)\frac{(EPC_i)}{SL_{c-i}}$$

where:

Cumulative Risk = Cumulative risk for carcinogenic COPCs one through "i" (unitless), where $(TR)\frac{(EPC_i)}{SL_{c-i}}$ is the chemical-specific carcinogenic risk for chemical "i";

TR = Target lifetime excess carcinogenic risk of 10^{-6} (unitless);

EPC_i = Exposure point concentration for chemical "i" (mg/kg for soil or µg/L for water); and

SL_{c-i} = Medium–specific human health screening level (mg/kg for soil or µg/L for water) for carcinogenic chemical "i".

Non-carcinogenic risks were estimated using the following equation.

$$HI = \sum (THQ)\frac{(EPC_i)}{SL_{nc-i}}$$

where:

HI = Cumulative hazard index for non-carcinogenic COPCs one through "i" (unitless), where $(THQ)\frac{(EPC_i)}{SL_{nc-i}}$ is the chemical-specific non-carcinogenic hazard quotient (HQ) for chemical "i";

THQ = Target hazard quotient of one (unitless);

EPC_i = Exposure point concentration for chemical "i" (mg/kg for soil or µg/L for water); and

SL_{nc-i} = Medium-specific human health screening levels

(mg/kg for soil or µg/L for water) for non-carcinogenic chemical "i".

6.4.3 Screening Criteria

6.4.3.1 Soil Screening Criteria

The soil results were evaluated using USEPA RSLs for industrial workers, site-specific SLs for utility workers, and site-specific SLs for recreational users. The USEPA RSL is based on a combined exposure (i.e., incidental ingestion of soil, dermal contact and inhalation of particulates and volatiles). The utility worker and recreational user screening levels were calculated using the USEPA RSL calculator, based on site-specific exposure parameters (USEPA. 2013b). The utility worker and recreational user equations used in the calculator are provided in **Appendix B**. The calculated utility worker and recreational user screening levels are based on combined exposures (i.e., incidental ingestion, dermal contact, and inhalation of particulates and volatiles). The exposure parameters for utility workers assumed exposure of 30 days per year, over the duration of one year. The utility worker is assumed to be an adult. The exposure parameters for recreational users assumed exposure of one time per week, for two hours at a time, over the course of the year. Therefore, there are 50 exposure events per year. Further, the recreational user is expected to be onsite partially as an adolescent (age 6 to <16 years) and partially as an adult (age 16 to 30). The exposure parameters used in the utility worker and recreational user screening levels calculations are shown in **Appendix B**. The outdoor worker screening levels are provided in the USEPA RSL tables, but for comparison, the exposure parameters for the outdoor worker are also shown in **Appendix B**. The USEPA RSL table indicates whether a chemical is carcinogenic, non-carcinogenic, or both. If a chemical is considered both carcinogenic and non-carcinogenic (exerting both carcinogenic and non-carcinogenic effects), it will be included in the cumulative cancer risk calculation and the cumulative hazard quotient calculation.

6.4.3.2 Groundwater Screening Levels

Groundwater analytical results were evaluated using site-specific screening levels for utility workers. The utility worker screening levels were calculated using the USEPA RSL calculator, based on site-specific exposure parameters (USEPA, 2013b). The utility worker equations used in the calculator are provided in **Appendix B**. The calculated utility worker SL is based on combined exposure (i.e., incidental ingestion, dermal contact, and inhalation of particulates and volatiles). The exposure parameters for utility workers assumed exposure of 30 days per year, over the duration of one year. The utility worker is assumed to be an adult. The USEPA RSL table indicates whether a chemical is carcinogenic, non-carcinogenic, or both. If a chemical is considered both carcinogenic and non-carcinogenic, it was included in the cumulative cancer risk calculation and the cumulative hazard quotient calculation.

6.5 RISK ASSESSMENT RESULTS AND UNCERTAINTIES

The primary objective of this HHRA was to quantitatively characterize the human health risk associated with current and reasonably expected future exposure to contaminated media at FTMM-05. As discussed in Section 6.3, potentially complete exposure pathways for the site were evaluated. The exposure pathways are outlined in Section 6.3 and are also shown on the CSM (**Figure 6.2**). The results of the risk ratio calculations are presented in this section.

6.5.1 Estimated Risks for Soil

The risk ratio calculations for potential exposure to soil by current and future outdoor industrial worker are shown in **Table 6.1**, by a future utility worker are shown in **Table 6.2**, and by a future recreational user are shown in **Table 6.3**.

No unacceptable hazards were calculated for the non-carcinogenic COPCs in soil at FTMM-05, using the maximum detected concentration or the 95% UCL for risk drivers. The cumulative hazard was 0.9 for outdoor workers (**Table 6.1)**. The cumulative hazard was 0.3 for a utility worker (**Table 6.2**). The cumulative hazard was 0.1 for recreational users (**Table 6.3**). The cumulative hazards were less than 1, indicating that an unacceptable non-carcinogenic risk to outdoor workers, utility workers, or recreational users exposed to soil is unlikely.

As previously discussed, lead was evaluated separately from the other chemicals. The maximum detected concentration of lead provides a hazard quotient greater than one, however, when the 95% UCL is used as the EPC (to provide a more accurate estimate of exposure) the hazard quotient was 0.4 for outdoor workers (**Table 6.**1); was 0.2 for utility workers (**Table 6.2**), and was 0.1 for recreational users (**Table 6.3**). The cumulative hazards for lead in soil were less than 1, indicating that an unacceptable non-carcinogenic risk to outdoor workers, utility workers, or recreational users exposed to lead in soil is unlikely.

The cumulative carcinogenic risk ratio for outdoor workers was 4×10^{-5} (**Table 6.1)** which is within the USEPA acceptable range of carcinogenic risk of 1×10^{-4} to 1×10^{-6}. The cumulative carcinogenic risk ratio for utility workers was 6×10^{-7} (**Table 6.2**) which is less than the USEPA acceptable range of carcinogenic risk of 1×10^{-4} to 1×10^{-6}. The cumulative carcinogenic risk ratio for recreational users was 1×10^{-5} (**Table 6.3)** which is within the USEPA acceptable range of carcinogenic risk of 1×10^{-4} to 1×10^{-6}. The cumulative hazards for carcinogens in soil are within or less than 1×10^{-4} to 1×10^{-6}, indicating that unacceptable risks associated with exposure to site soil for outdoor workers, utility workers, and recreational users are unlikely.

6.5.2 Estimated Risks for Groundwater

The calculated risk ratios for exposure of a future utility worker to COPCs detected in groundwater from any well on site are shown in **Table 6.3**.

No unacceptable hazards are calculated for the non-carcinogenic COPCs analytes in groundwater at FTMM-05. The cumulative hazard for future utility workers is 0.04 (**Table 6.4**). Cumulative hazards for potential future receptors are less than 1, indicating that unacceptable non-carcinogenic hazards associated with exposure to groundwater for future utility workers are unlikely.

The cumulative carcinogenic risk ratio for utility workers is 8×10^{-9}, which is less than the USEPA acceptable range of carcinogenic risk of 1×10^{-4} to 1×10^{-6} (**Table 6.4**). Therefore, unacceptable carcinogenic risk associated with exposure to groundwater for future utility workers is unlikely.

6.5.3 Risk Assessment Uncertainties

All risk assessments involve use of assumptions, professional judgments, and imperfect data to varying degrees, which result in uncertainty in the final estimates of risk. Risk assessment in general is often based on conservative assumptions and scenarios. Uncertainty can be introduced

into a risk assessment at every step of the process outlined in this document. Uncertainties are present in a risk assessment because it required integration of the following:

- Release of constituents into the environment, and the areal and vertical distribution of these materials in soil and groundwater;
- Fate and transport of constituents in a variety of different and variable environments by processes that are often poorly understood or too complex to quantify accurately;
- Potential for adverse health effects in humans based on extrapolations from animal studies; and
- Probability of adverse effects in a human population that is highly variable with respect to genetics, age, activity level, and lifestyle.

This section qualitatively describes the inherent and site-specific uncertainties of the assessments process.

6.5.3.1 Uncertainty in Data Collection and Evaluation

The analysis of uncertainties focuses on determining whether the available data are representative of contaminant concentrations and site conditions, and whether features of sampling, analyses, or statistical treatment of the data result in an over- or underestimation of potential risk.

Constituents detected in soil at the site and included in the risk assessment were retained regardless of how frequently they had been detected. USEPA's ProUCL 5.0 will calculate UCLs for datasets with small sample sizes in order to accommodate the Incremental Sampling Method (USEPA. 2013a). Because the soil samples collected at FTMM-05 were collected as discrete samples, not all UCLs calculated or suggested by ProUCL are appropriate for use in the risk calculations. Parametric and non-parametric methods (i.e., Chebyshev [Mean, standard deviation (Sd)], Kaplan-Meier (KM) [Percentile Bootstrap], KM [Chebyshev], Adjusted Gamma KM, and Approximate Gamma KM,) were used to determine the 95% UCL for the analytes with six or more samples. For analytes with six samples or less or if ProUCL generated a warning with regards to unreliable statistics, the maximum detected concentration was used as the exposure point concentration. The use of the maximum detected concentration introduces uncertainty into the risk assessment, since the use of one analytical result likely does not accurately represent the concentration of the constituent in the volume of soil that is being evaluated. In cases where the analyte is infrequently detected, the use of the maximum concentration will likely overestimate the actual exposure point concentration, resulting in an overestimate of the risk. In cases with few total samples, the use of the maximum detected concentration can either over- or underestimate the exposure concentration depending on the distribution of the actual concentrations in the medium of concern.

USEPA has researched how to determine the appropriate method for calculating a 95% UCL based on the data distribution, data set size, skewness, and percentage of non-detect observations. The ProUCL output included in **Appendix B** states, "Suggestions regarding the selection of a 95% UCL are provided to help the user select the most appropriate 95% UCL." ProUCL generates UCLs using all available methods for each data set, regardless of the appropriateness of the method. The results listed under "Suggested UCLs to Use" are the results recommended by ProUCL based on data size, data distribution, and skewness of the data set, as well as the results of simulation studies. Where more than one result was listed in the ProUCL

output in "Suggested UCLs to Use", the most conservative (highest) of the recommended "Suggested UCLs to Use" was selected for use as the EPC. This is a default selection made without regard to scientific validity. The use of the most conservative UCL may overestimate the EPC and, therefore, the risk.

COPCs identified in groundwater were evaluated in the risk ratio using the calculated screening levels based on conservative assumptions. The maximum detected concentration from any well present at FTMM-05 was used to calculate the risk ratio for utility workers. The use of the maximum detected concentration introduces uncertainty into the risk assessment, since the use of one analytical result likely does not accurately represent the concentration of the constituent across the entire site. In cases where the analyte is infrequently detected, the use of the maximum concentration will likely overestimate the actual exposure point concentration, resulting in an overestimate of the risk. In cases with few total samples, the use of the maximum detected concentration can either over-or underestimate the exposure concentration depending on the distribution of the actual concentrations in the medium of concern.

Detected analytes that do not have screening values are not identified as COPCs. If these analytes are present in surface water, not including them in the risk assessment may underestimate the risk for commercial/industrial worker or recreational user exposure to surface water.

Chemicals that were never detected in any samples were eliminated from the HHRA. It is possible that some chemicals may have been present in samples below the sample quantitation limit and not retained in the risk assessment. However, because samples were collected from areas where concentrations were expected to be high and because maximum detected concentrations or 95% UCLs were used in the HHRA comparisons, it is very unlikely that chemicals were present at health-significant levels and not detected in at least one sample.

6.5.3.2 Uncertainty in Exposure Assessment

The risk assessment estimates are conditional on actual and potential exposure pathways identified at the site. If exposure does not occur, no risks are present. Furthermore, the risk assessment process does not factor in the probability of exposure occurring. For example, there may not be a reason for an outdoor worker to be present on site 225 days per year. The actual exposure for the potential landscaper/groundskeeper is likely to be less often than 225 days per year.

Current land uses and characterization of the site's current physical setting provided the basis for predicting future land use at and in the vicinity of the site. Steady-state conditions were assumed for evaluation of potential future exposures. The assumption of steady-state conditions may tend to overestimate long-term exposure and health risk because contaminant concentrations may decline over time due to natural dissipation processes. In some cases, depending on the contaminant and or the release mechanisms involved, steady-state assumptions could potentially underestimate risk (e.g., a continuous source contributing to contamination in another media).

There is also some concern as to how well an exposure scenario approximates the actual conditions that a receptor may be exposed to at a given site. Potential human exposures could deviate from those used in the risk assessment through differences in exposure frequency, contact rates, exposure durations, body weight, and life span. Each of these factors has a degree of uncertainty associated with it that could over- or underestimate risk.

Evaluation of risk for recreational user exposure to soil includes calculation of the risk to adolescents. Other sensitive subpopulations such as children, elderly people, pregnant or nursing women, and people with chronic illnesses were not specifically evaluated in this risk assessment. These subpopulations may be more sensitive to certain chemical exposures. However, USEPA generally considers sensitive subpopulations when developing toxicity factors. Additionally, there are no daycare or school facilities, healthcare facilities onsite, nursing homes, retirement communities, or residential areas with children or adolescents onsite currently.

Exposure to groundwater was evaluated for utility workers to determine the potential risk during routine activities. The utility worker screening levels assume that the worker will be exposed through dermal contact and incidental ingestion. If volatile contaminants are present in groundwater, a utility worker may be exposed to them in groundwater. However, there is no validated model available to quantify the exposure of utility workers to volatiles in groundwater. If volatiles are present in groundwater, and if groundwater is at the depth where trenches are present, volatiles in groundwater are expected to volatilize rapidly in air, thus diluted, and the exposure to utility works is expected to be insignificant.

6.5.3.3 Uncertainty in Toxicity Assessment

Some uncertainty is also inherent in the toxicity values used in the risk assessment. Carcinogenic slope factors and route-specific values were derived only for compounds that have been shown to cause an increased incidence of tumors in either human or animal studies. This dose-response curve is then assumed to be linear at low doses (e.g., those found in situations of environmental contamination) and is used to predict tumor incidence at low exposure levels. When an animal study is used, the final slope factor is adjusted to account for extrapolation of animal data to humans. If the studies used to derive the slope factor were conducted for less than the life span of the test organism, the final slope factor had also been adjusted to reflect risk associated with lifetime exposure. The chronic RfD for a compound is based on studies where either human or animal populations were exposed to a given compound by a given route of exposure for a major portion of the life span (as a USEPA guideline, seven years to a lifetime; USEPA, 1989). RfDs are derived by determining dose-specific effect levels from available quantitative studies and applying uncertainty factors to the most appropriate effect level to determine an RfD for humans. The slope factors and RfD for compounds are used to calculate the default USEPA RSLs or the calculated utility worker or recreational user screening levels for soil, and are used to calculate the groundwater screening levels for utility workers. The screening levels are then based on conservative assumptions, and tend to overestimate risk.

6.5.3.4 Uncertainty in Estimating Chemical Risk

The expression of the potential risk associated with contaminants detected at the site is a result of the combined steps of data evaluation, exposure assessment, and toxicity assessment. This combination can magnify the uncertainties present in these steps of the HHRA process.

Screening criteria are developed using very conservative (health-protective) exposure and intake assumptions. The HHRA comparisons also use conservative concentrations of the chemicals detected at the site. In addition, screening criteria used in the HHRA are considered health-protective for carcinogenic and non-carcinogenic chemical mixtures. Carcinogenic chemicals correspond to the conservative 1×10^{-6} (one in a million) excess cancer risk level, providing a very protective screening value. Non-carcinogens use a target HQ of 1.0 and also

account for the cumulative non-cancer risk for chemicals with the same toxic endpoint or mechanism of action.

6.5.4 Conclusions

The HHRA was conducted to evaluate the potential for human health impacts as a result of potential exposures to chemicals in soil and groundwater at FTMM-05.

The cumulative carcinogenic risks and non-carcinogenic hazards estimated for current and future outdoor worker, future utility worker, and future recreational user exposure to soil are as follows.

- For outdoor workers exposed to soil at FTMM-05, the cumulative carcinogenic risk of 4×10^{-5} is within the cumulative risk goal of 1×10^{-4} to 1×10^{-6}. The cumulative non-carcinogenic hazard is 0.9, which is less than the cumulative hazard goal of 1. Lead was evaluated separately from carcinogenic and non-carcinogenic COPCs. The hazard quotient for lead in soil is 0.4, which is less than 1. These results indicate that unacceptable carcinogenic risk, unacceptable non-carcinogenic hazard, or hazards from exposure to lead in soil are unlikely for future outdoor workers;

- For utility workers exposed to soil at FTMM-05, the cumulative carcinogenic risk of 6×10^{-7} is less than the cumulative risk goal of 1×10^{-4} to 1×10^{-6}. The cumulative non-carcinogenic hazard is 0.3, which is less than the cumulative hazard goal of 1. Lead was evaluated separately from carcinogenic and non-carcinogenic COPCs. The hazard quotient for lead in soil is 0.2, which is less than 1. These results indicate that unacceptable carcinogenic risk, unacceptable non-carcinogenic hazard, or hazards from exposure to lead in soil are unlikely for future utility workers; and,

- For recreational users exposed to soil at FTMM-05, the cumulative carcinogenic risk of 1×10^{-5} is within the cumulative risk goal of 1×10^{-4} to 1×10^{-6}. The cumulative non-carcinogenic hazard is 0.1, which is less than the cumulative hazard goal of 1. Lead was evaluated separately from carcinogenic and non-carcinogenic COPCs. The hazard quotient for lead in soil is 0.1, which is less than 1. These results indicate that unacceptable carcinogenic risk, unacceptable non-carcinogenic hazard, or hazards from exposure to lead in soil are unlikely for future utility workers.

For utility workers exposed to groundwater, the cumulative carcinogenic risks for all wells is 8×10^{-9}, which is less than the cumulative risk goal of 1×10^{-4} to 1×10^{-6}. The cumulative non-carcinogenic hazard for all wells is 0.04, which is less than the cumulative hazard goal of 1. Therefore, no potential non-carcinogenic or carcinogenic effects to utility workers are expected from exposure to groundwater at FTMM-05.

SECTION 7
REMEDIAL INVESTIGATION SUMMARY

7.1 NATURE AND EXTENT OF CONTAMINATION

The nature and extent of targeted constituents exceeding NJDEP and/or USEPA comparison criteria in sampled media at FTMM-05 are summarized below.

7.1.1 Soil

Soil samples were collected at FTMM-05 during RI sampling activities in 1998. Concentrations of the following constituents exceeded the current NJDEP RDCSRS and/or USEPA Residential RSL in at least one soil sample:

- The VOCs PCE, and chloroform;
- The SVOCs (all PAHs) naphthalene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and dibenz(a,h)anthracene;
- The pesticides heptachlor epoxide, 4,4'-DDE, dieldrin, 4,4'-DDD, 4,4'-DDT, gamma-chlordane, alpha-chlordane, and the PCB Aroclor 1254; and
- The metals aluminum, antimony, arsenic, cadmium, cobalt, copper, iron, lead, manganese, mercury, nickel, selenium, thallium, vanadium, and zinc.

Concentrations of the following constituents exceeded the current NJDEP NRDCSRS and/or USEPA Industrial RSL in at least one soil sample:

- The SVOCs (all classified as PAHs) benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and dibenz(a,h)anthracene;
- The pesticides heptachlor epoxide and 4,4'-DDT, and the PCB Aroclor 1254; and
- The metals arsenic, cadmium, cobalt, iron, lead, manganese, mercury, and thallium.

Concentrations of the following constituents exceeded the current NJDEP IGW criterion and/or USEPA Groundwater Protection RSL in at least one soil sample:

- The VOCs methylene chloride, benzene, PCE, chloroform, and ethylbenzene;
- The SVOCs naphthalene, n-nitrosodiphenylamine, 2-methylnaphthalene, 4-methylphenol, acenaphthene, dibenzofuran, fluorene, anthracene, di-n-butylphthalate, fluoranthene, pyrene, pyridine, benzo(a)anthracene, 3,3'-dichlorobenzidine, chrysene, bis(2-ethylhexyl)phthalate, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and dibenz(a,h)anthracene;
- The pesticides heptachlor, heptachlor epoxide, 4,4'-DDE, dieldrin, endrin, 4,4'-DDD, 4,4'-DDT, endosulfan-sulfate, gamma-chlordane, alpha-chlordane, and the PCB Aroclor 1254; and
- The metals aluminum, antimony, arsenic, barium, beryllium, cadmium, colbalt, copper, iron, lead, manganese, mercury, nickel, selenium, silver, thallium, vanadium, and zinc.

The maximum-detected concentrations of the all of the metals targeted for analysis in soil samples exceed the maximum background concentrations for the MP presented in Weston (1995) except for chromium, magnesium, and potassium. Additionally, aluminum exceeded background only once at a similar (within approximately 3%) concentration to the maximum background concentration. Therefore, only these four metals can be assumed to be representative of natural background conditions at every one of the soil boring locations.

Based on decision logic described in Section 4, COPCs in soil that were evaluated in the risk assessment include chloroform, naphthalene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenz(a,h)anthracene, heptachlor epoxide, 4,4'-DDE, dieldrin, 4,4'-DDD, 4,4'-DDT, Aroclor 1254, antimony, arsenic, cadmium, cobalt, copper, lead, manganese, mercury, nickel, selenium, thallium, vanadium, and zinc.

7.1.2 Groundwater

Previous reports identified chlorinated ethenes (i.e., PCE, TCE, *cis*-1,2-DCE, and/or VC) as the primary constituents of concern in FTMM-05 groundwater. During the groundwater monitoring events evaluated in detail (2009 to 2011 and 2013 to 2014), concentrations of the following constituents exceeded the current NJDEP GWQS and/or USEPA Tapwater RSLs in at least one sample:

- The VOCs bromodichloromethane, chloroform, *cis*-1,2-DCE, PCE, TCE, and VC; and
- The metals aluminum, antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, iron, lead, manganese, mercury, nickel, selenium , sodium, thallium, and zinc.

Given the small number of background exceedances, detected concentrations of metals are considered to be representative of background conditions at FTMM-05 and metals were not evaluated as COPCs. SVOCs, pesticides and PCBs were previously eliminated from the sampling program in 2003, and therefore are not COPCs in groundwater for FTMM-05.

For VOCs in groundwater, the single bromodichloromethane exceedance was determined to be insignificant, and chloroform and vinyl chloride were attributed to an upgradient source. There is also an upgradient source of PCE in groundwater that contributes to VOC contamination of FTMM-05 groundwater. However, higher concentrations of PCE, TCE, and cis-1,2-DCE were typically encountered either within the landfill (wells M5MW11 and M5MW20) or downgradient of the landfill (M5MW23), rather than upgradient of FTMM-05. Further, PCE was detected in landfill soil samples at concentrations in excess of NJDEP IGW soil standards and USEPA RSL Groundwater Protection criteria. Also, TCE and cis-1,2-DCE are biological degradation products of PCE. Therefore, the potential for FTMM-05 to contribute to PCE, TCE, and cis-1,2-DCE contamination in groundwater cannot be discounted. Based on COPC identification decision logic described in Section 4, COPCs in groundwater that were evaluated in the risk assessment include the VOCs PCE, TCE, and cis-1,2-DCE.

7.1.3 Surface Water

Historical reports identified two VOCs (PCE and TCE) as the primary constituents exceeding NJDEP SWQS in surface water samples collected from locations related to FTMM-05. However, during the most recent 8 quarters of surface water sampling, PCE was the only VOC that

exceeded NJDEP SWQS, and cis-1,2-DCE was the only VOC that exceeded the USEPA human health criterion. Upstream data indicate that concentrations of these VOCs detected in Mill Creek surface water originated from an upstream, offsite source. Metals that exceeded NJDEP SWQS and/or USEPA human health criteria (arsenic and mercury) were also detected at the upstream sampling location and are not associated with FTMM-05. The same metals were also detected in a distant-downstream location (SS-27) at concentrations exceeding NJDEP and USEPA comparison criteria, but they cannot be related to FTMM-05 with any confidence given the distance between the site and the downstream sampling location and the presence of other streams that drain into Parkers Creek between FTMM-05 and SS-27. No COPCs were identified for surface water for inclusion in the risk assessment.

7.1.4 Sediment

Sediment sampling was conducted in April 2000 in Mill Creek to evaluate PCB-related impacts to stream sediments associated with FTMM-05. One PCB (Aroclor 1254) was detected in one of six samples collected at a concentration less than the NJDEP RDCSRS for total PCBs and the USEPA residential soil RSL for Aroclor 1254. Therefore, there were no exceedances of comparison criteria in sediment samples, and no COPCs were identified for inclusion in the risk assessment.

7.2 CONTAMINANT FATE AND TRANSPORT

Detected constituents of interest in terms of contaminant fate and transport at FTMM-05 include VOCs, SVOCs, pesticides, PCBs, and metals in soil and groundwater. The migration routes of interest are dissolution of soluble residual contamination in near-surface soil into infiltrating precipitation that percolates through the vadose zone to the water table, and lateral migration of contaminants dissolved in groundwater toward Mill Creek and Parkers Creek. VOCs in vadose zone soil are expected to have a relatively low persistence and moderate to high mobility. In contrast, SVOCs, pesticides, PCBs, and metals in near-surface soil at FTMM-05 are expected to be relatively persistent and immobile, limiting their impact on groundwater quality.

VOCs that dissolve into groundwater are expected to be moderately to highly mobile and transported laterally with advective groundwater flow, although some sorption to aquifer matrix materials will occur. Highly chlorinated solvents such as PCE have a higher sorption potential than less chlorinated solvents such as VC, and the migration of PCE in groundwater will be more retarded as a result. VOC concentrations in the saturated zone will attenuate over time as a result of destructive and non-destructive attenuation mechanisms.

7.3 BASELINE RISK ASSESSMENT

An evaluation of the potential risk resulting from human exposure to soil was conducted as part of this RI. No COPCs were identified in surface water or sediment, Therefore, further evaluation of these media in the risk assessment was not conducted. The HHRA utilized a conservative approach that assumed exposure to the maximum detected concentration or the 95% UCL of analytes in soil. Lead in soil was evaluated separately from carcinogenic and non-carcinogenic COPCs.

For outdoor workers exposed to soil at FTMM-05, the cumulative carcinogenic risk of 4×10^{-5} is within the cumulative risk goal of 1×10^{-4} to 1×10^{-6}. The cumulative non-carcinogenic hazard is 0.9, which is less than the cumulative hazard goal of 1. The hazard quotient for lead in soil is 0.4, which is less than 1. Therefore, no potential non-carcinogenic or

carcinogenic effects or effects due to exposure to lead for outdoor workers are expected from exposure to soil at FTMM-05.

For utility workers exposed to soil at FTMM-05, the cumulative carcinogenic risk of 6×10^{-7} is less than the cumulative risk goal of 1×10^{-4} to 1×10^{-6}. The cumulative non-carcinogenic hazard is 0.3, which is less than the cumulative hazard goal of 1. The hazard quotient for lead in soil is 0.2, which is less than 1. Therefore, no potential non-carcinogenic or carcinogenic effects or effects due to exposure to lead for utility workers are expected from exposure to soil at FTMM-05.

For recreational users exposed to soil at FTMM-05, the cumulative carcinogenic risk of 1×10^{-5} is within the cumulative risk goal of 1×10^{-4} to 1×10^{-6}. The cumulative non-carcinogenic hazard is 0.1, which is less than the cumulative hazard goal of 1. The hazard quotient for lead in soil is 0.1, which is less than 1. Therefore, no potential non-carcinogenic or carcinogenic effects or effects due to exposure to lead for recreational users are expected from exposure to soil at FTMM-05.

For utility workers exposed to groundwater, the cumulative carcinogenic risks for all wells is 8×10^{-9}, which is less than the cumulative risk goal of 1×10^{-4} to 1×10^{-6}. The cumulative non-carcinogenic hazard for all wells is 0.04, which is less than the cumulative hazard goal of 1. Therefore, no potential non-carcinogenic or carcinogenic effects to utility workers are expected from exposure to groundwater at FTMM-05.

SECTION 8
CONCLUSION

The RI concluded that risks to human health and the environment from soil and groundwater are within acceptable ranges for current and future intended land use. A FS was not performed because the RI concluded that NFA is required at FTMM-05 under CERCLA.

To address safety concerns, a vegetated soil cover will be placed over the landfill area after the landfill is regraded to provide safety protection for future non-residential use. The soil cap with be placed consistent with the NJDEP Solid Waste regulations (N.J.A.C. 7:26-2A). Additional soil will be added to the existing soil cover to provide a minimum of two feet of soil between the ground surface and landfilled debris. The use of a vegetated native soil cover will offer safety protection to non-residents from future exposure to solid waste at the landfill and will control surface water runoff and erosion.

ICs to maintain the soil cover and prevent residential land use will also be implemented at FTMM-05. The Army will prepare a LUC implementation plan during the remedy design phase to document the location of the engineering control and identify the procedural responsibilities including landfill cover inspections, monitoring and reporting, and long-term management requirements, etc. In addition, as part of LUC implementation, and prior to designing and placing the vegetated soil cover, refinement of the landfill boundary will be performed to investigate data gaps identified in this report. The landfill boundary refinement process is ongoing; field work was performed in September 2015 and results will be documented in a separate report.

The Army will be responsible for documenting and implementing the ICs through the filing of a deed notice, and will also be responsible for conducting biennial reviews to ensure that the ICs remain protective of human health and the environment. However, the Army will not be responsible for obtaining a remedial action permit under New Jersey TRSR. When the property is transferred to private ownership, the ICs will be incorporated into the title and the new owner will be responsible for complying with the ICs. Although the Army may later transfer its procedural responsibilities to another party by contract, property transfer agreement, or through other means, the Army shall retain ultimate responsibility for remedy integrity.

In addition, a CEA will be established pursuant to NJDEP's TRSR (N.J.A.C. 7:26E) and Administrative Requirements for the Remediation of Contaminated Sites (N.J.A.C. 7:26C). The CEA is a groundwater use restriction to protect a hypothetical residential user from potential risk associated with groundwater as a potable water source. The CEA will remain in place until NJDEP GWQS are achieved at the site.

The estimated total present value (TPV) of the soil cover and implementing ICs is approximately $1,131,000. The capital cost to install the vegetative cap is $741,000. Costs associated with ICs, including preparation of a LUC Implementation Plan, refinement of the landfill boundaries, as well as IC inspection and reporting for a 30-year duration is $390,000. Costs associated with the vegetative cover include advancement of two geotechnical borings, placement of 18 inches of a soil cover, followed by 6 inches of a vegetative cover, grading for runoff, and seeding. The cost estimate is provided in **Appendix C.**

SECTION 9
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TABLES

Table 1.1 Chronology of Events
Table 2.1 Well Construction Summary
Table 2.2 Groundwater Sampling Summary
Table 2.3 Surface Water Sampling Summary
Table 4.1 Soil Sampling Summary – Comparison to NJDEP Standards
Table 4.2 Soil Sampling Summary – Comparison to USEPA Criteria
Table 4.3 Soil Sampling Summary of Exceedances
Table 4.4 Groundwater Summary Sampling Results for March 2008 to August 2011
Table 4.5 Groundwater Sampling Results for August 2013
Table 4.6 Groundwater Sampling Summary of Exceedances for November 2009 to August 2013
Table 4.7 Surface Water Results
Table 4.8 Surface Water Summary of Exceedances for December 2008 to September 2010
Table 4.9 Sediment PCB Results
Table 6.1 Risk Ratio Calculations for Potential Exposure to Soil by a Current/Future Outdoor Worker
Table 6.2 Risk Ratio Calculations for Potential Exposure to Soil by a Future Utility Worker
Table 6.3 Risk Ratio Calculations for Potential Exposure to Soil by a Future Recreational User
Table 6.4 Risk Ratio Calculations for Potential Exposure to Groundwater by a Future Utility Worker

TABLE 1.1
CHRONOLOGY OF EVENTS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

1918 – Fort Monmouth (FTMM) was established.
1980 – Installation Assessment of Fort Monmouth. U.S. Army Toxic and Hazardous Materials Agency (USATHAMA, 1980). Conducted a records search to assess the environmental quality of Fort Monmouth.
1980 – William F. Cosulich performed a landfill study that identified major areas on the base where landfill activities occurred. Samples were collected from Parkers Creek, Lafetra Brook, and Mill Brook. (note: later reports refer to Mill and Lafetra Creeks).
1984 – A water quality engineering study was performed to determine if landfill leachate was forming and entering streams. Surface water samples were collected in Mill Creek adjacent to FTMM-05 (USATHAMA, 1988).
1986 – A New Jersey Pollutant Discharge Elimination System (NJPDES) permit was issued and quarterly surface water monitoring began at FTMM-05.
1988 – Update of the Initial Installation Assessment of Fort Monmouth and Subinstallations: Charles Wood Area and Evans Area. A survey was conducted to determine if any environmental/hazardous waste disposal conditions had changed since the Installation Assessment conducted in 1980. (USATHAMA, 1988).
1993 – Weston (1993) performed Site Investigation (SI) that addressed 45 sites identified by FTMM and NJDEP. Additional remedial investigation was recommended for the FTMM-05 landfill.
1995 – Weston (1995) performed additional SI activities at FTMM-05 which included installation of two groundwater monitoring wells, and collection of background soil, groundwater, surface water, and sediment samples. The only organic compound identified in FTMM-05 groundwater at concentrations greater than NJDEP standards was tetrachlorethene (PCE).
1996 – Initiated regular sampling of surface water adjacent to, upstream, and downstream of FTMM-05. Sampling continued to September 2010, with results reported in a series of Remedial Action Progress Reports (RAPRs).
1997 – Initiated quarterly sampling of two groundwater monitoring wells. Samples were analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides, and metals. Regular groundwater sampling events in site wells were performed to August 2011, with results reported in a series of RAPRs.
1998 – DPW installed three additional wells at FTMM-05 as part of the expanded SI. Quarterly groundwater sampling of these three wells was initiated.
1999 – RI was conducted (ATC, 2000), and seven additional monitoring wells were installed in and around FTMM-05.
2000 – ATC Associates, Inc. (2000) developed a Remedial Action Work Plan to initiate an active groundwater remediation program by injecting Hydrogen Releasing Compound (HRC) into groundwater, to shorten the time required for PCE to naturally attenuate in groundwater.
2000 – Initial injection of HRC® performed between October to December 2000 (US Army 2012).
2001 – A Classification Exception Area (CEA)/Well Restriction Area report for tetrachloroethene in groundwater at FTMM-05 was finalized (ATC Associates, Inc.).
2002 – Second injection of HRC® performed between February to May 2002 (US Army 2012).
2003 – A RAPR was submitted after the first and second HRC injections (4th Quarter 1999 through 3rd Quarter 2002) (Versar 2003).

TABLE 1.1
CHRONOLOGY OF EVENTS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

2003 – Third injection of HRC® performed between June to August 2003 (US Army 2012).
2004 – A Remedial Investigation (RI) and Sediment Quality Evaluation was conducted to determine if sediment in Mill Creek adjacent to FTMM-05 contained polychlorinated biphenyl (PCBs), as had been detected at other landfill sites. PCBs were not present at concentrations greater than regulatory criteria, and no further sediment sampling was recommended (Versar, 2004a).
2004 – A RI for Near-Surface Soils was conducted at FTMM-05 to demonstrate the compliance equivalence of the existing soil cover over the FTMM-05 landfill (Versar, 2004b).
2004 – Fourth injection of HRC® performed between June to August 2004 (US Army 2012).
2005 – FTMM (MP and Charles Wood Area [CWA]) was selected for closure by the Base Realignment and Closure Commission.
2005 – A RAPR was submitted after the third HRC injection event (4th Quarter 2002 through 3rd Quarter 2003) (Versar, 2005).
2005 – Fifth injection of HRC® performed between September to December 2005 (US Army 2012).
2008 – FTMM submits a proposal to NJDEP to conduct a landfill delineation study consisting of test pits and soil borings (U.S. Army Fort Monmouth, 2012). The request was approved on August 19, 2008 by NJDEP. Following the delineation study, the landfill boundaries were adjusted based on the findings.
2008 – A groundwater Classification Exception Area report was submitted to provide information on contaminants that may exceed regulatory standards (Versar, 2008) (has not been processed by the NJDEP).
2009 – A RAPR was submitted following the fourth HRC injection event (4th Quarter 2003 through 3rd Quarter 2005) (VEETech, 2009a).
2009 – A RAPR was submitted after the fifth HRC injection event (4th Quarter 2005 through 3rd Quarter 2006) (VEETech, 2009b).
2010 – Preliminary tidal evaluation of select monitoring wells throughout the Main Post (Brinkerhoff, 2010).
2010 – A RAPR was submitted to summarize groundwater and surface water sampling results (4th Quarter 2006 through 4th Quarter 2008) (VEETech, 2010).
2010 – Between June and October 2010, Shaw Environmental, Inc. conducted a Baseline Ecological Evaluation (BEE) (Shaw, 2012).
2011 – The base was officially closed on September 15.
2011 – In accordance with an NJDEP-approved Permit-by-Rule, between February and July 2011, approximately 23,880 lbs of RegenOx® solution was injected into the subsurface at four targeted areas at FTMM-05 in an effort to remediate VOC concentrations in groundwater.
2012 – In an August 27, 2012 letter, the NJDEP approved "no additional ecological evaluation or assessment for the Main Post and Charles Wood Area."
2012 – A RAPR was submitted to summarize groundwater and surface water sampling results (1st Quarter 2009 through the 3rd Quarter 2010) (U.S. Army, 2012).
2013 – Groundwater sampling was conducted at 21 FTMM sites, including FTMM-05, in August 2013 to re-establish baseline groundwater conditions following temporary suspension of groundwater sampling in late 2011 (Parsons, 2013).
2015 – NJDEP agreed to continue annual monitoring for VOCs at 4 wells and discontinue sampling at the remaining wells (NJDEP, 2015).

TABLE 2.1
WELL CONSTRUCTION SUMMARY
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Site	Well Permit #	Y Coord. (Northing)	X Coord. (Easting)	Installation Date	Depth (ft bgs)	Casing Length (ft)	Screen Length (ft)	Screen Slot Size (inches)	Top of Casing (ft amsl)
M5MW09	E201015344	539680.000	617420.000	12/10/2010	20.00	5.00	15.00	0.01	7.90
M5MW10	29-32574	539469.986	617436.961	12/14/1994	15.00	5.00	10.00	0.01	6.05
M5MW11	29-32575	539702.462	617582.950	12/15/1994	15.00	5.00	10.00	0.01	10.61
M5MW12	29-39179	539502.575	617410.722	8/27/1998	15.00	5.00	10.00	0.01	**8.58**
M5MW13	29-39178	539367.025	617437.994	8/31/1998	20.00	5.00	10.00	0.01	**4.33**
M5MW14	29-39177	539178.158	617477.326	8/31/1998	20.00	5.00	10.00	0.01	**4.66**
M5MW15*	29-40120	539573.944	618119.388	3/24/1999	18.00	5.00	13.00	0.01	17.40
M5MW16	29-40121	539431.444	618031.862	3/24/1999	16.00	3.00	13.00	0.01	**14.08**
M5MW18	29-40123	539430.125	617754.747	3/26/1999	18.00	3.00	15.00	0.01	13.35
M5MW19	29-40124	539558.480	617759.521	3/26/1999	18.00	3.00	15.00	0.01	**12.93**
M5MW20	29-40122	539591.512	617684.122	3/25/1999	14.00	4.00	10.00	0.01	**11.55**
M5MW23	29-40125	539824.395	617693.490	3/26/1999	18.00	3.00	15.00	0.01	**11.91**
M5MW25*	29-40126	539983.109	617998.918	3/19/1999	18.00	3.00	15.00	0.01	**16.92**

Notes:
ft = feet
bgs = below ground surface
amsl = above mean sea level
Bolded top of casing elevations represent a mathematical adjustment between earlier NAD systems and the NAD 88 spatial system; the adjusted monitoring wells will be resurveyed. The wells were reduced 1.09 feet to reflect the changes in the NAD systems.
* indicates wells M5MW15 and M5MW25 were abandoned.

TABLE 2.2
GROUNDWATER SAMPLING SUMMARY
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

	Well ID												
Date	**M5MW09**	**M5MW10**	**M5MW11**	**M5MW12**	**M5MW13**	**M5MW14**	**M5MW15**	**M5MW16**	**M5MW18**	**M5MW19**	**M5MW20**	**M5MW23**	**M5MW25**
5/8/1997	--	V,S,P,M	V,S,P,M	--	--	--	--	--	--	--	--	--	--
8/8/1997	--	V,S,P,M	V,S,P,M	--	--	--	--	--	--	--	--	--	--
10/29/1997	--	V,S,P,M	V,S,P,M	--	--	--	--	--	--	--	--	--	--
2/18/1998	--	V,S,P,M	V,S,P,M	--	--	--	--	--	--	--	--	--	--
5/6/1998	--	V,S,P,M	V,S,P,M	--	--	--	--	--	--	--	--	--	--
8/4/1998	--	V,S,P,M	V,S,P,M	--	--	--	--	--	--	--	--	--	--
10/7/1998	--	--	--	--	V,S,P,M	V,S,P,M	V,S,P,M	--	--	--	--	--	--
10/21/1998	--	--	--	--	V,S,P,M	V,S,P,M	V,S,P,M	--	--	--	--	--	--
10/27/1998	--	V,S,P,M	V,S,P,M	--	V,S,P,M	V,S,P,M	--	--	--	--	--	--	--
2/2/1999	--	V,S,P,M	V,S,P,M	--	V,S,P,M	V,S,P,M	V,S,P,M	--	--	--	--	--	--
4/13/1999	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
4/27/1999	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
9/13/1999	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
11/18/1999	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
3/3/2000	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
5/31/2000	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
8/21/2000	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
12/11/2000	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
2/13/2001	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,P	V,P	V,P	V,P	V,P	V,P	V,P	V,P
3/19/2001	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
6/5/2001	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
9/5/2001	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
10/4/2001	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
1/14/2002	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
4/23/2002	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
8/21/2002	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
10/28/2002	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
1/22/2003	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
4/21/2003	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
7/30/2003	--	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M	V,S,P,M
10/8/2003	--	V	V	V	V	V	--	V	V	V	V	V	V
1/14/2004	--	V	V	V	V	V	--	V	V	V	V	V	V
5/13/2004	--	V	V	V	V	V	--	V	V	V	V	V	V
8/20/2004	--	V	V	V	V	V	--	V	V	V	V	V	V
12/16/2004	--	V	V	V	V	V	--	V	V	V	V	V	V
3/15/2005	--	V	V	V	V	V	--	V	V	V	V	V	V
6/3/2005	--	V	V	V	V	V	--	V	V	V	V	V	V
9/16/2005	--	V	V	V	V	V	--	V	V	V	V	V	V
12/21/2005	--	V	V	V	V	V	--	V	V	V	V	V	V
3/1/2006	--	V	V	V	V	V	--	V	V	V	V	V	V
5/5/2006	--	V	V	V	V	V	--	V	V	V	V	V	V
9/12/2006	--	V	V	V	V	V	--	V	V	V	V	V	V
11/17/2006	--	V	V	V	V	V	--	V	V	V	V	V	V
3/8/2007	--	V	V	V	V	V	--	V	V	V	V	V	V
6/6/2007	--	V	V	V	V	V	--	V	V	V	V	V	V
8/14/2007	--	V	V	V	V	V	--	V	V	V	V	V	V
12/5/2007	--	V	V	V	V	V	--	V	V	V	V	V	V
3/11/2008	--	V	V	V	V	V	--	V	V	V	V	V	--
6/3/2008	--	V	V	V	V	V	--	V	V	V	V	V	--
8/25/2008	--	V	V	V	V	V	--	V	V	V	V	V	--
11/10/2008	--	V	V	V	V	V	--	V	V	V	V	V	--
2/26/2009	--	V	V	V	V	V	--	V	V	V	V	V	--
6/12/2009	--	V	V	V	V	V	--	V	V	V	V	V	--
9/18/2009	--	V	V	V	V	V	--	V	V	V	V	V	--
12/28/2009	--	V	V	V	V	V	--	V	V	V	V	V	--
3/31/2010	--	V,M	V,M	V,M	V,M	V,M	--	V,M	V,M	V,M	V,M	V,M	--
6/30/2010	--	V,M	V,M	V,M	V,M	V,M	--	V,M	V,M	V,M	V,M	V,M	--
9/26/2010	--	V,M	V,M	V,M	V,M	V,M	--	V,M	V,M	V,M	V,M	V,M	--
1/4/2011	--	V,M	V,M	V,M	V,M	V,M	--	V,M	V,M	V,M	V,M	V,M	--
2/23/2011	--	V,M	V,M	V,M	V,M	V,M	--	V,M	V,M	V,M	V,M	V,M	--
3/9/2011	V,M	--	--	--	--	--	--	--	--	--	--	--	
4/12/2011	--	--	V,M	--	--	--	--	V,M	--	--	--	V,M	--
4/15/2011	--	--	V,M	--	--	--	--	V,M	--	--	--	V,M	--
4/22/2011	--	--	V,M	--	--	--	--	V,M	--	--	--	V,M	--
4/29/2011	--	--	V,M	--	--	--	--	V,M	--	--	--	V,M	--
6/6/2011	V,M	V,M	V,M	V,M	V,M	V,M	--	V,M	V,M	V,M	V,M	V,M	--
7/5/2011	--	--	V,M	--	--	--	--	V,M	--	--	--	V,M	--
7/29/2011	--	--	V,M	--	--	--	--	V,M	--	--	--	V,M	--
8/13/2011	V,M	V,M	V,M	V,M	V,M	V,M	--	V,M	V,M	V,M	V,M	V,M	--
8/19/2011	--	--	V,M	--	--	--	--	V,M	--	--	--	V,M	--
8/27/2013	--	V	V	V	V	V	--	V	V	V	V	V	--
12/18/2014	--	--	V	--	--	--	--	V	--	--	V	V	--

Notes:
V = volatile organic compounds + tentatively-identified compounds (TICs), S = semivolatile organic compounds + TICs, M = metals,
P = pesticides and polychlorinated biphenyls (PCBs), dash (--) = not sampled.
Wells M5MW15 and M5MW25 were abandoned.

TABLE 2.3
SURFACE WATER SAMPLING SUMMARY
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

	Location				
Date	**SS-4**	**SS-5**	**SS-15**	**SS-16**	**SS-27**
10/8/1996	V	V	V	V	--
11/25/1996	V	V	V	V	--
12/12/1996	V	V	V	V	--
1/29/1997	V	V	V	V	--
2/26/1997	V	V	V	V	--
3/10/1997	V	V	V	V	--
4/8/1997	V	V	V	V	--
7/17/1997	V	V	V	V	--
10/30/1997	V	V	V	V	--
2/10/1998	V	V	V	V	--
4/21/1998	V	V	V	V	--
8/19/1998	V	V	V	V	--
11/17/1998	V	V	V	V	--
11/17/1998	V	V	V	V	--
2/25/1999	V	V	V	V	--
6/29/1999	V	V	V	V	--
9/22/1999	V	V	V	V	--
12/8/1999	V	V	V	V	--
3/1/2000	V	V	V	V	--
6/12/2000	V,P	V,P	V,P	V,P	V,P
8/24/2000	V,P	V,P	V,P	V,P	V,P
11/20/2000	V,P	V,P	V,P	V,P	V,P
3/8/2001	V,P	V,P	V,P	V,P	V,P
5/16/2001	V,P	V,P	V,P	V,P	V,P
9/25/2001	V,P	V,P	V,P	V,P	V,P
11/14/2001	V,P	V,P	V,P	V,P	V,P
2/11/2002	V,P	V,P	V,P	V,P	V,P
6/18/2002	V,P	V,P	V,P	V,P	V,P
9/18/2002	V,P	V,P	V,P	V,P	V,P
11/4/2002	V,P	V,P	V,P	V,P	V,P
3/13/2003	V,P	V,P	V,P	V,P	V,P
5/21/2003	V,P	V,P	V,P	V,P	V,P
9/17/2003	V,P	V,P	V,P	V,P	V,P
11/4/2003	V,P	V,P	V,P	V,P	V,P
3/17/2004	V,P	V,P	V,P	V,P	V,P
6/29/2004	V,P	V,P	V,P	V,P	V,P
8/26/2004	V,P	V,P	V,P	V,P	V,P
11/23/2004	--	V,P	V,P,M	--	V,P,M
3/3/2005	--	V,P	V,P,M	--	V,P,M
6/15/2005	--	V,P	V,P,M	--	V,P,M
9/13/2005	--	V,P	V,P,M	--	V,P,M
12/1/2005	--	V,P	V,P,M	--	V,P,M
2/22/2006	--	V,P	V,P,M	--	V,P,M
5/31/2006	--	V,P	V,P,M	--	V,P,M
9/20/2006	--	V,P	V,P,M	--	V,P,M
12/11/2006	--	V,P	V,P,M	--	V,P,M
3/13/2007	--	V,P	V,P,M	--	V,P,M
6/26/2007	--	V,P	V,P,M	--	V,P,M
9/13/2007	--	V,P	V,P,M	--	V,P,M
12/19/2007	--	V,P	V,P,M	--	V,P,M
3/25/2008	--	V,P	V,P,M	--	V,P,M
6/26/2008	--	V,P	V,P,M	--	V,P,M
9/30/2008	--	V,P	V,P,M	--	V,P,M
12/29/2008	--	V,P	V,P,M	--	V,P,M
3/24/2009	--	V	V,M	--	V,M
6/29/2009	--	V	V,M	--	V,M
9/25/2009	--	V	V,M	--	V,M
12/7/2009	--	V	V,M	--	V,M
3/28/2010	--	V	V,M	--	V,M
6/22/2010	--	V	V,M	--	V,M
9/21/2010	--	V	V,M	--	V,M

Notes:
V = volatile organic compounds + tentatively-identified compounds (TICs),
M = metals, P = pesticides/polychlorinated biphenyls (PCBs), dash (--) = not sampled.

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential Direct Contact Soil Remediation Standard (1)	NJDEP Non-Residential Direct Contact Soil Remediation Standard (1)	NJDEP Impact to Groundwater Screening Level (2)	Weston 1995 Background (3)	B-1		B-2		B-3		B-4		B-5		B-6		B-7		B-8		B-9		B-10		B-11	
Sample Date					04/08/98		04/08/98		04/08/98		04/09/98		04/09/98		04/09/98		04/09/98		04/10/98		04/10/98		04/10/98		04/11/98	
Volatile Organic Compounds (VOCs, µg/kg)																										
Lab Sample ID (VOCs only collected at approximately 24 in. bgs)					3465.04		3465.08		3465.12		3470.04		3470.08		3470.12		3470.17		3472.04		3472.08		3472.12		3473.04	
Methylene Chloride	34,000	97,000	10	-	<560		<580		<580		<560		<550		<550		<670		<640		<670		<540		<540	
Benzene	2,000	5,000	5	-	<280		<290		<290		<280		<280		<280		<330		<320		<340		<270		<270	
Tetrachloroethene	2,000	5,000	5	-	<280		<290		<290		<280		<280		<280		<330		<320		<340		<270		<270	
Chloroform	600	2,000	400	-	<280		<290		<290		<280		<280		<280		<330		<320		<340		<270		<270	
Ethylbenzene	7,800,000	110,000,000	13,000	-	<560		<580		<580		<560		<550		<550		<670		<640		<670		<540		<540	
TICs	NLE	NLE	NLE	-	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Semivolatile Organic Compounds (SVOCs, µg/kg)																										
Lab Sample ID (All analyses except VOCs collected at approximately 6-12 in. bgs)					3465.03		3465.07		3465.11		3470.03		3470.07		3470.11		3470.15		3472.03		3472.07		3472.11		3473.03	
Naphthalene	6,000	17,000	25,000	-	<250		<1300		<280		<270		<270		<520		<580		<310		<300		**130**	J	<270	
n-Nitrosodiphenylamine	99,000	390,000	400	-	<190		<1000		<210		<200		<200		<390		<440		<240		<220		<200		<200	
2-Methylnaphthalene	230,000	2,400,000	8,000	-	<280		<1500		<310		<300		<310		<590		<650		<350		**140**	J	**150**	J	<300	
4-Methylphenol	31,000	340,000	NLE	-	<270		<1500		<300		<290		<300		<570		<640		<340		<330		<290		<290	
Acenaphthylene	NLE	3.00E+08	NLE	-	<190		<1000		<220		<210		<210		<410		<460		<250		<240		<210		<210	
Acenaphthene	3,400,000	37,000,000	110,000	-	<180		<950		<200		<190		<200		<380		<420		<220		<210		<190		<190	
Dibenzofuran	NLE	NLE	NLE	-	<190		<1000		<210		<200		<210		<400		<440		<240		<230		<200		<200	
Diethylphthalate	49,000,000	550,000,000	88,000	-	<210		<1100		<230		<220		<230		<440		<480		<260		<250		<220		<220	
Fluorene	2,300,000	24,000,000	170,000	-	<190		<1000		<220		<210		<210		<410		<460		<250		<230		<210		<210	
Phenanthrene	NLE	300,000,000	NLE	-	**160**	J	<1100		<220		<210		**280**		<410		**1700**		**150**	J	**680**		**410**		<210	
Anthracene	17,000,000	30,000,000	2,400,000	-	<200		<1100		<220		<210		<220		<410		**300**		<250		<240		<210		<210	
Dimethylphthalate	NLE	NLE	NLE	-	<150		<820		<170		<260		<170		<320		<360		<190		<190		<170		<170	
Di-n-butylphthalate	6,100,000	68,000,000	760,000	-	**3900**	B	**26000**	BD	**1500**	B	**2100**	B	**7900**	B	**14000**	BD	**16000**	BD	**2000**	B	**5200**	B	**640**	JB	**900**	JB
Fluoranthene	2,300,000	24,000,000	1,300,000	-	**170**	J	<1100		<220		<210		**310**		<420		**2100**		<250		**1100**		**300**		<210	
Pyrene	1,700,000	18,000,000	840,000	-	**280**		<1200		<260		<250		**410**		<490		**1600**		**150**	J	**880**		**440**		<250	
Pyridine	NLE	NLE	NLE	-	<300		<1600		<340		<320		<330		<320		<360		<380		<370		**770**		<330	
Butylbenzylphthalate	1,200,000	14,000,000	230,000	-	<250		<1400		<280		<270		<280		<540		<600		<320		<310		<280		<270	
Benzo(a)anthracene	600	2,000	800	-	**120**	J	<1100		<220		<210		**180**	J	<420		**990**		**360**		**200**	J	**180**	J	<210	
3,3'-Dichlorobenzidine	1,000	4,000	200	-	<350		<1900		<390		<370		<380		<740		<820		<440		<420		<380		<380	
Chrysene	62,000	230,000	80,000	-	**230**	J	<1400		<280		<270		**370**		<540		**1500**		**490**		**280**	J	**410**		<270	
bis(2-Ethylhexyl)phthalate	35,000	140,000	1,200,000	-	**100**	JB	**730**	JBD	**110**	JB	**110**	J	<310		**170**	J	<660		**150**	JB	<340		**180**	JB	**900**	JB
Benzo(b)fluoranthene	600	2,000	2,000	-	<250		<1300		<280		<270		**170**	J	<530		**890**		**160**	J	**600**		**150**	J	<270	
Benzo(k)fluoranthene	6,000	23,000	25,000	-	<180		<990		<210		<200		**150**	J	<390		**860**		<230		**690**		**150**	J	<200	
Benzo(a)pyrene	200	200	200	-	**110**	J	<1000		<210		<200		**170**	J	<400		**820**		**140**	J	**570**		**140**	J	<200	
Indeno(1,2,3-cd)pyrene	600	2,000	7,000	-	<210		<1100		<230		<220		<230		<440		**580**		<260		**390**		<220		<220	
Dibenz(a,h)anthracene	200	200	800	-	<240		<1300		<270		<260		<270		<510		**240**	J	<310		<290		<260		<260	
Benzo(g,h,i)perylene	380,000,000	30,000,000	NLE	-	<240		<1300		<270		<260		<270		<510		**420**	JD	<310		**310**		<260		<260	
Total TICs	NLE	NLE	NLE	-	**4000**		**5500**		**3100**		**7520**		**25460**		**2800**		**2600**		**48400**		**249600**		**8500**		**61100**	
Pesticides / PCBs (mg/kg)																										
Heptachlor	0.1	0.7	0.5	-	<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0007		<0.0006		<0.0006	
Heptachlor Epoxide	0.07	0.3	0.01	-	<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006		<0.0006		<0.0006		<0.0005		<0.0005	
4,4'-DDE	2	9	18	-	<0.0007		**0.001**		**0.001**		**0.001**		<0.0007		<0.0007		<0.0008		**0.006**		**0.021**		<0.0008		<0.0007	
Dieldrin	0.04	0.2	0.003	-	<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0005		<0.0005		<0.0004		<0.0004	
Endrin	23	340	1	-	<0.0006		<0.0006		<0.0007		<0.0006		<0.0006		<0.0006		<0.0007		<0.0007		<0.0007		<0.0007		<0.0006	
4,4'-DDD	3	13	4	-	<0.0014		<0.0014		<0.0015		<0.0014		<0.0014		<0.0014		<0.0015		**0.006**		<0.0016		**0.003**		<0.0014	
Endrin Aldehyde	NLE	NLE	NLE	-	<0.0011		<0.0011		<0.0012		<0.0011		<0.0011		<0.0011		<0.0012		<0.0012		<0.0013		<0.0012		<0.0011	
4,4'-DDT	2	8	11	-	<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0004		**0.01**		<0.0004		**0.006**		<0.0003	
Endosulfan I	470	6,800	4	-	<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006		<0.0006		<0.0006		<0.0005		<0.0005	
Endosulfan II	470	6,800	4	-	**0.008**		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0007		<0.0006		<0.0006	
Endosulfan-Sulfate	470	6,800	2	-	<0.0021		<0.0021		<0.0022		<0.0021		<0.0020		<0.0021		<0.0023		<0.0023		<0.0024		<0.0022		<0.0021	
gamma-Chlordane	0.2	1	0.05	-	<0.0022		<0.0022		<0.0022		<0.0021		<0.0020		<0.0021		<0.0023		<0.0024		<0.0025		<0.0023		<0.0022	
alpha-Chlordane	0.2	1	0.05	-	<0.0022		<0.0022		<0.0022		<0.0021		<0.0020		<0.0021		<0.0023		<0.0024		<0.0025		<0.0023		<0.0022	
Aroclor 1254	0.2	1	0.2	-	<0.1080		<0.1080		<0.1120		<0.1063		<0.1024		<0.1057		<0.1173		<0.1194		<0.1231		<0.1134		<0.1077	

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential Direct Contact Soil Remediation Standard (1)	NJDEP Non-Residential Direct Contact Soil Remediation Standard (1)	NJDEP Impact to Groundwater Screening Level (2)	Weston 1995 Background (3)	B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10	B-11
Sample Date					04/08/98	04/08/98	04/08/98	04/09/98	04/09/98	04/09/98	04/09/98	04/10/98	04/10/98	04/10/98	04/11/98
Metals (mg/kg)															
Aluminum	78,000	NA	6,000	15,200	**4632**	**13450**	**10970**	**10250**	**6368**	**8343**	**13830**	**3691**	**4474**	**9667**	**10420**
Antimony	31	450	6	ND	**0.891**	**2.881**	**1.599**	**1.421**	**1.159**	**0.71**	**2.079**	**0.486**	**1.098**	**1.569**	**2.011**
Arsenic	19	19	19	22.9	**4.12**	**20.13**	**32.33**	**10.22**	**9.054**	**8.85**	**11.54**	**19.98**	**15.98**	**11.87**	**11.44**
Barium	16,000	59,000	2,100	32.3	**13.03**	**32.88**	**30.43**	**21.25**	**40.37**	**18.58**	**116.04**	**31.68**	**58.82**	**23.16**	**23.76**
Beryllium	16	140	0.7	2	**0.4862**	**1.611**	**1.102**	**1.015**	**0.737**	**0.7328**	**1.32**	**0.7184**	**0.4577**	**1.055**	**1.1**
Cadmium	78	78	2	ND	<0.055	**0.201**	**0.1798**	**0.2656**	**0.1551**	**0.0579**	**0.541**	**0.2736**	**0.5314**	**0.1708**	**0.1037**
Calcium	NLE	NLE	NLE	921	**276**	**748.3**	**928.7**	**707.8**	**459.9**	**561.5**	**3956**	**1373**	**1105**	**453**	**555.8**
Chromium	NLE	NLE	NLE	269	**46.4**	**152.8**	**83.07**	**84.62**	**42.42**	**53.53**	**75.63**	**13.02**	**14.93**	**82.74**	**104.3**
Cobalt	1,600	590	90	2.5	**1.692**	**5.048**	**3.708**	**4.383**	**1.834**	**3.863**	**6.127**	**4.926**	**4.535**	**4.224**	**5.456**
Copper	3,100	45,000	11,000	8	**2.887**	**5.284**	**6.87**	**2.717**	**30.09**	**2.421**	**254.1**	**43.77**	**2837**	**14.52**	**6.138**
Iron	NLE	NLE	NLE	55,800	**18680**	**59460**	**41330**	**44130**	**22150**	**30210**	**29220**	**10980**	**9325**	**40700**	**44300**
Lead	400	800	90	19.5	**14.35**	**24.96**	**59.27**	**8.682**	**135.1**	**16.31**	**370.1**	**57.95**	**383.9**	**17.36**	**8.172**
Magnesium	NLE	NLE	NLE	7,230	**623.7**	**1468**	**1548**	**1250**	**1222**	**1051**	**1571**	**373.7**	**423.7**	**1019**	**1049**
Manganese	11,000	5,900	65	90.7	**47.18**	**69.84**	**76.15**	**83.14**	**50.43**	**104.4**	**146**	**30.67**	**484.3**	**97.99**	**86.4**
Mercury	23	65	0.1	ND	**0.018**	**0.084**	**0.949**	<0.011	**0.228**	<0.011	**0.687**	**1.257**	**0.236**	**0.091**	**0.017**
Nickel	1,600	23,000	48	8.4	**5.762**	**18.8**	**11.78**	**12.74**	**6.33**	**10.08**	**16.79**	**1.257**	**10.39**	**12.34**	**17.5**
Potassium	NLE	NLE	NLE	15400	**1412**	**3255**	**4106**	**2577**	**3614**	**2171**	**4423**	**690**	**1241**	**2288**	**2328**
Selenium	390	5,700	11	1.9	<0.330	<0.380	<0.362	<0.330	<0.369	<0.353	<0.363	**0.785**	**1.534**	<0.348	<0.352
Silver	390	5,700	1	1.1	<0.330	<0.380	<0.362	<0.330	<0.369	<0.353	<0.363	<0.412	<0.351	<0.348	<0.352
Sodium	NLE	NLE	NLE	51.6	**39.52**	**37.37**	**66.18**	**95.95**	**124.8**	**109**	**969.8**	**259.8**	**227.5**	**68.42**	**142.9**
Thallium	5	79	3	ND	<0.330	<0.380	<0.362	<0.330	<0.369	<0.353	<0.363	<0.412	<0.351	<0.348	<0.352
Vanadium	78	1,100	NLE	94.1	**53.06**	**200.1**	**103.1**	**115.4**	**37.5**	**76.97**	**76.13**	**24**	**19.41**	**118.7**	**141**
Zinc	23,000	110,000	930	81.4	**36.18**	**90.91**	**71.52**	**62.01**	**58.64**	**44.99**	**178**	**22.14**	**942.9**	**64.9**	**65.8**

Notes:

Historically, there have been up to 318 soil boring locations associated with FTMM-05. This analysis looks at only those boring locations that fall within the footprint of FTMM-05.

(1) New Jersey Department of Environmental Protection (NJDEP) Residential Direct Contact Soil Remediation Standards (RDCSRS) and Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS) (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.
(2) NJDEP Impact to Groundwater (NJDEP guidance document; Nov 2013).
(3) Weston, 1995. Final Site Investigation - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December.
NJDEP criteria for total xylenes are used for xylene isomers (m+p, o).
NJDEP criteria for endrin is used for endrin aldehyde.
NJDEP criteria for 4,4'-DDD and 4,4'-DDT are for total DDD and total DDT, respectively.
There are no NJDEP soil standards for individual PCB Arcolors; the total PCB NJDEP standards were used for individual Arcolors
Dash (--) = only background concentrations for metals are being used as comparison criteria.
B = Analyte detected in both sample and associated laboratory blank.
D = Result from dilution of sample.
DUP = field duplicate sample.
E = Estimated value.
J = Analyte detected between MDL and practical quantitation limit (PQL).
NA = not analyzed.
ND = not detected.
NLE = No limit established.
< = analyte not detected above method detection limit (MDL).
µg/kg = micrograms per kilogram.
mg/kg = milligrams per kilogram.
VOCs = volatile organic compounds.
in. = inches.
bgs = below ground surface.
Detections are bolded.
Shaded cells = concentration exceeds NJDEP Impact to Groundwater Criterion.
Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria.
Shaded cells = concentration exceeds all NJDEP criteria.
Shaded cells = concentration exceeds Weston (1995) background concentration.

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential Direct Contact Soil Remediation Standard [1]	NJDEP Non-Residential Direct Contact Soil Remediation Standard [1]	NJDEP Impact to Groundwater Screening Level [2]	Weston 1995 Background [3]	B-12		B-13		B-14		B-15		B-16		B-17		B-18		B-19		B-20		B-20 Dup		B-21	
Sample Date					04/11/98		04/11/98		04/11/98		04/11/98		04/13/98		04/13/98		04/13/98		04/13/98		04/14/98		04/14/98		04/14/98	
Volatile Organic Compounds (VOCs, µg/kg)																										
Lab Sample ID (VOCs only collected at approximately 24 in. bgs)					3473.08		3473.12		3473.16		3473.20		3477.04		3477.08		3477.12		3477.16		3479.04		3479.16		3479.08	
Methylene Chloride	34,000	97,000	10	-	<550		<550		<520		<650		<730		<790		<710		<560		<530		<540		<520	
Benzene	2,000	5,000	5	-	<270		<270		<260		<320		<360		<400		<350		<280		<260		<270		<260	
Tetrachloroethene	2,000	5,000	5	-	<270		<270		<260		**5000**		<360		<400		<350		<280		<260		<270		<260	
Chloroform	600	2,000	400	-	<270		<270		<260		<320		<360		<400		<350		<280		<260		<270		<260	
Ethylbenzene	7,800,000	110,000,000	13,000	-	<550		<550		<520		<650		<730		<790		<710		<560		<530		<540		<520	
TICs	NLE	NLE	NLE	-	ND		ND		ND		ND		**19200**		**2600**		**5800**		ND		ND		**2800**		ND	
Semivolatile Organic Compounds (SVOCs, µg/kg)																										
Lab Sample ID (All analyses except VOCs collected at approximately 6-12 in. bgs)					3473.07		3473.11		3473.15		3473.19		3477.03		3477.07		3477.11		3477.15		3479.03		3479.15		3479.07	
Naphthalene	6,000	17,000	25,000	-	<280		<260		<280		<1400		<270		**300**		<270		<260		<300		<280		<260	
n-Nitrosodiphenylamine	99,000	390,000	400	-	<210		<190		<210		<1000		<200		<200		<210		<200		<220		<210		<190	
2-Methylnaphthalene	230,000	2,400,000	8,000	-	<310		<290		<310		<1600		<300		**520**		<310		<300		<330		<310		<290	
4-Methylphenol	31,000	340,000	NLE	-	<310		<280		<300		<1500		<290		<300		<300		<290		<320		<300		<280	
Acenaphthylene	NLE	3.00E+08	NLE	-	<220		<200		<220		<1100		<210		<210		<220		<210		<230		<220		<200	
Acenaphthene	3,400,000	37,000,000	110,000	-	<200		<180		<200		<1000		<190		<190		<200		<190		<210		<200		<190	
Dibenzofuran	NLE	NLE	NLE	-	<210		<200		<210		<1100		<200		**160**	J	<210		<200		<230		<210		<200	
Diethylphthalate	49,000,000	550,000,000	88,000	-	<230		<210		<230		<1200		<220		<220		<230		<220		<250		<230		<210	
Fluorene	2,300,000	24,000,000	170,000	-	<220		<200		<220		<1100		<210		<210		<210		<210		<230		<220		<200	
Phenanthrene	NLE	300,000,000	NLE	-	<220		**300**		<220		<1100		**200**	J	**310**		<220		**560**		<230		<220		<200	
Anthracene	17,000,000	30,000,000	2,400,000	-	<220		**290**		<220		<1100		<210		<210		<220		<210		<230		<220		<200	
Dimethylphthalate	NLE	NLE	NLE	-	<170		<160		<170		<860		<170		<170		<170		<160		<180		<170		<160	
Di-n-butylphthalate	6,100,000	68,000,000	760,000	-	**780**	JB	**300**	JB	**330**	JB	**27000**	BD	**820**	JB	**1000**	B	**590**	JB	**660**	JB	**740**	JB	**590**	JB	**750**	JB
Fluoranthene	2,300,000	24,000,000	1,300,000	-	<220		**260**		<220		<1100		**430**		<210		**180**	J	**340**		<240		<220		<210	
Pyrene	1,700,000	18,000,000	840,000	-	<260		**450**		<250		<1300		**420**		<250		**220**	J	**680**		<270		<260		<240	
Pyridine	NLE	NLE	NLE	-	<340		<310		<340		**780**	JD	<330		<330		<340		<320		<360		<340		<320	
Butylbenzylphthalate	1,200,000	14,000,000	230,000	-	<290		<260		<280		<1400		<270		<280		<280		<270		<300		<280		<270	
Benzo(a)anthracene	600	2,000	800	-	<220		**180**	J	<220		<1100		**270**		<220		**250**		**240**		<240		<220		<210	
3,3'-Dichlorobenzidine	1,000	4,000	200	-	<390		<360		<390		<2000		<380		<380		<390		<370		<420		<390		<360	
Chrysene	62,000	230,000	80,000	-	<290		**350**		<280		<1400		**460**		**250**	J	**410**		**440**		<300		<280		<270	
bis(2-Ethylhexyl)phthalate	35,000	140,000	1,200,000	-	**180**	JB	**160**	JB	**170**	JB	<1600		**180**	JB	**250**	JB	**190**	JB	**180**	JB	**400**		**130**	J	**190**	JB
Benzo(b)fluoranthene	600	2,000	2,000	-	<280		**120**	J	<280		<1400		**270**		<270		**410**		**140**	J	<300		<280		<260	
Benzo(k)fluoranthene	6,000	23,000	25,000	-	<210		**140**	J	<210		<1000		**260**		<200		**310**		**150**	J	<220		<210		<190	
Benzo(a)pyrene	200	200	200	-	<210		**150**	J	<210		<1100		**270**		<210		**350**		**170**	J	<230		<210		<200	
Indeno(1,2,3-cd)pyrene	600	2,000	7,000	-	<230		<210		<230		<1200		**200**	J	<230		**270**		**110**	J	<250		<230		<220	
Dibenz(a,h)anthracene	200	200	800	-	<270		<250		<270		<1400		<260		<260		<270		<260		<290		<270		<250	
Benzo(g,h,i)perylene	380,000,000	30,000,000	NLE	-	<270		<250		<270		<1400		**180**	J	<260		**220**	J	**120**	J	<290		<270		<250	
Total TICs	NLE	NLE	NLE	-	**56100**		**39300**		**51500**		ND		**36700**		**39950**		**43300**		**33800**		**35800**		**41850**		**18900**	
Pesticides / PCBs (mg/kg)																										
Heptachlor	0.1	0.7	0.5	-	<0.0006		<0.0006		<0.0006		**0**		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003	
Heptachlor Epoxide	0.07	0.3	0.01	-	<0.0005		<0.0005		<0.0005		**0**		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003	
4,4'-DDE	2	9	18	-	<0.0007		<0.0008		<0.0008		**0**		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		**0.001**		**0.001**	
Dieldrin	0.04	0.2	0.003	-	<0.0004		<0.0004		<0.0004		**0**		<0.0002		<0.0002		<0.0002		<0.0002		<0.0002		<0.0002		<0.0002	
Endrin	23	340	1	-	<0.0006		<0.0007		<0.0007		**0**		<0.0003		<0.0003		<0.0004		<0.0003		<0.0003		<0.0003		<0.0003	
4,4'-DDD	3	13	4	-	<0.0014		<0.0015		<0.0015		<0.001		<0.0007		<0.0007		<0.0008		<0.0007		<0.0007		<0.0007		**0.001**	
Endrin Aldehyde	NLE	NLE	NLE	-	**0.01**		<0.0012		<0.0012		<0.001		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006	
4,4'-DDT	2	8	11	-	<0.0003		<0.0003		<0.0003		**0**		**0.003**		<0.0002		<0.0002		<0.0002		<0.0002		<0.0002		<0.0002	
Endosulfan I	470	6,800	4	-	**0.008**		<0.0005		<0.0005		**0**		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003	
Endosulfan II	470	6,800	4	-	**0.002**		**0.009**		<0.0006		**0**		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003	
Endosulfan-Sulfate	470	6,800	2	-	<0.0021		<0.0022		<0.0022		<0.001		<0.0011		<0.0011		<0.0012		<0.0011		<0.0011		<0.0011		<0.0010	
gamma-Chlordane	0.2	1	0.05	-	<0.0021		<0.0022		<0.0023		<0.010		<0.0011		<0.0011		<0.0012		<0.0011		<0.0011		<0.0011		<0.0011	
alpha-Chlordane	0.2	1	0.05	-	<0.0021		<0.0022		<0.0023		<0.010		<0.0011		<0.0011		<0.0012		<0.0011		<0.0011		<0.0011		<0.0011	
Aroclor 1254	0.2	1	0.2	-	<0.1069		<0.1109		<0.1140		ND		<0.0555		<0.0550		<0.0603		<0.0547		<0.0548		<0.0542		<0.0531	

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential Direct Contact Soil Remediation Standard (1)	NJDEP Non-Residential Direct Contact Soil Remediation Standard (1)	NJDEP Impact to Groundwater Screening Level (2)	Weston 1995 Background (3)	B-12	B-13	B-14	B-15	B-16	B-17	B-18	B-19	B-20	B-20 Dup	B-21
Sample Date					04/11/98	04/11/98	04/11/98	04/11/98	04/13/98	04/13/98	04/13/98	04/13/98	04/14/98	04/14/98	04/14/98
Metals (mg/kg)															
Aluminum	78,000	NA	6,000	15,200	**10180**	**10770**	**10610**	**12770**	**12110**	**2705**	**5034**	**10530**	**12710**	**6500**	**12310**
Antimony	31	450	6	ND	**1.568**	**1.548**	**2.184**	**2.339**	**1.504**	**2.11**	**0.716**	**1.411**	**1.18**	**0.811**	**1.586**
Arsenic	19	19	19	22.9	**11.02**	**13.28**	**12.94**	**14.03**	**12.91**	**7.747**	**10.67**	**1030**	**14.23**	**6.743**	**12.38**
Barium	16,000	59,000	2,100	32.3	**22.06**	**28.75**	**21.51**	**29.59**	**77.62**	**19.8**	**57.41**	**28.22**	**26.01**	**18.78**	**34.1**
Beryllium	16	140	0.7	2	**0.9966**	**1.09**	**1.376**	**1.187**	**1.463**	**0.3558**	**0.5955**	**0.9895**	**1.228**	**0.72**	**1.182**
Cadmium	78	78	2	ND	**0.0837**	**0.0925**	**0.3648**	**0.2357**	**0.3385**	**0.482**	**1.934**	**1.258**	**1.41**	<0.050	<0.059
Calcium	NLE	NLE	NLE	921	**1110**	**1749**	**1224**	**600.2**	**1370**	**746.9**	**1947**	**533.2**	**750.3**	**1079**	**4851**
Chromium	NLE	NLE	NLE	269	**86.63**	**83.47**	**117.3**	**98.72**	**70.59**	**5.603**	**13.86**	**83.08**	**106.7**	**53.19**	**109.2**
Cobalt	1,600	590	90	2.5	**5.389**	**3.82**	**5.631**	**5.412**	**5.138**	**3.41**	**5.639**	**2.785**	**3.228**	**2.142**	**5.048**
Copper	3,100	45,000	11,000	8	**4.719**	**7.043**	**4.11**	**2.605**	**132.3**	**191.4**	**504.4**	**6.488**	**4.663**	**4.971**	**5.5**
Iron	NLE	NLE	NLE	55,800	**39710**	**39530**	**56290**	**47940**	**33680**	**4204**	**8125**	**33280**	**38800**	**19270**	**44760**
Lead	400	800	90	19.5	**9.266**	**32.8**	**8.331**	**8.012**	**288.8**	**1793**	**305.2**	**10.63**	**16.25**	**11.83**	**9.176**
Magnesium	NLE	NLE	NLE	7,230	**1442**	**2317**	**1445**	**1278**	**1392**	**184.9**	**348.8**	**2199**	**3160**	**2083**	**3428**
Manganese	11,000	5,900	65	90.7	**105.6**	**85.88**	**115.4**	**87.25**	**110.8**	**24.55**	**50.34**	**59.32**	**76.21**	**67.71**	**81.37**
Mercury	23	65	0.1	ND	**0.055**	**0.467**	**0.024**	**0.012**	**0.437**	**0.0062**	**0.133**	<0.012	**0.019**	**0.011**	<0.013
Nickel	1,600	23,000	48	8.4	**14.2**	**12.04**	**19.62**	**15.27**	**15.51**	**8.915**	**15.97**	**8.234**	**10.4**	**5.72**	**15.46**
Potassium	NLE	NLE	NLE	15400	**2392**	**4990**	**2466**	**3631**	**3944**	**375.3**	**907.7**	**4763**	**5588**	**4347**	**3221**
Selenium	390	5,700	11	1.9	<0.357	<0.314	<0.358	<0.353	<0.301	**0.438**	**0.78**	<0.295	<0.360	<0.302	<0.351
Silver	390	5,700	1	1.1	<0.357	<0.314	<0.358	<0.353	<0.301	<0.361	**1.519**	<0.295	<0.360	<0.302	<0.351
Sodium	NLE	NLE	NLE	51.6	**66.2**	**67.71**	**79.89**	**83.87**	**248**	**152.2**	**246.7**	**37.78**	**48.64**	**33.37**	**235.5**
Thallium	5	79	3	ND	<0.357	<0.314	<0.358	<0.353	<0.301	<0.361	<0.397	<0.295	<0.360	<0.302	<0.351
Vanadium	78	1,100	NLE	94.1	**120.3**	**104.6**	**166.2**	**146.2**	**90.73**	**10.9**	**17.17**	**66.69**	**67.64**	**34.59**	**135.8**
Zinc	23,000	110,000	930	81.4	**59.62**	**66.81**	**108.8**	**79.64**	**120.7**	**46.07**	**627.4**	**42.6**	**56.35**	**32.86**	**74.92**

Notes:

Historically, there have been up to 318 soil boring locations associated with FTMM-05. This analysis looks at only those boring locations that fall within the footprint of FTMM-05.

(1) New Jersey Department of Environmental Protection (NJDEP) Residential Direct Contact Soil Remediation Standards (RDCSRS) and Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS) (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.
(2) NJDEP Impact to Groundwater (NJDEP guidance document; Nov 2013).
(3) Weston, 1995. Final Site Investigation - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December.
NJDEP criteria for total xylenes are used for xylene isomers (m+p, o).
NJDEP criteria for endrin is used for endrin aldehyde.
NJDEP criteria for 4,4'-DDD and 4,4'-DDT are for total DDD and total DDT, respectively.
There are no NJDEP soil standards for individual PCB Arcolors; the total PCB NJDEP standards were used for individual Arcolors
Dash (--) = only background concentrations for metals are being used as comparison criteria.
B = Analyte detected in both sample and associated laboratory blank.
D = Result from dilution of sample.
DUP = field duplicate sample.
E = Estimated value.
J = Analyte detected between MDL and practical quantitation limit (PQL).
NA = not analyzed.
ND = not detected.
NLE = No limit established.
< = analyte not detected above method detection limit (MDL).
µg/kg = micrograms per kilogram.
mg/kg = milligrams per kilogram.
VOCs = volatile organic compounds.
in. = inches.
bgs = below ground surface.
Detections are bolded.
Shaded cells = concentration exceeds NJDEP Impact to Groundwater Criterion.
Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria.
Shaded cells = concentration exceeds all NJDEP criteria.
Shaded cells = concentration exceeds Weston (1995) background concentration.

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential Direct Contact Soil Remediation Standard (1)	NJDEP Non-Residential Direct Contact Soil Remediation Standard (1)	NJDEP Impact to Groundwater Screening Level (2)	Weston 1995 Background (3)	B-22		B-23		B-24		B-25		B-26		B-27		B-28		B-29		B-30		B-31		B-32	
Sample Date					04/14/98		04/15/98		04/15/98		04/15/98		04/15/98		04/20/98		04/20/98		04/20/98		04/20/98		04/21/98		04/21/98	
Volatile Organic Compounds (VOCs, µg/kg)																										
Lab Sample ID (VOCs only collected at approximately 24 in. bgs)					3479.12		3485.04		3485.08		3485.12		3485.16		3498.04		3498.08		3498.12		3498.16		3500.03		3500.07	
Methylene Chloride	34,000	97,000	10	-	<540		<560		<620		<570		<650		<670		<570		<530		<570		<520		<530	
Benzene	2,000	5,000	5	-	<270		<280		<310		<290		<330		<340		<290		<260		<280		<260		<270	
Tetrachloroethene	2,000	5,000	5	-	<270		**4800**		**3200**		<290		<330		<340		<290		<260		<280		<260		<270	
Chloroform	600	2,000	400	-	<270		<280		<310		<290		<330		<340		<290		<260		<280		<260		<270	
Ethylbenzene	7,800,000	110,000,000	13,000	-	<540		<560		<620		<570		<650		<670		<570		<530		<570		<520		<530	
TICs	NLE	NLE	NLE	-	**2700**		ND		ND		ND		ND		**3800**		ND		ND		ND		ND		ND	
Semivolatile Organic Compounds (SVOCs, µg/kg)																										
Lab Sample ID (All analyses except VOCs collected at approximately 6-12 in. bgs)					3479.11		3485.03		3485.07		3485.11		3485.15		3498.03		3498.07		3498.11		3498.15		3500.02		3500.06	
Naphthalene	6,000	17,000	25,000	-	<250		<270		<250		<280		<280		**170**	J	**130**	J	<260		<270		<1300		<270	
n-Nitrosodiphenylamine	99,000	390,000	400	-	<180		<200		<190		<210		<210		<220		<200		<200		<200		<990		<210	
2-Methylnaphthalene	230,000	2,400,000	8,000	-	<270		<300		<280		<310		<310		**210**	J	**160**	J	<290		<300		<1500		<310	
4-Methylphenol	31,000	340,000	NLE	-	<270		<300		<280		<300		<300		<320		<290		<290		<290		<1400		<300	
Acenaphthylene	NLE	3.00E+08	NLE	-	<190		<210		<200		<220		<220		<230		<210		<210		<210		<1000		<220	
Acenaphthene	3,400,000	37,000,000	110,000	-	<180		<190		<180		<200		<200		<210		<190		<190		<190		<940		<200	
Dibenzofuran	NLE	NLE	NLE	-	<190		<210		<190		<210		<210		<220		<200		<200		<200		<1000		<210	
Diethylphthalate	49,000,000	550,000,000	88,000	-	<200		<230		<210		<230		<230		**200**	JB	<220		**120**	JB	**120**	JB	**150**	J	**140**	J
Fluorene	2,300,000	24,000,000	170,000	-	<190		<210		<200		<220		<220		<230		<210		<200		<210		<1000		<210	
Phenanthrene	NLE	300,000,000	NLE	-	**140**	J	<210		<200		**190**	J	**390**		**1300**		**480**		**150**	J	<210		**130**	J	**170**	J
Anthracene	17,000,000	30,000,000	2,400,000	-	**140**	J	<210		<200		<220		<220		**210**	J	<210		<210		<210		<1000		<220	
Dimethylphthalate	NLE	NLE	NLE	-	<150		<170		<160		<170		<170		<180		<160		<160		<170		<810		<170	
Di-n-butylphthalate	6,100,000	68,000,000	760,000	-	**520**	JB	**11000**	B	**1100**	B	**5700**	B	**4600**	B	**6600**	B	**890**	JB	**1600**	B	**1000**	B	**26000**	BD	**2500**	B
Fluoranthene	2,300,000	24,000,000	1,300,000	-	**150**	J	<220		<200		**330**		**910**		**2800**		**380**		**140**	J	<210		**120**	J	**250**	
Pyrene	1,700,000	18,000,000	840,000	-	**220**	J	<250		<240		**310**		**770**		**2500**		**600**		**240**	J	<250		**190**	J	**270**	
Pyridine	NLE	NLE	NLE	-	<300		<330		<310		<340		<340		<360		<330		<320		<330		<1600		<340	
Butylbenzylphthalate	1,200,000	14,000,000	230,000	-	<250		<280		<260		<290		**120**	J	<300		<270		<270		<270		<270		<280	
Benzo(a)anthracene	600	2,000	800	-	<200		<220		<200		**250**		**540**		**1500**		**230**		<210		<210		<1100		**170**	J
3,3'-Dichlorobenzidine	1,000	4,000	200	-	<350		<380		<360		<390		<390		<410		<380		<370		<380		<1900		<390	
Chrysene	62,000	230,000	80,000	-	**190**	J	<280		<260		**410**		**830**		**2300**		**530**		**190**	J	<270		**150**	J	**300**	
bis(2-Ethylhexyl)phthalate	35,000	140,000	1,200,000	-	**640**		**130**	JB	**510**	B	**230**	JB	**1300**	B	**290**	JB	**140**	JB	**180**	JB	**170**	JB	**130**	JB	**160**	JB
Benzo(b)fluoranthene	600	2,000	2,000	-	<250		<270		<260		**290**		**690**		**1600**		**190**	J	<260		<270		<1300		**160**	J
Benzo(k)fluoranthene	6,000	23,000	25,000	-	<180		<200		<190		**260**		**560**		**1400**		**190**	J	<190		<200		<980		**150**	J
Benzo(a)pyrene	200	200	200	-	<190		<210		<190		**250**		**670**		**1600**		**220**		<200		<200		<1000		**170**	J
Indeno(1,2,3-cd)pyrene	600	2,000	7,000	-	<210		<230		<210		**190**	J	**580**		**1200**		**150**	J	<220		<220		<1100		**120**	J
Dibenz(a,h)anthracene	200	200	800	-	<240		<270		<250		<270		<270		**420**		<260		<260		<260		<1300		<270	
Benzo(g,h,i)perylene	380,000,000	30,000,000	NLE	-	<240		<270		<250		**170**	J	**510**		**950**		**160**	J	<260		<260		<1300		<270	
Total TICs	NLE	NLE	NLE	-	**9900**		**57400**		**47900**		**56800**		**39240**		**48800**		**33500**		**50100**		**54500**		**6500**		**17700**	
Pesticides / PCBs (mg/kg)																										
Heptachlor	0.1	0.7	0.5	-	<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0004		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003	
Heptachlor Epoxide	0.07	0.3	0.01	-	<0.0002		<0.0003		<0.0003		<0.0003		<0.0003		<0.0007		<0.0006		<0.0006		<0.0007		<0.0007		<0.0007	
4,4'-DDE	2	9	18	-	<0.0004		<0.0004		<0.0004		**0.007**		**0.001**		**0.092**		**0.016**		**0.009**		**0.004**		<0.0004		<0.0004	
Dieldrin	0.04	0.2	0.003	-	<0.0002		<0.0002		<0.0002		<0.0002		<0.0002		<0.0006		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005	
Endrin	23	340	1	-	<0.0003		<0.0003		<0.0003		<0.0003		<0.0004		<0.0006		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005	
4,4'-DDD	3	13	4	-	<0.0007		<0.0007		<0.0007		**0.002**		**0.002**		**0.008**		**0.001**		<0.0006		<0.0007		<0.0007		<0.0007	
Endrin Aldehyde	NLE	NLE	NLE	-	<0.0005		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005	
4,4'-DDT	2	8	11	-	<0.0002		<0.0002		<0.0002		**0.015**		**0.001**		**0.03**		**0.004**		**0.001**		<0.0012		<0.0012		<0.0012	
Endosulfan I	470	6,800	4	-	<0.0002		<0.0003		<0.0003		<0.0003		<0.0003		<0.0006		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005	
Endosulfan II	470	6,800	4	-	**0.002**		<0.0003		<0.0003		**0.005**		<0.0003		<0.0005		<0.0004		**0.004**		<0.0004		<0.0004		<0.0004	
Endosulfan-Sulfate	470	6,800	2	-	<0.0010		<0.0011		<0.0011		<0.0011		<0.0012		<0.0005		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004	
gamma-Chlordane	0.2	1	0.05	-	<0.0010		<0.0011		<0.0011		<0.0011		<0.0012		<0.0006		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005	
alpha-Chlordane	0.2	1	0.05	-	<0.0010		<0.0011		<0.0011		<0.0011		<0.0012		<0.0006		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005	
Aroclor 1254	0.2	1	0.2	-	<0.0520		<0.0557		<0.0553		<0.0554		<0.0601		<0.0048		<0.0047		<0.0044		<0.0044		<0.0045		<0.0044	

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential Direct Contact Soil Remediation Standard (1)	NJDEP Non-Residential Direct Contact Soil Remediation Standard (1)	NJDEP Impact to Groundwater Screening Level (2)	Weston 1995 Background (3)	B-22	B-23	B-24	B-25	B-26	B-27	B-28	B-29	B-30	B-31	B-32
Sample Date					04/14/98	04/15/98	04/15/98	04/15/98	04/15/98	04/20/98	04/20/98	04/20/98	04/20/98	04/21/98	04/21/98
Metals (mg/kg)															
Aluminum	78,000	NA	6,000	15,200	**6500**	**10230**	**8798**	**5973**	**3987**	**4737**	**10510**	**3825**	**11450**	**9478**	**9374**
Antimony	31	450	6	ND	**0.811**	**1.933**	**2.019**	**0.535**	**1.402**	**0.609**	**2.536**	**0.562**	**1.41**	**1.835**	**1.035**
Arsenic	19	19	19	22.9	**6.743**	**11.27**	**11.08**	**9.377**	**12.45**	**14.28**	**11.12**	**5.409**	**10.21**	**12.89**	**11.15**
Barium	16,000	59,000	2,100	32.3	**18.78**	**18.63**	**22.06**	**54.85**	**93.31**	**102.3**	**27.13**	**21.8**	**27.58**	**26**	**36.46**
Beryllium	16	140	0.7	2	**0.72**	**1.132**	**1.003**	**0.5943**	**0.5401**	**0.5059**	**1.382**	**0.4842**	**0.9559**	**1.034**	**0.8538**
Cadmium	78	78	2	ND	<0.050	**0.2331**	**0.4323**	**0.5041**	**1.011**	**1.863**	**0.2193**	**0.0786**	**0.1311**	**0.1635**	**0.2132**
Calcium	NLE	NLE	NLE	921	**1079**	**672.4**	**645.4**	**2380**	**1670**	**2181**	**775.9**	**715.5**	**1593**	**705.5**	**1054**
Chromium	NLE	NLE	NLE	269	**53.19**	**106.8**	**92.13**	**43.8**	**24.87**	**25.25**	**141.4**	**28.13**	**78.5**	**102.1**	**70.22**
Cobalt	1,600	590	90	2.5	**2.142**	**3.946**	**4.48**	**3.881**	**3.974**	**3.495**	**3.636**	**0.8424**	**4.455**	**1.878**	**3.774**
Copper	3,100	45,000	11,000	8	**4.971**	**37.2**	**11.34**	**102.8**	**484.1**	**566.7**	**7.552**	**7.933**	**4.673**	**8.222**	**32.05**
Iron	NLE	NLE	NLE	55,800	**19270**	**50900**	**41650**	**23110**	**17000**	**14330**	**51640**	**11250**	**36530**	**39390**	**31220**
Lead	400	800	90	19.5	**11.83**	**17.2**	**10.74**	**207.2**	**921.5**	**708.5**	**21.74**	**39.12**	**10.71**	**34.73**	**70.19**
Magnesium	NLE	NLE	NLE	7,230	**2083**	**1176**	**958.6**	**1409**	**378.7**	**1019**	**1088**	**844.5**	**1847**	**1751**	**1360**
Manganese	11,000	5,900	65	90.7	**67.71**	**74.58**	**86.61**	**104.8**	**97.11**	**73.72**	**52.63**	**39.55**	**87.83**	**38.07**	**123.3**
Mercury	23	65	0.1	ND	**0.011**	<0.012	<0.011	**0.201**	**0.485**	**0.512**	**0.064**	**0.056**	**0.012**	**0.184**	**0.025**
Nickel	1,600	23,000	48	8.4	**5.72**	**13.06**	**12.94**	**10.85**	**13.33**	**10.33**	**11.45**	**3.095**	**12.99**	**8.486**	**12.04**
Potassium	NLE	NLE	NLE	15400	**4347**	**2592**	**1592**	**1725**	**684**	**1454**	**2371**	**1592**	**2876**	**4834**	**3626**
Selenium	390	5,700	11	1.9	<0.302	<0.331	<0.381	<0.305	**0.888**	**0.881**	<0.302	<0.372	<0.365	<0.290	<0.299
Silver	390	5,700	1	1.1	<0.302	<0.331	<0.381	<0.305	**1.574**	**0.419**	<0.302	<0.372	<0.365	<0.290	<0.299
Sodium	NLE	NLE	NLE	51.6	**33.37**	**35.27**	**58.67**	**95.4**	**333.1**	**159.7**	**49.69**	**35.99**	**77.41**	**39.97**	**81.26**
Thallium	5	79	3	ND	<0.302	<0.331	<0.381	<0.305	<0.373	<0.366	<0.302	<0.372	<0.365	<0.290	<0.299
Vanadium	78	1,100	NLE	94.1	**34.59**	**138.4**	**126.7**	**51.98**	**34.2**	**28.86**	**191.7**	**19.39**	**109.7**	**79.23**	**76.03**
Zinc	23,000	110,000	930	81.4	**32.86**	**86.32**	**67.07**	**163.9**	**303.7**	**179.4**	**70.69**	**55.47**	**56.71**	**62.43**	**82.33**

Notes:

Historically, there have been up to 318 soil boring locations associated with FTMM-05. This analysis looks at only those boring locations that fall within the footprint of FTMM-05.

(1) New Jersey Department of Environmental Protection (NJDEP) Residential Direct Contact Soil Remediation Standards (RDCSRS) and Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS) (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.
(2) NJDEP Impact to Groundwater (NJDEP guidance document; Nov 2013).
(3) Weston, 1995. Final Site Investigation - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December.
NJDEP criteria for total xylenes are used for xylene isomers (m+p, o).
NJDEP criteria for endrin is used for endrin aldehyde.
NJDEP criteria for 4,4'-DDD and 4,4'-DDT are for total DDD and total DDT, respectively.
There are no NJDEP soil standards for individual PCB Arcolors; the total PCB NJDEP standards were used for individual Arcolors
Dash (--) = only background concentrations for metals are being used as comparison criteria.
B = Analyte detected in both sample and associated laboratory blank.
D = Result from dilution of sample.
DUP = field duplicate sample.
E = Estimated value.
J = Analyte detected between MDL and practical quantitation limit (PQL).
NA = not analyzed.
ND = not detected.
NLE = No limit established.
< = analyte not detected above method detection limit (MDL).
µg/kg = micrograms per kilogram.
mg/kg = milligrams per kilogram.
VOCs = volatile organic compounds.
in. = inches.
bgs = below ground surface.
Detections are bolded.
Shaded cells = concentration exceeds NJDEP Impact to Groundwater Criterion.
Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria.
Shaded cells = concentration exceeds all NJDEP criteria.
Shaded cells = concentration exceeds Weston (1995) background concentration.

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential Direct Contact Soil Remediation Standard (1)	NJDEP Non-Residential Direct Contact Soil Remediation Standard (1)	NJDEP Impact to Groundwater Screening Level (2)	Weston 1995 Background (3)	B-33		B-34		B-35		B-36		B-37		B-38		B-39		B-40		B-41		B-42		B-43	
Sample Date					04/21/98		04/21/98		04/21/98		04/22/98		04/22/98		04/22/98		04/22/98		04/22/98		05/01/98		05/01/98		05/04/98	
Volatile Organic Compounds (VOCs, µg/kg)																										
Lab Sample ID (VOCs only collected at approximately 24 in. bgs)					3500.11		3500.15		3500.19		3501.03		3501.07		3501.11		3501.15		3501.19		3539.03		3539.07		3543.03	
Methylene Chloride	34,000	97,000	10	-	<620		<890		<680		<520		<520		<690		<570		<630		<680		<580		<630	
Benzene	2,000	5,000	5	-	<310		<450		<340		<260		<260		<340		<280		<320		<340		<290		<310	
Tetrachloroethene	2,000	5,000	5	-	<310		<450		<340		<260		<260		**410**		<280		**3100**		<340		<290		<310	
Chloroform	600	2,000	400	-	<310		<450		<340		<260		<260		<340		<280		<320		<340		<290		<310	
Ethylbenzene	7,800,000	110,000,000	13,000	-	<620		<890		<680		<520		<520		<690		<570		<630		<680		<580		<630	
TICs	NLE	NLE	NLE	-	ND		ND		ND		ND		ND		ND		ND		ND		**22700**		ND		ND	
Semivolatile Organic Compounds (SVOCs, µg/kg)																										
Lab Sample ID (All analyses except VOCs collected at approximately 6-12 in. bgs)					3500.10		3500.14		3500.18		3501.02		3501.06		3501.10		3501.14		3501.18		3539.02		3539.06		3543.02	
Naphthalene	6,000	17,000	25,000	-	<270		<280		<260		<250		<250		<270		<1300		<260		**180**	J	**310**		<310	
n-Nitrosodiphenylamine	99,000	390,000	400	-	<200		<210		<200		<190		<190		<200		<990		<190		<210		<200		<230	
2-Methylnaphthalene	230,000	2,400,000	8,000	-	**110**	J	<310		**120**	J	<280		<280		<310		<1500		<290		**260**	J	**260**	J	<350	
4-Methylphenol	31,000	340,000	NLE	-	<290		<300		<290		<280		<270		<300		<1400		<280		<300		<290		<340	
Acenaphthylene	NLE	3.00E+08	NLE	-	<210		<220		<210		<200		<200		<210		<1000		<200		<220		<210		<240	
Acenaphthene	3,400,000	37,000,000	110,000	-	<190		<200		<190		<180		<180		<200		<940		<190		<200		<190		<220	
Dibenzofuran	NLE	NLE	NLE	-	<200		<210		<200		<190		<190		<210		<1000		<200		<210		<200		<240	
Diethylphthalate	49,000,000	550,000,000	88,000	-	**300**		**180**	J	<220		<210		<210		<230		<1100		<220		<230		<220		<260	
Fluorene	2,300,000	24,000,000	170,000	-	<210		<220		<200		<200		<200		<210		<1000		<200		<210		<210		<240	
Phenanthrene	NLE	300,000,000	NLE	-	**350**		**280**		**670**		**210**		<200		<220		<1000		<210		**350**		**640**		<250	
Anthracene	17,000,000	30,000,000	2,400,000	-	<210		<220		<210		<200		<200		<220		<1000		<210		<220		<210		<250	
Dimethylphthalate	NLE	NLE	NLE	-	<170		<170		<160		<160		<160		<170		<810		<160		<170		<170		<190	
Di-n-butylphthalate	6,100,000	68,000,000	760,000	-	**1000**	B	**1400**	B	**6800**	B	**3300**	B	**4700**	B	**6100**	B	**35000**	BD	**4200**	B	**1100**	B	**800**	JB	**400**	JB
Fluoranthene	2,300,000	24,000,000	1,300,000	-	**550**		**570**		**1300**		**220**		<200		<220		<1000		<210		**340**		**1300**		<250	
Pyrene	1,700,000	18,000,000	840,000	-	**520**		**460**		**1100**		**330**		<230		<250		<1200		<240		**310**		**960**		<290	
Pyridine	NLE	NLE	NLE	-	<330		<340		<320		<310		<310		<330		<1600		<320		<340		<330		<380	
Butylbenzylphthalate	1,200,000	14,000,000	230,000	-	<280		<290		<270		<260		<260		<280		<1400		<270		<280		<280		<320	
Benzo(a)anthracene	600	2,000	800	-	**320**		**350**		**690**		**140**	J	<200		<220		<1100		<210		**150**	J	**650**		<250	
3,3'-Dichlorobenzidine	1,000	4,000	200	-	<380		<390		<370		<350		<350		<380		<1900		<370		<390		<380		<440	
Chrysene	62,000	230,000	80,000	-	**600**		**570**		**1200**		**280**		<260		<280		<1400		<270		**410**		**980**		**130**	J
bis(2-Ethylhexyl)phthalate	35,000	140,000	1,200,000	-	**150**	JB	**360**	B	**130**	JB	**130**	JB	**130**	JB	**150**	JB	<1500		<290		**150**	JB	<300		<350	
Benzo(b)fluoranthene	600	2,000	2,000	-	**350**		**420**		**840**		**110**	J	<250		<270		<1300		<260		**250**	J	**720**		<310	
Benzo(k)fluoranthene	6,000	23,000	25,000	-	**360**		**340**		**700**		**120**	J	<190		<200		<980		<190		**180**	J	**590**		<230	
Benzo(a)pyrene	200	200	200	-	**370**		**390**		**720**		**120**	J	<190		<210		<1000		<200		**160**	J	**670**		<240	
Indeno(1,2,3-cd)pyrene	600	2,000	7,000	-	**260**		**300**		**490**		<210		<210		<230		<1100		<220		**130**	J	**580**		<260	
Dibenz(a,h)anthracene	200	200	800	-	<260		<270		**200**	J	<250		<250		<270		<1300		<250		<270		**200**	J	<300	
Benzo(g,h,i)perylene	380,000,000	30,000,000	NLE	-	**230**	J	**250**	J	**400**		<250		<250		<270		<1300		<250		**120**	J	**500**		<300	
Total TICs	NLE	NLE	NLE	-	**11560**		**32020**		**5920**		**6000**		**7100**		**7300**		ND		**5800**		**19190**		**19310**		**12400**	
Pesticides / PCBs (mg/kg)																										
Heptachlor	0.1	0.7	0.5	-	<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0004	
Heptachlor Epoxide	0.07	0.3	0.01	-	<0.0007		<0.0007		<0.0006		<0.0006		<0.0006		<0.0006		<0.0007		<0.0007		<0.0006		<0.0007		<0.0007	
4,4'-DDE	2	9	18	-	**0.037**		**0.009**		**0.153**		**0.003**		<0.0004		**0**		<0.0005		**0.001**		**0.028**		**0.007**		<0.0005	
Dieldrin	0.04	0.2	0.003	-	<0.0006		<0.0006		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006		<0.0006		<0.0005		<0.0006		<0.0006	
Endrin	23	340	1	-	<0.0006		<0.0006		**0.023**		<0.0005		<0.0005		<0.0005		<0.0006		<0.0006		<0.0005		<0.0006		<0.0006	
4,4'-DDD	3	13	4	-	**0.003**		<0.0007		**0.02**		**0.001**		<0.0006		<0.0006		<0.0007		**0.001**		**0.003**		**0.003**		<0.0007	
Endrin Aldehyde	NLE	NLE	NLE	-	<0.0006		<0.0006		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006		<0.0006		<0.0005		<0.0006		<0.0006	
4,4'-DDT	2	8	11	-	**0.02**		**0.003**		**0.051**		**0.006**		<0.0011		<0.0012		<0.0012		**0.003**		**0.044**		**0.033**		<0.0013	
Endosulfan I	470	6,800	4	-	<0.0006		<0.0006		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006		<0.0006		<0.0005		<0.0006		<0.0006	
Endosulfan II	470	6,800	4	-	<0.0004		<0.0004		**0.01**		<0.0004		<0.0004		<0.0004		<0.0005		<0.0004		<0.0004		**0.004**		<0.0005	
Endosulfan-Sulfate	470	6,800	2	-	<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0005		<0.0004		<0.0004		<0.0004		<0.0005	
gamma-Chlordane	0.2	1	0.05	-	<0.0006		<0.0006		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006		<0.0006		<0.0005		<0.0006		<0.0006	
alpha-Chlordane	0.2	1	0.05	-	<0.0006		<0.0006		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006		<0.0006		<0.0005		<0.0006		<0.0006	
Aroclor 1254	0.2	1	0.2	-	<0.0044		<0.0045		<0.0042		<0.0042		<0.0042		<0.0043		<0.0045		<0.0045		<0.0043		<0.0045		<0.0048	

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential Direct Contact Soil Remediation Standard (1)	NJDEP Non-Residential Direct Contact Soil Remediation Standard (1)	NJDEP Impact to Groundwater Screening Level (2)	Weston 1995 Background (3)	B-33	B-34	B-35	B-36	B-37	B-38	B-39	B-40	B-41	B-42	B-43
Sample Date					04/21/98	04/21/98	04/21/98	04/22/98	04/22/98	04/22/98	04/22/98	04/22/98	05/01/98	05/01/98	05/04/98
Metals (mg/kg)															
Aluminum	78,000	NA	6,000	15,200	**5404**	**6652**	**12810**	**8275**	**10070**	**9616**	**9833**	**7769**	**6479**	**3951**	**6390**
Antimony	31	450	6	ND	**1.754**	**2.403**	**5.962**	**0.964**	**1.965**	**1.819**	**1.916**	**1.55**	**1.413**	**1.104**	<0.280
Arsenic	19	19	19	22.9	**32.71**	**13.11**	**62.27**	**9.445**	**10.42**	**9.688**	**13.1**	**10.04**	**12.52**	**8.959**	**4.218**
Barium	16,000	59,000	2,100	32.3	**150**	**203.9**	**354.6**	**22.98**	**24.73**	**26.09**	**30.29**	**20**	**107.8**	**181.9**	**258.9**
Beryllium	16	140	0.7	2	**0.6234**	**0.689**	**10.89**	**0.8057**	**1.032**	**1.058**	**1.159**	**0.8691**	**0.759**	**0.4586**	**0.764**
Cadmium	78	78	2	ND	**2.087**	**1.975**	**7.431**	**0.5596**	**0.1855**	**0.2547**	**0.1541**	**0.1502**	**0.959**	**0.489**	<0.070
Calcium	NLE	NLE	NLE	921	**4974**	**3063**	**2477**	**635.6**	**1015**	**839**	**612.5**	**577.6**	**2137**	**962.9**	**1200**
Chromium	NLE	NLE	NLE	269	**38.59**	**44.4**	**72.25**	**61.12**	**96.84**	**99.42**	**106.1**	**83.34**	**56.36**	**36.34**	**21.06**
Cobalt	1,600	590	90	2.5	**5.207**	**5.537**	**55.97**	**3.707**	**4.522**	**4.232**	**4.975**	**4.022**	**4.604**	**4.035**	**5.369**
Copper	3,100	45,000	11,000	8	**409.3**	**428**	**442.8**	**8.111**	**3.796**	**3.185**	**3.559**	**1.854**	**412.9**	**207.3**	**38.4**
Iron	NLE	NLE	NLE	55,800	**32440**	**23380**	**13500**	**29820**	**43400**	**42240**	**49440**	**36490**	**27420**	**21350**	**8584**
Lead	400	800	90	19.5	**810.3**	**1090**	**2851**	**16.68**	**8.622**	**8.58**	**10.66**	**5.945**	**629.1**	**502.5**	**39.9**
Magnesium	NLE	NLE	NLE	7,230	**2213**	**878.7**	**1112**	**1019**	**1311**	**1022**	**899.6**	**789.1**	**1009**	**485**	**331.2**
Manganese	11,000	5,900	65	90.7	**179.6**	**153.2**	**174.9**	**76.98**	**103.8**	**85.25**	**110.2**	**86.79**	**193.3**	**102.6**	**68.44**
Mercury	23	65	0.1	ND	**0.979**	**0.662**	**1.562**	**0.059**	**0.025**	**0.014**	**0.037**	**0.013**	**0.891**	**0.754**	**0.085**
Nickel	1,600	23,000	48	8.4	**18.98**	**22.35**	**69.97**	**10.12**	**14.97**	**15.78**	**15.84**	**10.83**	**19.73**	**10.93**	**13.84**
Potassium	NLE	NLE	NLE	15400	**1348**	**1615**	**3185**	**2115**	**2342**	**1607**	**1726**	**1611**	**1890**	**864.1**	**525.2**
Selenium	390	5,700	11	1.9	**0.602**	**1.104**	**50.7**	**0.584**	<0.347	<0.341	<0.376	<0.320	**0.627**	**0.859**	**1.417**
Silver	390	5,700	1	1.1	**2.78**	**3.345**	**9.425**	<0.353	<0.347	<0.341	<0.376	<0.320	**0.945**	<0.357	**2.362**
Sodium	NLE	NLE	NLE	51.6	**245.1**	**186.7**	**343.3**	**38.72**	**40.28**	**45.41**	**62.79**	**32.38**	**154.9**	**103.4**	**216.8**
Thallium	5	79	3	ND	<0.377	<0.380	**47.42**	<0.353	<0.347	<0.341	<0.376	<0.320	<0.363	<0.357	<0.420
Vanadium	78	1,100	NLE	94.1	**44.85**	**52.39**	**84.39**	**84.38**	**131.4**	**139**	**159.7**	**103.5**	**59.51**	**43.68**	**20.79**
Zinc	23,000	110,000	930	81.4	**743**	**828**	**658.1**	**45.25**	**64.17**	**70.04**	**71.88**	**58.82**	**433.1**	**250.3**	**48.22**

Notes:

Historically, there have been up to 318 soil boring locations associated with FTMM-05. This analysis looks at only those boring locations that fall within the footprint of FTMM-05.

(1) New Jersey Department of Environmental Protection (NJDEP) Residential Direct Contact Soil Remediation Standards (RDCSRS) and Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS) (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.
(2) NJDEP Impact to Groundwater (NJDEP guidance document; Nov 2013).
(3) Weston, 1995. Final Site Investigation - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December.
NJDEP criteria for total xylenes are used for xylene isomers (m+p, o).
NJDEP criteria for endrin is used for endrin aldehyde.
NJDEP criteria for 4,4'-DDD and 4,4'-DDT are for total DDD and total DDT, respectively.
There are no NJDEP soil standards for individual PCB Arcolors; the total PCB NJDEP standards were used for individual Arcolors
Dash (--) = only background concentrations for metals are being used as comparison criteria.
B = Analyte detected in both sample and associated laboratory blank.
D = Result from dilution of sample.
DUP = field duplicate sample.
E = Estimated value.
J = Analyte detected between MDL and practical quantitation limit (PQL).
NA = not analyzed.
ND = not detected.
NLE = No limit established.
< = analyte not detected above method detection limit (MDL).
µg/kg = micrograms per kilogram.
mg/kg = milligrams per kilogram.
VOCs = volatile organic compounds.
in. = inches.
bgs = below ground surface.
Detections are bolded.
Shaded cells = concentration exceeds NJDEP Impact to Groundwater Criterion.
Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria.
Shaded cells = concentration exceeds all NJDEP criteria.
Shaded cells = concentration exceeds Weston (1995) background concentration.

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential Direct Contact Soil Remediation Standard [1]	NJDEP Non-Residential Direct Contact Soil Remediation Standard [1]	NJDEP Impact to Groundwater Screening Level [2]	Weston 1995 Background [3]	B-43 Dup		B-44		B-45		B-46		B-47		B-48		B-49		B-50		B-51		B-52		B-53	
Sample Date					05/04/98		05/04/98		05/04/98		05/04/98		05/05/98		05/05/98		05/05/98		05/05/98		05/05/98		05/06/98		05/06/98	
Volatile Organic Compounds (VOCs, µg/kg)																										
Lab Sample ID (VOCs only collected at approximately 24 in. bgs)					3543.19		3543.07		3543.11		3543.15		3547.03		3547.07		3547.11		3547.15		3547.19		3550.04		3550.08	
Methylene Chloride	34,000	97,000	10	-	<640		<690		<650		<680		<510		<530		<540		<540		<560		<620		<540	
Benzene	2,000	5,000	5	-	<320		<340		<330		<340		<250		<270		<270		<270		<280		<310		<270	
Tetrachloroethene	2,000	5,000	5	-	<320		<340		<330		**450**		<250		<270		<270		<270		<280		<310		<270	
Chloroform	600	2,000	400	-	<320		<340		<330		<340		<250		<270		<270		<270		<280		<310		<270	
Ethylbenzene	7,800,000	110,000,000	13,000	-	<640		<690		<650		<680		<510		<530		<540		<540		<560		<620		<540	
TICs	NLE	NLE	NLE	-	ND		ND		**1800**		**1500**		ND		**2300**		**14500**		**7600**		ND		ND		**37700**	
Semivolatile Organic Compounds (SVOCs, µg/kg)																										
Lab Sample ID (All analyses except VOCs collected at approximately 6-12 in. bgs)					3543.18		3543.06		3543.10		3543.14		3547.02		3547.06		3547.10		3547.14		3547.18		3550.03		3550.07	
Naphthalene	6,000	17,000	25,000	-	<310		**190**	J	<250		<260		<240		<260		<270		<260		<260		<260		<250	
n-Nitrosodiphenylamine	99,000	390,000	400	-	<230		<210		<190		<190		<180		<190		<200		<200		<200		<190		<190	
2-Methylnaphthalene	230,000	2,400,000	8,000	-	<350		**160**	J	<280		<290		<270		<290		<300		<290		<300		<290		<280	
4-Methylphenol	31,000	340,000	NLE	-	<340		<310		<280		**160**	J	<270		<280		<300		<290		<290		<280		<270	
Acenaphthylene	NLE	3.00E+08	NLE	-	<250		<220		<200		<200		<190		<200		<210		<200		<210		<200		<200	
Acenaphthene	3,400,000	37,000,000	110,000	-	<220		<200		<180		<180		<170		<180		<200		<190		<190		<190		<180	
Dibenzofuran	NLE	NLE	NLE	-	<240		<220		<190		<200		<190		<190		<210		<200		<200		<200		<190	
Diethylphthalate	49,000,000	550,000,000	88,000	-	<260		<240		<210		<210		**110**	JB	<210		<230		<220		<220		<220		<210	
Fluorene	2,300,000	24,000,000	170,000	-	<240		<220		<200		<200		<190		<200		<210		<200		<210		<200		<190	
Phenanthrene	NLE	300,000,000	NLE	-	**140**	J	**1300**		**300**		**320**		<190		<200		<220		<210		**140**	J	**110**	J	**240**	
Anthracene	17,000,000	30,000,000	2,400,000	-	<250		**190**	J	<200		<200		<190		<200		<220		<210		**130**	J	<200		**240**	
Dimethylphthalate	NLE	NLE	NLE	-	<190		<180		<160		<160		<150		<160		<170		<160		<160		<160		<150	
Di-n-butylphthalate	6,100,000	68,000,000	760,000	-	**870**	JB	**370**	JB	**290**	JB	**1000**	B	**960**	B	**630**	JB	**490**	JB	**260**	JB	**910**	B	<880		**350**	JB
Fluoranthene	2,300,000	24,000,000	1,300,000	-	**180**	J	**2800**		**710**		**560**		<190		**120**	J	<220		**170**	J	**160**	J	<210		**260**	
Pyrene	1,700,000	18,000,000	840,000	-	**140**	J	**2500**		**700**		**530**		<230		<240		<250		**130**	J	**230**	J	**170**	J	**410**	
Pyridine	NLE	NLE	NLE	-	<380		<350		<310		<320		<300		<310		**580**		<320		<320		<320		<310	
Butylbenzylphthalate	1,200,000	14,000,000	230,000	-	<320		<290		<260		<260		<250		<260		<280		<270		<270		<270		<260	
Benzo(a)anthracene	600	2,000	800	-	<250		**1500**		**440**		**310**		<200		<210		<220		<210		<210		<210		**190**	J
3,3'-Dichlorobenzidine	1,000	4,000	200	-	<440		<400		<360		<360		<340		<360				<370		<370		<360		<350	
Chrysene	62,000	230,000	80,000	-	**130**	J	**2400**		**690**		**510**		<250		<260		<280		**130**	J	**180**	J	**140**	J	**370**	
bis(2-Ethylhexyl)phthalate	35,000	140,000	1,200,000	-	<350		<320		<290		**2900**	B	<280		<290		**140**	J	**120**	J	**140**	J	<290		<280	
Benzo(b)fluoranthene	600	2,000	2,000	-	<310		**1600**		**480**		**330**		<240		<260		<270		<260		<270		<260		**110**	J
Benzo(k)fluoranthene	6,000	23,000	25,000	-	<230		**1500**		**470**		**350**		<180		<190		<200		<190		<200		<190		**140**	J
Benzo(a)pyrene	200	200	200	-	<240		**1600**		**500**		**360**		<190		<200		<210		<200		<200		<200		**170**	J
Indeno(1,2,3-cd)pyrene	600	2,000	7,000	-	<260		**1300**		**470**		**310**		<200		<210		<230		<220		<220		<220		**110**	J
Dibenz(a,h)anthracene	200	200	800	-	<310		**470**		**160**	J	<250		<240		<250		<270		<260		<260		<250		<240	
Benzo(g,h,i)perylene	380,000,000	30,000,000	NLE	-	<310		**1200**		**420**		**280**		<240		<250		<270		<260		<260		<250		**110**	J
Total TICs	NLE	NLE	NLE	-	**15700**		**26870**		**12290**		**60570**		**13020**		**40900**		ND		**49200**		**28000**		**14200**		**28900**	
Pesticides / PCBs (mg/kg)																										
Heptachlor	0.1	0.7	0.5	-	<0.0004		<0.0004		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003	
Heptachlor Epoxide	0.07	0.3	0.01	-	<0.0008		<0.0007		<0.0007		<0.0007		<0.0002		<0.0002		<0.0003		<0.0002		<0.0003		<0.0007		<0.0006	
4,4'-DDE	2	9	18	-	<0.0005		<0.0005		**0.084**		**0.052**		**0.004**		<0.0003		<0.0004		**0.004**		<0.0004		<0.0004		**0.027**	
Dieldrin	0.04	0.2	0.003	-	<0.0006		<0.0006		<0.0006		<0.0006		<0.0002		<0.0002		<0.0002		<0.0002		<0.0002		<0.0006		<0.0005	
Endrin	23	340	1	-	<0.0006		<0.0006		<0.0006		<0.0006		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0006		<0.0005	
4,4'-DDD	3	13	4	-	<0.0008		<0.0007		**0.007**		**0.008**		<0.0007		<0.0007		**0.001**		**0.001**		<0.0007		<0.0007		<0.0006	
Endrin Aldehyde	NLE	NLE	NLE	-	<0.0006		<0.0006		<0.0006		<0.0006		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006		<0.0006		<0.0005	
4,4'-DDT	2	8	11	-	<0.0014		<0.0013		**0.105**		**0.075**		**0.004**		<0.0002		<0.0002		**0.01**		<0.0002		<0.0012		<0.0012	
Endosulfan I	470	6,800	4	-	<0.0006		<0.0006		<0.0006		<0.0006		<0.0002		<0.0002		<0.0003		<0.0002		<0.0003		<0.0006		<0.0005	
Endosulfan II	470	6,800	4	-	<0.0005		<0.0005		<0.0004		<0.0005		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		**0.013**		**0.019**	
Endosulfan-Sulfate	470	6,800	2	-	<0.0005		<0.0005		<0.0004		<0.0005		<0.0010		<0.0010		<0.0010		<0.0010		<0.0011		<0.0004		<0.0004	
gamma-Chlordane	0.2	1	0.05	-	<0.0006		<0.0006		<0.0006		<0.0006		<0.0010		<0.0010		<0.0010		<0.0010		<0.0011		<0.0006		<0.0005	
alpha-Chlordane	0.2	1	0.05	-	<0.0006		<0.0006		<0.0006		<0.0006		<0.0010		<0.0010		<0.0010		<0.0010		<0.0011		<0.0006		<0.0005	
Aroclor 1254	0.2	1	0.2	-	<0.0050		<0.0048		<0.0045		<0.0045		<0.0502		<0.0500		<0.0524		<0.0501		<0.0547		<0.0044		<0.0042	

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential Direct Contact Soil Remediation Standard (1)	NJDEP Non-Residential Direct Contact Soil Remediation Standard (1)	NJDEP Impact to Groundwater Screening Level (2)	Weston 1995 Background (3)	B-43 Dup	B-44	B-45	B-46	B-47	B-48	B-49	B-50	B-51	B-52	B-53
Sample Date					05/04/98	05/04/98	05/04/98	05/04/98	05/05/98	05/05/98	05/05/98	05/05/98	05/05/98	05/06/98	05/06/98
Metals (mg/kg)															
Aluminum	78,000	NA	6,000	15,200	**4159**	**8077**	**1961**	**4464**	**1986**	**3363**	**4876**	**3699**	**8596**	**8267**	**4460**
Antimony	31	450	6	ND	**0.732**	**1.203**	**0.382**	**0.639**	**0.388**	**0.95**	**0.791**	**0.497**	**1.713**	**1.263**	**0.547**
Arsenic	19	19	19	22.9	**9.162**	**11.66**	**2.255**	**8.122**	**1.719**	**8.626**	**12.79**	**3.172**	**27.93**	**14.36**	**4.293**
Barium	16,000	59,000	2,100	32.3	**105.3**	**513.9**	**16.6**	**69.01**	**10.23**	**113.8**	**76.99**	**16.51**	**27.23**	**29.54**	**25.47**
Beryllium	16	140	0.7	2	**0.565**	**0.8622**	**0.166**	**0.4403**	**10.23**	**0.4112**	**0.6963**	**0.7032**	**1.108**	**0.9403**	**0.412**
Cadmium	78	78	2	ND	**2.775**	**0.6777**	**0.4876**	**0.9829**	<0.054	**0.2786**	**0.1114**	<0.051	**0.1293**	<0.068	<0.064
Calcium	NLE	NLE	NLE	921	**1607**	**2670**	**10360**	**2705**	**277**	**933.3**	**1111**	**476.2**	**943.5**	**664.1**	**452.9**
Chromium	NLE	NLE	NLE	269	**11.39**	**70.59**	**17.96**	**36.61**	**21.36**	**23.73**	**52.57**	**30.82**	**108.5**	**87.14**	**31.37**
Cobalt	1,600	590	90	2.5	**3.668**	**2.42**	**1.223**	**2.495**	**0.3853**	**2.388**	**1.731**	**0.3871**	**3.129**	**6.072**	**1.335**
Copper	3,100	45,000	11,000	8	**55.16**	**346.7**	**28.23**	**262.8**	**2.913**	**532.4**	**60.76**	**4.304**	**7.103**	**15.39**	**17.84**
Iron	NLE	NLE	NLE	55,800	**9241**	**21940**	**6391**	**18840**	**7617**	**20580**	**22280**	**10500**	**47660**	**40040**	**10340**
Lead	400	800	90	19.5	**165.5**	**275.5**	**228.1**	**273.5**	**8.632**	**845.1**	**226.7**	**6.099**	**40.53**	**55.83**	**22.07**
Magnesium	NLE	NLE	NLE	7,230	**318.6**	**2943**	**5665**	**928.1**	**534.1**	**574.5**	**1066**	**602.6**	**963.9**	**1089**	**698.6**
Manganese	11,000	5,900	65	90.7	**185.6**	**84.22**	**52.05**	**725.6**	**10.21**	**107.1**	**71.47**	**20.24**	**65.67**	**153.5**	**74.62**
Mercury	23	65	0.1	ND	**0.389**	**0.164**	**10.194**	**5.04**	**0.039**	**0.51**	**5.141**	**0.074**	**0.225**	**0.588**	**0.037**
Nickel	1,600	23,000	48	8.4	**9.258**	**13.28**	**4.67**	**7.3**	**2.299**	**7.715**	**6.521**	**3.713**	**12.48**	**11.51**	**2.826**
Potassium	NLE	NLE	NLE	15400	**379.1**	**3791**	**722.3**	**1955**	**1048**	**1422**	**2485**	**918.9**	**2085**	**2466**	**1529**
Selenium	390	5,700	11	1.9	**0.996**	**0.473**	<0.359	<0.361	**0.372**	**0.4**	<0.401	<0.303	<0.397	<0.408	<0.383
Silver	390	5,700	1	1.1	**0.564**	**0.993**	<0.359	**0.512**	<0.326	**1.123**	<0.401	<0.303	<0.397	<0.408	<0.383
Sodium	NLE	NLE	NLE	51.6	**870.9**	**221.4**	**174.2**	**312.4**	**144.3**	**96.56**	**71.52**	**266.9**	**393.3**	**52.66**	**40.01**
Thallium	5	79	3	ND	<0.433	<0.358	<0.359	<0.361	<0.326	<0.314	<0.401	<0.303	<0.397	<0.408	<0.383
Vanadium	78	1,100	NLE	94.1	**15.84**	**30.96**	**14.38**	**33.38**	**16.22**	**17.18**	**39.23**	**26.17**	**126.4**	**79.15**	**18.81**
Zinc	23,000	110,000	930	81.4	**75.11**	**1598**	**62.64**	**1809**	**46.14**	**209.5**	**100.6**	**49.56**	**68.26**	**91.96**	**35.88**

Notes:

Historically, there have been up to 318 soil boring locations associated with FTMM-05. This analysis looks at only those boring locations that fall within the footprint of FTMM-05.

(1) New Jersey Department of Environmental Protection (NJDEP) Residential Direct Contact Soil Remediation Standards (RDCSRS) and Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS) (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.
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(3) Weston, 1995. Final Site Investigation - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December.
NJDEP criteria for total xylenes are used for xylene isomers (m+p, o).
NJDEP criteria for endrin is used for endrin aldehyde.
NJDEP criteria for 4,4'-DDD and 4,4'-DDT are for total DDD and total DDT, respectively.
There are no NJDEP soil standards for individual PCB Arcolors; the total PCB NJDEP standards were used for individual Arcolors
Dash (--) = only background concentrations for metals are being used as comparison criteria.
B = Analyte detected in both sample and associated laboratory blank.
D = Result from dilution of sample.
DUP = field duplicate sample.
E = Estimated value.
J = Analyte detected between MDL and practical quantitation limit (PQL).
NA = not analyzed.
ND = not detected.
NLE = No limit established.
< = analyte not detected above method detection limit (MDL).
µg/kg = micrograms per kilogram.
mg/kg = milligrams per kilogram.
VOCs = volatile organic compounds.
in. = inches.
bgs = below ground surface.
Detections are bolded.
Shaded cells = concentration exceeds NJDEP Impact to Groundwater Criterion.
Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria.
Shaded cells = concentration exceeds all NJDEP criteria.
Shaded cells = concentration exceeds Weston (1995) background concentration.

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential Direct Contact Soil Remediation Standard [1]	NJDEP Non-Residential Direct Contact Soil Remediation Standard [1]	NJDEP Impact to Groundwater Screening Level [2]	Weston 1995 Background [3]	B-54		B-55		B-56		B-57		B-58		B-59		B-60		B-60 Dup		B-61		B-62		B-63	
Sample Date					05/06/98		05/06/98		05/11/98		05/11/98		05/11/98		05/11/98		05/14/98		05/14/98		05/14/98		05/14/98		05/14/98	
Volatile Organic Compounds (VOCs, µg/kg)																										
Lab Sample ID (VOCs only collected at approximately 24 in. bgs)					3550.12		3550.16		3561.03		3561.07		3561.11		3561.15		3567.03		3567.24		3567.07		3567.11		3567.15	
Methylene Chloride	34,000	97,000	10	-	<580		<620		<640		<720		<560		<530		<550		<540		<540		<560		<520	
Benzene	2,000	5,000	5	-	<290		<310		<320		<360		<280		<270		<270		<270		<270		<280		<260	
Tetrachloroethene	2,000	5,000	5	-	<290		<310		<320		<360		<280		<270		<270		<270		<270		<280		<260	
Chloroform	600	2,000	400	-	<290		<310		<320		<360		<280		<270		<270		<270		<270		<280		<260	
Ethylbenzene	7,800,000	110,000,000	13,000	-	<580		<620		<640		<720		<560		<530		<550		<540		<540		<560		<520	
TICs	NLE	NLE	NLE	-	ND		ND		ND		ND		ND		ND		**1700**		**9100**		ND		ND		ND	
Semivolatile Organic Compounds (SVOCs, µg/kg)																										
Lab Sample ID (All analyses except VOCs collected at approximately 6-12 in. bgs)					3550.11		3550.15		3561.02		3561.06		3561.10		3561.14		3567.02		3567.23		3567.06		3567.10		3567.14	
Naphthalene	6,000	17,000	25,000	-	<260		<280		<280		<270		<260		<270		<280		<260		<270		<270		<260	
n-Nitrosodiphenylamine	99,000	390,000	400	-	<190		<210		<210		<200		<190		<210		<210		<190		<200		<200		<190	
2-Methylnaphthalene	230,000	2,400,000	8,000	-	<290		<310		<310		<300		<290		<310		<310		<290		<300		<300		<290	
4-Methylphenol	31,000	340,000	NLE	-	<280		<300		<300		<290		<280		<300		<300		<280		<300		<300		<280	
Acenaphthylene	NLE	3.00E+08	NLE	-	<200		<220		<220		<210		<200		<220		<220		<200		<210		<210		**140**	J
Acenaphthene	3,400,000	37,000,000	110,000	-	<190		<200		<200		<190		<180		<200		<200		<180		<190		<190		<180	
Dibenzofuran	NLE	NLE	NLE	-	<200		<210		<210		<210		<200		<210		<210		<200		<210		<210		<200	
Diethylphthalate	49,000,000	550,000,000	88,000	-	<220		<230		<230		<220		<210		<230		<230		<210		<230		<230		<210	
Fluorene	2,300,000	24,000,000	170,000	-	<200		<220		<220		<210		<200		<210		<220		<200		<210		<210		<200	
Phenanthrene	NLE	300,000,000	NLE	-	**110**	J	<220		<220		**250**		<200		<220		**440**		<200		<210		<210		**540**	
Anthracene	17,000,000	30,000,000	2,400,000	-	<200		<220		<220		<210		<200		<220		<220		<200		<210		<210		<200	
Dimethylphthalate	NLE	NLE	NLE	-	<160		<170		<170		<170		<160		<170		<170		<160		<170		<170		<160	
Di-n-butylphthalate	6,100,000	68,000,000	760,000	-	**1600**	B	**900**	JB	**360**	JB	**570**	JB	**970**	B	**430**	JB	**610**	JB	**1300**	B	**880**	JB	**450**	JB	**380**	JB
Fluoranthene	2,300,000	24,000,000	1,300,000	-	**160**	J	<220		<220		**300**		<200		**140**	J	**710**		<200		**140**	J	<220		**890**	
Pyrene	1,700,000	18,000,000	840,000	-	**240**		<260		<260		**450**		<240		**120**	J	**530**		<240		**150**	J	<250		**1300**	
Pyridine	NLE	NLE	NLE	-	<320		**420**		<340		<330		<310		<340		<340		<320		<330		<330		<310	
Butylbenzylphthalate	1,200,000	14,000,000	230,000	-	<270		<290		<280		<280		<260		<280		<280		<260		<280		<280		<260	
Benzo(a)anthracene	600	2,000	800	-	**170**	J	<220		<220		**210**	J	<210		<220		**280**		<210		<220		<220		**560**	
3,3'-Dichlorobenzidine	1,000	4,000	200	-	<360		<390		<390		<380		<360		<390		<390		<360		<380		<380		<360	
Chrysene	62,000	230,000	80,000	-	**230**	J	<290		<280		**290**		<260		<280		**300**		<260		**130**	J	<280		**880**	
bis(2-Ethylhexyl)phthalate	35,000	140,000	1,200,000	-	**220**	J	**130**	J	<310		**140**	J	**200**	J	<310		**200**	JB	**270**	JB	**220**	JB	**110**	JB	**210**	JB
Benzo(b)fluoranthene	600	2,000	2,000	-	<260		<280		<280		<270		<260		<280		**220**	J	<260		<270		<270		**410**	
Benzo(k)fluoranthene	6,000	23,000	25,000	-	**110**	J	<210		<210		**130**	J	<190		<200		**240**		<190		<200		<200		**520**	
Benzo(a)pyrene	200	200	200	-	**110**	J	<210		<210		**150**	J	<200		<210		**260**		<200		<210		<210		**580**	
Indeno(1,2,3-cd)pyrene	600	2,000	7,000	-	<220		<230		<230		<220		<210		<230		**180**	J	<210		<230		<230		**370**	
Dibenz(a,h)anthracene	200	200	800	-	<250		<270		<270		<260		<250		<270		<270		<250		<270		<270		<250	
Benzo(g,h,i)perylene	380,000,000	30,000,000	NLE	-	<250		<270		<270		<260		<250		<270		**170**	J	<250		<270		<270		**440**	
Total TICs	NLE	NLE	NLE	-	**40500**		**9400**		**15300**		**34700**		**16400**		**9580**		**50710**		**38600**		**25130**		**6900**		**14940**	
Pesticides / PCBs (mg/kg)																										
Heptachlor	0.1	0.7	0.5	-	<0.0003		<0.0003		<0.0004		<0.0003		<0.0003		**0.014**		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003	
Heptachlor Epoxide	0.07	0.3	0.01	-	<0.0006		<0.0006		<0.0007		<0.0006		<0.0006		**0.261**		<0.0007		<0.0006		<0.0007		<0.0007		<0.0007	
4,4'-DDE	2	9	18	-	**0.009**		**0.006**		**0.227**		**0.039**		**0.004**		**2.058**		**0.003**		**0.002**		**0.005**		**0.001**		**0.007**	
Dieldrin	0.04	0.2	0.003	-	<0.0005		<0.0005		<0.0006		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005		<0.0006		<0.0006		<0.0006	
Endrin	23	340	1	-	<0.0005		<0.0005		<0.0006		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005		<0.0006		<0.0006		<0.0006	
4,4'-DDD	3	13	4	-	**0.019**		**0.002**		<0.0007		<0.0006		<0.0006		**2.68**		<0.0007		<0.0006		<0.0007		<0.0007		<0.0007	
Endrin Aldehyde	NLE	NLE	NLE	-	<0.0005		<0.0005		<0.0006		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005		<0.0006		<0.0006		<0.0006	
4,4'-DDT	2	8	11	-	**0.092**		**0.012**		**0.17**		**0.06**		**0.007**		**11.182**		**0.002**		<0.0012		**0.007**		<0.0012		**0.01**	
Endosulfan I	470	6,800	4	-	<0.0005		<0.0005		<0.0006		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005		<0.0006		<0.0006		<0.0006	
Endosulfan II	470	6,800	4	-	<0.0004		<0.0004		<0.0005		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004	
Endosulfan-Sulfate	470	6,800	2	-	<0.0004		<0.0004		<0.0005		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004	
gamma-Chlordane	0.2	1	0.05	-	<0.0005		<0.0005		<0.0006		<0.0005		<0.0005		**0.577**		<0.0006		<0.0005		<0.0006		<0.0006		<0.0006	
alpha-Chlordane	0.2	1	0.05	-	<0.0005		<0.0005		<0.0006		<0.0005		<0.0005		**0.409**		<0.0006		<0.0005		<0.0006		<0.0006		<0.0006	
Aroclor 1254	0.2	1	0.2	-	<0.0041		<0.0043		<0.0048		<0.0043		<0.0041		<0.0043		<0.0045		<0.0042		<0.0045		<0.0045		<0.0044	

TABLE 4.1
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SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential Direct Contact Soil Remediation Standard (1)	NJDEP Non-Residential Direct Contact Soil Remediation Standard (1)	NJDEP Impact to Groundwater Screening Level (2)	Weston 1995 Background (3)	B-54	B-55	B-56	B-57	B-58	B-59	B-60	B-60 Dup	B-61	B-62	B-63
Sample Date					05/06/98	05/06/98	05/11/98	05/11/98	05/11/98	05/11/98	05/14/98	05/14/98	05/14/98	05/14/98	05/14/98
Metals (mg/kg)															
Aluminum	78,000	NA	6,000	15,200	**6246**	**7988**	**11380**	**10290**	**1884**	**2975**	**13190**	**3373**	**9246**	**5436**	**7195**
Antimony	31	450	6	ND	**1.532**	**1.149**	**1.246**	**1.868**	**0.326**	**0.48**	**1.266**	**0.739**	**0.86**	**0.921**	**1.01**
Arsenic	19	19	19	22.9	**147.5**	**10.36**	**16.81**	**14.94**	**1.201**	**7.456**	**10.76**	**3.77**	**7.677**	**5.493**	**8.63**
Barium	16,000	59,000	2,100	32.3	**14.72**	**101.2**	**44.19**	**88.58**	**5.948**	**27.13**	**34.64**	**11.22**	**21.61**	**18.86**	**111.8**
Beryllium	16	140	0.7	2	**0.7216**	**0.9041**	**1.233**	**0.9952**	**0.3044**	**0.3715**	**1.496**	**0.4787**	**1.056**	**0.6189**	**0.8207**
Cadmium	78	78	2	ND	<0.063	<0.066	<0.069	**0.2176**	**0.1125**	**0.2638**	<0.062	<0.057	<0.051	**0.7023**	**0.2273**
Calcium	NLE	NLE	NLE	921	**440.1**	**950.6**	**1662**	**1169**	**152.9**	**400.1**	**1188**	**91.75**	**491.6**	**181.1**	**1930**
Chromium	NLE	NLE	NLE	269	**81.6**	**58.97**	**90.25**	**78.52**	**14.29**	**18.99**	**100.1**	**37.19**	**82.22**	**49.99**	**57.85**
Cobalt	1,600	590	90	2.5	**0.8229**	**2.301**	**2.645**	**4.073**	**0.2267**	**1.23**	**2.967**	**0.057**	**1.778**	**0.5732**	**1.54**
Copper	3,100	45,000	11,000	8	**6.733**	**14.76**	**15.96**	**83.51**	**3.742**	**9.851**	**5.622**	**3.553**	**3.459**	**20.54**	**50.68**
Iron	NLE	NLE	NLE	55,800	**30770**	**24580**	**32850**	**34590**	**5510**	**7582**	**36290**	**12740**	**26710**	**15460**	**22510**
Lead	400	800	90	19.5	**14.64**	**45.25**	**108.8**	**2379**	**8.725**	**71.13**	**10.39**	**34.32**	**9.338**	**94.89**	**673.7**
Magnesium	NLE	NLE	NLE	7,230	**2093**	**2144**	**3720**	**1506**	**335.4**	**664.8**	**3941**	**498.5**	**2704**	**948.3**	**1648**
Manganese	11,000	5,900	65	90.7	**30.56**	**147.5**	**76.07**	**118.1**	**5.243**	**21.19**	**95.3**	**9.593**	**47.43**	**18.48**	**144**
Mercury	23	65	0.1	ND	**0.036**	**0.213**	**0.9**	**0.459**	**0.039**	**17.584**	**0.671**	**0.104**	**0.058**	**0.161**	**0.115**
Nickel	1,600	23,000	48	8.4	**3.717**	**7.104**	**8.858**	**13.31**	**1.59**	**4.389**	**7.747**	**2.124**	**5.302**	**3.305**	**8.803**
Potassium	NLE	NLE	NLE	15400	**6333**	**5418**	**7138**	**4203**	**460.3**	**1084**	**7084**	**839.2**	**5398**	**2311**	**3715**
Selenium	390	5,700	11	1.9	**0.599**	<0.397	<0.411	<0.373	<0.352	<0.371	<0.369	<0.341	<0.307	<0.337	<0.315
Silver	390	5,700	1	1.1	<0.377	<0.397	<0.411	<0.373	<0.352	<0.371	<0.369	<0.341	<0.307	<0.337	<0.315
Sodium	NLE	NLE	NLE	51.6	**229.7**	**159.4**	**71.89**	**110.9**	**25.7**	**57.27**	**81.7**	**7.482**	**49.79**	**51.48**	**439.1**
Thallium	5	79	3	ND	<0.377	<0.397	<0.411	<0.373	<0.352	<0.371	<0.369	<0.341	<0.307	<0.337	<0.315
Vanadium	78	1,100	NLE	94.1	**32.76**	**29.63**	**42.8**	**82.13**	**13.82**	**18.5**	**44.53**	**33.17**	**37.72**	**39.39**	**27.81**
Zinc	23,000	110,000	930	81.4	**28.84**	**58.2**	**81.92**	**178.4**	**26.47**	**73.37**	**59.43**	**20.2**	**41.41**	**32.25**	**338.9**

Notes:

Historically, there have been up to 318 soil boring locations associated with FTMM-05. This analysis looks at only those boring locations that fall within the footprint of FTMM-05.

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NJDEP criteria for 4,4'-DDD and 4,4'-DDT are for total DDD and total DDT, respectively.
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Detections are bolded.
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Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria.
Shaded cells = concentration exceeds all NJDEP criteria.
Shaded cells = concentration exceeds Weston (1995) background concentration.

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential Direct Contact Soil Remediation Standard [1]	NJDEP Non-Residential Direct Contact Soil Remediation Standard [1]	NJDEP Impact to Groundwater Screening Level [2]	Weston 1995 Background [3]	B-64		B-65		B-66		B-67		B-68		B-69		B-70		B-71		B-72		B-73		B-74	
Sample Date					05/14/98		05/15/98		05/15/98		05/15/98		05/15/98		05/15/98		05/18/98		05/18/98		05/18/98		05/18/98		05/19/98	
Volatile Organic Compounds (VOCs, µg/kg)																										
Lab Sample ID (VOCs only collected at approximately 24 in. bgs)					3567.20		3571.03		3571.07		3571.11		3571.14		3571.18		3576.03		3576.07		3576.11		3576.15		3580.03	
Methylene Chloride	34,000	97,000	10	-	<530		<540		<540		<540		<650		<600		<600		<540		<550		<570		<540	
Benzene	2,000	5,000	5	-	<270		<270		<270		<270		<320		<300		<300		<270		<280		<280		<270	
Tetrachloroethene	2,000	5,000	5	-	<270		<270		<270		<270		**1600**		<300		<300		<270		<280		<280		<270	
Chloroform	600	2,000	400	-	<270		<270		<270		<270		<320		<300		<300		<270		<280		<280		<270	
Ethylbenzene	7,800,000	110,000,000	13,000	-	<530		<540		<540		<540		<650		<600		<600		<540		<550		<570		<540	
TICs	NLE	NLE	NLE	-	ND		ND		ND		ND		ND		ND		**25000**		**1700**		ND		ND		ND	
Semivolatile Organic Compounds (SVOCs, µg/kg)																										
Lab Sample ID (All analyses except VOCs collected at approximately 6-12 in. bgs)					3567.19		3571.02		3571.06		3571.10		3571.13		3571.17		3576.02		3576.06		3576.10		3576.14		3580.02	
Naphthalene	6,000	17,000	25,000	-	<290		<270		<260		<280		<260		**120**	J	<260		**220**	J	**220**	J	<260		<250	
n-Nitrosodiphenylamine	99,000	390,000	400	-	<220		<200		<190		<210		<200		<200		<200		<200		<200		<190		<190	
2-Methylnaphthalene	230,000	2,400,000	8,000	-	<330		<300		<290		<310		<290		**140**	J	<290		**260**	J	**230**	J	<290		<290	
4-Methylphenol	31,000	340,000	NLE	-	<320		<290		<280		<300		<290		<290		<290		<290		<300		<280		<280	
Acenaphthylene	NLE	3.00E+08	NLE	-	**150**	J	<210		<200		**190**	J	<210		<210		<210		**740**		<210		<200		<200	
Acenaphthene	3,400,000	37,000,000	110,000	-	<210		<190		<190		<200		<190		<190		<190		**180**	J	<200		<180		<180	
Dibenzofuran	NLE	NLE	NLE	-	<220		<200		<200		<210		<200		<200		<200		<200		<210		<200		<190	
Diethylphthalate	49,000,000	550,000,000	88,000	-	<240		<220		<210		<230		<220		<220		<220		<220		<230		<210		<210	
Fluorene	2,300,000	24,000,000	170,000	-	<230		<210		<200		<220		<200		<210		<200		**460**		<210		<200		<200	
Phenanthrene	NLE	300,000,000	NLE	-	**1100**		<210		<200		**1500**		**170**	J	**950**		<210		**3800**		**1200**		**250**		**120**	J
Anthracene	17,000,000	30,000,000	2,400,000	-	<230		<210		<200		<220		<210		**150**	J	<210		**740**		**130**	J	<200		<200	
Dimethylphthalate	NLE	NLE	NLE	-	<180		<160		<160		<170		<160		<160		<160		<160		<170		<160		<160	
Di-n-butylphthalate	6,100,000	68,000,000	760,000	-	**820**	JB	**210**	JB	**590**	JB	**250**	JB	**180**	JB	**220**	JB	**540**	JB	**1000**	B	**820**	JB	**510**	JB	**320**	JB
Fluoranthene	2,300,000	24,000,000	1,300,000	-	**1200**		<210		**170**	J	**1200**		**140**	J	**1500**		<210		**4500**		**2300**		**330**		**130**	J
Pyrene	1,700,000	18,000,000	840,000	-	**2200**		<250		**150**	J	**2100**		**200**	J	**1300**		<240		**6400**		**2200**		**560**		**170**	J
Pyridine	NLE	NLE	NLE	-	<360		<330		<320		<340		<320		<320		<320		<330		<330		<310		<310	
Butylbenzylphthalate	1,200,000	14,000,000	230,000	-	<300		<270		<270		<280		<270		<270		<270		<270		<280		<260		<260	
Benzo(a)anthracene	600	2,000	800	-	**660**		<210		<210		**760**		<210		**700**		<210		**3100**		**970**		**240**		<200	
3,3'-Dichlorobenzidine	1,000	4,000	200	-	<410		<380		<360		<390		<370		<370		<370		<380		<380		<360		<360	
Chrysene	62,000	230,000	80,000	-	**1500**		<270		**120**	J	**1200**		**180**	J	**970**		<270		**5000**		**1700**		**430**		**120**	J
bis(2-Ethylhexyl)phthalate	35,000	140,000	1,200,000	-	**280**	JB	<300		**120**	JB	<310		<300		**110**	JB	<300		<300		<310		<290		<290	
Benzo(b)fluoranthene	600	2,000	2,000	-	**560**		<270		**110**	J	**410**		<260		**740**		<260		**2400**		**1200**		**210**	J	<260	
Benzo(k)fluoranthene	6,000	23,000	25,000	-	**560**		<200		**110**	J	**530**		<190		**700**		<190		**2400**		**1200**		**230**		<190	
Benzo(a)pyrene	200	200	200	-	**660**		<200		**120**	J	**720**		<200		**720**		<200		**3000**		**1100**		**260**		<200	
Indeno(1,2,3-cd)pyrene	600	2,000	7,000	-	**440**		<220		<220		**430**		<220		**470**		<220		**1900**		**760**		<210		<210	
Dibenz(a,h)anthracene	200	200	800	-	<290		<260		<250		<270		<260		<260		<260		**1000**		<270		<250		<250	
Benzo(g,h,i)perylene	380,000,000	30,000,000	NLE	-	**540**		<260		<250		**530**		<260		**450**		<260		**2300**		**770**		**220**	J	<250	
Total TICs	NLE	NLE	NLE	-	**52760**		**9100**		**9050**		**12520**		**8600**		**11750**		**9300**		**45860**		**16580**		**11170**		**6200**	
Pesticides / PCBs (mg/kg)																										
Heptachlor	0.1	0.7	0.5	-	<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003	
Heptachlor Epoxide	0.07	0.3	0.01	-	<0.0007		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006	
4,4'-DDE	2	9	18	-	**1.184**		**0.002**		<0.0004		<0.0004		**0.041**		**0.069**		**0.001**		**0.103**		**0.087**		**0.005**		**0.009**	
Dieldrin	0.04	0.2	0.003	-	<0.0006		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005	
Endrin	23	340	1	-	<0.0006		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005	
4,4'-DDD	3	13	4	-	**0.196**		<0.0006		<0.0006		<0.0006		<0.0006		**0.038**		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006	
Endrin Aldehyde	NLE	NLE	NLE	-	<0.0006		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005	
4,4'-DDT	2	8	11	-	**0.532**		**0.002**		<0.0012		<0.0012		**0.069**		**0.287**		**0.002**		**0.104**		**0.072**		**0.005**		**0.01**	
Endosulfan I	470	6,800	4	-	<0.0006		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005	
Endosulfan II	470	6,800	4	-	<0.0005		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004	
Endosulfan-Sulfate	470	6,800	2	-	<0.0005		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004	
gamma-Chlordane	0.2	1	0.05	-	<0.0006		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005	
alpha-Chlordane	0.2	1	0.05	-	<0.0006		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005	
Aroclor 1254	0.2	1	0.2	-	<0.0047		<0.0042		<0.0042		<0.0043		<0.0043		<0.0043		<0.0043		<0.0043		<0.0042		<0.0042		<0.0043	

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential Direct Contact Soil Remediation Standard (1)	NJDEP Non-Residential Direct Contact Soil Remediation Standard (1)	NJDEP Impact to Groundwater Screening Level (2)	Weston 1995 Background (3)	B-64	B-65	B-66	B-67	B-68	B-69	B-70	B-71	B-72	B-73	B-74
Sample Date					05/14/98	05/15/98	05/15/98	05/15/98	05/15/98	05/15/98	05/18/98	05/18/98	05/18/98	05/18/98	05/19/98
Metals (mg/kg)															
Aluminum	78,000	NA	6,000	15,200	**15670**	**8058**	**3044**	**7248**	**6761**	**7952**	**11120**	**9388**	**8881**	**8643**	**2868**
Antimony	31	450	6	ND	**1.059**	**0.997**	**0.443**	**0.35**	**1.209**	**1.305**	**1.249**	**0.789**	**0.724**	**1.158**	**0.57**
Arsenic	19	19	19	22.9	**14.6**	**7.83**	**3.083**	**7.19**	**11.44**	**10.21**	**10.11**	**9.62**	**8.338**	**7.981**	**4.511**
Barium	16,000	59,000	2,100	32.3	**52.75**	**28.5**	**21.9**	**15.88**	**44.56**	**125.5**	**25.88**	**51.51**	**58.95**	**25.84**	**12.69**
Beryllium	16	140	0.7	2	**1.179**	**0.8404**	**0.4444**	**0.604**	**0.8332**	**0.8544**	**1.128**	**0.9041**	**0.6764**	**0.867**	**0.4361**
Cadmium	78	78	2	ND	<0.065	<0.055	<0.059	<0.057	**0.1382**	**1.154**	<0.056	<0.057	**0.1899**	<0.056	<0.061
Calcium	NLE	NLE	NLE	921	**969**	**744.4**	**266.5**	**518.3**	**1209**	**1407**	**586.5**	**1169**	**1570**	**691**	**327.2**
Chromium	NLE	NLE	NLE	269	**81.95**	**68.44**	**23.91**	**42.72**	**57.83**	**51.07**	**114.5**	**77.94**	**46.85**	**85.23**	**27.92**
Cobalt	1,600	590	90	2.5	**4.367**	**3.136**	**0.5376**	**2.701**	**4.179**	**5.826**	**4.8**	**3.255**	**3.326**	**5.769**	**0.7721**
Copper	3,100	45,000	11,000	8	**8.773**	**5.669**	**7.449**	**3.409**	**42.05**	**1544**	**2.028**	**39.85**	**46.73**	**6.715**	**5.597**
Iron	NLE	NLE	NLE	55,800	**34010**	**29740**	**8577**	**25900**	**27790**	**27860**	**47050**	**33340**	**17160**	**34570**	**10120**
Lead	400	800	90	19.5	**20.2**	**30.1**	**37.51**	**9.825**	**90.71**	**852.3**	**11.87**	**122.6**	**58.5**	**75.52**	**18.46**
Magnesium	NLE	NLE	NLE	7,230	**2740**	**1237**	**710.2**	**895.3**	**730.7**	**817.3**	**1074**	**1435**	**1940**	**941**	**664.5**
Manganese	11,000	5,900	65	90.7	**175.4**	**76.07**	**29.05**	**79.87**	**54.71**	**195.3**	**103.5**	**76.53**	**89.7**	**168.8**	**30.3**
Mercury	23	65	0.1	ND	**0.17**	**0.074**	**0.088**	**0.0068**	**0.268**	<0.044	<0.024	**0.079**	**0.115**	**0.053**	**0.041**
Nickel	1,600	23,000	48	8.4	**13.41**	**9.24**	**2.565**	**7.65**	**10.39**	**17.71**	**16.38**	**10.52**	**8.935**	**11.23**	**2.749**
Potassium	NLE	NLE	NLE	15400	**5202**	**3399**	**1602**	**1460**	**1202**	**1922**	**2684**	**3817**	**4607**	**2201**	**1340**
Selenium	390	5,700	11	1.9	<0.389	<0.329	<0.356	<0.340	<0.366	<0.328	<0.336	<0.340	<0.335	<0.339	<0.366
Silver	390	5,700	1	1.1	<0.389	<0.329	<0.356	<0.340	<0.366	**1.082**	<0.336	<0.340	<0.335	<0.339	<0.366
Sodium	NLE	NLE	NLE	51.6	**287.7**	**56.68**	**11.9**	**43.74**	**72.72**	**175.9**	**92.7**	**92.75**	**262.7**	**62.74**	**61.08**
Thallium	5	79	3	ND	<0.389	<0.329	<0.356	<0.340	<0.366	<0.328	<0.336	<0.340	<0.335	<0.339	<0.366
Vanadium	78	1,100	NLE	94.1	**74.48**	**74.42**	**14.64**	**56.21**	**74.83**	**52.52**	**148.9**	**82.7**	**34.6**	**101.9**	**22.17**
Zinc	23,000	110,000	930	81.4	**73.04**	**55.34**	**43.34**	**42.07**	**49.92**	**455**	**81.93**	**117.6**	**123.4**	**104.7**	**25.57**

Notes:

Historically, there have been up to 318 soil boring locations associated with FTMM-05. This analysis looks at only those boring locations that fall within the footprint of FTMM-05.

(1) New Jersey Department of Environmental Protection (NJDEP) Residential Direct Contact Soil Remediation Standards (RDCSRS) and Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS) (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.
(2) NJDEP Impact to Groundwater (NJDEP guidance document; Nov 2013).
(3) Weston, 1995. Final Site Investigation - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December.
NJDEP criteria for total xylenes are used for xylene isomers (m+p, o).
NJDEP criteria for endrin is used for endrin aldehyde.
NJDEP criteria for 4,4'-DDD and 4,4'-DDT are for total DDD and total DDT, respectively.
There are no NJDEP soil standards for individual PCB Arcolors; the total PCB NJDEP standards were used for individual Arcolors
Dash (--) = only background concentrations for metals are being used as comparison criteria.
B = Analyte detected in both sample and associated laboratory blank.
D = Result from dilution of sample.
DUP = field duplicate sample.
E = Estimated value.
J = Analyte detected between MDL and practical quantitation limit (PQL).
NA = not analyzed.
ND = not detected.
NLE = No limit established.
< = analyte not detected above method detection limit (MDL).
µg/kg = micrograms per kilogram.
mg/kg = milligrams per kilogram.
VOCs = volatile organic compounds.
in. = inches.
bgs = below ground surface.
Detections are bolded.
Shaded cells = concentration exceeds NJDEP Impact to Groundwater Criterion.
Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria.
Shaded cells = concentration exceeds all NJDEP criteria.
Shaded cells = concentration exceeds Weston (1995) background concentration.

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential Direct Contact Soil Remediation Standard [1]	NJDEP Non-Residential Direct Contact Soil Remediation Standard [1]	NJDEP Impact to Groundwater Screening Level [2]	Weston 1995 Background [3]	B-75		B-76		B-77		B-78		B-79		B-80		B-80 Dup		B-81		B-82		B-83		B-84	
Sample Date					05/19/98		05/19/98		05/19/98		05/19/98		05/19/98		05/19/98		05/19/98		05/19/98		05/19/98		05/19/98		05/20/98	
Volatile Organic Compounds (VOCs, µg/kg)																										
Lab Sample ID (VOCs only collected at approximately 24 in. bgs)					3580.06		3580.09		3580.12		3580.15		3580.19		3580.23		3580.39		3580.27		3580.31		3580.35		3584.03	
Methylene Chloride	34,000	97,000	10	-	<530		<580		<730		<560		<580		<560		<570		<560		<540		<510		<510	
Benzene	2,000	5,000	5	-	<270		<290		<370		<280		<290		<280		<290		<280		<270		<250		<260	
Tetrachloroethene	2,000	5,000	5	-	<270		**770**		<370		<280		<290		<280		<290		<280		<270		<250		<260	
Chloroform	600	2,000	400	-	<270		<290		<370		<280		<290		<280		<290		<280		<270		<250		<260	
Ethylbenzene	7,800,000	110,000,000	13,000	-	<530		<580		<730		<560		<580		<560		<570		<560		<540		<510		<510	
TICs	NLE	NLE	NLE	-	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Semivolatile Organic Compounds (SVOCs, µg/kg)																										
Lab Sample ID (All analyses except VOCs collected at approximately 6-12 in. bgs)					3580.05		3580.08		3580.11		3580.14		3580.18		3580.22		3580.38		3580.26		3580.30		3580.34		3584.02	
Naphthalene	6,000	17,000	25,000	-	<250		<240		<270		<250		<270		<270		<280		**400**		<250		<240		**2300**	
n-Nitrosodiphenylamine	99,000	390,000	400	-	<180		<180		<200		<190		<200		<200		<210		**150**	J	<180		<180		<190	
2-Methylnaphthalene	230,000	2,400,000	8,000	-	<270		<270		<300		<280		<300		<300		<320		**660**		<280		<270		**4900**	
4-Methylphenol	31,000	340,000	NLE	-	<270		<270		<300		<280		<300		<290		<310		<270		<270		<270		<280	
Acenaphthylene	NLE	3.00E+08	NLE	-	<190		<190		<210		<200		<210		<210		<220		**110**	J	<190		<190		**4400**	
Acenaphthene	3,400,000	37,000,000	110,000	-	<180		<180		<190		<180		<190		<190		<200		<180		<180		<170		**1900**	
Dibenzofuran	NLE	NLE	NLE	-	<190		<190		<210		<190		<210		<210		<220		**250**		<190		<190		**540**	
Diethylphthalate	49,000,000	550,000,000	88,000	-	<200		<200		<230		<210		<220		<220		<230		**170**	J	<210		<200		<210	
Fluorene	2,300,000	24,000,000	170,000	-	<190		<190		<210		<200		<210		<210		<220		**110**	J	<190		<190		**5300**	
Phenanthrene	NLE	300,000,000	NLE	-	**480**		**720**		**170**	J	**130**	J	<210		<210		<220		**570**		<200		<190		**29000**	E
Anthracene	17,000,000	30,000,000	2,400,000	-	<190		<190		<210		<200		<210		<210		<220		**160**	J	<200		<190		**3200**	
Dimethylphthalate	NLE	NLE	NLE	-	<150		<150		<170		<160		<170		<170		<170		**120**	J	<150		<150		<160	
Di-n-butylphthalate	6,100,000	68,000,000	760,000	-	**760**	JB	**780**	JB	**380**	JB	**670**	JB	**600**	JB	**270**	JB	**220**	JB	**840**	JB	**170**	JB	**180**	JB	**270**	JB
Fluoranthene	2,300,000	24,000,000	1,300,000	-	**300**		**500**		**190**	J	<200		<210		<210		<220		**400**		<200		<190		**16000**	E
Pyrene	1,700,000	18,000,000	840,000	-	**510**		**820**		**120**	J	**120**	J	<250		<250		<260		**580**		<230		<230		**30000**	E
Pyridine	NLE	NLE	NLE	-	<300		<300		<330		<310		<330		<330		<350		<300		<300		<300		<310	
Butylbenzylphthalate	1,200,000	14,000,000	230,000	-	<250		<250		<280		<260		<280		<280		<280		<260		<250		<250		<260	
Benzo(a)anthracene	600	2,000	800	-	**180**	J	**310**		<220		<200		<220		<220		<230		**300**		<200		<200		**13000**	E
3,3'-Dichlorobenzidine	1,000	4,000	200	-	<350		<350		<380		<350		<380		<380		<400		<350		<350		<340		**1000**	
Chrysene	62,000	230,000	80,000	-	**300**		**520**		<280		<260		<280		<280		<290		**510**		<250		<250		**21000**	E
bis(2-Ethylhexyl)phthalate	35,000	140,000	1,200,000	-	**280**	J	**100**	J	<310		<290		<310		<310		<320		<280		<280		<280		**120**	J
Benzo(b)fluoranthene	600	2,000	2,000	-	**110**	J	**200**	J	<270		<250		<270		<270		<280		**180**	J	<250		<240		**9200**	
Benzo(k)fluoranthene	6,000	23,000	25,000	-	**130**	J	**220**		<200		<190		<200		<200		<210		**220**		<180		<180		**8800**	
Benzo(a)pyrene	200	200	200	-	**130**	J	**290**		<210		<190		<210		<210		<220		**240**		<190		<190		**11000**	
Indeno(1,2,3-cd)pyrene	600	2,000	7,000	-	<200		**160**	J	<230		<210		<230		<220		<240		**150**	J	<210		<200		**4900**	
Dibenz(a,h)anthracene	200	200	800	-	<240		<240		<260		<250		<260		<260		<280		<240		<240		<240		**2900**	
Benzo(g,h,i)perylene	380,000,000	30,000,000	NLE	-	<240		**190**	J	<260		<250		<260		<260		<280		**190**	J	<240		<240		**5800**	
Total TICs	NLE	NLE	NLE	-	**10100**		**9860**		**5400**		**9600**		**10400**		**7400**		**1400**		**9820**		**1900**		**2500**		**72000**	
Pesticides / PCBs (mg/kg)																										
Heptachlor	0.1	0.7	0.5	-	<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003	
Heptachlor Epoxide	0.07	0.3	0.01	-	<0.0006		<0.0006		<0.0007		<0.0006		<0.0007		<0.0006		<0.0007		<0.0006		<0.0006		<0.0006		<0.0006	
4,4'-DDE	2	9	18	-	<0.0004		<0.0004		<0.0005		<0.0004		**0.002**		**0.005**		**0.002**		<0.0004		**0.001**		**0.018**		**0.208**	
Dieldrin	0.04	0.2	0.003	-	<0.0005		<0.0005		<0.0006		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005		<0.0005		<0.0005		<0.0005	
Endrin	23	340	1	-	<0.0005		<0.0005		<0.0006		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005		<0.0005		<0.0005		<0.0005	
4,4'-DDD	3	13	4	-	<0.0006		<0.0006		<0.0007		<0.0006		<0.0007		<0.0006		<0.0007		<0.0006		<0.0006		<0.0006		<0.0006	
Endrin Aldehyde	NLE	NLE	NLE	-	<0.0005		<0.0005		<0.0006		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005		<0.0005		<0.0005		<0.0005	
4,4'-DDT	2	8	11	-	<0.0011		<0.0012		<0.0013		**0.007**		**0.002**		**0.006**		**0.002**		<0.0012		<0.0011		**0.028**		**0.803**	
Endosulfan I	470	6,800	4	-	<0.0005		<0.0005		<0.0006		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005		<0.0005		<0.0005		<0.0005	
Endosulfan II	470	6,800	4	-	<0.0004		<0.0004		<0.0005		<0.0004		<0.0004		<0.0004		<0.0005		<0.0004		<0.0004		<0.0004		<0.0004	
Endosulfan-Sulfate	470	6,800	2	-	<0.0004		<0.0004		<0.0005		<0.0004		<0.0004		<0.0004		<0.0005		<0.0004		<0.0004		<0.0004		<0.0004	
gamma-Chlordane	0.2	1	0.05	-	<0.0005		<0.0005		<0.0006		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005		<0.0005		<0.0005		<0.0005	
alpha-Chlordane	0.2	1	0.05	-	<0.0005		<0.0005		<0.0006		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005		<0.0005		<0.0005		<0.0005	
Aroclor 1254	0.2	1	0.2	-	<0.0041		<0.0042		<0.0046		<0.0042		<0.0043		<0.0042		<0.0045		<0.0042		<0.0042		<0.0042		<0.0042	

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential Direct Contact Soil Remediation Standard (1)	NJDEP Non-Residential Direct Contact Soil Remediation Standard (1)	NJDEP Impact to Groundwater Screening Level (2)	Weston 1995 Background (3)	B-75	B-76	B-77	B-78	B-79	B-80	B-80 Dup	B-81	B-82	B-83	B-84
Sample Date					05/19/98	05/19/98	05/19/98	05/19/98	05/19/98	05/19/98	05/19/98	05/19/98	05/19/98	05/19/98	05/20/98
Metals (mg/kg)															
Aluminum	78,000	NA	6,000	15,200	**1781**	**6780**	**8537**	**10590**	**10590**	**10450**	**10910**	**2577**	**2449**	**1275**	**9216**
Antimony	31	450	6	ND	<0.219	**0.686**	**1.309**	**1.531**	**1.531**	**1.642**	**1.6**	**0.308**	**0.356**	**0.255**	**1.288**
Arsenic	19	19	19	22.9	**1.452**	**6.874**	**8.003**	**10.88**	**10.88**	**10.26**	**11.24**	**5.594**	**1.387**	**0.858**	**11.23**
Barium	16,000	59,000	2,100	32.3	**5.525**	**26.72**	**24.35**	**24.94**	**24.94**	**24.91**	**21.68**	**36.08**	**15.13**	**4.896**	**29.34**
Beryllium	16	140	0.7	2	**0.2615**	**0.6806**	**0.9024**	**1.19**	**1.19**	**1.143**	**1.322**	**0.2973**	**0.3248**	**0.1492**	**0.634**
Cadmium	78	78	2	ND	<0.055	<0.055	<0.055	<0.058	<0.058	<0.054	<0.064	**0.0968**	<0.056	<0.052	<0.061
Calcium	NLE	NLE	NLE	921	**117.9**	**510**	**440.1**	**809.2**	**908.2**	**611.8**	**297**	**865.2**	**316.7**	**134.9**	**817.1**
Chromium	NLE	NLE	NLE	269	**18.67**	**61.92**	**97.55**	**96.08**	**96.08**	**112.3**	**149.7**	**11.66**	**19.27**	**12.27**	**62.61**
Cobalt	1,600	590	90	2.5	**0.4013**	**2.925**	**2.623**	**5.587**	**5.587**	**5.818**	**4.822**	**1.554**	**0.4012**	**0.2038**	**1.854**
Copper	3,100	45,000	11,000	8	**2.002**	**8.638**	**3.266**	**27.74**	**27.74**	**4.975**	<0.386	**17.64**	**1.524**	**1.995**	**43.09**
Iron	NLE	NLE	NLE	55,800	**6671**	**28090**	**36430**	**56400**	**56400**	**47360**	**65860**	**6221**	**6563**	**4284**	**24830**
Lead	400	800	90	19.5	**5.525**	**48.57**	**16.89**	**33.19**	**33.19**	**65.52**	**8.234**	**36.85**	**4.79**	**6.115**	**126.8**
Magnesium	NLE	NLE	NLE	7,230	**334.2**	**887.6**	**863.8**	**1385**	**1385**	**1003**	**848.1**	**318.6**	**568.3**	**317.3**	**1392**
Manganese	11,000	5,900	65	90.7	**13.35**	**67.87**	**62.27**	**160.5**	**160.5**	**141.4**	**68.32**	**17.63**	**12.37**	**8.873**	**40**
Mercury	23	65	0.1	ND	<0.023	**0.028**	**0.029**	<0.021	<0.021	<0.023	<0.022	**0.061**	<0.022	<0.020	**0.123**
Nickel	1,600	23,000	48	8.4	**1.679**	**8.334**	**10.82**	**13.68**	**13.68**	**15.43**	**17.24**	**4.848**	**1.503**	**0.8202**	**7.483**
Potassium	NLE	NLE	NLE	15400	**614.6**	**1966**	**2023**	**3911**	**3911**	**2351**	**1996**	**648.6**	**1045**	**490**	**4076**
Selenium	390	5,700	11	1.9	<0.329	<0.331	<0.331	<0.350	<0.350	<0.325	<0.386	**0.385**	<0.338	<0.315	<0.365
Silver	390	5,700	1	1.1	<0.329	<0.331	<0.331	<0.350	<0.350	<0.325	<0.386	<0.345	<0.338	<0.315	<0.365
Sodium	NLE	NLE	NLE	51.6	**27.75**	**32.16**	**31.08**	**150.5**	**150.5**	**27.11**	**90.62**	**138.3**	**13.7**	**23.19**	**61.43**
Thallium	5	79	3	ND	<0.329	<0.331	<0.331	<0.350	<0.350	<0.325	<0.386	<0.345	<0.338	<0.315	<0.365
Vanadium	78	1,100	NLE	94.1	**16.56**	**73.25**	**103**	**123**	**123**	**154.8**	**183.2**	**18.03**	**13.74**	**9.388**	**58.91**
Zinc	23,000	110,000	930	81.4	**12.77**	**53.92**	**58.91**	**72.31**	**72.31**	**70.89**	**74.82**	**29.27**	**12.57**	**7.018**	**46.59**

Notes:

Historically, there have been up to 318 soil boring locations associated with FTMM-05. This analysis looks at only those boring locations that fall within the footprint of FTMM-05.

(1) New Jersey Department of Environmental Protection (NJDEP) Residential Direct Contact Soil Remediation Standards (RDCSRS) and Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS) (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.
(2) NJDEP Impact to Groundwater (NJDEP guidance document; Nov 2013).
(3) Weston, 1995. Final Site Investigation - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December.
NJDEP criteria for total xylenes are used for xylene isomers (m+p, o).
NJDEP criteria for endrin is used for endrin aldehyde.
NJDEP criteria for 4,4'-DDD and 4,4'-DDT are for total DDD and total DDT, respectively.
There are no NJDEP soil standards for individual PCB Arcolors; the total PCB NJDEP standards were used for individual Arcolors
Dash (--) = only background concentrations for metals are being used as comparison criteria.
B = Analyte detected in both sample and associated laboratory blank.
D = Result from dilution of sample.
DUP = field duplicate sample.
E = Estimated value.
J = Analyte detected between MDL and practical quantitation limit (PQL).
NA = not analyzed.
ND = not detected.
NLE = No limit established.
< = analyte not detected above method detection limit (MDL).
µg/kg = micrograms per kilogram.
mg/kg = milligrams per kilogram.
VOCs = volatile organic compounds.
in. = inches.
bgs = below ground surface.
Detections are bolded.
Shaded cells = concentration exceeds NJDEP Impact to Groundwater Criterion.
Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria.
Shaded cells = concentration exceeds all NJDEP criteria.
Shaded cells = concentration exceeds Weston (1995) background concentration.

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential Direct Contact Soil Remediation Standard [1]	NJDEP Non-Residential Direct Contact Soil Remediation Standard [1]	NJDEP Impact to Groundwater Screening Level [2]	Weston 1995 Background [3]	B-85		B-86		B-87		B-88		B-89	B-90		B-91		B-92		B-93		B-94		B-95	B-96	
Sample Date					05/20/98		05/20/98		05/20/98		05/20/98		05/20/98	05/20/98		05/20/98		05/20/98		05/21/98		05/21/98		05/21/98	05/21/98	
Volatile Organic Compounds (VOCs, µg/kg)																										
Lab Sample ID (VOCs only collected at approximately 24 in. bgs)					3584.07		3584.11		3584.15		3584.19		3584.23	3584.27		3584.31		3584.35		3588.03		3588.07		3588.11	3588.15	
Methylene Chloride	34,000	97,000	10	-	<510		<560		<580		<630		<620	<610		<500		<540		<570		<570		<550	<610	
Benzene	2,000	5,000	5	-	<260		<280		<290		<310		<310	<300		<250		<270		<280		<280		<270	<300	
Tetrachloroethene	2,000	5,000	5	-	<260		<280		<290		<310		<310	<300		<250		<270		<280		<280		<270	<300	
Chloroform	600	2,000	400	-	<260		<280		<290		<310		<310	<300		<250		<270		<280		<280		<270	<300	
Ethylbenzene	7,800,000	110,000,000	13,000	-	<510		<560		<580		<630		<620	<610		<500		<540		<570		<570		<550	<610	
TICs	NLE	NLE	NLE	-	ND		ND		ND		ND		ND	ND		ND		ND		ND		ND		ND	ND	
Semivolatile Organic Compounds (SVOCs, µg/kg)																										
Lab Sample ID (All analyses except VOCs collected at approximately 6-12 in. bgs)					3584.06		3584.10		3584.14		3584.18		3584.22	3584.26		3584.30		3584.34		3588.02		3588.06		3588.10	3588.14	
Naphthalene	6,000	17,000	25,000	-	<240		<260		<240		<270		<280	**130**	J	<240		<250		<260		<250		<250	<260	
n-Nitrosodiphenylamine	99,000	390,000	400	-	<180		<190		<180		<210		<210	<200		<180		<190		<200		<190		<190	<190	
2-Methylnaphthalene	230,000	2,400,000	8,000	-	<270		<290		<270		<310		<320	**170**	J	<270		<280		<290		<280		<280	<290	
4-Methylphenol	31,000	340,000	NLE	-	<270		<280		<270		<300		<310	<290		<270		<280		<280		<270		<280	<280	
Acenaphthylene	NLE	3.00E+08	NLE	-	<190		<200		<190		<220		<220	<210		<190		<200		<200		<190		<200	<200	
Acenaphthene	3,400,000	37,000,000	110,000	-	<180		<190		<180		<200		<200	<190		<170		**590**		<190		<180		<180	<180	
Dibenzofuran	NLE	NLE	NLE	-	<190		<200		<190		<210		<220	<200		<180		**640**		<200		<190		<190	<200	
Diethylphthalate	49,000,000	550,000,000	88,000	-	<200		<220		<200		<230		<240	<220		<200		<210		<220		<210		<210	<210	
Fluorene	2,300,000	24,000,000	170,000	-	<190		<200		<190		<210		<220	<210		<190		**1100**		<200		<190		<200	<200	
Phenanthrene	NLE	300,000,000	NLE	-	<190		<200		<190		<220		<220	**480**		<190		<200		<210		<200		<200	<200	
Anthracene	17,000,000	30,000,000	2,400,000	-	<190		<200		<190		<220		<220	<210		<190		**3300**		<210		<200		<200	<200	
Dimethylphthalate	NLE	NLE	NLE	-	<150		<160		<150		<170		<180	<160		<150		<160		<160		<150		<160	<160	
Di-n-butylphthalate	6,100,000	68,000,000	760,000	-	**640**	JB	**870**	JB	**660**	JB	**290**	JB	<970	**510**	JB	**320**	JB	**280**	JB	**470**	JB	**270**	JB	<860	**430**	JB
Fluoranthene	2,300,000	24,000,000	1,300,000	-	<190		<210		<190		<220		<230	**480**		<190		<200		<210		<200		<200	<200	
Pyrene	1,700,000	18,000,000	840,000	-	**140**	J	<240		<230		<250		<260	**840**		<220		**11000**		<240		<230		<230	<240	
Pyridine	NLE	NLE	NLE	-	<300		<320		<300		<340		<350	<320		<300		<310		<320		<300		<310	<320	
Butylbenzylphthalate	1,200,000	14,000,000	230,000	-	<250		<270		<250		<280		<290	<270		<250		<260		<270		<250		<260	<270	
Benzo(a)anthracene	600	2,000	800	-	<200		<210		<200		<220		<230	**360**		<190		**7200**		<210		<200		<200	<210	
3,3'-Dichlorobenzidine	1,000	4,000	200	-	<340		<370		<340		<390		<400	<370		<340		<360		<370		<350		<360	<360	
Chrysene	62,000	230,000	80,000	-	**120**	J	<270		<250		<280		<290	**590**		<250		**9700**		<270		<250		<260	<270	
bis(2-Ethylhexyl)phthalate	35,000	140,000	1,200,000	-	**110**	J	**150**	J	**160**	J	<310		<320	**120**	J	**110**	J	<290		<300		<280		<290	<290	
Benzo(b)fluoranthene	600	2,000	2,000	-	<250		<260		<250		<270		<290	**250**	J	<240		**5600**		<260		<250		<250	<260	
Benzo(k)fluoranthene	6,000	23,000	25,000	-	<180		<190		<180		<200		<210	**340**		<180		**3900**		<190		<180		<190	<190	
Benzo(a)pyrene	200	200	200	-	<190		<200		<190		<210		<220	**410**		<190		**5300**		<200		<190		<190	<200	
Indeno(1,2,3-cd)pyrene	600	2,000	7,000	-	<200		<220		<200		<230		<240	**200**	J	<200		**3000**		<220		<210		<210	<220	
Dibenz(a,h)anthracene	200	200	800	-	<240		<250		<240		<270		<280	<260		<240		**640**		<250		<240		<250	<250	
Benzo(g,h,i)perylene	380,000,000	30,000,000	NLE	-	<240		<250		<240		<270		<280	**230**	J	<240		**2800**		<250		<240		<250	<250	
Total TICs	NLE	NLE	NLE	-	**17900**		**9900**		**11650**		**16700**		**8600**	**1100**		**8400**		**47930**		**9080**		**9500**		**223800**	**8700**	
Pesticides / PCBs (mg/kg)																										
Heptachlor	0.1	0.7	0.5	-	<0.0003		<0.0003		<0.0003		<0.0003		<0.0003	<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003	<0.0003	
Heptachlor Epoxide	0.07	0.3	0.01	-	<0.0006		<0.0006		<0.0006		<0.0007		<0.0007	<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006	<0.0006	
4,4'-DDE	2	9	18	-	<0.0004		**0.002**		**0.007**		<0.0005		**0.006**	**0.001**		**0.002**		<0.0004		**0.008**		**0.002**		<0.0004	**0.003**	
Dieldrin	0.04	0.2	0.003	-	<0.0005		<0.0005		<0.0005		<0.0006		<0.0006	<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005	<0.0005	
Endrin	23	340	1	-	<0.0005		<0.0005		<0.0005		<0.0006		<0.0006	<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005	<0.0005	
4,4'-DDD	3	13	4	-	<0.0006		<0.0006		<0.0006		<0.0007		<0.0007	<0.0006		<0.0006		<0.0006		**0.004**		<0.0006		<0.0006	<0.0006	
Endrin Aldehyde	NLE	NLE	NLE	-	<0.0005		<0.0005		<0.0005		<0.0006		<0.0006	<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005	<0.0005	
4,4'-DDT	2	8	11	-	<0.0012		<0.0012		**0.003**		<0.0013		**0.003**	**0.002**		**0.002**		<0.0012		**0.032**		**0.004**		<0.0011	**0.002**	
Endosulfan I	470	6,800	4	-	<0.0005		<0.0005		<0.0005		<0.0006		<0.0006	<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005	<0.0005	
Endosulfan II	470	6,800	4	-	<0.0004		<0.0004		<0.0004		<0.0005		<0.0004	<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004	<0.0004	
Endosulfan-Sulfate	470	6,800	2	-	<0.0004		<0.0004		<0.0004		<0.0005		<0.0004	<0.0004		<0.0004		<0.0004		<0.0005		<0.0004		<0.0004	<0.0004	
gamma-Chlordane	0.2	1	0.05	-	<0.0005		<0.0005		<0.0005		<0.0006		<0.0006	<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005	<0.0005	
alpha-Chlordane	0.2	1	0.05	-	<0.0005		<0.0005		<0.0005		<0.0006		<0.0006	<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005	<0.0005	
Aroclor 1254	0.2	1	0.2	-	<0.0042		<0.0043		<0.0041		<0.0046		<0.0045	<0.0043		<0.0042		<0.0042		<0.0042		<0.0042		<0.0042	<0.0043	

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential Direct Contact Soil Remediation Standard (1)	NJDEP Non-Residential Direct Contact Soil Remediation Standard (1)	NJDEP Impact to Groundwater Screening Level (2)	Weston 1995 Background (3)	B-85	B-86	B-87	B-88	B-89	B-90	B-91	B-92	B-93	B-94	B-95	B-96
Sample Date					05/20/98	05/20/98	05/20/98	05/20/98	05/20/98	05/20/98	05/20/98	05/20/98	05/21/98	05/21/98	05/21/98	05/21/98
Metals (mg/kg)																
Aluminum	78,000	NA	6,000	15,200	**6650**	**7711**	**7796**	**5870**	**4347**	**4758**	**2982**	**2424**	**6587**	**7273**	**6776**	**1231**
Antimony	31	450	6	ND	**0.52**	**1.219**	**0.834**	**0.834**	**0.237**	**0.945**	**0.542**	**0.305**	**0.864**	**0.705**	**0.293**	**1.11**
Arsenic	19	19	19	22.9	**4.61**	**8.103**	**10.68**	**12.43**	**2.981**	**15.53**	**4.745**	**1.092**	**9.735**	**9.53**	**7.075**	**12.33**
Barium	16,000	59,000	2,100	32.3	**14.66**	**14.57**	**29.97**	**192.3**	**25.61**	**8.797**	**21.03**	**12.71**	**18.68**	**21.47**	**50.99**	**96.83**
Beryllium	16	140	0.7	2	**0.3893**	**0.9604**	**0.9373**	**4.787**	**0.3072**	**0.4409**	**0.3972**	**0.3802**	**0.49**	**0.7067**	**0.591**	**0.1224**
Cadmium	78	78	2	ND	<0.060	<0.059	<0.060	**0.674**	<0.067	<0.053	<0.055	<0.053	<0.060	<0.058	<0.061	<0.061
Calcium	NLE	NLE	NLE	921	**590.2**	**646.2**	**1477**	**1547**	**1663**	**181.2**	**987.9**	**168.5**	**393.2**	**502.8**	**1605**	**383.6**
Chromium	NLE	NLE	NLE	269	**37.09**	**91.08**	**88.9**	**54.19**	**7.984**	**58.29**	**27.55**	**16.35**	**56.44**	**57.07**	**28.21**	**11.51**
Cobalt	1,600	590	90	2.5	**2.493**	**2.845**	**3.717**	**7.393**	**3.526**	**0.5178**	**0.9371**	**0.4263**	**1.026**	**3.164**	**4.892**	**1.152**
Copper	3,100	45,000	11,000	8	**3.002**	**0.413**	**4.648**	**2314**	**46.74**	**139.2**	**10.16**	**2.46**	**11.74**	**2.615**	**19.37**	**26.15**
Iron	NLE	NLE	NLE	55,800	**13010**	**41350**	**41280**	**12220**	**5168**	**15660**	**12860**	**6114**	**21140**	**28210**	**10070**	**7920**
Lead	400	800	90	19.5	**6.786**	**7.797**	**90.95**	**1267**	**15.43**	**19.27**	**50.74**	**5.981**	**30.17**	**131.3**	**18.73**	**78.99**
Magnesium	NLE	NLE	NLE	7,230	**974.8**	**780.5**	**1019**	**614.5**	**359.5**	**1090**	**748**	**517.9**	**879**	**895**	**1135**	**286**
Manganese	11,000	5,900	65	90.7	**85.56**	**49.43**	**101.9**	**175.7**	**97.42**	**9.783**	**28.45**	**22.4**	**16.42**	**67.3**	**32.46**	**15.55**
Mercury	23	65	0.1	ND	**0.024**	<0.023	**0.034**	**0.044**	**0.039**	**0.044**	**0.053**	**0.036**	**0.051**	**0.024**	**0.05**	**0.184**
Nickel	1,600	23,000	48	8.4	**3.728**	**12.44**	**14.15**	**22.36**	**10.93**	**2.453**	**3.39**	**1.526**	**4.015**	**8.536**	**14.98**	**4.765**
Potassium	NLE	NLE	NLE	15400	**1656**	**1321**	**1580**	**1654**	**633.6**	**3985**	**1988**	**1086**	**2804**	**2075**	**2495**	**472.2**
Selenium	390	5,700	11	1.9	<0.363	<0.355	<0.359	**1.379**	<0.405	**1.146**	<0.329	<0.318	<0.363	<0.349	**0.627**	**3.91**
Silver	390	5,700	1	1.1	<0.363	<0.355	<0.359	**3.472**	<0.405	<0.319	<0.329	<0.318	<0.363	<0.349	<0.364	<0.367
Sodium	NLE	NLE	NLE	51.6	**38.89**	**40.52**	**116.5**	**335.1**	**440.7**	**186.3**	**128.8**	**22.98**	**91.43**	**37.29**	**216.6**	**58.66**
Thallium	5	79	3	ND	<0.363	<0.355	<0.359	<0.381	<0.405	<0.319	<0.329	<0.318	<0.363	<0.349	<0.364	<0.367
Vanadium	78	1,100	NLE	94.1	**32.18**	**108.4**	**113.1**	**18.83**	**9.574**	**11.28**	**11.94**	**9.943**	**51.64**	**75.4**	**25.26**	**9.353**
Zinc	23,000	110,000	930	81.4	**20.41**	**57.83**	**79.89**	**500.7**	**26.7**	**35.88**	**76.22**	**14.81**	**27.7**	**41.81**	**27.54**	**13.94**

Notes:

Historically, there have been up to 318 soil boring locations associated with FTMM-05. This analysis looks at only those boring locations that fall within the footprint of FTMM-05.

(1) New Jersey Department of Environmental Protection (NJDEP) Residential Direct Contact Soil Remediation Standards (RDCSRS) and Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS) (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.
(2) NJDEP Impact to Groundwater (NJDEP guidance document; Nov 2013).
(3) Weston, 1995. Final Site Investigation - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December.
NJDEP criteria for total xylenes are used for xylene isomers (m+p, o).
NJDEP criteria for endrin is used for endrin aldehyde.
NJDEP criteria for 4,4'-DDD and 4,4'-DDT are for total DDD and total DDT, respectively.
There are no NJDEP soil standards for individual PCB Arcolors; the total PCB NJDEP standards were used for individual Arcolors
Dash (--) = only background concentrations for metals are being used as comparison criteria.
B = Analyte detected in both sample and associated laboratory blank.
D = Result from dilution of sample.
DUP = field duplicate sample.
E = Estimated value.
J = Analyte detected between MDL and practical quantitation limit (PQL).
NA = not analyzed.
ND = not detected.
NLE = No limit established.
< = analyte not detected above method detection limit (MDL).
µg/kg = micrograms per kilogram.
mg/kg = milligrams per kilogram.
VOCs = volatile organic compounds.
in. = inches.
bgs = below ground surface.
Detections are bolded.
Shaded cells = concentration exceeds NJDEP Impact to Groundwater Criterion.
Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria.
Shaded cells = concentration exceeds all NJDEP criteria.
Shaded cells = concentration exceeds Weston (1995) background concentration.

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential Direct Contact Soil Remediation Standard [1]	NJDEP Non-Residential Direct Contact Soil Remediation Standard [1]	NJDEP Impact to Groundwater Screening Level [2]	Weston 1995 Background [3]	B-97		B-98		B-99	B-158		B-159		B-160		B-160 Dup		B-161		B-162		B-163		B-164		B-164
Sample Date					05/21/98		05/21/98		05/26/98	06/17/98		06/17/98		06/17/98		06/17/98		06/17/98		06/26/98		06/26/98		06/26/98		
Volatile Organic Compounds (VOCs, µg/kg)																										
Lab Sample ID (VOCs only collected at approximately 24 in. bgs)					3588.19		3588.22		3593.03	3665.13		3665.17		3665.20		3665.26		3665.23		3686.05		3686.08		3686.11		3688.03
Methylene Chloride	34,000	97,000	10	-	<580		<660		<610	<560		<570		<560		<550		<570		<630		<650		<530		<620
Benzene	2,000	5,000	5	-	<290		<330		<300	<280		<290		<280		<280		<280		<310		<330		<270		<310
Tetrachloroethene	2,000	5,000	5	-	<290		<330		<300	<280		<290		<280		<280		<280		<310		<330		<270		<310
Chloroform	600	2,000	400	-	<290		<330		<300	<280		<290		<280		<280		<280		<310		<330		<270		<310
Ethylbenzene	7,800,000	110,000,000	13,000	-	<580		<660		<610	<560		<570		<560		<550		<570		<630		<650		<530		<620
TICs	NLE	NLE	NLE	-	ND		ND		ND	ND		ND		ND		ND		ND		**1400**		ND		ND		ND
Semivolatile Organic Compounds (SVOCs, µg/kg)																										
Lab Sample ID (All analyses except VOCs collected at approximately 6-12 in. bgs)					3588.18		3588.22		3593.02	3665.12		3665.16		3665.19		3665.25		3665.22		3686.04		3686.07		3686.10		
Naphthalene	6,000	17,000	25,000	-	<230		<290		<2600	<240		<270		<260		<270		<250		<310		<270		<260		
n-Nitrosodiphenylamine	99,000	390,000	400	-	<170		<220		<1900	<180		<210		<190		<200		<190		<230		<200		<190		
2-Methylnaphthalene	230,000	2,400,000	8,000	-	<260		<320		<2900	<270		<310		<290		<300		<280		<340		<300		<290		
4-Methylphenol	31,000	340,000	NLE	-	<250		<320		<2800	<260		<300		<280		<290		<280		<330		<300		<280		
Acenaphthylene	NLE	3.00E+08	NLE	-	<180		<230		<2000	<190		<220		<200		<210		<200		<240		<210		<200		
Acenaphthene	3,400,000	37,000,000	110,000	-	<170		<210		<1800	<170		<200		<180		<190		<180		<220		<190		<180		
Dibenzofuran	NLE	NLE	NLE	-	<180		<220		<2000	<180		<210		<200		<210		<190		<230		<210		<190		
Diethylphthalate	49,000,000	550,000,000	88,000	-	<190		<240		<2100	<200		<230		<210		<220		<210		<250		<220		<210		
Fluorene	2,300,000	24,000,000	170,000	-	<180		<230		<2000	<190		<210		<200		<210		<200		<240		<210		<200		
Phenanthrene	NLE	300,000,000	NLE	-	<180		**160**	J	<2000	<190		<220		<200		<210		<200		<240		**230**		<200		
Anthracene	17,000,000	30,000,000	2,400,000	-	<180		<230		<2000	<190		<220		<200		<210		<200		<240		<210		<200		
Dimethylphthalate	NLE	NLE	NLE	-	<140		<180		<1600	<150		<170		<160		<170		<160		<190		<170		<160		
Di-n-butylphthalate	6,100,000	68,000,000	760,000	-	**730**	JB	**500**	JB	<8800	**230**	JB	**210**	JB	**900**	B	**490**	JB	**180**	JB	**460**	JB	**1100**	B	**380**	JB	
Fluoranthene	2,300,000	24,000,000	1,300,000	-	**240**		**210**	J	<2000	<190		<220		**300**		**150**	J	<200		<240		**830**		<200		
Pyrene	1,700,000	18,000,000	840,000	-	**160**	J	**200**	J	<2400	<220		<250		**400**		**170**	J	<230		<280		**1100**		<240		
Pyridine	NLE	NLE	NLE	-	<280		<350		<3100	<290		<340		<310		<330		<310		<370		<330		<310		
Butylbenzylphthalate	1,200,000	14,000,000	230,000	-	<2409		<300		<2600	<250		<280		<260		<280		<260		<310		<280		<260		
Benzo(a)anthracene	600	2,000	800	-	**120**	J	**140**	J	<2100	<190		<220		**150**	J	<220		<200		<250		**590**		<210		
3,3'-Dichlorobenzidine	1,000	4,000	200	-	<330		<410		<3600	<340		<390		<360		<380		<360		<430		<380		<360		
Chrysene	62,000	230,000	80,000	-	**170**	J	**290**	J	<2600	<250		<280		**340**		**180**	J	<260		<310		**1100**		<260		
bis(2-Ethylhexyl)phthalate	35,000	140,000	1,200,000	-	**100**	J	<330		<2900	<270		<310		<290		<310		<290		<350		**13000**		<290		
Benzo(b)fluoranthene	600	2,000	2,000	-	**110**	J	**160**	J	<2600	<240		<270		**140**	J	<270		<250		<310		**610**		<260		
Benzo(k)fluoranthene	6,000	23,000	25,000	-	<170		<220		<1900	<180		<200		**130**	J	<200		<190		<230		**630**		<190		
Benzo(a)pyrene	200	200	200	-	**110**	J	<220		<2000	<180		<210		**130**	J	<210		<190		<230		**530**		<200		
Indeno(1,2,3-cd)pyrene	600	2,000	7,000	-	<190		<240		<2100	<200		<230		<210		<220		<210		<260		**290**		<210		
Dibenz(a,h)anthracene	200	200	800	-	<230		<280		<2500	<230		<270		<250		<260		<250		<300		<260		<250		
Benzo(g,h,i)perylene	380,000,000	30,000,000	NLE	-	<230		<280		<2500	<230		<270		<250		<260		<250		<300		**310**		<250		
Total TICs	NLE	NLE	NLE	-	**10620**		**8500**		**105300**	**1700**		**1600**		**1200**		ND		ND		ND		**18520**		**940**		
Pesticides / PCBs (mg/kg)																										
Heptachlor	0.1	0.7	0.5	-	<0.0003		<0.0003		<0.0003	<0.0003		<0.0003		**0.003**		<0.0003		<0.0003		<0.0004		<0.0003		<0.0003		
Heptachlor Epoxide	0.07	0.3	0.01	-	**0.001**		<0.0007		<0.0006	<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0007		<0.0007		<0.0006		
4,4'-DDE	2	9	18	-	**0.008**		**0.166**		**0.008**	<0.0004		**0.003**		**0.011**		**0.011**		<0.0004		<0.0005		<0.0005		<0.0004		
Dieldrin	0.04	0.2	0.003	-	<0.0005		<0.0006		<0.0005	<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006		<0.0006		<0.0005		
Endrin	23	340	1	-	<0.0005		<0.0006		<0.0005	<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006		<0.0006		<0.0005		
4,4'-DDD	3	13	4	-	**0.003**		**0.02**		<0.0006	<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0007		<0.0007		<0.0006		
Endrin Aldehyde	NLE	NLE	NLE	-	<0.0005		<0.0006		<0.0005	<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006		<0.0006		<0.0005		
4,4'-DDT	2	8	11	-	**0.014**		**0.077**		**0.008**	<0.0011		**0.003**		**0.019**		**0.017**		<0.0011		<0.0014		<0.0013		<0.0012		
Endosulfan I	470	6,800	4	-	<0.0005		<0.0006		<0.0005	<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006		<0.0006		<0.0005		
Endosulfan II	470	6,800	4	-	<0.0004		<0.0005		<0.0004	<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0005		<0.0005		<0.0004		
Endosulfan-Sulfate	470	6,800	2	-	<0.0004		**0.009**		<0.0004	<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0005		<0.0005		<0.0004		
gamma-Chlordane	0.2	1	0.05	-	<0.0005		<0.0006		<0.0005	<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006		<0.0006		<0.0005		
alpha-Chlordane	0.2	1	0.05	-	<0.0005		<0.0006		<0.0005	<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006		<0.0006		<0.0005		
Aroclor 1254	0.2	1	0.2	-	<0.0042		<0.0047		<0.0041	<0.0042		<0.0039		<0.0042		<0.0041		<0.0040		<0.0050		<0.0046		<0.0043		

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential Direct Contact Soil Remediation Standard (1)	NJDEP Non-Residential Direct Contact Soil Remediation Standard (1)	NJDEP Impact to Groundwater Screening Level (2)	Weston 1995 Background (3)	B-97	B-98	B-99	B-158	B-159	B-160	B-160 Dup	B-161	B-162	B-163	B-164	B-164
Sample Date					05/21/98	05/21/98	05/26/98	06/17/98	06/17/98	06/17/98	06/17/98	06/17/98	06/26/98	06/26/98	06/26/98	
Metals (mg/kg)																
Aluminum	78,000	NA	6,000	15,200	**8665**	**2673**	**3319**	**2715**	**6285**		**6418**	**5319**	**2685**	**7000**	**1807**	
Antimony	31	450	6	ND	**0.813**	**0.397**	**1.522**	**0.349**	**0.487**		**0.678**	**0.579**	**0.337**	**4.693**	**0.31**	
Arsenic	19	19	19	22.9	**9.33**	**7.349**	**4.823**	**1.328**	**8.398**		**8.753**	**4.368**	**5.292**	**67.77**	**0.977**	
Barium	16,000	59,000	2,100	32.3	**35.87**	**108.4**	**25.33**	**15.24**	**16.27**		**18.2**	**11.72**	**35.73**	**180.7**	**8.533**	
Beryllium	16	140	0.7	2	**0.6407**	**0.2846**	**0.2113**	**0.401**	**0.5945**		**0.7039**	**0.4884**	**0.2658**	**0.562**	**0.3014**	
Cadmium	78	78	2	ND	<0.060	**0.415**	**8.552**	**0.1991**	<0.062		<0.061	<0.053	**0.4376**	<0.065	**0.4001**	
Calcium	NLE	NLE	NLE	921	**1533**	**1042**	**1011**	**230.8**	**705.6**		**604.4**	**395**	**1154**	**9589**	**211.4**	
Chromium	NLE	NLE	NLE	269	**41.47**	**11.65**	**20.07**	**20.65**	**48.92**		**53.4**	**41.48**	**13.87**	**65.41**	**14.53**	
Cobalt	1,600	590	90	2.5	**3.802**	**2.666**	**2.289**	**0.3999**	**2.458**		**2.825**	**1.602**	**2.082**	**14.15**	**0.2978**	
Copper	3,100	45,000	11,000	8	**14.07**	**48.11**	**1168**	**1.01**	**7.446**		**5.783**	**1.858**	**23.12**	**433**	**1.341**	
Iron	NLE	NLE	NLE	55,800	**21290**	**4878**	**7295**	**7173**	**25200**		**28760**	**13430**	**5905**	**131900**	**5494**	
Lead	400	800	90	19.5	**46.73**	**69.52**	**4549**	**3.345**	**22.86**		**17.83**	**4.473**	**46.83**	**98.63**	**2.754**	
Magnesium	NLE	NLE	NLE	7,230	**1372**	**342.3**	**783.4**	**712.5**	**914.9**		**859.9**	**1036**	**494.8**	**1008**	**363.8**	
Manganese	11,000	5,900	65	90.7	**78.04**	**59.09**	**2581**	**20.15**	**50.78**		**63.65**	**36.64**	**24.99**	**623.9**	**17.74**	
Mercury	23	65	0.1	ND	**0.099**	**0.34**	**4.465**	<0.022	<0.025		<0.024	<0.021	**0.031**	**0.067**	<0.022	
Nickel	1,600	23,000	48	8.4	**11.81**	**8.137**	**6.487**	**1.697**	**6.746**		**7.369**	**2.982**	**5.629**	**67.18**	**1.4**	
Potassium	NLE	NLE	NLE	15400	**3002**	**456**	**1426**	**1740**	**1640**		**1671**	**2860**	**716.6**	**1579**	**587.3**	
Selenium	390	5,700	11	1.9	<0.358	**1.474**	**0.504**	<0.288	<0.369		<0.365	<0.317	<0.430	<0.389	<0.333	
Silver	390	5,700	1	1.1	<0.358	**0.421**	**37.83**	<0.288	<0.369		<0.365	<0.317	<0.430	<0.389	<0.333	
Sodium	NLE	NLE	NLE	51.6	**183.9**	**177.3**	**235.1**	**61.53**	**62.96**		**34.22**	<2.112	**134.2**	**953.4**	**4.653**	
Thallium	5	79	3	ND	<0.358	<0.380	<0.363	<0.288	<0.369		<0.365	<0.317	<0.430	<0.389	<0.333	
Vanadium	78	1,100	NLE	94.1	**50.3**	**10.97**	**16.76**	**11.98**	**58.35**		**66.43**	**30.25**	**17.05**	**15.28**	**10.23**	
Zinc	23,000	110,000	930	81.4	**43.54**	**73.52**	**9772**	**15.95**	**39.62**		**41.11**	**17.6**	**29.63**	**457.1**	**13.81**	

Notes:

Historically, there have been up to 318 soil boring locations associated with FTMM-05. This analysis looks at only those boring locations that fall within the footprint of FTMM-05.

(1) New Jersey Department of Environmental Protection (NJDEP) Residential Direct Contact Soil Remediation Standards (RDCSRS) and Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS) (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.
(2) NJDEP Impact to Groundwater (NJDEP guidance document; Nov 2013).
(3) Weston, 1995. Final Site Investigation - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December.
NJDEP criteria for total xylenes are used for xylene isomers (m+p, o).
NJDEP criteria for endrin is used for endrin aldehyde.
NJDEP criteria for 4,4'-DDD and 4,4'-DDT are for total DDD and total DDT, respectively.
There are no NJDEP soil standards for individual PCB Arcolors; the total PCB NJDEP standards were used for individual Arcolors
Dash (--) = only background concentrations for metals are being used as comparison criteria.
B = Analyte detected in both sample and associated laboratory blank.
D = Result from dilution of sample.
DUP = field duplicate sample.
E = Estimated value.
J = Analyte detected between MDL and practical quantitation limit (PQL).
NA = not analyzed.
ND = not detected.
NLE = No limit established.
< = analyte not detected above method detection limit (MDL).
µg/kg = micrograms per kilogram.
mg/kg = milligrams per kilogram.
VOCs = volatile organic compounds.
in. = inches.
bgs = below ground surface.
Detections are bolded.
Shaded cells = concentration exceeds NJDEP Impact to Groundwater Criterion.
Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria.
Shaded cells = concentration exceeds all NJDEP criteria.
Shaded cells = concentration exceeds Weston (1995) background concentration.

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential Direct Contact Soil Remediation Standard [1]	NJDEP Non-Residential Direct Contact Soil Remediation Standard [1]	NJDEP Impact to Groundwater Screening Level [2]	Weston 1995 Background [3]	B-165		B-166		B-167		B-168		B-169		B-178		B-179		B-180		B-180 Dup		B-181		B-197
Sample Date					06/29/98		06/29/98		06/29/98		06/29/98		06/29/98		07/13/98		07/13/98		07/13/98		07/13/98		07/13/98		08/12/98
Volatile Organic Compounds (VOCs, µg/kg)																									
Lab Sample ID (VOCs only collected at approximately 24 in. bgs)					3688.07		3688.10		3688.13				3688.16		3722.13		3722.16		3722.19		3722.25		3722.22		3805.03
Methylene Chloride	34,000	97,000	10	-	<560		<670		<660		NA		<670		<520		<540		<520		<540		<560		<600
Benzene	2,000	5,000	5	-	<280		<340		<330		NA		<340		<260		<270		<260		<270		<280		<300
Tetrachloroethene	2,000	5,000	5	-	<280		**3200**		<330		NA		<340		<260		<270		<260		<270		<280		<300
Chloroform	600	2,000	400	-	<280		<340		<330		NA		<340		<260		<270		<260		<270		<280		<300
Ethylbenzene	7,800,000	110,000,000	13,000	-	<560		<670		<660		NA		<670		<520		<540		<520		<540		<560		<600
TICs	NLE	NLE	NLE	-	ND		ND		ND		NA		ND		ND		ND		ND		ND		ND		ND
Semivolatile Organic Compounds (SVOCs, µg/kg)																									
Lab Sample ID (All analyses except VOCs collected at approximately 6-12 in. bgs)					3688.02		3688.06		3688.09		3688.12		3688.15		3722.12		3722.15		3722.18		3722.24		3722.21		3805.02
Naphthalene	6,000	17,000	25,000	-	<270		<260		<260		<280		<320		<260		<240		<250		<240		<280		<260
n-Nitrosodiphenylamine	99,000	390,000	400	-	<200		<190		<200		<210		<240		<190		<180		<190		<180		<210		<200
2-Methylnaphthalene	230,000	2,400,000	8,000	-	<300		<290		<290		<310		<360		<290		<270		<280		<270		<310		<290
4-Methylphenol	31,000	340,000	NLE	-	<290		<280		<290		<310		<350		<280		<270		<270		<260		<300		<290
Acenaphthylene	NLE	3.00E+08	NLE	-	<210		<200		<210		<220		<250		<200		<190		<200		<190		<220		<210
Acenaphthene	3,400,000	37,000,000	110,000	-	<190		<190		<190		<200		<230		<180		<170		<180		<170		<200		<190
Dibenzofuran	NLE	NLE	NLE	-	<200		<200		<200		<210		<240		<190		<180		<190		<180		<210		<200
Diethylphthalate	49,000,000	550,000,000	88,000	-	<220		<210		<220		<230		<270		<210		<200		<210		<200		<230		<220
Fluorene	2,300,000	24,000,000	170,000	-	<210		<200		<210		<220		<250		<200		<190		<190		<190		<220		<210
Phenanthrene	NLE	300,000,000	NLE	-	<210		<200		**740**		<220		<250		<200		<190		**250**		**330**		<220		<210
Anthracene	17,000,000	30,000,000	2,400,000	-	<210		<200		<210		<220		<250		<200		<190		<200		<190		<220		<210
Dimethylphthalate	NLE	NLE	NLE	-	<170		<160		<160		<170		<200		<160		<150		<150		<150		<170		<160
Di-n-butylphthalate	6,100,000	68,000,000	760,000	-	**240**	JB	**290**	JB	**120**	JB	**480**	JB	**190**	JB	**580**	JB	**310**	JB	**610**	JB	**520**	JB	**760**	JB	<900
Fluoranthene	2,300,000	24,000,000	1,300,000	-	<210		<210		**470**		<220		<260		<200		<190		**230**		**360**		<220		<210
Pyrene	1,700,000	18,000,000	840,000	-	**110**	J	<240		**920**		<260		<300		<240		<220		**370**		**580**		<260		<240
Pyridine	NLE	NLE	NLE	-	<330		<320		<320		<340		<390		<310		<300		<300		<300		<340		<320
Butylbenzylphthalate	1,200,000	14,000,000	230,000	-	<280		<270		<270		<290		<330		<260		<250		<260		<260		<280		<270
Benzo(a)anthracene	600	2,000	800	-	<220		<210		**280**		<230		<260		<210		<190		**140**	J	**190**		<220		<210
3,3'-Dichlorobenzidine	1,000	4,000	200	-	<380		<360		<370		<400		<450		<360		<340		<350		<350		<390		<370
Chrysene	62,000	230,000	80,000	-	<280		**160**	J	**580**		<290		<330		<260		<250		**390**		**600**		<280		<270
bis(2-Ethylhexyl)phthalate	35,000	140,000	1,200,000	-	<310		<290		<300		<320		<360		<290		**110**	J	<280		**100**	J	<310		<300
Benzo(b)fluoranthene	600	2,000	2,000	-	<270		**170**	J	**200**	J	<280		<320		<260		<240		**110**	J	**130**	J	<280		<260
Benzo(k)fluoranthene	6,000	23,000	25,000	-	<200		**140**	J	**220**		<210		<240		<190		<180		<190		**190**		<210		<200
Benzo(a)pyrene	200	200	200	-	<210		<200		**210**		<210		<250		<200		<190		<190		**220**		<210		<200
Indeno(1,2,3-cd)pyrene	600	2,000	7,000	-	<220		**120**	J	**120**	J	<230		<270		<210		<200		<210		<200		<230		<220
Dibenz(a,h)anthracene	200	200	800	-	<260		<250		<260		<270		<310		<250		<240		<240		<240		<270		<260
Benzo(g,h,i)perylene	380,000,000	30,000,000	NLE	-	<260		<250		**140**	J	<270		<310		<250		<240		<240		<240		<270		<260
Total TICs	NLE	NLE	NLE	-	**2990**		**2500**		**3000**		**3100**		ND		**15500**		**14830**		**16310**		**18820**		**18450**		**12130**
Pesticides / PCBs (mg/kg)																									
Heptachlor	0.1	0.7	0.5	-	<0.0003		<0.0003		<0.0003		<0.0003		<0.0004		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003
Heptachlor Epoxide	0.07	0.3	0.01	-	<0.0006		<0.0006		<0.0006		<0.0007		<0.0008		<0.0006		<0.0006		<0.0006		<0.0006		<0.0007		<0.0007
4,4'-DDE	2	9	18	-	**0.011**		**0.003**		**0.067**		**0.003**		<0.0005		<0.0004		**0.002**		**0.006**		**0.008**		<0.0004		**0.033**
Dieldrin	0.04	0.2	0.003	-	<0.0005		<0.0005		<0.0005		<0.0006		<0.0007		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005
Endrin	23	340	1	-	<0.0005		<0.0005		<0.0005		<0.0006		<0.0007		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005
4,4'-DDD	3	13	4	-	<0.0006		<0.0006		**0.016**		<0.0007		<0.0008		<0.0006		<0.0006		<0.0006		<0.0006		<0.0007		**0.001**
Endrin Aldehyde	NLE	NLE	NLE	-	<0.0005		<0.0005		<0.0005		<0.0006		<0.0007		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005
4,4'-DDT	2	8	11	-	**0.01**		**0.01**		**0.091**		**0.002**		<0.0014		<0.0011		**0.002**		**0.009**		**0.009**		<0.0012		**0.015**
Endosulfan I	470	6,800	4	-	<0.0005		<0.0005		<0.0005		<0.0006		<0.0007		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005
Endosulfan II	470	6,800	4	-	<0.0004		<0.0004		<0.0004		<0.0005		<0.0005		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004
Endosulfan-Sulfate	470	6,800	2	-	<0.0004		<0.0004		<0.0004		<0.0005		<0.0005		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004
gamma-Chlordane	0.2	1	0.05	-	<0.0005		<0.0005		<0.0005		<0.0006		<0.0007		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005
alpha-Chlordane	0.2	1	0.05	-	<0.0005		<0.0005		<0.0005		<0.0006		<0.0007		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005
Aroclor 1254	0.2	1	0.2	-	<0.0042		<0.0042		<0.0042		<0.0045		<0.0052		<0.0042		<0.0041		<0.0042		<0.0038		<0.0044		<0.0044

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential Direct Contact Soil Remediation Standard (1)	NJDEP Non-Residential Direct Contact Soil Remediation Standard (1)	NJDEP Impact to Groundwater Screening Level (2)	Weston 1995 Background (3)	B-165	B-166	B-167	B-168	B-169	B-178	B-179	B-180	B-180 Dup	B-181	B-197
Sample Date					06/29/98	06/29/98	06/29/98	06/29/98	06/29/98	07/13/98	07/13/98	07/13/98	07/13/98	07/13/98	08/12/98
Metals (mg/kg)															
Aluminum	78,000	NA	6,000	15,200	**5053**	**9267**	**6171**	**3375**	**1764**	**5330**	**1710**	**10000**	**3330**	**12500**	**5970**
Antimony	31	450	6	ND	**0.822**	**1.298**	**0.638**	<0.261	**0.368**	**0.54**	**0.391**	**0.537**	<0.226	**1.16**	**0.253**
Arsenic	19	19	19	22.9	**6.525**	**17.45**	**9.463**	**4.215**	**3.946**	**6.39**	**1.55**	**9.99**	**3.72**	**11.6**	**4.98**
Barium	16,000	59,000	2,100	32.3	**15.48**	**14.34**	**54.63**	**31.47**	**45.13**	**21.4**	**5.27**	**42.8**	**21.7**	**14.2**	**47.1**
Beryllium	16	140	0.7	2	**0.4805**	**0.5758**	**0.5529**	**0.3019**	**0.1749**	**0.728**	**0.255**	**1.35**	**0.492**	**1.8**	**0.53**
Cadmium	78	78	2	ND	**0.2383**	<0.061	**0.3187**	**0.3736**	**0.3013**	<4.182	<0.057	<0.050	<0.057	<0.062	<0.058
Calcium	NLE	NLE	NLE	921	**665**	**441.5**	**1435**	**1273**	**624.1**	**851**	**127**	**1240**	**668**	**86.4**	**1720**
Chromium	NLE	NLE	NLE	269	**55.07**	**72.9**	**47.49**	**10.58**	**3.82**	**58.8**	**19.6**	**110**	**34.5**	**139**	**17.1**
Cobalt	1,600	590	90	2.5	**0.9522**	**0.8807**	**2.798**	**4.252**	**1.702**	**1.22**	**0.247**	**1.97**	**1.34**	**1.1**	**5.69**
Copper	3,100	45,000	11,000	8	**12.07**	**7.172**	**38.89**	**20.07**	**14.28**	**4.95**	**1**	**7.44**	**9.92**	<0.374	**37.8**
Iron	NLE	NLE	NLE	55,800	**18160**	**30120**	**21260**	**4301**	**2469**	**19400**	**7740**	**35100**	**12100**	**48800**	**7220**
Lead	400	800	90	19.5	**42.83**	**14.31**	**94.14**	**20.43**	**18.74**	**7.58**	**7.32**	**14.6**	**13.5**	**6.18**	**40**
Magnesium	NLE	NLE	NLE	7,230	**983.2**	**902.7**	**1306**	**468.3**	**159.2**	**1620**	**436**	**4220**	**975**	**1660**	**791**
Manganese	11,000	5,900	65	90.7	**30.92**	**12.46**	**59.92**	**34.87**	**17.16**	**38.7**	**4.3**	**45.3**	**44.3**	**17.6**	**47.8**
Mercury	23	65	0.1	ND	**0.051**	**0.064**	**0.101**	**0.025**	<0.026	**1.68**	**0.013**	**0.042**	**0.019**	**0.028**	**0.063**
Nickel	1,600	23,000	48	8.4	**3.563**	**4.461**	**8.902**	**11.23**	**4.544**	**3.57**	**1.14**	**5.91**	**3.9**	**6.24**	**14.9**
Potassium	NLE	NLE	NLE	15400	**2960**	**2850**	**3105**	**598.3**	**193.8**	**3980**	**774**	**9010**	**2050**	**3210**	**1300**
Selenium	390	5,700	11	1.9	<0.339	**0.371**	**0.342**	<0.392	<0.399	<25.092	<0.343	<0.300	<0.340	<0.374	<0.348
Silver	390	5,700	1	1.1	<0.339	<0.365	<0.333	<0.392	<0.399	<25.092	<0.343	<0.300	<0.340	<0.374	<0.348
Sodium	NLE	NLE	NLE	51.6	**46.52**	**7.854**	**690**	**226.4**	**147.4**	**84.8**	**42.6**	**109**	**59.2**	**56.6**	**290**
Thallium	5	79	3	ND	<0.339	<0.365	<0.333	<0.392	<0.399	<25.092	<0.343	<0.300	<0.340	<0.374	<0.348
Vanadium	78	1,100	NLE	94.1	**43.13**	**62.26**	**41.98**	**14.73**	**9.161**	**18.3**	**17**	**40.3**	**21.7**	**92.1**	**23.2**
Zinc	23,000	110,000	930	81.4	**37.72**	**32.28**	**61.39**	**28.85**	**11.74**	**48.4**	**10.5**	**51.5**	**34.8**	**44.9**	**31.9**

Notes:

Historically, there have been up to 318 soil boring locations associated with FTMM-05. This analysis looks at only those boring locations that fall within the footprint of FTMM-05.

(1) New Jersey Department of Environmental Protection (NJDEP) Residential Direct Contact Soil Remediation Standards (RDCSRS) and Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS) (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.
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NJDEP criteria for total xylenes are used for xylene isomers (m+p, o).
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Dash (--) = only background concentrations for metals are being used as comparison criteria.
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J = Analyte detected between MDL and practical quantitation limit (PQL).
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µg/kg = micrograms per kilogram.
mg/kg = milligrams per kilogram.
VOCs = volatile organic compounds.
in. = inches.
bgs = below ground surface.
Detections are bolded.
Shaded cells = concentration exceeds NJDEP Impact to Groundwater Criterion.
Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria.
Shaded cells = concentration exceeds all NJDEP criteria.
Shaded cells = concentration exceeds Weston (1995) background concentration.

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential Direct Contact Soil Remediation Standard (1)	NJDEP Non-Residential Direct Contact Soil Remediation Standard (1)	NJDEP Impact to Groundwater Screening Level (2)	Weston 1995 Background (3)	B-198		B-199		B-200		B-200 Dup	B-201	B-202		B-203		B-204		B-205		B-206		B-207	B-208	
Sample Date					08/12/98		08/12/98		08/12/98		08/12/98	08/12/98	08/12/98		08/12/98		08/12/98		08/12/98		08/12/98		08/12/98	08/12/98	
Volatile Organic Compounds (VOCs, µg/kg)																									
Lab Sample ID (VOCs only collected at approximately 24 in. bgs)					3805.05		3805.07		3805.09		3805.33	3805.11	3805.13		3805.15		3805.17		3805.19		3805.21		3805.23	3805.25	
Methylene Chloride	34,000	97,000	10	-	<910		<600		<740		<920	<660	<590		<560		<680		<640		<580		<630	<650	
Benzene	2,000	5,000	5	-	<460		<300		<370		<460	<330	<290		<280		<340		<320		<290		<310	<320	
Tetrachloroethene	2,000	5,000	5	-	<460		<300		<370		<460	<330	<290		**780**		<340		<320		<290		<310	<320	
Chloroform	600	2,000	400	-	<460		<300		<370		**760**	<330	<290		<280		<340		<320		<290		<310	<320	
Ethylbenzene	7,800,000	110,000,000	13,000	-	<910		<600		<740		<920	<660	<590		<560		<680		<640		<580		<630	<650	
TICs	NLE	NLE	NLE	-	ND		ND		ND		ND	ND	ND		ND		ND		ND		ND		ND	ND	
Semivolatile Organic Compounds (SVOCs, µg/kg)																									
Lab Sample ID (All analyses except VOCs collected at approximately 6-12 in. bgs)					3805.04		3805.06		3805.08		3805.32	3805.10	3805.12		3805.14		3805.16		3805.18		3805.20		3805.22	3805.24	
Naphthalene	6,000	17,000	25,000	-	<260		<300		<250		<260	<280	**130**	J	<240		<270		<270		<280		<270	<290	
n-Nitrosodiphenylamine	99,000	390,000	400	-	<190		<220		<190		<200	<210	<180		<180		<210		<200		<210		<200	<220	
2-Methylnaphthalene	230,000	2,400,000	8,000	-	<290		<330		<290		<290	<320	<270		<270		<310		<300		<310		<300	<320	
4-Methylphenol	31,000	340,000	NLE	-	<280		<330		<280		<290	<310	<260		<260		<300		<300		<310		<300	<320	
Acenaphthylene	NLE	3.00E+08	NLE	-	<200		**78**	J	<200		<210	<220	**530**		<190		<220		<210		<220		<210	<230	
Acenaphthene	3,400,000	37,000,000	110,000	-	<180		<210		<180		<190	<200	<170		<170		<200		<190		<200		<190	<210	
Dibenzofuran	NLE	NLE	NLE	-	<190		<230		<190		<200	<220	<180		<180		<210		<210		<210		<210	<220	
Diethylphthalate	49,000,000	550,000,000	88,000	-	<210		<250		<210		<220	<240	<200		<200		<230		<220		<230		<220	<240	
Fluorene	2,300,000	24,000,000	170,000	-	<200		<230		<200		<210	<220	<190		<190		<210		<210		<220		<210	<230	
Phenanthrene	NLE	300,000,000	NLE	-	<200		**260**		<200		<210	**1000**	**2100**		**380**		<220		<210		<220		<210	<230	
Anthracene	17,000,000	30,000,000	2,400,000	-	<200		<240		<200		<210	**280**	**390**		<190		<220		<210		<220		<210	<230	
Dimethylphthalate	NLE	NLE	NLE	-	<160		<190		<160		<160	<170	<150		<150		<170		<170		<170		<170	<180	
Di-n-butylphthalate	6,100,000	68,000,000	760,000	-	**720**	J	**700**	J	**630**	J	**1100**	**1200**	**570**	J	**210**	J	**210**	J	**270**	J	**240**	J	<920	**250**	J
Fluoranthene	2,300,000	24,000,000	1,300,000	-	<200		**400**		**170**	J	<210	**1100**	**4500**		**510**		**140**	J	<210		<220		<210	<230	
Pyrene	1,700,000	18,000,000	840,000	-	<240		**560**		**260**		<240	**950**	**5100**		**740**		**260**		<250		<260		<250	<270	
Pyridine	NLE	NLE	NLE	-	<310		<370		<310		<320	<350	<290		<290		<340		<330		<340		<330	<350	
Butylbenzylphthalate	1,200,000	14,000,000	230,000	-	<260		<310		<260		<260	<290	<250		<250		<280		<280		<290		<280	<300	
Benzo(a)anthracene	600	2,000	800	-	<210		**230**	J	**130**	J	<210	**470**	**2700**		**260**		**120**	J	<220		<230		<220	<230	
3,3'-Dichlorobenzidine	1,000	4,000	200	-	<360		<420		<360		<360	<400	<340		<340		<390		<380		<400		<380	<410	
Chrysene	62,000	230,000	80,000	-	<260		**460**		**290**		<270	**670**	**4900**		**490**		**240**	J	<280		<290		<280	<300	
bis(2-Ethylhexyl)phthalate	35,000	140,000	1,200,000	-	<290		<340		<290		<300	<320	<270		<270		<310		<310		<320		<310	<330	
Benzo(b)fluoranthene	600	2,000	2,000	-	<260		**220**	J	**160**	J	<260	**360**	**3100**		**230**	J	<280		<270		<280		<270	<290	
Benzo(k)fluoranthene	6,000	23,000	25,000	-	<190		**230**		**170**	J	<200	**360**	**2800**		**250**		<200		<200		<210		<200	<220	
Benzo(a)pyrene	200	200	200	-	<200		**240**		**130**	J	<200	**390**	**2900**		**260**		<210		<210		<210		<210	<220	
Indeno(1,2,3-cd)pyrene	600	2,000	7,000	-	<210		<250		<210		<220	<240	**2100**		**150**	J	<230		<230		<230		<230	<240	
Dibenz(a,h)anthracene	200	200	800	-	<250		<290		<250		<260	<280	**1500**		<240		<270		<260		<270		<260	<280	
Benzo(g,h,i)perylene	380,000,000	30,000,000	NLE	-	<250		<290		<250		<260	<280	**2200**		**140**	J	<270		<260		<270		<260	<280	
Total TICs	NLE	NLE	NLE	-	**9880**		**8800**		ND		**8200**	**16400**	**15260**		**4600**		**2500**		**2780**		**10400**		ND	**2200**	
Pesticides / PCBs (mg/kg)																									
Heptachlor	0.1	0.7	0.5	-	<0.0003		<0.0004		<0.0003		<0.0003	<0.0003	<0.0003		<0.0003		<0.0003		<0.0003		<0.0004		<0.0003	<0.0004	
Heptachlor Epoxide	0.07	0.3	0.01	-	<0.0006		<0.0007		<0.0007		<0.0006	<0.0007	<0.0006		<0.0006		<0.0007		<0.0006		<0.0007		<0.0007	<0.0008	
4,4'-DDE	2	9	18	-	**0.017**		**0.26**		**0.01**		<0.0004	**0.047**	**0.016**		**0.102**		**0.024**		<0.0004		**0.004**		<0.0005	**0.005**	
Dieldrin	0.04	0.2	0.003	-	<0.0005		<0.0006		<0.0005		<0.0005	<0.0006	<0.0005		<0.0005		<0.0006		<0.0005		<0.0006		<0.0006	<0.0006	
Endrin	23	340	1	-	<0.0005		<0.0006		<0.0005		<0.0005	<0.0006	<0.0005		<0.0005		<0.0006		<0.0005		<0.0006		<0.0006	<0.0006	
4,4'-DDD	3	13	4	-	**0.001**		**0.116**		<0.0007		<0.0006	<0.0007	<0.0006		**0.031**		**0.004**		<0.0006		**0.003**		<0.0007	<0.0008	
Endrin Aldehyde	NLE	NLE	NLE	-	<0.0005		<0.0006		<0.0005		<0.0005	<0.0006	<0.0005		<0.0005		<0.0006		<0.0005		<0.0006		<0.0006	<0.0006	
4,4'-DDT	2	8	11	-	**0.019**		**1.321**		**0.01**		<0.0011	<0.0013	**0.054**		**0.34**		**0.019**		<0.0011		**0.003**		<0.0013	**0.006**	
Endosulfan I	470	6,800	4	-	<0.0005		<0.0006		<0.0005		<0.0005	<0.0006	<0.0005		<0.0005		<0.0006		<0.0005		<0.0006		<0.0006	<0.0006	
Endosulfan II	470	6,800	4	-	<0.0004		<0.0005		<0.0004		<0.0004	<0.0005	<0.0004		<0.0004		<0.0005		<0.0004		<0.0005		<0.0005	<0.0005	
Endosulfan-Sulfate	470	6,800	2	-	<0.0004		<0.0005		<0.0004		<0.0004	<0.0005	<0.0004		<0.0004		<0.0005		<0.0004		<0.0005		<0.0005	<0.0005	
gamma-Chlordane	0.2	1	0.05	-	<0.0005		<0.0006		<0.0005		<0.0005	<0.0006	<0.0005		<0.0005		<0.0006		<0.0005		<0.0006		<0.0006	<0.0006	
alpha-Chlordane	0.2	1	0.05	-	<0.0005		<0.0006		<0.0005		<0.0005	<0.0006	<0.0005		<0.0005		<0.0006		<0.0005		<0.0006		<0.0006	<0.0006	
Aroclor 1254	0.2	1	0.2	-	<0.0040		<0.0049		<0.0044		<0.0202	**1.499**	<0.0041		<0.0042		<0.0045		<0.0041		<0.0047		**0.165**	<0.0050	

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SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential Direct Contact Soil Remediation Standard (1)	NJDEP Non-Residential Direct Contact Soil Remediation Standard (1)	NJDEP Impact to Groundwater Screening Level (2)	Weston 1995 Background (3)	B-198	B-199	B-200	B-200 Dup	B-201	B-202	B-203	B-204	B-205	B-206	B-207	B-208
Sample Date					08/12/98	08/12/98	08/12/98	08/12/98	08/12/98	08/12/98	08/12/98	08/12/98	08/12/98	08/12/98	08/12/98	08/12/98
Metals (mg/kg)																
Aluminum	78,000	NA	6,000	15,200	**4720**	**9820**	**10500**	**2490**	**5920**	**5990**	**6500**	**3940**	**4920**	**12300**	**3020**	**3420**
Antimony	31	450	6	ND	**1.48**	**6.56**	**0.35**	<0.245	**0.617**	**0.751**	**0.359**	<0.250	<0.245	<0.255	**0.411**	**0.737**
Arsenic	19	19	19	22.9	**59.1**	**11.5**	**8.59**	**4.96**	**5.5**	**7.11**	**6.34**	**5.27**	**7.61**	**8.46**	**6.07**	**10.7**
Barium	16,000	59,000	2,100	32.3	**68.6**	**363**	**147**	**50.1**	**84.6**	**113**	**25.5**	**35.5**	**61.6**	**99.6**	**22.3**	**71.1**
Beryllium	16	140	0.7	2	**0.548**	**0.9**	**0.743**	**0.266**	**0.92**	**0.58**	**0.428**	**0.389**	**0.354**	**0.985**	**0.288**	**0.525**
Cadmium	78	78	2	ND	<0.051	<0.057	**0.543**	**823**	**0.929**	<0.059	<0.059	<0.062	<0.061	<0.064	<0.057	<0.070
Calcium	NLE	NLE	NLE	921	**918**	**537**	**1390**	**823**	**1500**	**455**	**2470**	**1100**	**1010**	**1270**	**670**	**714**
Chromium	NLE	NLE	NLE	269	**19.5**	**77.4**	**25.8**	**5.31**	**37.8**	**49.8**	**36**	**19.8**	**12.9**	**26.4**	**18.4**	**32**
Cobalt	1,600	590	90	2.5	**11.4**	**5.14**	**7.57**	**1.77**	**5.81**	**1.98**	**4.27**	**4.61**	**4.8**	**9.39**	**3.91**	**2.42**
Copper	3,100	45,000	11,000	8	**92.6**	**122**	**38.6**	**23.6**	**47.3**	**77.4**	**36.4**	**35**	**18.1**	**110**	**31.8**	**58**
Iron	NLE	NLE	NLE	55,800	**38400**	**33400**	**15300**	**4580**	**12600**	**23300**	**14600**	**8620**	**5100**	**10200**	**15100**	**14800**
Lead	400	800	90	19.5	**119**	**494**	**37.6**	**11.2**	**62.8**	**268**	**23.8**	**35**	**28.6**	**39.9**	**12.6**	**135**
Magnesium	NLE	NLE	NLE	7,230	**491**	**1700**	**900**	**256**	**1430**	**1680**	**2450**	**630**	**342**	**540**	**329**	**995**
Manganese	11,000	5,900	65	90.7	**121**	**143**	**126**	**19.3**	**332**	**39.1**	**83.9**	**61.8**	**21.1**	**63.2**	**65.6**	**36.2**
Mercury	23	65	0.1	ND	**0.029**	**0.153**	**0.044**	**0**	**0.391**	**0.115**	**0.602**	**0.064**	<0.035	<0.034	**0.047**	**0.075**
Nickel	1,600	23,000	48	8.4	**18.2**	**23.6**	**19.6**	**5.28**	**10.5**	**5.95**	**11**	**8.78**	**14.5**	**24.5**	**11.9**	**7.99**
Potassium	NLE	NLE	NLE	15400	**1330**	**4160**	**3580**	**488**	**3670**	**3720**	**3560**	**1470**	**989**	**2280**	**852**	**3150**
Selenium	390	5,700	11	1.9	<0.303	<0.345	<0.327	<0.367	<0.386	<0.352	<0.352	<0.375	**1.24**	<0.382	**0.606**	<0.419
Silver	390	5,700	1	1.1	<0.303	<0.345	<0.327	<0.367	<0.386	<0.352	<0.352	<0.375	<0.368	<0.382	<0.340	<0.419
Sodium	NLE	NLE	NLE	51.6	**393**	**535**	**485**	**278**	**526**	**566**	**411**	**207**	**339**	**460**	**252**	**404**
Thallium	5	79	3	ND	<0.303	<0.345	<0.327	**0.513**	<0.386	**0.498**	<0.352	<0.375	<0.368	<0.382	<0.340	**0.505**
Vanadium	78	1,100	NLE	94.1	**17.5**	**43.5**	**30.9**	**11.8**	**25.3**	**31.2**	**36.7**	**22.9**	**23.7**	**31.5**	**17.1**	**21.1**
Zinc	23,000	110,000	930	81.4	**114**	**116**	**80.2**	**34.2**	**514**	**38.1**	**39.2**	**29.2**	**27.2**	**31.8**	**165**	**48.9**

Notes:

Historically, there have been up to 318 soil boring locations associated with FTMM-05. This analysis looks at only those boring locations that fall within the footprint of FTMM-05.

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SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential Direct Contact Soil Remediation Standard [1]	NJDEP Non-Residential Direct Contact Soil Remediation Standard [1]	NJDEP Impact to Groundwater Screening Level [2]	Weston 1995 Background [3]	B-209		B-210		B-211		B-212		B-213		B-214		B-215		B-216		B-217		B-218		B-219	
Sample Date					08/12/98		08/12/98		08/12/98		08/13/98		08/13/98		08/13/98		08/13/98		08/13/98		08/13/98		08/13/98		08/13/98	
Volatile Organic Compounds (VOCs, µg/kg)																										
Lab Sample ID (VOCs only collected at approximately 24 in. bgs)					3805.27		3805.29		3805.31		3809.03		3809.05		3809.07		3809.09		3809.11		3809.13		3809.15		3809.17	
Methylene Chloride	34,000	97,000	10	-	<510		<580		<660		<710		<770		<580		<560		<560		<550		<640		<650	
Benzene	2,000	5,000	5	-	<250		<290		<330		<350		<390		<290		<280		<280		<270		<320		<320	
Tetrachloroethene	2,000	5,000	5	-	<250		<290		<330		<350		<390		<290		<280		<280		<270		<320		<320	
Chloroform	600	2,000	400	-	**450**		**490**		**550**		**460**		**520**		**410**		**430**		**390**		**460**		**440**		**440**	
Ethylbenzene	7,800,000	110,000,000	13,000	-	<510		<580		<660		<710		<770		<580		<560		<560		<550		<640		<650	
TICs	NLE	NLE	NLE	-	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Semivolatile Organic Compounds (SVOCs, µg/kg)																										
Lab Sample ID (All analyses except VOCs collected at approximately 6-12 in. bgs)					3805.26		3805.28		3805.30		3809.02		3809.04		3809.06		3809.08		3809.10		3809.12		3809.14		3809.16	
Naphthalene	6,000	17,000	25,000	-	**120**	J	<240		<250		<1200		<1200		<1100		<970		<980		<1000		<1100		<1100	
n-Nitrosodiphenylamine	99,000	390,000	400	-	<180		**60**	J	<190		<1200		<1200		<1100		<970		<980		<1000		<1100		<1100	
2-Methylnaphthalene	230,000	2,400,000	8,000	-	**120**	J	<270		<280		<1200		<1200		<1100		<970		<980		<1000		<1100		<1100	
4-Methylphenol	31,000	340,000	NLE	-	<260		<260		<280		<1200		<1200		<1100		<970		<980		<1000		<1100		<1100	
Acenaphthylene	NLE	3.00E+08	NLE	-	**260**		<190		<200		<1200		<1200		<1100		<970		<980		<1000		**480**	J	<1100	
Acenaphthene	3,400,000	37,000,000	110,000	-	<170		<170		<180		<1200		<1200		<1100		<970		<980		<1000		<1100		<1100	
Dibenzofuran	NLE	NLE	NLE	-	<180		<180		<190		<1200		<1200		<1100		<970		<980		<1000		<1100		<1100	
Diethylphthalate	49,000,000	550,000,000	88,000	-	<200		<200		<210		<1200		<1200		<1100		<970		<980		<1000		<1100		<1100	
Fluorene	2,300,000	24,000,000	170,000	-	<190		<190		<200		<1200		<1200		<1100		<970		<980		<1000		<1100		<1100	
Phenanthrene	NLE	300,000,000	NLE	-	**760**		<190		**150**	J	**140**	J	**280**	J	**190**	J	**160**	J	<980		**140**	J	**1300**		**110**	J
Anthracene	17,000,000	30,000,000	2,400,000	-	**200**		<190		<200		<1200		<1200		<1100		<970		<980		<1000		**250**	J	<1100	
Dimethylphthalate	NLE	NLE	NLE	-	<150		<150		<160		<1200		<1200		<1100		<970		<980		<1000		<1100		<1100	
Di-n-butylphthalate	6,100,000	68,000,000	760,000	-	**540**	J	**840**		**580**	J	**330**	JB	**670**	JB	**260**	JB	**660**	JB	**250**	JB	**190**	JB	**650**	JB	**380**	JB
Fluoranthene	2,300,000	24,000,000	1,300,000	-	**1400**		**190**	J	**160**	J	**370**	J	**370**	J	**220**	J	**160**	J	**280**	J	**190**	J	**2900**		**220**	J
Pyrene	1,700,000	18,000,000	840,000	-	**1100**		**260**		**270**		**400**	J	**560**	J	**310**	J	**270**	J	**340**	J	**180**	J	**3500**		**280**	J
Pyridine	NLE	NLE	NLE	-	<290		<290		<310		<1200		<1200		<1100		<970		<980		<1000		<1100		<1100	
Butylbenzylphthalate	1,200,000	14,000,000	230,000	-	<250		<250		<260		<1200		<1200		<1100		<970		<980		<1000		<1100		<1100	
Benzo(a)anthracene	600	2,000	800	-	<190		**110**	J	<200		**230**	J	**200**	J	**120**	J	<970		**140**	J	<1000		**1000**	J	**110**	J
3,3'-Dichlorobenzidine	1,000	4,000	200	-	<340		<340		<350		<1200		<1200		<1100		<970		<980		<1000		<1100		<1100	
Chrysene	62,000	230,000	80,000	-	<250		**240**	J	<260		**360**	J	**460**	J	**240**	J	<970		**280**	J	<1000		**2500**		**280**	J
bis(2-Ethylhexyl)phthalate	35,000	140,000	1,200,000	-	<270		<270		<290		<1200		<1200		<1100		<970		<980		<1000		<1100		**120**	J
Benzo(b)fluoranthene	600	2,000	2,000	-	**530**		<240		<250		**180**	J	**190**	J	<1100		<970		<980		<1000		**1100**		**170**	J
Benzo(k)fluoranthene	6,000	23,000	25,000	-	<180		<180		<190		**220**	J	**240**	J	<1100		<970		<980		<1000		**1200**		<1100	
Benzo(a)pyrene	200	200	200	-	**400**		<180		<190		**200**	J	**240**	J	<1100		<970		<980		<1000		**1000**	J	<1100	
Indeno(1,2,3-cd)pyrene	600	2,000	7,000	-	**190**	J	<200		<210		**120**	J	**140**	J	<1100		<970		<980		<1000		**550**	J	<1100	
Dibenz(a,h)anthracene	200	200	800	-	**170**	J	<230		<250		<1200		<1200		<1100		<970		<980		<1000		<1100		<1100	
Benzo(g,h,i)perylene	380,000,000	30,000,000	NLE	-	**190**	J	<230		<250		**210**	J	<1200		<1100		<970		<980		<1000		**490**	J	<1100	
Total TICs	NLE	NLE	NLE	-	ND		**3400**		**3400**		**1200**		**11700**		**25710**		**1200**		**1200**		**2300**		**11430**		**880**	
Pesticides / PCBs (mg/kg)																										
Heptachlor	0.1	0.7	0.5	-	<0.0003		<0.0003		<0.0003		<0.0004		<0.0035		<0.0034		<0.0003		<0.0003		**0.004**		<0.0030		<0.0030	
Heptachlor Epoxide	0.07	0.3	0.01	-	<0.0006		<0.0006		<0.0006		<0.0007		<0.0070		<0.0067		<0.0006		<0.0006		<0.0006		<0.0059		<0.0060	
4,4'-DDE	2	9	18	-	**0.028**		**0.057**		**0.057**		<0.0005		**0.473**		**0.313**		**0.013**		**0.088**		**0.013**		**0.315**		**0.233**	
Dieldrin	0.04	0.2	0.003	-	<0.0005		<0.0005		<0.0005		<0.0006		<0.0058		<0.0056		<0.0005		<0.0005		**0.004**		<0.0049		<0.0050	
Endrin	23	340	1	-	<0.0005		<0.0005		<0.0005		<0.0006		<0.0058		<0.0056		<0.0005		<0.0005		<0.0005		<0.0049		<0.0050	
4,4'-DDD	3	13	4	-	**0.025**		**0.014**		**0.008**		<0.0007		**0.814**		**0.214**		**0.004**		**0.008**		**0.012**		**0.17**		**0.082**	
Endrin Aldehyde	NLE	NLE	NLE	-	<0.0005		<0.0005		<0.0005		<0.0006		<0.0058		<0.0056		<0.0005		<0.0005		<0.0005		<0.0049		<0.0050	
4,4'-DDT	2	8	11	-	**0.167**		**0.025**		**0.014**		<0.0013		**1.042**		**0.463**		**0.015**		**0.106**		**0.039**		**0.444**		**0.472**	
Endosulfan I	470	6,800	4	-	<0.0005		<0.0005		<0.0005		<0.0006		<0.0058		<0.0056		<0.0005		<0.0005		<0.0005		<0.0049		<0.0050	
Endosulfan II	470	6,800	4	-	<0.0004		<0.0004		<0.0004		<0.0005		<0.0046		<0.0045		<0.0004		<0.0004		<0.0004		<0.0039		<0.0040	
Endosulfan-Sulfate	470	6,800	2	-	<0.0004		<0.0004		<0.0004		<0.0005		<0.0046		<0.0045		<0.0004		<0.0004		<0.0004		<0.0039		<0.0040	
gamma-Chlordane	0.2	1	0.05	-	<0.0005		<0.0005		<0.0005		<0.0006		<0.0058		<0.0056		<0.0005		<0.0005		**0.004**		<0.0049		<0.0050	
alpha-Chlordane	0.2	1	0.05	-	<0.0005		<0.0005		<0.0005		<0.0006		<0.0058		<0.0056		<0.0005		<0.0005		**0.001**		<0.0049		<0.0050	
Aroclor 1254	0.2	1	0.2	-	<0.0037		<0.0041		<0.0042		<0.0048		<0.0464		<0.0449		<0.0041		<0.0041		<0.0040		<0.0393		<0.0400	

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential Direct Contact Soil Remediation Standard (1)	NJDEP Non-Residential Direct Contact Soil Remediation Standard (1)	NJDEP Impact to Groundwater Screening Level (2)	Weston 1995 Background (3)	B-209	B-210	B-211	B-212	B-213	B-214	B-215	B-216	B-217	B-218	B-219
Sample Date					08/12/98	08/12/98	08/12/98	08/13/98	08/13/98	08/13/98	08/13/98	08/13/98	08/13/98	08/13/98	08/13/98
Metals (mg/kg)															
Aluminum	78,000	NA	6,000	15,200	**6840**	**5330**	**958**	**3050**	**3690**	**6270**	**7680**	**10900**	**8370**	**2150**	**3880**
Antimony	31	450	6	ND	**0.87**	**0.665**	<0.229	<0.249	**0.466**	**1.24**	**0.827**	**1.7**	<0.229	<0.189	**0.285**
Arsenic	19	19	19	22.9	**8.17**	**9.51**	**1.23**	**9**	**10.5**	**10.9**	**6.37**	**18.5**	**5.26**	**5.78**	**7.42**
Barium	16,000	59,000	2,100	32.3	**59.7**	**43.6**	**129**	**55.3**	**70.3**	**42.5**	**28.8**	**9.95**	**25**	**24.4**	**98.9**
Beryllium	16	140	0.7	2	**0.671**	**0.525**	**0.0934**	**0.423**	**0.492**	**0.591**	**0.885**	**1.27**	**0.422**	**0.227**	**0.804**
Cadmium	78	78	2	ND	<0.047	<0.055	<0.057	<0.062	<0.069	<0.055	<0.057	<0.052	<0.057	<0.047	**0.115**
Calcium	NLE	NLE	NLE	921	**1740**	**2000**	**405**	**1440**	**777**	**320**	**747**	**511**	**774**	**901**	**1700**
Chromium	NLE	NLE	NLE	269	**43.7**	**36.8**	**2.75**	**5.38**	**26.1**	**67.3**	**78.2**	**122**	**28.8**	**12.9**	**21.4**
Cobalt	1,600	590	90	2.5	**3.08**	**2.66**	**1.56**	**2.47**	**2.82**	**0.937**	**1.07**	**0.799**	**1.68**	**1.77**	**2.73**
Copper	3,100	45,000	11,000	8	**36.6**	**26.3**	**12.1**	**14.6**	**33.1**	**7.75**	**4.39**	**3.87**	**4.41**	**24.9**	**30.3**
Iron	NLE	NLE	NLE	55,800	**18600**	**15500**	**2220**	**5180**	**16000**	**36000**	**24600**	**36400**	**11900**	**6370**	**10700**
Lead	400	800	90	19.5	**289**	**73.8**	**7.32**	**25.3**	**146**	**20.2**	**11.8**	**12.6**	**23.4**	**54.3**	**117**
Magnesium	NLE	NLE	NLE	7,230	**1800**	**1850**	**136**	**316**	**918**	**2080**	**2350**	**3600**	**1120**	**443**	**2390**
Manganese	11,000	5,900	65	90.7	**72.7**	**73.2**	**25.5**	**23.1**	**105**	**13**	**31.9**	**26.6**	**48.9**	**30**	**103**
Mercury	23	65	0.1	ND	**0.072**	**0.036**	<0.020	**0.041**	**0.645**	**0.244**	**0.061**	**0.042**	**0.095**	**0.159**	**0.236**
Nickel	1,600	23,000	48	8.4	**10.4**	**7.49**	**3.63**	**5.3**	**11**	**4.41**	**4.35**	**4.77**	**4.55**	**4.61**	**6.11**
Potassium	NLE	NLE	NLE	15400	**2920**	**3840**	**248**	**369**	**2690**	**4850**	**4890**	**6900**	**3200**	**882**	**2270**
Selenium	390	5,700	11	1.9	<0.282	<0.331	<0.343	<0.373	**0.618**	<0.331	<0.342	<0.312	<0.343	**0.582**	<0.359
Silver	390	5,700	1	1.1	<0.282	<0.331	<0.343	<0.373	<0.411	<0.331	<0.342	<0.312	<0.343	<0.284	<0.359
Sodium	NLE	NLE	NLE	51.6	**294**	**327**	**159**	**349**	**412**	**650**	**132**	**101**	**95.2**	**142**	**491**
Thallium	5	79	3	ND	<0.282	<0.331	**0.422**	**0.437**	<0.411	**0.564**	**0.531**	**0.738**	<0.343	**0.348**	<0.359
Vanadium	78	1,100	NLE	94.1	**38.1**	**32.7**	**5.82**	**11.2**	**21.5**	**38.4**	**48.5**	**45.5**	**24.2**	**16**	**20.5**
Zinc	23,000	110,000	930	81.4	**197**	**48**	**11.7**	**22.3**	**178**	**27.8**	**43.1**	**34**	**28.6**	**30.6**	**67.3**

Notes:

Historically, there have been up to 318 soil boring locations associated with FTMM-05. This analysis looks at only those boring locations that fall within the footprint of FTMM-05.

(1) New Jersey Department of Environmental Protection (NJDEP) Residential Direct Contact Soil Remediation Standards (RDCSRS) and Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS) (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.
(2) NJDEP Impact to Groundwater (NJDEP guidance document; Nov 2013).
(3) Weston, 1995. Final Site Investigation - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December.
NJDEP criteria for total xylenes are used for xylene isomers (m+p, o).
NJDEP criteria for endrin is used for endrin aldehyde.
NJDEP criteria for 4,4'-DDD and 4,4'-DDT are for total DDD and total DDT, respectively.
There are no NJDEP soil standards for individual PCB Arcolors; the total PCB NJDEP standards were used for individual Arcolors
Dash (--) = only background concentrations for metals are being used as comparison criteria.
B = Analyte detected in both sample and associated laboratory blank.
D = Result from dilution of sample.
DUP = field duplicate sample.
E = Estimated value.
J = Analyte detected between MDL and practical quantitation limit (PQL).
NA = not analyzed.
ND = not detected.
NLE = No limit established.
< = analyte not detected above method detection limit (MDL).
µg/kg = micrograms per kilogram.
mg/kg = milligrams per kilogram.
VOCs = volatile organic compounds.
in. = inches.
bgs = below ground surface.
Detections are bolded.
Shaded cells = concentration exceeds NJDEP Impact to Groundwater Criterion.
Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria.
Shaded cells = concentration exceeds all NJDEP criteria.
Shaded cells = concentration exceeds Weston (1995) background concentration.

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential Direct Contact Soil Remediation Standard (1)	NJDEP Non-Residential Direct Contact Soil Remediation Standard (1)	NJDEP Impact to Groundwater Screening Level (2)	Weston 1995 Background (3)	B-220		B-220 Dup		B-221		B-222		B-223		B-224		B-225		B-226		B-227		B-228		B-229	
Sample Date					08/13/98		08/13/98		08/13/98		08/13/98		08/14/98		08/14/98		08/14/98		08/14/98		08/14/98		08/14/98		08/14/98	
Volatile Organic Compounds (VOCs, µg/kg)																										
Lab Sample ID (VOCs only collected at approximately 24 in. bgs)					3809.19		3809.25		3809.21		3809.23		3812.03		3812.05		3812.07		3812.09		3812.11		3812.13		3812.15	
Methylene Chloride	34,000	97,000	10	-	<1100		<700		<690		<840		<530		<470		<500		<490		<600		<510		<540	
Benzene	2,000	5,000	5	-	<540		<350		<340		<420		<260		<240		<250		<240		<300		<260		<270	
Tetrachloroethene	2,000	5,000	5	-	<540		<350		<340		<420		<260		<240		<250		<240		<300		<260		<270	
Chloroform	600	2,000	400	-	<540		**410**		**400**		**480**		<260		<240		<250		<240		<300		<260		<270	
Ethylbenzene	7,800,000	110,000,000	13,000	-	<1100		**56**	J	<690		<840		<530		<470		<500		<490		<600		<510		<540	
TICs	NLE	NLE	NLE	-	ND		ND		ND		**2700**		ND		ND		ND		ND		ND		ND		ND	
Semivolatile Organic Compounds (SVOCs, µg/kg)																										
Lab Sample ID (All analyses except VOCs collected at approximately 6-12 in. bgs)					3809.18		3809.24		3809.20		3809.22		3812.02		3812.04		3812.06		3812.08		3812.10		3812.12		3812.14	
Naphthalene	6,000	17,000	25,000	-	**4000**	JD	<1000		<1100		<1100		<1100		<950		<1000		<1000		<1200		<1000		<1100	
n-Nitrosodiphenylamine	99,000	390,000	400	-	<9800		<1000		<1100		<1100		<1100		<950		<1000		<1000		<1200		<1000		<1100	
2-Methylnaphthalene	230,000	2,400,000	8,000	-	**7600**	JD	<1000		<1100		<1100		<1100		<950		<1000		<1000		<1200		<1000		<1100	
4-Methylphenol	31,000	340,000	NLE	-	<9800		<1000		<1100		<1100		<1100		<950		<1000		<1000		<1200		<1000		<1100	
Acenaphthylene	NLE	3.00E+08	NLE	-	**6100**	JD	**170**	J	**120**	J	<1100		**260**	J	<950		**120**	J	**110**	J	<1200		<1000		<1100	
Acenaphthene	3,400,000	37,000,000	110,000	-	<9800		<1000		<1100		<1100		<1100		<950		<1000		<1000		<1200		<1000		<1100	
Dibenzofuran	NLE	NLE	NLE	-	<9800		<1000		<1100		<1100		<1100		<950		<1000		<1000		<1200		<1000		<1100	
Diethylphthalate	49,000,000	550,000,000	88,000	-	<9800		<1000		<1100		<1100		<1100		<950		<1000		<1000		<1200		<1000		<1100	
Fluorene	2,300,000	24,000,000	170,000	-	<9800		<1000		<1100		<1100		<1100		<950		<1000		<1000		<1200		<1000		<1100	
Phenanthrene	NLE	300,000,000	NLE	-	**55000**	D	**490**	J	**560**	J	**220**	J	**1000**	J	<950		**420**	J	**360**	J	<1200		**170**	J	**280**	J
Anthracene	17,000,000	30,000,000	2,400,000	-	**6700**	JD	<1000		<1100		<1100		**150**	J	<950		<1000		<1000		<1200		<1000		<1100	
Dimethylphthalate	NLE	NLE	NLE	-	<9800		<1000		<1100		<1100		<1100		<950		<1000		<1000		<1200		<1000		<1100	
Di-n-butylphthalate	6,100,000	68,000,000	760,000	-	<9800		**580**	JB	**220**	JB	**1000**	JB	**310**	JB	**490**	JB	**210**	JB	**530**	JB	**210**	JB	**670**	JB	**710**	JB
Fluoranthene	2,300,000	24,000,000	1,300,000	-	**23000**	D	**620**	J	**640**	J	**270**	J	**1300**		**95**	J	**710**	J	**500**	J	<1200		**160**	J	**290**	J
Pyrene	1,700,000	18,000,000	840,000	-	**44000**	D	**990**	J	**900**	J	**370**	J	**1900**		**110**	J	**890**	J	**700**	J	**140**	J	**270**	J	**430**	J
Pyridine	NLE	NLE	NLE	-	<9800		<1000		<1100		<1100		<1100		<950		<1000		<1000		<1200		<1000		<1100	
Butylbenzylphthalate	1,200,000	14,000,000	230,000	-	<9800		<1000		<1100		<1100		<1100		<950		<1000		<1000		<1200		<1000		<1100	
Benzo(a)anthracene	600	2,000	800	-	**14000**	D	**350**	J	**320**	J	**160**	J	**700**	J	<950		**240**	J	**280**	J	<1200		<1000		**160**	J
3,3'-Dichlorobenzidine	1,000	4,000	200	-	<9800		<1000		<1100		<1100		<1100		<950		<1000		<1000		<1200		<1000		<1100	
Chrysene	62,000	230,000	80,000	-	**25000**	D	**850**	J	**680**	J	**290**	J	**1500**		<950		**720**	J	**610**	J	<1200		**200**	J	**340**	J
bis(2-Ethylhexyl)phthalate	35,000	140,000	1,200,000	-	<9800		<1000		<1100		<1100		<1100		<950		<1000		<1000		<1200		<1000		<1100	
Benzo(b)fluoranthene	600	2,000	2,000	-	**4700**	JD	**380**	J	**330**	J	**140**	J	**670**	J	<950		**320**	J	**310**	J	<1200		<1000		**130**	J
Benzo(k)fluoranthene	6,000	23,000	25,000	-	**9000**	JD	**400**	J	**430**	J	**180**	J	**720**	J	<950		**380**	J	**360**	J	<1200		<1000		**200**	J
Benzo(a)pyrene	200	200	200	-	**8900**	JD	**380**	J	**360**	J	**130**	J	**770**	J	<950		**280**	J	**320**	J	<1200		<1000		**150**	J
Indeno(1,2,3-cd)pyrene	600	2,000	7,000	-	**19000**	D	<1000		<1100		<1100		**550**	J	<950		**200**	J	**200**	J	<1200		<1000		<1100	
Dibenz(a,h)anthracene	200	200	800	-	**25000**	D	<1000		<1100		<1100		<1100		<950		<1000		<1000		<1200		<1000		<1100	
Benzo(g,h,i)perylene	380,000,000	30,000,000	NLE	-	**22000**	D	<1000		<1100		<1100		**490**	J	<950		**210**	J	**190**	J	<1200		<1000		<1100	
Total TICs	NLE	NLE	NLE	-	**87910**		**32430**		**32510**		**41840**		**24000**		**8810**		**13740**		**25150**		ND		**6050**		**15710**	
Pesticides / PCBs (mg/kg)																										
Heptachlor	0.1	0.7	0.5	-	<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0037		<0.0033		<0.0032	
Heptachlor Epoxide	0.07	0.3	0.01	-	<0.0006		<0.0006		<0.0007		<0.0007		<0.0006		**0.01**		<0.0006		<0.0006		<0.0074		<0.0066		<0.0064	
4,4'-DDE	2	9	18	-	**0.104**		**0.457**		**0.433**		**0.068**		**0.644**		**0.024**		**0.422**		**0.612**		**0.241**		**0.262**		**0.169**	
Dieldrin	0.04	0.2	0.003	-	<0.0005		<0.0005		<0.0006		<0.0006		<0.0005		**0.003**		<0.0005		<0.0005		<0.0062		<0.0055		<0.0053	
Endrin	23	340	1	-	<0.0005		<0.0005		<0.0006		<0.0006		<0.0005		<0.0005		<0.0005		<0.0005		<0.0062		<0.0055		<0.0053	
4,4'-DDD	3	13	4	-	**0.021**		**0.069**		**2.225**		**0.03**		<0.0006		**0.004**		**0.048**		**0.164**		**0.276**		**0.419**		**0.179**	
Endrin Aldehyde	NLE	NLE	NLE	-	<0.0005		<0.0005		<0.0006		<0.0006		**0.061**		<0.0005		<0.0005		<0.0005		<0.0062		<0.0055		<0.0053	
4,4'-DDT	2	8	11	-	**0.15**		**0.491**		**5.604**		**0.427**		**1.237**		**0.05**		**1**		**0.973**		**0.859**		<0.0121		**1.07**	
Endosulfan I	470	6,800	4	-	<0.0005		<0.0005		<0.0006		<0.0006		<0.0005		<0.0005		<0.0005		<0.0005		<0.0062		<0.0055		<0.0053	
Endosulfan II	470	6,800	4	-	<0.0004		<0.0004		<0.0005		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0049		<0.0044		<0.0042	
Endosulfan-Sulfate	470	6,800	2	-	<0.0004		<0.0004		<0.0005		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0049		<0.0439		**2.215**	
gamma-Chlordane	0.2	1	0.05	-	<0.0005		<0.0005		<0.0006		<0.0006		<0.0005		**0.002**		<0.0005		<0.0005		<0.0062		<0.0055		<0.0053	
alpha-Chlordane	0.2	1	0.05	-	<0.0005		<0.0005		<0.0006		<0.0006		<0.0005		<0.0005		<0.0005		<0.0005		<0.0062		<0.0055		<0.0053	
Aroclor 1254	0.2	1	0.2	-	<0.0042		<0.0041		<0.0045		<0.0044		<0.0039		<0.0039		<0.0041		<0.0043		<0.0492		<0.0439		<0.0424	

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential Direct Contact Soil Remediation Standard (1)	NJDEP Non-Residential Direct Contact Soil Remediation Standard (1)	NJDEP Impact to Groundwater Screening Level (2)	Weston 1995 Background (3)	B-220	B-220 Dup	B-221	B-222	B-223	B-224	B-225	B-226	B-227	B-228	B-229
Sample Date					08/13/98	08/13/98	08/13/98	08/13/98	08/14/98	08/14/98	08/14/98	08/14/98	08/14/98	08/14/98	08/14/98
Metals (mg/kg)															
Aluminum	78,000	NA	6,000	15,200	**4400**	**4200**	**7220**	**6310**	**8000**	**8920**	**3360**	**5370**	**6730**	**8520**	**4570**
Antimony	31	450	6	ND	**0.763**	**0.382**	**1.38**	**0.483**	**0.759**	<0.200	**0.444**	**0.648**	<0.220	**1.17**	**1.06**
Arsenic	19	19	19	22.9	**10**	**7.26**	**9.59**	**10.2**	**8.04**	**4.76**	**6.16**	**7.7**	**6.64**	**8.79**	**11**
Barium	16,000	59,000	2,100	32.3	**70.6**	**36**	**55.2**	**26**	**40.3**	**25.7**	**28.3**	**47.9**	**38.5**	**39.9**	**31.5**
Beryllium	16	140	0.7	2	**0.534**	**0.449**	**1.1**	**0.446**	**0.764**	**0.399**	**0.336**	**0.719**	**0.916**	**1.43**	**0.514**
Cadmium	78	78	2	ND	<0.053	<0.054	<0.060	<0.059	<0.056	<0.050	<0.054	<0.059	<0.055	<0.056	<0.057
Calcium	NLE	NLE	NLE	921	**983**	**779**	**654**	**314**	**1210**	**606**	**631**	**1020**	**519**	**395**	**344**
Chromium	NLE	NLE	NLE	269	**37.5**	**25.5**	**74.3**	**69**	**60.4**	**27.1**	**22.4**	**44.1**	**73.2**	**92.1**	**51.5**
Cobalt	1,600	590	90	2.5	**2.52**	**2.24**	**1.09**	**1.08**	**2.47**	**1.6**	**1.47**	**2.1**	**0.94**	**1.42**	**0.718**
Copper	3,100	45,000	11,000	8	**29.8**	**30**	**32.9**	**4.04**	**22**	**3.7**	**23.1**	**32.9**	**8.81**	**5.93**	**17.7**
Iron	NLE	NLE	NLE	55,800	**19400**	**14500**	**28900**	**17800**	**21500**	**11300**	**10800**	**18800**	**25700**	**30100**	**30800**
Lead	400	800	90	19.5	**122**	**162**	**137**	**12.9**	**67.7**	**15.3**	**81.2**	**111**	**21.4**	**23.9**	**18.8**
Magnesium	NLE	NLE	NLE	7,230	**1440**	**839**	**2280**	**1680**	**2160**	**1040**	**748**	**1470**	**2690**	**2940**	**1530**
Manganese	11,000	5,900	65	90.7	**49.5**	**43.7**	**20.7**	**12.9**	**69.5**	**46.6**	**29.2**	**40**	**11.5**	**26.8**	**10.5**
Mercury	23	65	0.1	ND	**2.341**	**31.452**	**0.392**	**0.197**	**0.096**	**0.351**	**0.301**	**0.283**	**0.198**	**0.212**	**0.182**
Nickel	1,600	23,000	48	8.4	**6.6**	**6.3**	**5.86**	**4.76**	**8.15**	**4.31**	**5.43**	**7.43**	**4.49**	**5.39**	**3.49**
Potassium	NLE	NLE	NLE	15400	**4340**	**2170**	**4950**	**5820**	**4300**	**3180**	**1920**	**4750**	**5430**	**6580**	**3610**
Selenium	390	5,700	11	1.9	<0.315	<0.327	<0.360	**0.353**	<0.335	<0.300	<0.325	<0.355	<0.329	<0.336	<0.344
Silver	390	5,700	1	1.1	<0.315	<0.327	<0.360	<0.352	<0.335	<0.300	<0.325	<0.355	<0.329	<0.336	<0.344
Sodium	NLE	NLE	NLE	51.6	**386**	**218**	**723**	**572**	**168**	**94.2**	**262**	**448**	**483**	**315**	**565**
Thallium	5	79	3	ND	**0.54**	<0.327	<0.360	**0.527**	<0.335	<0.300	**0.457**	**0.457**	**0.898**	**0.567**	**0.69**
Vanadium	78	1,100	NLE	94.1	**28.3**	**25.1**	**34.4**	**38.7**	**41.8**	**23.5**	**23.1**	**28.9**	**24.8**	**32.1**	**34**
Zinc	23,000	110,000	930	81.4	**57.2**	**31.1**	**62**	**25.8**	**79.5**	**23.5**	**48**	**50.3**	**34.3**	**50.8**	**43.5**

Notes:

Historically, there have been up to 318 soil boring locations associated with FTMM-05. This analysis looks at only those boring locations that fall within the footprint of FTMM-05.

(1) New Jersey Department of Environmental Protection (NJDEP) Residential Direct Contact Soil Remediation Standards (RDCSRS) and Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS) (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.
(2) NJDEP Impact to Groundwater (NJDEP guidance document; Nov 2013).
(3) Weston, 1995. Final Site Investigation - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December.
NJDEP criteria for total xylenes are used for xylene isomers (m+p, o).
NJDEP criteria for endrin is used for endrin aldehyde.
NJDEP criteria for 4,4'-DDD and 4,4'-DDT are for total DDD and total DDT, respectively.
There are no NJDEP soil standards for individual PCB Arcolors; the total PCB NJDEP standards were used for individual Arcolors
Dash (--) = only background concentrations for metals are being used as comparison criteria.
B = Analyte detected in both sample and associated laboratory blank.
D = Result from dilution of sample.
DUP = field duplicate sample.
E = Estimated value.
J = Analyte detected between MDL and practical quantitation limit (PQL).
NA = not analyzed.
ND = not detected.
NLE = No limit established.
< = analyte not detected above method detection limit (MDL).
µg/kg = micrograms per kilogram.
mg/kg = milligrams per kilogram.
VOCs = volatile organic compounds.
in. = inches.
bgs = below ground surface.
Detections are bolded.
Shaded cells = concentration exceeds NJDEP Impact to Groundwater Criterion.
Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria.
Shaded cells = concentration exceeds all NJDEP criteria.
Shaded cells = concentration exceeds Weston (1995) background concentration.

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential Direct Contact Soil Remediation Standard [1]	NJDEP Non-Residential Direct Contact Soil Remediation Standard [1]	NJDEP Impact to Groundwater Screening Level [2]	Weston 1995 Background [3]	B-230		B-231		B-232		B-233		B-234		B-235		B-236		B-237		B-238		B-239		B-240	
Sample Date					08/14/98		08/14/98		08/25/98		08/25/98		08/25/98		08/25/98		08/25/98		08/26/98		08/26/98		08/26/98		08/26/98	
Volatile Organic Compounds (VOCs, µg/kg)																										
Lab Sample ID (VOCs only collected at approximately 24 in. bgs)					3812.17		3812.19		3827.03		3827.05		3827.07		3827.09		3827.11		3836.03		3836.05		3836.07		3836.09	
Methylene Chloride	34,000	97,000	10	-	<480		<480		<510		<530		<580		<520		<550		<550		<610		<840		<760	
Benzene	2,000	5,000	5	-	<240		<240		<250		<260		<290		<260		**340**		<270		<300		<420		<380	
Tetrachloroethene	2,000	5,000	5	-	<240		<240		<250		<260		<290		<260		<280		<270		<300		<420		<380	
Chloroform	600	2,000	400	-	<240		<240		<250		<260		<290		<260		<280		<270		<300		<420		<380	
Ethylbenzene	7,800,000	110,000,000	13,000	-	<480		<480		<510		<530		<580		<520		<550		<550		<610		<840		<760	
TICs	NLE	NLE	NLE	-	ND		ND		ND		**1600**		**1900**		ND		ND		ND		ND		ND		ND	
Semivolatile Organic Compounds (SVOCs, µg/kg)																										
Lab Sample ID (All analyses except VOCs collected at approximately 6-12 in. bgs)					3812.16		3812.18		3827.02		3827.04		3827.06		3827.08		3827.10		3836.02		3836.04		3836.06		3836.08	
Naphthalene	6,000	17,000	25,000	-	<960		<970		<1000		<1100		<1200		<1000		<1100		<1100		<1000		<1100		<1000	
n-Nitrosodiphenylamine	99,000	390,000	400	-	<960		<970		<1000		<1100		<1200		<1000		<1100		<1100		<1000		<1100		<1000	
2-Methylnaphthalene	230,000	2,400,000	8,000	-	<960		<970		<1000		<1100		<1200		<1000		<1100		<1100		<1000		<1100		<1000	
4-Methylphenol	31,000	340,000	NLE	-	<960		<970		<1000		<1100		<1200		<1000		<1100		<1100		<1000		<1100		<1000	
Acenaphthylene	NLE	3.00E+08	NLE	-	<960		<970		<1000		**230**	J	<1200		<1000		**200**	J	<1100		<1000		**340**	J	**260**	J
Acenaphthene	3,400,000	37,000,000	110,000	-	<960		<970		<1000		<1100		**210**	J	<1000		<1100		<1100		<1000		<1100		<1000	
Dibenzofuran	NLE	NLE	NLE	-	<960		<970		<1000		<1100		<1200		<1000		<1100		<1100		<1000		<1100		<1000	
Diethylphthalate	49,000,000	550,000,000	88,000	-	<960		<970		<1000		<1100		<1200		<1000		<1100		<1100		<1000		<1100		<1000	
Fluorene	2,300,000	24,000,000	170,000	-	<960		<970		<1000		<1100		**260**	J	<1000		<1100		<1100		<1000		<1100		<1000	
Phenanthrene	NLE	300,000,000	NLE	-	**310**	J	<970		<1000		**590**	J	**3200**		**370**	J	**670**	J	**300**	J	**440**	J	**1000**	J	**990**	J
Anthracene	17,000,000	30,000,000	2,400,000	-	<960		<970		<1000		**170**	J	**750**	J	<1000		**120**	J	<1100		<1000		<1100		<1000	
Dimethylphthalate	NLE	NLE	NLE	-	<960		<970		<1000		<1100		<1200		<1000		<1100		<1100		<1000		<1100		<1000	
Di-n-butylphthalate	6,100,000	68,000,000	760,000	-	**470**	JB	**160**	JB	**420**	J	**450**	J	**580**	J	**410**	J	**280**	J	**320**	J	<1000		**190**	J	**440**	J
Fluoranthene	2,300,000	24,000,000	1,300,000	-	**360**	J	**250**	J	**130**	J	**950**	J	**5100**		**410**	J	**700**	J	**310**	J	**350**	J	**950**	J	**850**	J
Pyrene	1,700,000	18,000,000	840,000	-	**550**	J	**380**	J	**200**	J	**1200**		**4700**		**570**	J	**1100**		**610**	J	**580**	J	**1800**		**1600**	
Pyridine	NLE	NLE	NLE	-	<960		<970		<1000		<1100		<1200		<1000		<1100		<1100		<1000		<1100		<1000	
Butylbenzylphthalate	1,200,000	14,000,000	230,000	-	<960		<970		<1000		<1100		<1200		<1000		<1100		<1100		<1000		<1100		<1000	
Benzo(a)anthracene	600	2,000	800	-	**190**	J	**130**	J	<1000		**570**	J	**2100**		**220**	J	**380**	J	**220**	J	**200**	J	**550**	J	**510**	J
3,3'-Dichlorobenzidine	1,000	4,000	200	-	<960		<970		<1000		<1100		<1200		<1000		<1100		<1100		<1000		<1100		<1000	
Chrysene	62,000	230,000	80,000	-	**450**	J	**350**	J	<1000		**1000**	J	**3100**		**450**	J	**860**	J	**490**	J	**410**	J	**1300**		**1100**	
bis(2-Ethylhexyl)phthalate	35,000	140,000	1,200,000	-	<960		<970		<1000		<1100		**130**	J	<1000		<1100		<1100		<1000		<1100		<1000	
Benzo(b)fluoranthene	600	2,000	2,000	-	**180**	J	**140**	J	<1000		**450**	J	**1600**		**200**	J	**340**	J	<1100		<1000		**500**	J	**410**	J
Benzo(k)fluoranthene	6,000	23,000	25,000	-	**210**	J	**160**	J	<1000		**620**	J	**1500**		**240**	J	**420**	J	<1100		<1000		**520**	J	**470**	J
Benzo(a)pyrene	200	200	200	-	**210**	J	**150**	J	<1000		**570**	J	**1600**		**210**	J	**400**	J	<1100		<1000		**560**	J	**510**	J
Indeno(1,2,3-cd)pyrene	600	2,000	7,000	-	**120**	J	<970		<1000		**330**	J	**880**	J	<1000		**180**	J	<1100		<1000		**240**	J	**210**	J
Dibenz(a,h)anthracene	200	200	800	-	<960		<970		<1000		<1100		<1200		<1000		<1100		<1100		<1000		<1100		<1000	
Benzo(g,h,i)perylene	380,000,000	30,000,000	NLE	-	**130**	J	<970		<1000		**290**	J	**650**	J	**120**	J	**190**	J	<1100		<1000		**230**	J	**220**	J
Total TICs	NLE	NLE	NLE	-	**22080**		**3400**		**7200**		**5400**		**16500**		**20710**		**15570**		**4500**		**4950**		ND		**44620**	
Pesticides / PCBs (mg/kg)																										
Heptachlor	0.1	0.7	0.5	-	<0.0015		<0.0015		<0.0032		<0.0007		<0.0017		<0.0016		<0.0033		<0.0003		<0.0003		<0.0003		<0.0003	
Heptachlor Epoxide	0.07	0.3	0.01	-	<0.0031		<0.0031		<0.0064		<0.0013		<0.0034		<0.0032		<0.0066		<0.0006		<0.0006		<0.0006		<0.0007	
4,4'-DDE	2	9	18	-	**0.483**		**0.366**		<0.0043		**0.104**		**0.08**		**0.204**		**0.272**		**0.275**		**0.412**		**0.592**		**0.445**	
Dieldrin	0.04	0.2	0.003	-	<0.0026		<0.0025		<0.0053		<0.0011		<0.0028		<0.0026		<0.0055		<0.0005		<0.0005		**0.049**		<0.0006	
Endrin	23	340	1	-	<0.0026		<0.0025		<0.0053		<0.0011		<0.0028		<0.0026		<0.0055		<0.0005		<0.0005		<0.0005		<0.0006	
4,4'-DDD	3	13	4	-	**0.127**		**0.089**		**0.181**		**0.068**		**0.143**		**0.209**		**0.158**		**0.021**		**0.033**		**0.779**		**0.287**	
Endrin Aldehyde	NLE	NLE	NLE	-	<0.0026		<0.0025		<0.0053		<0.0011		<0.0028		<0.0026		<0.0055		<0.0005		<0.0005		<0.0005		<0.0006	
4,4'-DDT	2	8	11	-	**0.833**		**0.626**		**1.344**		**0.345**		**1.143**		**1.028**		**1.28**		**0.65**		**1.438**		**2.914**		**1.636**	
Endosulfan I	470	6,800	4	-	<0.0026		<0.0025		<0.0053		<0.0011		<0.0028		<0.0026		<0.0055		<0.0005		<0.0005		<0.0005		<0.0006	
Endosulfan II	470	6,800	4	-	<0.0021		<0.0020		<0.0043		<0.0009		<0.0023		<0.0021		<0.0044		<0.0004		<0.0004		<0.0004		<0.0004	
Endosulfan-Sulfate	470	6,800	2	-	<0.0021		<0.0020		<0.0043		<0.0009		<0.0023		<0.0021		<0.0044		<0.0004		<0.0004		<0.0004		<0.0004	
gamma-Chlordane	0.2	1	0.05	-	<0.0026		<0.0025		**0.007**		<0.0011		<0.0028		<0.0026		<0.0055		**0.012**		**0.007**		**0.004**		<0.0006	
alpha-Chlordane	0.2	1	0.05	-	<0.0026		<0.0025		**0.01**		<0.0011		<0.0028		<0.0026		<0.0055		**0.011**		**0.007**		**0.003**		**0.002**	
Aroclor 1254	0.2	1	0.2	-	<0.0205		<0.0203		<0.0426		<0.0087		<0.0226		<0.0211		<0.0442		<0.0042		<0.0040		<0.0042		<0.0044	

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential Direct Contact Soil Remediation Standard (1)	NJDEP Non-Residential Direct Contact Soil Remediation Standard (1)	NJDEP Impact to Groundwater Screening Level (2)	Weston 1995 Background (3)	B-230	B-231	B-232	B-233	B-234	B-235	B-236	B-237	B-238	B-239	B-240
Sample Date					08/14/98	08/14/98	08/25/98	08/25/98	08/25/98	08/25/98	08/25/98	08/26/98	08/26/98	08/26/98	08/26/98
Metals (mg/kg)															
Aluminum	78,000	NA	6,000	15,200	**6620**	**7420**	**7250**	**3370**	**4870**	**5200**	**10200**	**4020**	**6180**	**5840**	**7580**
Antimony	31	450	6	ND	**0.918**	**1.12**	**1.28**	**0.374**	**0.9**	**1.04**	**1.67**	**0.604**	**0.948**	**0.721**	**1.16**
Arsenic	19	19	19	22.9	**9.13**	**7.76**	**9.52**	**6.66**	**6.23**	**7.87**	**9.48**	**5.11**	**8.95**	**9.08**	**12.6**
Barium	16,000	59,000	2,100	32.3	**19**	**31**	**45.3**	**35.5**	**25.8**	**36.4**	**36.3**	**16.8**	**20.1**	**49.4**	**48.1**
Beryllium	16	140	0.7	2	**0.723**	**0.786**	**0.958**	**0.5**	**0.861**	**0.887**	**1.39**	**0.479**	**0.733**	**0.799**	**0.949**
Cadmium	78	78	2	ND	<0.048	<0.053	<0.060	<0.061	<0.065	<0.057	<0.063	<0.050	<0.054	<0.060	<0.058
Calcium	NLE	NLE	NLE	921	**420**	**786**	**862**	**708**	**199**	**442**	**583**	**595**	**290**	**371**	**421**
Chromium	NLE	NLE	NLE	269	**62.7**	**59.1**	**74.3**	**20.6**	**55.4**	**57.3**	**112**	**40.3**	**59.8**	**61.8**	**71.4**
Cobalt	1,600	590	90	2.5	**1.55**	**2.61**	**1.36**	**3.37**	**0.88**	**0.948**	**1.67**	**1.79**	**2.79**	**1.01**	**1.26**
Copper	3,100	45,000	11,000	8	**11.6**	**12.9**	**14.2**	**11.9**	**2.95**	**10.5**	**5.84**	**8.44**	**1.78**	**17.6**	**18.4**
Iron	NLE	NLE	NLE	55,800	**20200**	**26600**	**29600**	**12200**	**19900**	**22900**	**41300**	**17300**	**31700**	**24100**	**28500**
Lead	400	800	90	19.5	**36.3**	**47.5**	**55.9**	**25.5**	**14.4**	**30.7**	**21.9**	**26**	**13.4**	**50.6**	**55.8**
Magnesium	NLE	NLE	NLE	7,230	**1890**	**1430**	**2260**	**684**	**1640**	**1690**	**4380**	**928**	**872**	**1690**	**2060**
Manganese	11,000	5,900	65	90.7	**45.2**	**45.2**	**21.2**	**61.6**	**14.7**	**14.1**	**15.7**	**53.3**	**60.2**	**13.9**	**16.9**
Mercury	23	65	0.1	ND	**0.067**	**0.078**	**0.278**	**0.22**	**0.213**	**0.288**	**0.217**	**0.037**	**0.015**	**0.38**	**0.391**
Nickel	1,600	23,000	48	8.4	**5.19**	**9.07**	**6.07**	**6.49**	**3.35**	**4.77**	**6.44**	**5.85**	**7.59**	**4.97**	**6.16**
Potassium	NLE	NLE	NLE	15400	**3780**	**5360**	**4740**	**1950**	**6550**	**3720**	**10200**	**2360**	**2490**	**6150**	**4130**
Selenium	390	5,700	11	1.9	<0.289	<0.317	<0.359	<0.365	<0.390	<0.341	<0.378	<0.298	<0.321	<0.359	<0.345
Silver	390	5,700	1	1.1	<0.289	<0.317	<0.359	<0.365	<0.390	<0.341	<0.378	<0.298	<0.321	<0.359	<0.345
Sodium	NLE	NLE	NLE	51.6	**135**	**241**	**360**	**297**	**194**	**431**	**582**	**104**	**97**	**320**	**374**
Thallium	5	79	3	ND	<0.289	**0.429**	**0.725**	**0.456**	**0.68**	**0.475**	**0.589**	**0.402**	**0.57**	**0.606**	**1.06**
Vanadium	78	1,100	NLE	94.1	**42.3**	**60.8**	**40.3**	**15.7**	**17.6**	**22.7**	**51.8**	**39.8**	**74.9**	**28.9**	**40.4**
Zinc	23,000	110,000	930	81.4	**32.1**	**36.3**	**43.4**	**59.6**	**28.8**	**43.8**	**43.6**	**39.1**	**46.3**	**39.6**	**43.7**

Notes:

Historically, there have been up to 318 soil boring locations associated with FTMM-05. This analysis looks at only those boring locations that fall within the footprint of FTMM-05.

(1) New Jersey Department of Environmental Protection (NJDEP) Residential Direct Contact Soil Remediation Standards (RDCSRS) and Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS) (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.
(2) NJDEP Impact to Groundwater (NJDEP guidance document; Nov 2013).
(3) Weston, 1995. Final Site Investigation - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December.
NJDEP criteria for total xylenes are used for xylene isomers (m+p, o).
NJDEP criteria for endrin is used for endrin aldehyde.
NJDEP criteria for 4,4'-DDD and 4,4'-DDT are for total DDD and total DDT, respectively.
There are no NJDEP soil standards for individual PCB Arcolors; the total PCB NJDEP standards were used for individual Arcolors
Dash (--) = only background concentrations for metals are being used as comparison criteria.
B = Analyte detected in both sample and associated laboratory blank.
D = Result from dilution of sample.
DUP = field duplicate sample.
E = Estimated value.
J = Analyte detected between MDL and practical quantitation limit (PQL).
NA = not analyzed.
ND = not detected.
NLE = No limit established.
< = analyte not detected above method detection limit (MDL).
µg/kg = micrograms per kilogram.
mg/kg = milligrams per kilogram.
VOCs = volatile organic compounds.
in. = inches.
bgs = below ground surface.
Detections are bolded.
Shaded cells = concentration exceeds NJDEP Impact to Groundwater Criterion.
Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria.
Shaded cells = concentration exceeds all NJDEP criteria.
Shaded cells = concentration exceeds Weston (1995) background concentration.

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential Direct Contact Soil Remediation Standard (1)	NJDEP Non-Residential Direct Contact Soil Remediation Standard (1)	NJDEP Impact to Groundwater Screening Level (2)	Weston 1995 Background (3)	B-240 Dup		B-241		B-242		B-243		B-244		B-245		B-246		B-247		B-248		B-249		B-250	
Sample Date					08/26/98		08/26/98		08/26/98		08/26/98		08/26/98		08/26/98		08/26/98		08/26/98		08/26/98		08/26/98		08/26/98	
Volatile Organic Compounds (VOCs, µg/kg)																										
Lab Sample ID (VOCs only collected at approximately 24 in. bgs)					3836.39		3836.11		3836.13		3836.15		3836.17		3836.19		3836.21		3836.23		3836.25		3836.27		3836.29	
Methylene Chloride	34,000	97,000	10	-	**6400**		<1000		<670		<670		<570		<620		<940		<620		<630		<780		<640	
Benzene	2,000	5,000	5	-	<350		<500		<330		<340		<290		<310		<470		<310		<310		<390		<320	
Tetrachloroethene	2,000	5,000	5	-	<350		<500		<330		<340		<290		<310		<470		<310		<310		<390		<320	
Chloroform	600	2,000	400	-	<350		<500		<330		<340		<290		<310		<470		<310		<310		<390		<320	
Ethylbenzene	7,800,000	110,000,000	13,000	-	<700		<1000		<670		<670		<570		<620		<940		<620		<630		<780		<640	
TICs	NLE	NLE	NLE	-	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Semivolatile Organic Compounds (SVOCs, µg/kg)																										
Lab Sample ID (All analyses except VOCs collected at approximately 6-12 in. bgs)					3836.38		3836.10		3836.12		3836.14		3836.16		3836.18		3836.20		3836.22		3836.24		3836.26		3836.28	
Naphthalene	6,000	17,000	25,000	-	<1100		<1000		<990		<1400		<1100		<1100		<1100		<1000		<1000		<1000		<1100	
n-Nitrosodiphenylamine	99,000	390,000	400	-	<1100		<1000		<990		<1400		<1100		<1100		<1100		<1000		<1000		<1000		<1100	
2-Methylnaphthalene	230,000	2,400,000	8,000	-	<1100		<1000		<990		<1400		<1100		<1100		<1100		<1000		<1000		<1000		<1100	
4-Methylphenol	31,000	340,000	NLE	-	<1100		<1000		<990		<1400		<1100		<1100		<1100		<1000		<1000		<1000		<1100	
Acenaphthylene	NLE	3.00E+08	NLE	-	**280**	J	<1000		<990		<1400		**210**	J	<1100		<1100		<1000		<1000		<1000		<1100	
Acenaphthene	3,400,000	37,000,000	110,000	-	<1100		<1000		<990		<1400		<1100		<1100		<1100		<1000		<1000		<1000		<1100	
Dibenzofuran	NLE	NLE	NLE	-	<1100		<1000		<990		<1400		<1100		<1100		<1100		<1000		<1000		<1000		<1100	
Diethylphthalate	49,000,000	550,000,000	88,000	-	<1100		<1000		<990		<1400		<1100		<1100		<1100		<1000		<1000		<1000		<1100	
Fluorene	2,300,000	24,000,000	170,000	-	<1100		<1000		<990		<1400		<1100		<1100		<1100		<1000		<1000		<1000		<1100	
Phenanthrene	NLE	300,000,000	NLE	-	**2800**		**210**	J	<990		<1400		**1100**		**440**	J	**360**	J	<1000		<1000		<1000		**400**	J
Anthracene	17,000,000	30,000,000	2,400,000	-	**440**	J	<1000		<990		<1400		<1100		<1100		<1100		<1000		<1000		<1000		<1100	
Dimethylphthalate	NLE	NLE	NLE	-	<1100		<1000		<990		<1400		<1100		<1100		<1100		<1000		<1000		<1000		<1100	
Di-n-butylphthalate	6,100,000	68,000,000	760,000	-	<1100		**420**	J	<990		**290**	J	**960**	J	**460**	J	**960**	J	**440**	J	**440**	J	**350**	J	**780**	J
Fluoranthene	2,300,000	24,000,000	1,300,000	-	**2900**		**250**	J	**180**	J	<1400		**720**	J	**420**	J	**360**	J	**190**	J	**190**	J	<1000		**310**	J
Pyrene	1,700,000	18,000,000	840,000	-	**3600**		**390**	J	**310**	J	<1400		**1400**		**680**	J	**570**	J	**310**	J	**300**	J	<1000		**560**	J
Pyridine	NLE	NLE	NLE	-	<1100		<1000		<990		<1400		<1100		<1100		<1100		<1000		<1000		<1000		<1100	
Butylbenzylphthalate	1,200,000	14,000,000	230,000	-	<1100		<1000		<990		<1400		<1100		<1100		<1100		<1000		<1000		<1000		<1100	
Benzo(a)anthracene	600	2,000	800	-	**1200**		<1000		<990		<1400		**410**	J	**220**	J	<1100		<1000		<1000		<1000		<1100	
3,3'-Dichlorobenzidine	1,000	4,000	200	-	<1100		<1000		<990		<1400		<1100		<1100		<1100		<1000		<1000		<1000		<1100	
Chrysene	62,000	230,000	80,000	-	**2100**		<1000		<990		<1400		**880**	J	**460**	J	<1100		<1000		<1000		<1000		<1100	
bis(2-Ethylhexyl)phthalate	35,000	140,000	1,200,000	-	<1100		<1000		<990		<1400		<1100		<1100		<1100		<1000		<1000		<1000		<1100	
Benzo(b)fluoranthene	600	2,000	2,000	-	**1100**	J	<1000		<990		<1400		<1100		<1100		<1100		<1000		<1000		<1000		<1100	
Benzo(k)fluoranthene	6,000	23,000	25,000	-	**1000**	J	<1000		<990		<1400		<1100		<1100		<1100		<1000		<1000		<1000		<1100	
Benzo(a)pyrene	200	200	200	-	**1100**	J	<1000		<990		<1400		<1100		<1100		<1100		<1000		<1000		<1000		<1100	
Indeno(1,2,3-cd)pyrene	600	2,000	7,000	-	**590**	J	<1000		<990		<1400		<1100		<1100		<1100		<1000		<1000		<1000		<1100	
Dibenz(a,h)anthracene	200	200	800	-	<1100		<1000		<990		<1400		<1100		<1100		<1100		<1000		<1000		<1000		<1100	
Benzo(g,h,i)perylene	380,000,000	30,000,000	NLE	-	**540**	J	<1000		<990		<1400		<1100		<1100		<1100		<1000		<1000		<1000		<1100	
Total TICs	NLE	NLE	NLE	-	**20300**		**12700**		**7250**		**23700**		**32940**		**15450**		**20700**		**10500**		**11300**		**4500**		**17500**	
Pesticides / PCBs (mg/kg)																										
Heptachlor	0.1	0.7	0.5	-	<0.0003		<0.0003		<0.0003		<0.0004		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003	
Heptachlor Epoxide	0.07	0.3	0.01	-	<0.0007		<0.0006		<0.0006		<0.0008		<0.0007		<0.0007		<0.0006		<0.0006		<0.0006		<0.0006		<0.0007	
4,4'-DDE	2	9	18	-	**0.34**		**0.195**		**0.036**		**0.135**		**1.003**		**0.164**		**0.33**		**0.408**		**0.083**		**0.903**		**3.33**	
Dieldrin	0.04	0.2	0.003	-	<0.0006		<0.0005		<0.0005		<0.0007		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006	
Endrin	23	340	1	-	<0.0006		<0.0005		<0.0005		<0.0007		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006	
4,4'-DDD	3	13	4	-	**0.109**		**0.077**		**0.056**		**0.037**		**0.178**		**0.08**		**0.171**		**0.145**		**0.045**		**0.378**		**0.729**	
Endrin Aldehyde	NLE	NLE	NLE	-	<0.0006		<0.0005		<0.0005		<0.0007		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006	
4,4'-DDT	2	8	11	-	**0.822**		**0.599**		**0.07**		**0.62**		**2.781**		**0.789**		**2.226**		**1.918**		**0.525**		**13.949**		**23.629**	
Endosulfan I	470	6,800	4	-	<0.0006		<0.0005		<0.0005		<0.0007		<0.0005		<0.0006		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006	
Endosulfan II	470	6,800	4	-	<0.0005		<0.0004		<0.0004		<0.0006		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004	
Endosulfan-Sulfate	470	6,800	2	-	<0.0005		<0.0004		<0.0004		<0.0006		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004	
gamma-Chlordane	0.2	1	0.05	-	<0.0006		<0.0005		<0.0005		<0.0007		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		**0.015**	
alpha-Chlordane	0.2	1	0.05	-	<0.0006		<0.0005		<0.0005		<0.0007		<0.0005		<0.0005		**0.003**		<0.0005		<0.0005		<0.0005		**0.023**	
Aroclor 1254	0.2	1	0.2	-	<0.0046		<0.0042		<0.0042		<0.0056		<0.0043		<0.0044		<0.0043		<0.0043		<0.0040		<0.0041		<0.0044	

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential Direct Contact Soil Remediation Standard (1)	NJDEP Non-Residential Direct Contact Soil Remediation Standard (1)	NJDEP Impact to Groundwater Screening Level (2)	Weston 1995 Background (3)	B-240 Dup	B-241	B-242	B-243	B-244	B-245	B-246	B-247	B-248	B-249	B-250
Sample Date					08/26/98	08/26/98	08/26/98	08/26/98	08/26/98	08/26/98	08/26/98	08/26/98	08/26/98	08/26/98	08/26/98
Metals (mg/kg)															
Aluminum	78,000	NA	6,000	15,200	**6210**	**5080**	**5800**	**7380**	**3900**	**8730**	**5890**	**5890**	**6970**	**3390**	**8150**
Antimony	31	450	6	ND	**0.999**	**0.821**	**0.593**	**1.15**	**0.495**	**1.28**	**0.94**	**0.931**	**1.14**	**0.654**	**1.43**
Arsenic	19	19	19	22.9	**9.78**	**7.6**	**6.45**	**10**	**6.62**	**9.43**	**8.91**	**8.61**	**9.13**	**5.72**	**7.84**
Barium	16,000	59,000	2,100	32.3	**45.3**	**46.5**	**24.5**	**51**	**34.5**	**53.7**	**53.3**	**40.9**	**34.6**	**25.1**	**31.1**
Beryllium	16	140	0.7	2	**0.775**	**1.15**	**0.736**	**0.927**	**0.45**	**1.25**	**0.811**	**1.02**	**0.945**	**0.538**	**1.02**
Cadmium	78	78	2	ND	<0.059	<0.059	**45.8**	<0.079	<0.059	<0.064	<0.059	<0.059	<0.049	<0.058	<0.047
Calcium	NLE	NLE	NLE	921	**508**	**332**	**575**	**427**	**929**	**396**	**306**	**787**	**1140**	**278**	**389**
Chromium	NLE	NLE	NLE	269	**61.9**	**52.1**	**45.8**	**72**	**31.3**	**88.1**	**63.2**	**60.5**	**72.5**	**39.3**	**90.1**
Cobalt	1,600	590	90	2.5	**1.07**	**1.11**	**0.951**	**2.04**	**1.85**	**1.68**	**0.96**	**0.998**	**1.55**	**0.926**	**1.02**
Copper	3,100	45,000	11,000	8	**13.4**	**6.5**	**7.62**	**12.3**	**27**	**45.3**	**22.5**	**18**	**10.1**	**5.01**	**5.52**
Iron	NLE	NLE	NLE	55,800	**25000**	**21100**	**17000**	**33900**	**13200**	**33700**	**28200**	**24400**	**30600**	**17500**	**32800**
Lead	400	800	90	19.5	**43.4**	**28.5**	**19.4**	**17**	**94.5**	**50.5**	**53.2**	**47.4**	**21.6**	**23.1**	**20.2**
Magnesium	NLE	NLE	NLE	7,230	**1810**	**1470**	**1420**	**1930**	**1090**	**2980**	**1660**	**1830**	**2730**	**1160**	**3380**
Manganese	11,000	5,900	65	90.7	**15.2**	**13**	**28.1**	**24.9**	**53.9**	**18.8**	**15**	**19**	**33.2**	**8.41**	**12.4**
Mercury	23	65	0.1	ND	**0.393**	**0.332**	**0.19**	**0.255**	**0.228**	**0.355**	**0.385**	**0.371**	**0.229**	**0.267**	**0.163**
Nickel	1,600	23,000	48	8.4	**5.16**	**5**	**431**	**8.64**	**5.75**	**7.73**	**4.64**	**4.52**	**6.14**	**2.99**	**4.74**
Potassium	NLE	NLE	NLE	15400	**6560**	**5540**	**4830**	**7840**	**3120**	**7070**	**3650**	**3760**	**5980**	**4390**	**8120**
Selenium	390	5,700	11	1.9	<0.357	<0.355	<0.335	<0.477	<0.354	<0.386	<0.356	<0.351	<0.296	<0.346	<0.282
Silver	390	5,700	1	1.1	<0.357	<0.355	<0.335	<0.477	<0.354	<0.386	<0.356	<0.351	<0.296	<0.346	<0.282
Sodium	NLE	NLE	NLE	51.6	**463**	**304**	**362**	**898**	**262**	**303**	**310**	**349**	**360**	**336**	**342**
Thallium	5	79	3	ND	**0.945**	**1.03**	**0.426**	**0.71**	**0.389**	**0.969**	**0.665**	**0.863**	**0.563**	**0.681**	**0.6**
Vanadium	78	1,100	NLE	94.1	**34.5**	**21.3**	**19.8**	**59.3**	**27.8**	**45.4**	**28.6**	**27.3**	**33**	**15.9**	**40**
Zinc	23,000	110,000	930	81.4	**38.5**	**43.8**	**53.5**	**35.8**	**65.6**	**47.6**	**181**	**43.6**	**69.5**	**27.2**	**39.4**

Notes:

Historically, there have been up to 318 soil boring locations associated with FTMM-05. This analysis looks at only those boring locations that fall within the footprint of FTMM-05.

(1) New Jersey Department of Environmental Protection (NJDEP) Residential Direct Contact Soil Remediation Standards (RDCSRS) and Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS) (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.
(2) NJDEP Impact to Groundwater (NJDEP guidance document; Nov 2013).
(3) Weston, 1995. Final Site Investigation - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December.
NJDEP criteria for total xylenes are used for xylene isomers (m+p, o).
NJDEP criteria for endrin is used for endrin aldehyde.
NJDEP criteria for 4,4'-DDD and 4,4'-DDT are for total DDD and total DDT, respectively.
There are no NJDEP soil standards for individual PCB Arcolors; the total PCB NJDEP standards were used for individual Arcolors
Dash (--) = only background concentrations for metals are being used as comparison criteria.
B = Analyte detected in both sample and associated laboratory blank.
D = Result from dilution of sample.
DUP = field duplicate sample.
E = Estimated value.
J = Analyte detected between MDL and practical quantitation limit (PQL).
NA = not analyzed.
ND = not detected.
NLE = No limit established.
< = analyte not detected above method detection limit (MDL).
µg/kg = micrograms per kilogram.
mg/kg = milligrams per kilogram.
VOCs = volatile organic compounds.
in. = inches.
bgs = below ground surface.
Detections are bolded.
Shaded cells = concentration exceeds NJDEP Impact to Groundwater Criterion.
Shaded cells = concentration exceeds one or both NJDEP Direct Contact Criteria.
Shaded cells = concentration exceeds all NJDEP criteria.
Shaded cells = concentration exceeds Weston (1995) background concentration.

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential Direct Contact Soil Remediation Standard [1]	NJDEP Non-Residential Direct Contact Soil Remediation Standard [1]	NJDEP Impact to Groundwater Screening Level [2]	Weston 1995 Background [3]	B-251		B-252		B-253	B-254	
Sample Date					08/26/98		08/26/98		08/26/98	08/26/98	
Volatile Organic Compounds (VOCs, µg/kg)											
Lab Sample ID (VOCs only collected at approximately 24 in. bgs)					3836.31		3836.33		3836.35	3836.37	
Methylene Chloride	34,000	97,000	10	-	<510		<620		<600	<550	
Benzene	2,000	5,000	5	-	<250		<310		<300	**340**	
Tetrachloroethene	2,000	5,000	5	-	<250		<310		<300	<280	
Chloroform	600	2,000	400	-	<250		<310		<300	<280	
Ethylbenzene	7,800,000	110,000,000	13,000	-	<510		<620		<600	<550	
TICs	NLE	NLE	NLE	-	ND		ND		ND	ND	
Semivolatile Organic Compounds (SVOCs, µg/kg)											
Lab Sample ID (All analyses except VOCs collected at approximately 6-12 in. bgs)					3836.30		3836.32		3836.34	3836.36	
Naphthalene	6,000	17,000	25,000	-	<1100		<1000		<1000	<990	
n-Nitrosodiphenylamine	99,000	390,000	400	-	<1100		<1000		<1000	<990	
2-Methylnaphthalene	230,000	2,400,000	8,000	-	<1100		<1000		<1000	<990	
4-Methylphenol	31,000	340,000	NLE	-	<1100		<1000		<1000	<990	
Acenaphthylene	NLE	3.00E+08	NLE	-	<1100		<1000		<1000	**250**	J
Acenaphthene	3,400,000	37,000,000	110,000	-	<1100		<1000		<1000	<990	
Dibenzofuran	NLE	NLE	NLE	-	<1100		<1000		<1000	<990	
Diethylphthalate	49,000,000	550,000,000	88,000	-	<1100		<1000		<1000	<990	
Fluorene	2,300,000	24,000,000	170,000	-	<1100		<1000		<1000	<990	
Phenanthrene	NLE	300,000,000	NLE	-	**300**	J	**240**	J	<1000	**1800**	
Anthracene	17,000,000	30,000,000	2,400,000	-	<1100		<1000		<1000	<990	
Dimethylphthalate	NLE	NLE	NLE	-	<1100		<1000		<1000	<990	
Di-n-butylphthalate	6,100,000	68,000,000	760,000	-	**390**	J	**370**	J	<1000	<990	
Fluoranthene	2,300,000	24,000,000	1,300,000	-	**290**	J	**300**	J	<1000	**1300**	
Pyrene	1,700,000	18,000,000	840,000	-	**450**	J	**570**	J	<1000	**2400**	
Pyridine	NLE	NLE	NLE	-	<1100		<1000		<1000	<990	
Butylbenzylphthalate	1,200,000	14,000,000	230,000	-	<1100		<1000		<1000	<990	
Benzo(a)anthracene	600	2,000	800	-	<1100		**220**	J	<1000	**690**	J
3,3'-Dichlorobenzidine	1,000	4,000	200	-	<1100		<1000		<1000	<990	
Chrysene	62,000	230,000	80,000	-	<1100		**430**	J	<1000	**1400**	
bis(2-Ethylhexyl)phthalate	35,000	140,000	1,200,000	-	<1100		<1000		<1000	<990	
Benzo(b)fluoranthene	600	2,000	2,000	-	<1100		<1000		<1000	**480**	J
Benzo(k)fluoranthene	6,000	23,000	25,000	-	<1100		<1000		<1000	**510**	J
Benzo(a)pyrene	200	200	200	-	<1100		<1000		<1000	**520**	J
Indeno(1,2,3-cd)pyrene	600	2,000	7,000	-	<1100		<1000		<1000	**310**	J
Dibenz(a,h)anthracene	200	200	800	-	<1100		<1000		<1000	<990	
Benzo(g,h,i)perylene	380,000,000	30,000,000	NLE	-	<1100		<1000		<1000	**320**	J
Total TICs	NLE	NLE	NLE	-	**18050**		**5100**		**8840**	**83770**	
Pesticides / PCBs (mg/kg)											
Heptachlor	0.1	0.7	0.5	-	<0.0003		<0.0003		<0.0003	<0.0003	
Heptachlor Epoxide	0.07	0.3	0.01	-	<0.0006		<0.0006		<0.0006	<0.0006	
4,4'-DDE	2	9	18	-	**0.742**		**1.104**		**0.23**	**4.185**	
Dieldrin	0.04	0.2	0.003	-	<0.0005		<0.0005		<0.0005	<0.0005	
Endrin	23	340	1	-	<0.0005		<0.0005		<0.0005	<0.0005	
4,4'-DDD	3	13	4	-	**0.046**		**0.041**		**0.043**	**3.787**	
Endrin Aldehyde	NLE	NLE	NLE	-	<0.0005		<0.0005		<0.0005	<0.0005	
4,4'-DDT	2	8	11	-	**2.094**		**1.746**		**0.856**	**56.446**	
Endosulfan I	470	6,800	4	-	<0.0005		<0.0005		<0.0005	<0.0005	
Endosulfan II	470	6,800	4	-	<0.0004		<0.0004		<0.0004	<0.0004	
Endosulfan-Sulfate	470	6,800	2	-	<0.0004		<0.0004		<0.0004	<0.0004	
gamma-Chlordane	0.2	1	0.05	-	<0.0005		<0.0005		<0.0005	**0.021**	
alpha-Chlordane	0.2	1	0.05	-	<0.0005		<0.0005		<0.0005	**0.026**	
Aroclor 1254	0.2	1	0.2	-	<0.0041		<0.0040		<0.0040	<0.0042	

TABLE 4.1
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO NJDEP STANDARDS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Field Sample Location	NJDEP Residential Direct Contact Soil Remediation Standard (1)	NJDEP Non-Residential Direct Contact Soil Remediation Standard (1)	NJDEP Impact to Groundwater Screening Level (2)	Weston 1995 Background (3)	B-251		B-252		B-253	B-254	
Sample Date					08/26/98		08/26/98		08/26/98	08/26/98	
Metals (mg/kg)											
Aluminum	78,000	NA	6,000	15,200	**6430**		**5560**		**4350**	**6740**	
Antimony	31	450	6	ND	**1.31**		**0.774**		**0.688**	**0.916**	
Arsenic	19	19	19	22.9	**11.3**		**9.19**		**5.88**	**10.1**	
Barium	16,000	59,000	2,100	32.3	**69.6**		**32.2**		**17**	**48.4**	
Beryllium	16	140	0.7	2	**0.824**		**0.736**		**0.84**	**2.05**	
Cadmium	78	78	2	ND	<0.056		<0.053		<0.045	<0.053	
Calcium	NLE	NLE	NLE	921	**828**		**1100**		**563**	**143**	
Chromium	NLE	NLE	NLE	269	**72.6**		**56.7**		**46.7**	**52.8**	
Cobalt	1,600	590	90	2.5	**1.36**		**1.43**		**1.21**	**2.76**	
Copper	3,100	45,000	11,000	8	**110**		**15.8**		**11.9**	**10.1**	
Iron	NLE	NLE	NLE	55,800	**31400**		**21200**		**16400**	**27700**	
Lead	400	800	90	19.5	**163**		**69.8**		**12.4**	**40.3**	
Magnesium	NLE	NLE	NLE	7,230	**2210**		**1920**		**1330**	**1130**	
Manganese	11,000	5,900	65	90.7	**38.5**		**49.7**		**15.4**	**38**	
Mercury	23	65	0.1	ND	**0.275**		**0.361**		**0.069**	**0.706**	
Nickel	1,600	23,000	48	8.4	**5.81**		**5.24**		**3.33**	**6.57**	
Potassium	NLE	NLE	NLE	15400	**4900**		**3860**		**5380**	**4170**	
Selenium	390	5,700	11	1.9	<0.336		<0.321		<0.267	<0.316	
Silver	390	5,700	1	1.1	<0.336		<0.321		<0.267	**0.413**	
Sodium	NLE	NLE	NLE	51.6	**388**		**147**		**84.6**	**99.8**	
Thallium	5	79	3	ND	**0.709**		**0.535**		**0.332**	**0.691**	
Vanadium	78	1,100	NLE	94.1	**35.1**		**25.7**		**13.5**	**26.8**	
Zinc	23,000	110,000	930	81.4	**123**		**115**		**32.1**	**51.5**	

Notes:

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VOCs = volatile organic compounds.
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Shaded cells = concentration exceeds NJDEP Impact to Groundwater Criterion.
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Shaded cells = concentration exceeds all NJDEP criteria.
Shaded cells = concentration exceeds Weston (1995) background concentration.

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Loc ID	USEPA RSL Residential (HQ=0.1)[1]	USEPA RSL Industrial (HQ=0.1)	USEPA RSL Groundwater Protection (Risk-based)	Weston Background [2]	B-1		B-2		B-3		B-4		B-5		B-6		B-7		B-8		B-9		B-10		B-11		B-12	
Sample Date					04/08/98		04/08/98		04/08/98		04/09/98		04/09/98		04/09/98		04/09/98		04/10/98		04/10/98		04/10/98		04/11/98		04/11/98	
Volatile Organic Compounds (VOCS, µg/kg)																												
Lab Sample ID (VOCs only collected at approximately 24 in. bgs)					3465.04		3465.08		3465.12		3470.04		3470.08		3470.12		3470.17		3472.04		3472.08		3472.12		3473.04		3473.08	
Methylene Chloride	36,000	63,000,000	240	-	<560		<580		<580		<560		<550		<550		<670		<640		<670		<540		<540		<550	
Benzene	1,100	5,400	0.2	-	<280		<290		<290		<280		<280		<280		<330		<320		<340		<270		<270		<270	
Tetrachloroethene	8,600	41,000	1.6	-	<280		<290		<290		<280		<280		<280		<330		<320		<340		<270		<270		<270	
Chloroform	290	1,500	0.053	-	<280		<290		<290		<280		<280		<280		<330		<320		<340		<270		<270		<270	
Ethylbenzene	5,400	27,000	1.5	-	<560		<580		<580		<560		<550		<550		<670		<640		<670		<540		<540		<550	
TICs	NLE	NLE	NLE	-	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Semivolatile Organic Compounds (SVOCs, µg/kg)																												
Lab Sample ID (All analyses except VOCs collected at approximately 6-12 in. bgs)					3465.03		3465.07		3465.11		3470.03		3470.07		3470.11		3470.15		3472.03		3472.07		3472.11		3473.03		3473.07	
Naphthalene	3,600	18,000	0.47	-	<250		<1300		<280		<270		<270		<520		<580		<310		<300		**130**	J	<270		<280	
n-Nitrosodiphenylamine	99,000	350,000	57	-	<190		<1000		<210		<200		<200		<390		<440		<240		<220		<200		<200		<210	
2-Methylnaphthalene	23,000	220,000	14	-	<280		<1500		<310		<300		<310		<590		<650		<350		**140**	J	**150**	J	<300		<310	
4-Methylphenol	610,000	6,200,000	110	-	<270		<1500		<300		<290		<300		<570		<640		<340		<330		<290		<290		<310	
Acenaphthylene	NLE	NLE	NLE	-	<190		<1000		<220		<210		<210		<410		<460		<250		<240		<210		<210		<220	
Acenaphthene	340,000	3,300,000	410	-	<180		<950		<200		<190		<200		<380		<420		<220		<210		<190		<190		<200	
Dibenzofuran	7,800	100,000	11	-	<190		<1000		<210		<200		<210		<400		<440		<240		<230		<200		<200		<210	
Diethylphthalate	4,900,000	49,000,000	470	-	<210		<1100		<230		<220		<230		<440		<480		<260		<250		<220		<220		<230	
Fluorene	230,000	2,200,000	400	-	<190		<1000		<220		<210		<210		<410		<460		<250		<230		<210		<210		<220	
Phenanthrene	NLE	NLE	NLE	-	**160**	J	<1100		<220		<210		**280**		<410		**1700**		**150**	J	**680**		**410**		<210		<220	
Anthracene	1,700,000	17,000,000	4200	-	<200		<1100		<220		<210		<220		<410		**300**		<250		<240		<210		<210		<220	
Dimethylphthalate	NLE	NLE	NLE	-	<150		<820		<170		<260		<170		<320		<360		<190		<190		<170		<170		<170	
Di-n-butylphthalate	610,000	6,200,000	170	-	**3900**	B	**26000**	BD	**1500**	B	**2100**	B	**7900**	B	**14000**	BD	**16000**	BD	**2000**	B	**5200**	B	**640**	JB	**900**	JB	**780**	JB
Fluoranthene	230,000	2,200,000	7,000	-	**170**	J	<1100		<220		<210		**310**		<420		**2100**		<250		**1100**		**300**		<210		<220	
Pyrene	170,000	1,700,000	950	-	**280**		<1200		<260		<250		**410**		<490		**1600**		**150**	J	**880**		**440**		<250		<260	
Pyridine	7,800	100,000	0.53	-	<300		<1600		<340		<320		<330		<320		<360		<380		<370		**770**		<330		<340	
Butylbenzylphthalate	260,000	910,000	200	-	<250		<1400		<280		<270		<280		<540		<600		<320		<310		<280		<270		<290	
Benzo(a)anthracene	150	2,100	10	-	**120**	J	<1100		<220		<210		**180**	J	<420		**990**		**360**		**200**	J	**180**	J	<210		<220	
3,3'-Dichlorobenzidine	1,100	3,800	0.71	-	<350		<1900		<390		<370		<380		<740		<820		<440		<420		<380		<380		<390	
Chrysene	15,000	210,000	1,100	-	**230**	J	<1400		<280		<270		**370**		<540		**1500**		**490**		**280**	J	**410**		<270		<290	
bis(2-Ethylhexyl)phthalate	35,000	120,000	1,100	-	**100**	JB	**730**	JBD	**110**	JB	**110**	J	<310		**170**	J	<660		**150**	JB	<340		**180**	JB	**180**	JB	**180**	JB
Benzo(b)fluoranthene	150	2,100	35	-	<250		<1300		<280		<270		**170**	J	<530		**890**		**160**	J	**600**		**150**	J	<270		<280	
Benzo(k)fluoranthene	1,500	21,000	350	-	<180		<990		<210		<200		**150**	J	<390		**860**		<230		**690**		**150**	J	<200		<210	
Benzo(a)pyrene	15	210	4	-	**110**	J	<1000		<210		<200		**170**	J	<400		**820**		**140**	J	**570**		**140**	J	<200		<210	
Indeno(1,2,3-cd)pyrene	150	2,100	200	-	<210		<1100		<230		<220		<230		<440		**580**		<260		**390**		<220		<220		<230	
Dibenz(a,h)anthracene	15	210	11	-	<240		<1300		<270		<260		<270		<510		**240**	J	<310		<290		<260		<260		<270	
Benzo(g,h,i)perylene	NLE	NLE	NLE	-	<240		<1300		<270		<260		<270		<510		**420**	JD	<310		**310**		<260		<260		<270	
Total TICs	NLE	NLE	NLE	-	**4000**		**5500**		**3100**		**7520**		**25460**		**2800**		**2600**		**48400**		**249600**		**8500**		**61100**		**56100**	
Pesticides / PCBs (mg/kg)																												
Heptachlor	0.11	0.38	0.00014	-	<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0007		<0.0006		<0.0006		<0.0006	
Heptachlor Epoxide	0.053	0.19	0.000068	-	<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006		<0.0006		<0.0006		<0.0005		<0.0005		<0.0005	
4,4'-DDE	1.4	5.1	0.05	-	<0.0007		**0.001**		**0.001**		**0.001**		<0.0007		<0.0007		<0.0008		**0.006**		**0.021**		<0.0008		<0.0007		<0.0007	
Dieldrin	0.03	0.11	0.000061	-	<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0005		<0.0005		<0.0004		<0.0004		<0.0004	
Endrin	1.8	18	0.0068	-	<0.0006		<0.0006		<0.0007		<0.0006		<0.0006		<0.0006		<0.0007		<0.0007		<0.0007		<0.0007		<0.0006		<0.0006	
4,4'-DDD	2	7.2	0.01	-	<0.0014		<0.0014		<0.0015		<0.0014		<0.0014		<0.0014		<0.0015		**0.006**		<0.0016		**0.003**		<0.0014		<0.0014	
Endrin Aldehyde	NLE	NLE	NLE	-	<0.0011		<0.0011		<0.0012		<0.0011		<0.0011		<0.0011		<0.0012		<0.0012		<0.0013		<0.0012		<0.0011		**0.01**	
4,4'-DDT	1.7	7	0.07	-	<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0004		**0.01**		<0.0004		**0.006**		<0.0003		<0.0003	
Endosulfan I	37	370	0.11	-	<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006		<0.0006		<0.0006		<0.0005		<0.0005		**0.008**	
Endosulfan II	37	370	0.11	-	**0.008**		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0007		<0.0006		<0.0006		**0.002**	
Endosulfan-Sulfate	NLE	NLE	NLE	-	<0.0021		<0.0021		<0.0022		<0.0021		<0.0020		<0.0021		<0.0023		<0.0023		<0.0024		<0.0022		<0.0021		<0.0021	
gamma-Chlordane	1.6	6.5	0.013	-	<0.0022		<0.0022		<0.0022		<0.0021		<0.0020		<0.0021		<0.0023		<0.0024		<0.0025		<0.0023		<0.0022		<0.0021	
alpha-Chlordane	1.6	6.5	0.013	-	<0.0022		<0.0022		<0.0022		<0.0021		<0.0020		<0.0021		<0.0023		<0.0024		<0.0025		<0.0023		<0.0022		<0.0021	
Aroclor 1254	0.22	0.74	0.0082	-	<0.1080		<0.1080		<0.1120		<0.1063		<0.1024		<0.1057		<0.1173		<0.1194		<0.1231		<0.1134		<0.1077		<0.1069	

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Loc ID	USEPA RSL Residential (HQ=0.1)[1]	USEPA RSL Industrial (HQ=0.1)	USEPA RSL Groundwater Protection (Risk-based)	Weston Background [2]	B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10	B-11	B-12
Sample Date					04/08/98	04/08/98	04/08/98	04/09/98	04/09/98	04/09/98	04/09/98	04/10/98	04/10/98	04/10/98	04/11/98	04/11/98
Metals (mg/kg)																
Aluminum	7,700	99,000	2,300	15,200	**4632**	**13450**	**10970**	**10250**	**6368**	**8343**	**13830**	**3691**	**4474**	**9667**	**10420**	**10180**
Antimony	3.1	41	0.03	ND	**0.891**	**2.881**	**1.599**	**1.421**	**1.159**	**0.71**	**2.079**	**0.486**	**1.098**	**1.569**	**2.011**	**1.568**
Arsenic	0.61	2.4	0.0013	22.9	**4.12**	**20.13**	**32.33**	**10.22**	**9.054**	**8.85**	**11.54**	**19.98**	**15.98**	**11.87**	**11.44**	**11.02**
Barium	1,500	19,000	12	32.3	**13.03**	**32.88**	**30.43**	**21.25**	**40.37**	**18.58**	**116.04**	**31.68**	**58.82**	**23.16**	**23.76**	**22.06**
Beryllium	16	200	1.3	2	**0.4862**	**1.611**	**1.102**	**1.015**	**0.737**	**0.7328**	**1.32**	**0.7184**	**0.4577**	**1.055**	**1.1**	**0.9966**
Cadmium	7	80	0.05	ND	<0.055	**0.201**	**0.1798**	**0.2656**	**0.1551**	**0.0579**	**0.541**	**0.2736**	**0.5314**	**0.1708**	**0.1037**	**0.0837**
Calcium	NLE	NLE	NLE	921	**276**	**748.3**	**928.7**	**707.8**	**459.9**	**561.5**	**3956**	**1373**	**1105**	**453**	**555.8**	**1110**
Chromium	12,000	150,000	2,800,000	269	**46.4**	**152.8**	**83.07**	**84.62**	**42.42**	**53.53**	**75.63**	**13.02**	**14.93**	**82.74**	**104.3**	**86.63**
Cobalt	2.3	30	0.02	2.5	**1.692**	**5.048**	**3.708**	**4.383**	**1.834**	**3.863**	**6.127**	**4.926**	**4.535**	**4.224**	**5.456**	**5.389**
Copper	310	4,100	2.2	8	**2.887**	**5.284**	**6.87**	**2.717**	**30.09**	**2.421**	**254.1**	**43.77**	**2837**	**14.52**	**6.138**	**4.719**
Iron	5500	72,000	27	55,800	**18680**	**59460**	**41330**	**44130**	**22150**	**30210**	**29220**	**10980**	**9325**	**40700**	**44300**	**39710**
Lead	400	800	NLE	19.5	**14.35**	**24.96**	**59.27**	**8.682**	**135.1**	**16.31**	**370.1**	**57.95**	**383.9**	**17.36**	**8.172**	**9.266**
Magnesium	NLE	NLE	NLE	7,230	**623.7**	**1468**	**1548**	**1250**	**1222**	**1051**	**1571**	**373.7**	**423.7**	**1019**	**1049**	**1442**
Manganese	180	2,300	2.1	90.7	**47.18**	**69.84**	**76.15**	**83.14**	**50.43**	**104.4**	**146**	**30.67**	**484.3**	**97.99**	**86.4**	**105.6**
Mercury	1	4.3	0.0033	ND	**0.018**	**0.084**	**0.949**	<0.011	**0.228**	<0.011	**0.687**	**1.257**	**0.236**	**0.091**	**0.017**	**0.055**
Nickel	150	2000	2	8.4	**5.762**	**18.8**	**11.78**	**12.74**	**6.33**	**10.08**	**16.79**	**1.257**	**10.39**	**12.34**	**17.5**	**14.2**
Potassium	NLE	NLE	NLE	15,400	**1412**	**3255**	**4106**	**2577**	**3614**	**2171**	**4423**	**690**	**1241**	**2288**	**2328**	**2392**
Selenium	39	510	0.04	1.9	<0.330	<0.380	<0.362	<0.330	<0.369	<0.353	<0.363	**0.785**	**1.534**	<0.348	<0.352	<0.357
Silver	39	510	0.06	1.1	<0.330	<0.380	<0.362	<0.330	<0.369	<0.353	<0.363	<0.412	<0.351	<0.348	<0.352	<0.357
Sodium	NLE	NLE	NLE	51.6	**39.52**	**37.37**	**66.18**	**95.95**	**124.8**	**109**	**969.8**	**259.8**	**227.5**	**68.42**	**142.9**	**66.2**
Thallium	0.08	1	0.0011	ND	<0.330	<0.380	<0.362	<0.330	<0.369	<0.353	<0.363	<0.412	<0.351	<0.348	<0.352	<0.357
Vanadium	39	510	6.3	94.1	**53.06**	**200.1**	**103.1**	**115.4**	**37.5**	**76.97**	**76.13**	**24**	**19.41**	**118.7**	**141**	**120.3**
Zinc	2,300	31,000	29	81.4	**36.18**	**90.91**	**71.52**	**62.01**	**58.64**	**44.99**	**178**	**22.14**	**942.9**	**64.9**	**65.8**	**59.62**

Notes:

Historically, there have been up to 318 soil boring locations associated with FTMM-05. This analysis looks at only those boring locations that fall within the footprint of FTMM-05.

(1) U.S. Environmental Protection Agency, Regional Screening Levels (RSLs). Residential Soil (TR=1E-06, HQ = 0.1). (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Revised November 2013.

(2) Weston, 1995. Final Site Investigation - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December

USEPA RSL for Endosulfan is used for Endosulfan II

USEPA RSL for Chromium III is used for Chromium

RSL values were current at the time the screening was conducted.

Dash (--) = only background concentrations for metals are being used as comparison criteria.

B = Analyte detected in both sample and associated laboratory blank.

D = Result from dilution of sample.

DUP = field duplicate sample.

E = Estimated value.

J = Analyte detected between MDL and practical quantitation limit (PQL).

NA = not analyzed.

ND = not detected.

NLE = No limit established.

< = analyte not detected above method detection limit (MDL).

µg/kg = micrograms per kilogram.

mg/kg = milligrams per kilogram.

VOCs = volatile organic compounds.

in. = inches.

bgs = below ground surface.

Detections are bolded.

Shaded cells = concentration exceeds USEPA Groundwater Protection RSL.

Shaded cells = concentration exceeds USEPA Residential and/or Industrial RSL.

Shaded cells = concentration exceeds all three USEPA comparison criteria.

Shaded cells = concentration exceeds Weston (1995) background concentration.

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Loc ID	USEPA RSL Residential (HQ=0.1)[1]	USEPA RSL Industrial (HQ=0.1)	USEPA RSL Groundwater Protection (Risk-based)	Weston Background [2]	B-13		B-14		B-15		B-16		B-17		B-18		B-19		B-20		B-20 Dup		B-21		B-22		B-23	
Sample Date					04/11/98		04/11/98		04/11/98		04/13/98		04/13/98		04/13/98		04/13/98		04/14/98		04/14/98		04/14/98		04/14/98		04/15/98	
Volatile Organic Compounds (VOCS, µg/kg)																												
Lab Sample ID (VOCs only collected at approximately 24 in. bgs)					3473.12		3473.16		3473.20		3477.04		3477.08		3477.12		3477.16		3479.04		3479.16		3479.08		3479.12		3485.04	
Methylene Chloride	36,000	63,000,000	240	-	<550		<520		<650		<730		<790		<710		<560		<530		<540		<520		<540		<560	
Benzene	1,100	5,400	0.2	-	<270		<260		<320		<360		<400		<350		<280		<260		<270		<260		<270		<280	
Tetrachloroethene	8,600	41,000	1.6	-	<270		<260		**5000**		<360		<400		<350		<280		<260		<270		<260		<270		**4800**	
Chloroform	290	1,500	0.053	-	<270		<260		<320		<360		<400		<350		<280		<260		<270		<260		<270		<280	
Ethylbenzene	5,400	27,000	1.5	-	<550		<520		<650		<730		<790		<710		<560		<530		<540		<520		<540		<560	
TICs	NLE	NLE	NLE	-	ND		ND		ND		**19200**		**2600**		**5800**		ND		ND		**2800**		ND		**2700**		ND	
Semivolatile Organic Compounds (SVOCs, µg/kg)																												
Lab Sample ID (All analyses except VOCs collected at approximately 6-12 in. bgs)					3473.11		3473.15		3473.19		3477.03		3477.07		3477.11		3477.15		3479.03		3479.15		3479.07		3479.11		3485.03	
Naphthalene	3,600	18,000	0.47	-	<260		<280		<1400		<270		**300**		<270		<260		<300		<280		<260		<250		<270	
n-Nitrosodiphenylamine	99,000	350,000	57	-	<190		<210		<1000		<200		<200		<210		<200		<220		<210		<190		<180		<200	
2-Methylnaphthalene	23,000	220,000	14	-	<290		<310		<1600		<300		**520**		<310		<300		<330		<310		<290		<270		<300	
4-Methylphenol	610,000	6,200,000	110	-	<280		<300		<1500		<290		<300		<300		<290		<320		<300		<280		<270		<300	
Acenaphthylene	NLE	NLE	NLE	-	<200		<220		<1100		<210		<210		<220		<210		<230		<220		<200		<190		<210	
Acenaphthene	340,000	3,300,000	410	-	<180		<200		<1000		<190		<190		<200		<190		<210		<200		<190		<180		<190	
Dibenzofuran	7,800	100,000	11	-	<200		<210		<1100		<200		**160**	J	<210		<200		<230		<210		<200		<190		<210	
Diethylphthalate	4,900,000	49,000,000	470	-	<210		<230		<1200		<220		<220		<230		<220		<250		<230		<210		<200		<230	
Fluorene	230,000	2,200,000	400	-	<200		<220		<1100		<210		<210		<210		<210		<230		<220		<200		<190		<210	
Phenanthrene	NLE	NLE	NLE	-	**300**		<220		<1100		**200**	J	**310**		<220		**560**		<230		<220		<200		**140**	J	<210	
Anthracene	1,700,000	17,000,000	4200	-	**290**		<220		<1100		<210		<210		<220		<210		<230		<220		<200		**140**	J	<210	
Dimethylphthalate	NLE	NLE	NLE	-	<160		<170		<860		<170		<170		<170		<160		<180		<170		<160		<150		<170	
Di-n-butylphthalate	610,000	6,200,000	170	-	**300**	JB	**330**	JB	**27000**	BD	**820**	JB	**1000**	B	**590**	JB	**660**	JB	**740**	JB	**590**	JB	**750**	JB	**520**	JB	**11000**	B
Fluoranthene	230,000	2,200,000	7,000	-	**260**		<220		<1100		**430**		<210		**180**	J	**340**		<240		<220		<210		**150**	J	<220	
Pyrene	170,000	1,700,000	950	-	**450**		<250		<1300		**420**		<250		**220**	J	**680**		<270		<260		<240		**220**	J	<250	
Pyridine	7,800	100,000	0.53	-	<310		<340		**780**	JD	<330		<330		<340		<320		<360		<340		<320		<300		<330	
Butylbenzylphthalate	260,000	910,000	200	-	<260		<280		<1400		<270		<280		<280		<270		<300		<280		<270		<250		<280	
Benzo(a)anthracene	150	2,100	10	-	**180**	J	<220		<1100		**270**		<220		**250**		**240**		<240		<220		<210		<200		<220	
3,3'-Dichlorobenzidine	1,100	3,800	0.71	-	<360		<390		<2000		<380		<380		<390		<370		<420		<390		<360		<350		<380	
Chrysene	15,000	210,000	1,100	-	**350**		<280		<1400		**460**		**250**	J	**410**		**440**		<300		<280		<270		**190**	J	<280	
bis(2-Ethylhexyl)phthalate	35,000	120,000	1,100	-	**160**	JB	**170**	JB	<1600		**180**	JB	**250**	JB	**190**	JB	**180**	JB	**400**		**130**	J	**190**	JB	**640**		**130**	JB
Benzo(b)fluoranthene	150	2,100	35	-	**120**	J	<280		<1400		**270**		<270		**410**		**140**	J	<300		<280		<260		<250		<270	
Benzo(k)fluoranthene	1,500	21,000	350	-	**140**	J	<210		<1000		**260**		<200		**310**		**150**	J	<220		<210		<190		<180		<200	
Benzo(a)pyrene	15	210	4	-	**150**	J	<210		<1100		**270**		<210		**350**		**170**	J	<230		<210		<200		<190		<210	
Indeno(1,2,3-cd)pyrene	150	2,100	200	-	<210		<230		<1200		**200**	J	<230		**270**		**110**	J	<250		<230		<220		<210		<230	
Dibenz(a,h)anthracene	15	210	11	-	<250		<270		<1400		<260		<260		<270		<260		<290		<270		<250		<240		<270	
Benzo(g,h,i)perylene	NLE	NLE	NLE	-	<250		<270		<1400		**180**	J	<260		**220**	J	**120**	J	<290		<270		<250		<240		<270	
Total TICs	NLE	NLE	NLE	-	**39300**		**51500**		ND		**36700**		**39950**		**43300**		**33800**		**35800**		**41850**		**18900**		**9900**		**57400**	
Pesticides / PCBs (mg/kg)																												
Heptachlor	0.11	0.38	0.00014	-	<0.0006		<0.0006		**0**		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003	
Heptachlor Epoxide	0.053	0.19	0.000068	-	<0.0005		<0.0005		**0**		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0002		<0.0003	
4,4'-DDE	1.4	5.1	0.05	-	<0.0008		<0.0008		**0**		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		**0.001**		**0.001**		<0.0004		<0.0004	
Dieldrin	0.03	0.11	0.000061	-	<0.0004		<0.0004		**0**		<0.0002		<0.0002		<0.0002		<0.0002		<0.0002		<0.0002		<0.0002		<0.0002		<0.0002	
Endrin	1.8	18	0.0068	-	<0.0007		<0.0007		**0**		<0.0003		<0.0003		<0.0004		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003	
4,4'-DDD	2	7.2	0.01	-	<0.0015		<0.0015		<0.001		<0.0007		<0.0007		<0.0008		<0.0007		<0.0007		<0.0007		**0.001**		<0.0007		<0.0007	
Endrin Aldehyde	NLE	NLE	NLE	-	<0.0012		<0.0012		<0.001		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0005		<0.0006	
4,4'-DDT	1.7	7	0.07	-	<0.0003		<0.0003		**0**		**0.003**		<0.0002		<0.0002		<0.0002		<0.0002		<0.0002		<0.0002		<0.0002		<0.0002	
Endosulfan I	37	370	0.11	-	<0.0005		<0.0005		**0**		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0002		<0.0003	
Endosulfan II	37	370	0.11	-	**0.009**		<0.0006		**0**		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		**0.002**		<0.0003	
Endosulfan-Sulfate	NLE	NLE	NLE	-	<0.0022		<0.0022		<0.001		<0.0011		<0.0011		<0.0012		<0.0011		<0.0011		<0.0011		<0.0010		<0.0010		<0.0011	
gamma-Chlordane	1.6	6.5	0.013	-	<0.0022		<0.0023		<0.010		<0.0011		<0.0011		<0.0012		<0.0011		<0.0011		<0.0011		<0.0011		<0.0010		<0.0011	
alpha-Chlordane	1.6	6.5	0.013	-	<0.0022		<0.0023		<0.010		<0.0011		<0.0011		<0.0012		<0.0011		<0.0011		<0.0011		<0.0011		<0.0010		<0.0011	
Aroclor 1254	0.22	0.74	0.0082	-	<0.1109		<0.1140		ND		<0.0555		<0.0550		<0.0603		<0.0547		<0.0548		<0.0542		<0.0531		<0.0520		<0.0557	

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Loc ID	USEPA RSL Residential (HQ=0.1)[1]	USEPA RSL Industrial (HQ=0.1)	USEPA RSL Groundwater Protection (Risk-based)	Weston Background [2]	B-13	B-14	B-15	B-16	B-17	B-18	B-19	B-20	B-20 Dup	B-21	B-22	B-23
Sample Date					04/11/98	04/11/98	04/11/98	04/13/98	04/13/98	04/13/98	04/13/98	04/14/98	04/14/98	04/14/98	04/14/98	04/15/98
Metals (mg/kg)																
Aluminum	7,700	99,000	2,300	15,200	**10770**	**10610**	**12770**	**12110**	**2705**	**5034**	**10530**	**12710**	**6500**	**12310**	**6500**	**10230**
Antimony	3.1	41	0.03	ND	**1.548**	**2.184**	**2.339**	**1.504**	**2.11**	**0.716**	**1.411**	**1.18**	**0.811**	**1.586**	**0.811**	**1.933**
Arsenic	0.61	2.4	0.0013	22.9	**13.28**	**12.94**	**14.03**	**12.91**	**7.747**	**10.67**	**1030**	**14.23**	**6.743**	**12.38**	**6.743**	**11.27**
Barium	1,500	19,000	12	32.3	**28.75**	**21.51**	**29.59**	**77.62**	**19.8**	**57.41**	**28.22**	**26.01**	**18.78**	**34.1**	**18.78**	**18.63**
Beryllium	16	200	1.3	2	**1.09**	**1.376**	**1.187**	**1.463**	**0.3558**	**0.5955**	**0.9895**	**1.228**	**0.72**	**1.182**	**0.72**	**1.132**
Cadmium	7	80	0.05	ND	**0.0925**	**0.3648**	**0.2357**	**0.3385**	**0.482**	**1.934**	**1.258**	**1.41**	<0.050	<0.059	<0.050	**0.2331**
Calcium	NLE	NLE	NLE	921	**1749**	**1224**	**600.2**	**1370**	**746.9**	**1947**	**533.2**	**750.3**	**1079**	**4851**	**1079**	**672.4**
Chromium	12,000	150,000	2,800,000	269	**83.47**	**117.3**	**98.72**	**70.59**	**5.603**	**13.86**	**83.08**	**106.7**	**53.19**	**109.2**	**53.19**	**106.8**
Cobalt	2.3	30	0.02	2.5	**3.82**	**5.631**	**5.412**	**5.138**	**3.41**	**5.639**	**2.785**	**3.228**	**2.142**	**5.048**	**2.142**	**3.946**
Copper	310	4,100	2.2	8	**7.043**	**4.11**	**2.605**	**132.3**	**191.4**	**504.4**	**6.488**	**4.663**	**4.971**	**5.5**	**4.971**	**37.2**
Iron	5500	72,000	27	55,800	**39530**	**56290**	**47940**	**33680**	**4204**	**8125**	**33280**	**38800**	**19270**	**44760**	**19270**	**50900**
Lead	400	800	NLE	19.5	**32.8**	**8.331**	**8.012**	**288.8**	**1793**	**305.2**	**10.63**	**16.25**	**11.83**	**9.176**	**11.83**	**17.2**
Magnesium	NLE	NLE	NLE	7,230	**2317**	**1445**	**1278**	**1392**	**184.9**	**348.8**	**2199**	**3160**	**2083**	**3428**	**2083**	**1176**
Manganese	180	2,300	2.1	90.7	**85.88**	**115.4**	**87.25**	**110.8**	**24.55**	**50.34**	**59.32**	**76.21**	**67.71**	**81.37**	**67.71**	**74.58**
Mercury	1	4.3	0.0033	ND	**0.467**	**0.024**	**0.012**	**0.437**	**0.0062**	**0.133**	<0.012	**0.019**	**0.011**	<0.013	**0.011**	<0.012
Nickel	150	2000	2	8.4	**12.04**	**19.62**	**15.27**	**15.51**	**8.915**	**15.97**	**8.234**	**10.4**	**5.72**	**15.46**	**5.72**	**13.06**
Potassium	NLE	NLE	NLE	15,400	**4990**	**2466**	**3631**	**3944**	**375.3**	**907.7**	**4763**	**5588**	**4347**	**3221**	**4347**	**2592**
Selenium	39	510	0.04	1.9	<0.314	<0.358	<0.353	<0.301	**0.438**	**0.78**	<0.295	<0.360	<0.302	<0.351	<0.302	<0.331
Silver	39	510	0.06	1.1	<0.314	<0.358	<0.353	<0.301	<0.361	**1.519**	<0.295	<0.360	<0.302	<0.351	<0.302	<0.331
Sodium	NLE	NLE	NLE	51.6	**67.71**	**79.89**	**83.87**	**248**	**152.2**	**246.7**	**37.78**	**48.64**	**33.37**	**235.5**	**33.37**	**35.27**
Thallium	0.08	1	0.0011	ND	<0.314	<0.358	<0.353	<0.301	<0.361	<0.397	<0.295	<0.360	<0.302	<0.351	<0.302	<0.331
Vanadium	39	510	6.3	94.1	**104.6**	**166.2**	**146.2**	**90.73**	**10.9**	**17.17**	**66.69**	**67.64**	**34.59**	**135.8**	**34.59**	**138.4**
Zinc	2,300	31,000	29	81.4	**66.81**	**108.8**	**79.64**	**120.7**	**46.07**	**627.4**	**42.6**	**56.35**	**32.86**	**74.92**	**32.86**	**86.32**

Notes:

Historically, there have been up to 318 soil boring locations associated with FTMM-05. This analysis looks at only those boring locations that fall within the footprint of FTMM-05.

(1) U.S. Environmental Protection Agency, Regional Screening Levels (RSLs). Residential Soil (TR=1E-06, HQ = 0.1). (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Revised November 2013.

(2) Weston, 1995. Final Site Investigation - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December

USEPA RSL for Endosulfan is used for Endosulfan II
USEPA RSL for Chromium III is used for Chromium
RSL values were current at the time the screening was conducted.
Dash (--) = only background concentrations for metals are being used as comparison criteria.
B = Analyte detected in both sample and associated laboratory blank.
D = Result from dilution of sample.
DUP = field duplicate sample.
E = Estimated value.
J = Analyte detected between MDL and practical quantitation limit (PQL).
NA = not analyzed.
ND = not detected.
NLE = No limit established.
< = analyte not detected above method detection limit (MDL).
µg/kg = micrograms per kilogram.
mg/kg = milligrams per kilogram.
VOCs = volatile organic compounds.
in. = inches.
bgs = below ground surface.
Detections are bolded.
Shaded cells = concentration exceeds USEPA Groundwater Protection RSL.
Shaded cells = concentration exceeds USEPA Residential and/or Industrial RSL.
Shaded cells = concentration exceeds all three USEPA comparison criteria.
Shaded cells = concentration exceeds Weston (1995) background concentration.

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Loc ID	USEPA RSL Residential (HQ=0.1)[1]	USEPA RSL Industrial (HQ=0.1)	USEPA RSL Groundwater Protection (Risk-based)	Weston Background [2]	B-24		B-25		B-26		B-27		B-28		B-29		B-30		B-31		B-32		B-33		B-34		B-35	
Sample Date					04/15/98		04/15/98		04/15/98		04/20/98		04/20/98		04/20/98		04/20/98		04/21/98		04/21/98		04/21/98		04/21/98		04/21/98	
Volatile Organic Compounds (VOCS, µg/kg)																												
Lab Sample ID (VOCs only collected at approximately 24 in. bgs)					3485.08		3485.12		3485.16		3498.04		3498.08		3498.12		3498.16		3500.03		3500.07		3500.11		3500.15		3500.19	
Methylene Chloride	36,000	63,000,000	240	-	<620		<570		<650		<670		<570		<530		<570		<520		<530		<620		<890		<680	
Benzene	1,100	5,400	0.2	-	<310		<290		<330		<340		<290		<260		<280		<260		<270		<310		<450		<340	
Tetrachloroethene	8,600	41,000	1.6	-	**3200**		<290		<330		<340		<290		<260		<280		<260		<270		<310		<450		<340	
Chloroform	290	1,500	0.053	-	<310		<290		<330		<340		<290		<260		<280		<260		<270		<310		<450		<340	
Ethylbenzene	5,400	27,000	1.5	-	<620		<570		<650		<670		<570		<530		<570		<520		<530		<620		<890		<680	
TICs	NLE	NLE	NLE	-	ND		ND		ND		**3800**		ND		ND		ND		ND		ND		ND		ND		ND	
Semivolatile Organic Compounds (SVOCs, µg/kg)																												
Lab Sample ID (All analyses except VOCs collected at approximately 6-12 in. bgs)					3485.07		3485.11		3485.15		3498.03		3498.07		3498.11		3498.15		3500.02		3500.06		3500.10		3500.14		3500.18	
Naphthalene	3,600	18,000	0.47	-	<250		<280		<280		**170**	J	**130**	J	<260		<270		<1300		<270		<270		<280		<260	
n-Nitrosodiphenylamine	99,000	350,000	57	-	<190		<210		<210		<220		<200		<200		<200		<990		<210		<200		<210		<200	
2-Methylnaphthalene	23,000	220,000	14	-	<280		<310		<310		**210**	J	**160**	J	<290		<300		<1500		<310		**110**	J	<310		**120**	J
4-Methylphenol	610,000	6,200,000	110	-	<280		<300		<300		<320		<290		<290		<290		<1400		<300		<290		<300		<290	
Acenaphthylene	NLE	NLE	NLE	-	<200		<220		<220		<230		<210		<210		<210		<1000		<220		<210		<220		<210	
Acenaphthene	340,000	3,300,000	410	-	<180		<200		<200		<210		<190		<190		<190		<940		<200		<190		<200		<190	
Dibenzofuran	7,800	100,000	11	-	<190		<210		<210		<220		<200		<200		<200		<1000		<210		<200		<210		<200	
Diethylphthalate	4,900,000	49,000,000	470	-	<210		<230		<230		**200**	JB	<220		**120**	JB	**120**	JB	**150**	J	**140**	J	**300**		**180**	J	<220	
Fluorene	230,000	2,200,000	400	-	<200		<220		<220		<230		<210		<200		<210		<1000		<210		<210		<220		<200	
Phenanthrene	NLE	NLE	NLE	-	<200		**190**	J	**390**		**1300**		**480**		**150**	J	<210		**130**	J	**170**	J	**350**		**280**		**670**	
Anthracene	1,700,000	17,000,000	4200	-	<200		<220		<220		**210**	J	<210		<210		<210		<1000		<220		<210		<220		<210	
Dimethylphthalate	NLE	NLE	NLE	-	<160		<170		<170		<180		<160		<160		<170		<810		<170		<170		<170		<160	
Di-n-butylphthalate	610,000	6,200,000	170	-	**1100**	B	**5700**	B	**4600**	B	**6600**	B	**890**	JB	**1600**	B	**1000**	B	**26000**	BD	**2500**	B	**1000**	B	**1400**	B	**6800**	B
Fluoranthene	230,000	2,200,000	7,000	-	<200		**330**		**910**		**2800**		**380**		**140**	J	<210		**120**	J	**250**		**550**		**570**		**1300**	
Pyrene	170,000	1,700,000	950	-	<240		**310**		**770**		**2500**		**600**		**240**	J	<250		**190**	J	**270**		**520**		**460**		**1100**	
Pyridine	7,800	100,000	0.53	-	<310		<340		<340		<360		<330		<320		<330		<1600		<340		<330		<340		<320	
Butylbenzylphthalate	260,000	910,000	200	-	<260		<290		**120**	J	<300		<270		<270		<270		<270		<280		<280		<290		<270	
Benzo(a)anthracene	150	2,100	10	-	<200		**250**		**540**		**1500**		**230**		<210		<210		<1100		**170**	J	**320**		**350**		**690**	
3,3'-Dichlorobenzidine	1,100	3,800	0.71	-	<360		<390		<390		<410		<380		<370		<380		<1900		<390		<380		<390		<370	
Chrysene	15,000	210,000	1,100	-	<260		**410**		**830**		**2300**		**530**		**190**	J	<270		**150**	J	**300**		**600**		**570**		**1200**	
bis(2-Ethylhexyl)phthalate	35,000	120,000	1,100	-	**510**	B	**230**	JB	**1300**	B	**290**	JB	**140**	JB	**180**	JB	**170**	JB	**130**	JB	**160**	JB	**150**	JB	**360**	B	**130**	JB
Benzo(b)fluoranthene	150	2,100	35	-	<260		**290**		**690**		**1600**		**190**	J	<260		<270		<1300		**160**	J	**350**		**420**		**840**	
Benzo(k)fluoranthene	1,500	21,000	350	-	<190		**260**		**560**		**1400**		**190**	J	<190		<200		<980		**150**	J	**360**		**340**		**700**	
Benzo(a)pyrene	15	210	4	-	<190		**250**		**670**		**1600**		**220**		<200		<200		<1000		**170**	J	**370**		**390**		**720**	
Indeno(1,2,3-cd)pyrene	150	2,100	200	-	<210		**190**	J	**580**		**1200**		**150**	J	<220		<220		<1100		**120**	J	**260**		**300**		**490**	
Dibenz(a,h)anthracene	15	210	11	-	<250		<270		<270		**420**		<260		<260		<260		<1300		<270		<260		<270		**200**	J
Benzo(g,h,i)perylene	NLE	NLE	NLE	-	<250		**170**	J	**510**		**950**		**160**	J	<260		<260		<1300		<270		**230**	J	**250**	J	**400**	
Total TICs	NLE	NLE	NLE	-	**47900**		**56800**		**39240**		**48800**		**33500**		**50100**		**54500**		**6500**		**17700**		**11560**		**32020**		**5920**	
Pesticides / PCBs (mg/kg)																												
Heptachlor	0.11	0.38	0.00014	-	<0.0003		<0.0003		<0.0003		<0.0004		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003	
Heptachlor Epoxide	0.053	0.19	0.000068	-	<0.0003		<0.0003		<0.0003		<0.0007		<0.0006		<0.0006		<0.0007		<0.0007		<0.0007		<0.0007		<0.0007		<0.0006	
4,4'-DDE	1.4	5.1	0.05	-	<0.0004		**0.007**		**0.001**		**0.092**		**0.016**		**0.009**		**0.004**		<0.0004		<0.0004		**0.037**		**0.009**		**0.153**	
Dieldrin	0.03	0.11	0.000061	-	<0.0002		<0.0002		<0.0002		<0.0006		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005		<0.0006		<0.0006		<0.0005	
Endrin	1.8	18	0.0068	-	<0.0003		<0.0003		<0.0004		<0.0006		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005		<0.0006		<0.0006		**0.023**	
4,4'-DDD	2	7.2	0.01	-	<0.0007		**0.002**		**0.002**		**0.008**		**0.001**		<0.0006		<0.0007		<0.0007		<0.0007		**0.003**		<0.0007		**0.02**	
Endrin Aldehyde	NLE	NLE	NLE	-	<0.0006		<0.0006		<0.0006		<0.0006		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005		<0.0006		<0.0006		<0.0005	
4,4'-DDT	1.7	7	0.07	-	<0.0002		**0.015**		**0.001**		**0.03**		**0.004**		**0.001**		<0.0012		<0.0012		<0.0012		**0.02**		**0.003**		**0.051**	
Endosulfan I	37	370	0.11	-	<0.0003		<0.0003		<0.0003		<0.0006		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005		<0.0006		<0.0006		<0.0005	
Endosulfan II	37	370	0.11	-	<0.0003		**0.005**		<0.0003		<0.0005		<0.0004		**0.004**		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		**0.01**	
Endosulfan-Sulfate	NLE	NLE	NLE	-	<0.0011		<0.0011		<0.0012		<0.0005		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004	
gamma-Chlordane	1.6	6.5	0.013	-	<0.0011		<0.0011		<0.0012		<0.0006		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005		<0.0006		<0.0006		<0.0005	
alpha-Chlordane	1.6	6.5	0.013	-	<0.0011		<0.0011		<0.0012		<0.0006		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005		<0.0006		<0.0006		<0.0005	
Aroclor 1254	0.22	0.74	0.0082	-	<0.0553		<0.0554		<0.0601		<0.0048		<0.0047		<0.0044		<0.0044		<0.0045		<0.0044		<0.0044		<0.0045		<0.0042	

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Loc ID	USEPA RSL Residential (HQ=0.1)[1]	USEPA RSL Industrial (HQ=0.1)	USEPA RSL Groundwater Protection (Risk-based)	Weston Background [2]	B-24	B-25	B-26	B-27	B-28	B-29	B-30	B-31	B-32	B-33	B-34	B-35
Sample Date					04/15/98	04/15/98	04/15/98	04/20/98	04/20/98	04/20/98	04/20/98	04/21/98	04/21/98	04/21/98	04/21/98	04/21/98
Metals (mg/kg)																
Aluminum	7,700	99,000	2,300	15,200	**8798**	**5973**	**3987**	**4737**	**10510**	**3825**	**11450**	**9478**	**9374**	**5404**	**6652**	**12810**
Antimony	3.1	41	0.03	ND	**2.019**	**0.535**	**1.402**	**0.609**	**2.536**	**0.562**	**1.41**	**1.835**	**1.035**	**1.754**	**2.403**	**5.962**
Arsenic	0.61	2.4	0.0013	22.9	**11.08**	**9.377**	**12.45**	**14.28**	**11.12**	**5.409**	**10.21**	**12.89**	**11.15**	**32.71**	**13.11**	**62.27**
Barium	1,500	19,000	12	32.3	**22.06**	**54.85**	**93.31**	**102.3**	**27.13**	**21.8**	**27.58**	**26**	**36.46**	**150**	**203.9**	**354.6**
Beryllium	16	200	1.3	2	**1.003**	**0.5943**	**0.5401**	**0.5059**	**1.382**	**0.4842**	**0.9559**	**1.034**	**0.8538**	**0.6234**	**0.689**	**10.89**
Cadmium	7	80	0.05	ND	**0.4323**	**0.5041**	**1.011**	**1.863**	**0.2193**	**0.0786**	**0.1311**	**0.1635**	**0.2132**	**2.087**	**1.975**	**7.431**
Calcium	NLE	NLE	NLE	921	**645.4**	**2380**	**1670**	**2181**	**775.9**	**715.5**	**1593**	**705.5**	**1054**	**4974**	**3063**	**2477**
Chromium	12,000	150,000	2,800,000	269	**92.13**	**43.8**	**24.87**	**25.25**	**141.4**	**28.13**	**78.5**	**102.1**	**70.22**	**38.59**	**44.4**	**72.25**
Cobalt	2.3	30	0.02	2.5	**4.48**	**3.881**	**3.974**	**3.495**	**3.636**	**0.8424**	**4.455**	**1.878**	**3.774**	**5.207**	**5.537**	**55.97**
Copper	310	4,100	2.2	8	**11.34**	**102.8**	**484.1**	**566.7**	**7.552**	**7.933**	**4.673**	**8.222**	**32.05**	**409.3**	**428**	**442.8**
Iron	5500	72,000	27	55,800	**41650**	**23110**	**17000**	**14330**	**51640**	**11250**	**36530**	**39390**	**31220**	**32440**	**23380**	**13500**
Lead	400	800	NLE	19.5	**10.74**	**207.2**	**921.5**	**708.5**	**21.74**	**39.12**	**10.71**	**34.73**	**70.19**	**810.3**	**1090**	**2851**
Magnesium	NLE	NLE	NLE	7,230	**958.6**	**1409**	**378.7**	**1019**	**1088**	**844.5**	**1847**	**1751**	**1360**	**2213**	**878.7**	**1112**
Manganese	180	2,300	2.1	90.7	**86.61**	**104.8**	**97.11**	**73.72**	**52.63**	**39.55**	**87.83**	**38.07**	**123.3**	**179.6**	**153.2**	**174.9**
Mercury	1	4.3	0.0033	ND	<0.011	**0.201**	**0.485**	**0.512**	**0.064**	**0.056**	**0.012**	**0.184**	**0.025**	**0.979**	**0.662**	**1.562**
Nickel	150	2000	2	8.4	**12.94**	**10.85**	**13.33**	**10.33**	**11.45**	**3.095**	**12.99**	**8.486**	**12.04**	**18.98**	**22.35**	**69.97**
Potassium	NLE	NLE	NLE	15,400	**1592**	**1725**	**684**	**1454**	**2371**	**1592**	**2876**	**4834**	**3626**	**1348**	**1615**	**3185**
Selenium	39	510	0.04	1.9	<0.381	<0.305	**0.888**	**0.881**	<0.302	<0.372	<0.365	<0.290	<0.299	**0.602**	**1.104**	**50.7**
Silver	39	510	0.06	1.1	<0.381	<0.305	**1.574**	**0.419**	<0.302	<0.372	<0.365	<0.290	<0.299	**2.78**	**3.345**	**9.425**
Sodium	NLE	NLE	NLE	51.6	**58.67**	**95.4**	**333.1**	**159.7**	**49.69**	**35.99**	**77.41**	**39.97**	**81.26**	**245.1**	**186.7**	**343.3**
Thallium	0.08	1	0.0011	ND	<0.381	<0.305	<0.373	<0.366	<0.302	<0.372	<0.365	<0.290	<0.299	<0.377	<0.380	**47.42**
Vanadium	39	510	6.3	94.1	**126.7**	**51.98**	**34.2**	**28.86**	**191.7**	**19.39**	**109.7**	**79.23**	**76.03**	**44.85**	**52.39**	**84.39**
Zinc	2,300	31,000	29	81.4	**67.07**	**163.9**	**303.7**	**179.4**	**70.69**	**55.47**	**56.71**	**62.43**	**82.33**	**743**	**828**	**658.1**

Notes:

Historically, there have been up to 318 soil boring locations associated with FTMM-05. This analysis looks at only those boring locations that fall within the footprint of FTMM-05.

(1) U.S. Environmental Protection Agency, Regional Screening Levels (RSLs). Residential Soil (TR=1E-06, HQ = 0.1). (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Revised November 2013.

(2) Weston, 1995. Final Site Investigation - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December

USEPA RSL for Endosulfan is used for Endosulfan II
USEPA RSL for Chromium III is used for Chromium
RSL values were current at the time the screening was conducted.
Dash (--) = only background concentrations for metals are being used as comparison criteria.
B = Analyte detected in both sample and associated laboratory blank.
D = Result from dilution of sample.
DUP = field duplicate sample.
E = Estimated value.
J = Analyte detected between MDL and practical quantitation limit (PQL).
NA = not analyzed.
ND = not detected.
NLE = No limit established.
< = analyte not detected above method detection limit (MDL).
µg/kg = micrograms per kilogram.
mg/kg = milligrams per kilogram.
VOCs = volatile organic compounds.
in. = inches.
bgs = below ground surface.
Detections are bolded.
Shaded cells = concentration exceeds USEPA Groundwater Protection RSL.
Shaded cells = concentration exceeds USEPA Residential and/or Industrial RSL.
Shaded cells = concentration exceeds all three USEPA comparison criteria.
Shaded cells = concentration exceeds Weston (1995) background concentration.

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Loc ID	USEPA RSL Residential (HQ=0.1)[1]	USEPA RSL Industrial (HQ=0.1)	USEPA RSL Groundwater Protection (Risk-based)	Weston Background [2]	B-36		B-37		B-38		B-39		B-40		B-41		B-42		B-43		B-43 Dup		B-44		B-45		B-46	
Sample Date					04/22/98		04/22/98		04/22/98		04/22/98		04/22/98		05/01/98		05/01/98		05/04/98		05/04/98		05/04/98		05/04/98		05/04/98	
Volatile Organic Compounds (VOCS, µg/kg)																												
Lab Sample ID (VOCs only collected at approximately 24 in. bgs)					3501.03		3501.07		3501.11		3501.15		3501.19		3539.03		3539.07		3543.03		3543.19		3543.07		3543.11		3543.15	
Methylene Chloride	36,000	63,000,000	240	-	<520		<520		<690		<570		<630		<680		<580		<630		<640		<690		<650		<680	
Benzene	1,100	5,400	0.2	-	<260		<260		<340		<280		<320		<340		<290		<310		<320		<340		<330		<340	
Tetrachloroethene	8,600	41,000	1.6	-	<260		<260		**410**		<280		**3100**		<340		<290		<310		<320		<340		<330		**450**	
Chloroform	290	1,500	0.053	-	<260		<260		<340		<280		<320		<340		<290		<310		<320		<340		<330		<340	
Ethylbenzene	5,400	27,000	1.5	-	<520		<520		<690		<570		<630		<680		<580		<630		<640		<690		<650		<680	
TICs	NLE	NLE	NLE	-	ND		ND		ND		ND		ND		**22700**		ND		ND		ND		ND		**1800**		**1500**	
Semivolatile Organic Compounds (SVOCs, µg/kg)																												
Lab Sample ID (All analyses except VOCs collected at approximately 6-12 in. bgs)					3501.02		3501.06		3501.10		3501.14		3501.18		3539.02		3539.06		3543.02		3543.18		3543.06		3543.10		3543.14	
Naphthalene	3,600	18,000	0.47	-	<250		<250		<270		<1300		<260		**180**	J	**310**		<310		<310		**190**	J	<250		<260	
n-Nitrosodiphenylamine	99,000	350,000	57	-	<190		<190		<200		<990		<190		<210		<200		<230		<230		<210		<190		<190	
2-Methylnaphthalene	23,000	220,000	14	-	<280		<280		<310		<1500		<290		**260**	J	**260**	J	<350		<350		**160**	J	<280		<290	
4-Methylphenol	610,000	6,200,000	110	-	<280		<270		<300		<1400		<280		<300		<290		<340		<340		<310		<280		**160**	J
Acenaphthylene	NLE	NLE	NLE	-	<200		<200		<210		<1000		<200		<220		<210		<240		<250		<220		<200		<200	
Acenaphthene	340,000	3,300,000	410	-	<180		<180		<200		<940		<190		<200		<190		<220		<220		<200		<180		<180	
Dibenzofuran	7,800	100,000	11	-	<190		<190		<210		<1000		<200		<210		<200		<240		<240		<220		<190		<200	
Diethylphthalate	4,900,000	49,000,000	470	-	<210		<210		<230		<1100		<220		<230		<220		<260		<260		<240		<210		<210	
Fluorene	230,000	2,200,000	400	-	<200		<200		<210		<1000		<200		<210		<210		<240		<240		<220		<200		<200	
Phenanthrene	NLE	NLE	NLE	-	**210**		<200		<220		<1000		<210		**350**		**640**		<250		**140**	J	**1300**		**300**		**320**	
Anthracene	1,700,000	17,000,000	4200	-	<200		<200		<220		<1000		<210		<220		<210		<250		<250		**190**	J	<200		<200	
Dimethylphthalate	NLE	NLE	NLE	-	<160		<160		<170		<810		<160		<170		<170		<190		<190		<180		<160		<160	
Di-n-butylphthalate	610,000	6,200,000	170	-	**3300**	B	**4700**	B	**6100**	B	**35000**	BD	**4200**	B	**1100**	B	**800**	JB	**400**	JB	**870**	JB	**370**	JB	**290**	JB	**1000**	B
Fluoranthene	230,000	2,200,000	7,000	-	**220**		<200		<220		<1000		<210		**340**		**1300**		<250		**180**	J	**2800**		**710**		**560**	
Pyrene	170,000	1,700,000	950	-	**330**		<230		<250		<1200		<240		**310**		**960**		<290		**140**	J	**2500**		**700**		**530**	
Pyridine	7,800	100,000	0.53	-	<310		<310		<330		<1600		<320		<340		<330		<380		<380		<350		<310		<320	
Butylbenzylphthalate	260,000	910,000	200	-	<260		<260		<280		<1400		<270		<280		<280		<320		<320		<290		<260		<260	
Benzo(a)anthracene	150	2,100	10	-	**140**	J	<200		<220		<1100		<210		**150**	J	**650**		<250		<250		**1500**		**440**		**310**	
3,3'-Dichlorobenzidine	1,100	3,800	0.71	-	<350		<350		<380		<1900		<370		<390		<380		<440		<440		<400		<360		<360	
Chrysene	15,000	210,000	1,100	-	**280**		<260		<280		<1400		<270		**410**		**980**		**130**	J	**130**	J	**2400**		**690**		**510**	
bis(2-Ethylhexyl)phthalate	35,000	120,000	1,100	-	**130**	JB	**130**	JB	**150**	JB	<1500		<290		**150**	JB	<300		<350		<350		<320		<290		**2900**	B
Benzo(b)fluoranthene	150	2,100	35	-	**110**	J	<250		<270		<1300		<260		**250**	J	**720**		<310		<310		**1600**		**480**		**330**	
Benzo(k)fluoranthene	1,500	21,000	350	-	**120**	J	<190		<200		<980		<190		**180**	J	**590**		<230		<230		**1500**		**470**		**350**	
Benzo(a)pyrene	15	210	4	-	**120**	J	<190		<210		<1000		<200		**160**	J	**670**		<240		<240		**1600**		**500**		**360**	
Indeno(1,2,3-cd)pyrene	150	2,100	200	-	<210		<210		<230		<1100		<220		**130**	J	**580**		<260		<260		**1300**		**470**		**310**	
Dibenz(a,h)anthracene	15	210	11	-	<250		<250		<270		<1300		<250		<270		**200**	J	<300		<310		**470**		**160**	J	<250	
Benzo(g,h,i)perylene	NLE	NLE	NLE	-	<250		<250		<270		<1300		<250		**120**	J	**500**		<300		<310		**1200**		**420**		**280**	
Total TICs	NLE	NLE	NLE	-	**6000**		**7100**		**7300**		ND		**5800**		**19190**		**19310**		**12400**		**15700**		**26870**		**12290**		**60570**	
Pesticides / PCBs (mg/kg)																												
Heptachlor	0.11	0.38	0.00014	-	<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0004		<0.0004		<0.0004		<0.0003		<0.0003	
Heptachlor Epoxide	0.053	0.19	0.000068	-	<0.0006		<0.0006		<0.0006		<0.0007		<0.0007		<0.0006		<0.0007		<0.0007		<0.0008		<0.0007		<0.0007		<0.0007	
4,4'-DDE	1.4	5.1	0.05	-	**0.003**		<0.0004		**0**		<0.0005		**0.001**		**0.028**		**0.007**		<0.0005		<0.0005		<0.0005		**0.084**		**0.052**	
Dieldrin	0.03	0.11	0.000061	-	<0.0005		<0.0005		<0.0005		<0.0006		<0.0006		<0.0005		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006	
Endrin	1.8	18	0.0068	-	<0.0005		<0.0005		<0.0005		<0.0006		<0.0006		<0.0005		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006	
4,4'-DDD	2	7.2	0.01	-	**0.001**		<0.0006		<0.0006		<0.0007		**0.001**		**0.003**		**0.003**		<0.0007		<0.0008		<0.0007		**0.007**		**0.008**	
Endrin Aldehyde	NLE	NLE	NLE	-	<0.0005		<0.0005		<0.0005		<0.0006		<0.0006		<0.0005		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006	
4,4'-DDT	1.7	7	0.07	-	**0.006**		<0.0011		<0.0012		<0.0012		**0.003**		**0.044**		**0.033**		<0.0013		<0.0014		<0.0013		**0.105**		**0.075**	
Endosulfan I	37	370	0.11	-	<0.0005		<0.0005		<0.0005		<0.0006		<0.0006		<0.0005		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006	
Endosulfan II	37	370	0.11	-	<0.0004		<0.0004		<0.0004		<0.0005		<0.0004		<0.0004		**0.004**		<0.0005		<0.0005		<0.0005		<0.0004		<0.0005	
Endosulfan-Sulfate	NLE	NLE	NLE	-	<0.0004		<0.0004		<0.0004		<0.0005		<0.0004		<0.0004		<0.0004		<0.0005		<0.0005		<0.0005		<0.0004		<0.0005	
gamma-Chlordane	1.6	6.5	0.013	-	<0.0005		<0.0005		<0.0005		<0.0006		<0.0006		<0.0005		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006	
alpha-Chlordane	1.6	6.5	0.013	-	<0.0005		<0.0005		<0.0005		<0.0006		<0.0006		<0.0005		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006	
Aroclor 1254	0.22	0.74	0.0082	-	<0.0042		<0.0042		<0.0043		<0.0045		<0.0045		<0.0043		<0.0045		<0.0048		<0.0050		<0.0048		<0.0045		<0.0045	

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Loc ID	USEPA RSL Residential (HQ=0.1)[1]	USEPA RSL Industrial (HQ=0.1)	USEPA RSL Groundwater Protection (Risk-based)	Weston Background [2]	B-36	B-37	B-38	B-39	B-40	B-41	B-42	B-43	B-43 Dup	B-44	B-45	B-46
Sample Date					04/22/98	04/22/98	04/22/98	04/22/98	04/22/98	05/01/98	05/01/98	05/04/98	05/04/98	05/04/98	05/04/98	05/04/98
Metals (mg/kg)																
Aluminum	7,700	99,000	2,300	15,200	**8275**	**10070**	**9616**	**9833**	**7769**	**6479**	**3951**	**6390**	**4159**	**8077**	**1961**	**4464**
Antimony	3.1	41	0.03	ND	**0.964**	**1.965**	**1.819**	**1.916**	**1.55**	**1.413**	**1.104**	<0.280	**0.732**	**1.203**	**0.382**	**0.639**
Arsenic	0.61	2.4	0.0013	22.9	**9.445**	**10.42**	**9.688**	**13.1**	**10.04**	**12.52**	**8.959**	**4.218**	**9.162**	**11.66**	**2.255**	**8.122**
Barium	1,500	19,000	12	32.3	**22.98**	**24.73**	**26.09**	**30.29**	**20**	**107.8**	**181.9**	**258.9**	**105.3**	**513.9**	**16.6**	**69.01**
Beryllium	16	200	1.3	2	**0.8057**	**1.032**	**1.058**	**1.159**	**0.8691**	**0.759**	**0.4586**	**0.764**	**0.565**	**0.8622**	**0.166**	**0.4403**
Cadmium	7	80	0.05	ND	**0.5596**	**0.1855**	**0.2547**	**0.1541**	**0.1502**	**0.959**	**0.489**	<0.070	**2.775**	**0.6777**	**0.4876**	**0.9829**
Calcium	NLE	NLE	NLE	921	**635.6**	**1015**	**839**	**612.5**	**577.6**	**2137**	**962.9**	**1200**	**1607**	**2670**	**10360**	**2705**
Chromium	12,000	150,000	2,800,000	269	**61.12**	**96.84**	**99.42**	**106.1**	**83.34**	**56.36**	**36.34**	**21.06**	**11.39**	**70.59**	**17.96**	**36.61**
Cobalt	2.3	30	0.02	2.5	**3.707**	**4.522**	**4.232**	**4.975**	**4.022**	**4.604**	**4.035**	**5.369**	**3.668**	**2.42**	**1.223**	**2.495**
Copper	310	4,100	2.2	8	**8.111**	**3.796**	**3.185**	**3.559**	**1.854**	**412.9**	**207.3**	**38.4**	**55.16**	**346.7**	**28.23**	**262.8**
Iron	5500	72,000	27	55,800	**29820**	**43400**	**42240**	**49440**	**36490**	**27420**	**21350**	**8584**	**9241**	**21940**	**6391**	**18840**
Lead	400	800	NLE	19.5	**16.68**	**8.622**	**8.58**	**10.66**	**5.945**	**629.1**	**502.5**	**39.9**	**165.5**	**275.5**	**228.1**	**273.5**
Magnesium	NLE	NLE	NLE	7,230	**1019**	**1311**	**1022**	**899.6**	**789.1**	**1009**	**485**	**331.2**	**318.6**	**2943**	**5665**	**928.1**
Manganese	180	2,300	2.1	90.7	**76.98**	**103.8**	**85.25**	**110.2**	**86.79**	**193.3**	**102.6**	**68.44**	**185.6**	**84.22**	**52.05**	**725.6**
Mercury	1	4.3	0.0033	ND	**0.059**	**0.025**	**0.014**	**0.037**	**0.013**	**0.891**	**0.754**	**0.085**	**0.389**	**0.164**	**10.194**	**5.04**
Nickel	150	2000	2	8.4	**10.12**	**14.97**	**15.78**	**15.84**	**10.83**	**19.73**	**10.93**	**13.84**	**9.258**	**13.28**	**4.67**	**7.3**
Potassium	NLE	NLE	NLE	15,400	**2115**	**2342**	**1607**	**1726**	**1611**	**1890**	**864.1**	**525.2**	**379.1**	**3791**	**722.3**	**1955**
Selenium	39	510	0.04	1.9	**0.584**	<0.347	<0.341	<0.376	<0.320	**0.627**	**0.859**	**1.417**	**0.996**	**0.473**	<0.359	<0.361
Silver	39	510	0.06	1.1	<0.353	<0.347	<0.341	<0.376	<0.320	**0.945**	<0.357	**2.362**	**0.564**	**0.993**	<0.359	**0.512**
Sodium	NLE	NLE	NLE	51.6	**38.72**	**40.28**	**45.41**	**62.79**	**32.38**	**154.9**	**103.4**	**216.8**	**870.9**	**221.4**	**174.2**	**312.4**
Thallium	0.08	1	0.0011	ND	<0.353	<0.347	<0.341	<0.376	<0.320	<0.363	<0.357	<0.420	<0.433	<0.358	<0.359	<0.361
Vanadium	39	510	6.3	94.1	**84.38**	**131.4**	**139**	**159.7**	**103.5**	**59.51**	**43.68**	**20.79**	**15.84**	**30.96**	**14.38**	**33.38**
Zinc	2,300	31,000	29	81.4	**45.25**	**64.17**	**70.04**	**71.88**	**58.82**	**433.1**	**250.3**	**48.22**	**75.11**	**1598**	**62.64**	**1809**

Notes:

Historically, there have been up to 318 soil boring locations associated with FTMM-05. This analysis looks at only those boring locations that fall within the footprint of FTMM-05.

(1) U.S. Environmental Protection Agency, Regional Screening Levels (RSLs). Residential Soil (TR=1E-06, HQ = 0.1). (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Revised November 2013.

(2) Weston, 1995. Final Site Investigation - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December

USEPA RSL for Endosulfan is used for Endosulfan II

USEPA RSL for Chromium III is used for Chromium

RSL values were current at the time the screening was conducted.

Dash (--) = only background concentrations for metals are being used as comparison criteria.

B = Analyte detected in both sample and associated laboratory blank.

D = Result from dilution of sample.

DUP = field duplicate sample.

E = Estimated value.

J = Analyte detected between MDL and practical quantitation limit (PQL).

NA = not analyzed.

ND = not detected.

NLE = No limit established.

< = analyte not detected above method detection limit (MDL).

µg/kg = micrograms per kilogram.

mg/kg = milligrams per kilogram.

VOCs = volatile organic compounds.

in. = inches.

bgs = below ground surface.

Detections are bolded.

Shaded cells = concentration exceeds USEPA Groundwater Protection RSL.

Shaded cells = concentration exceeds USEPA Residential and/or Industrial RSL.

Shaded cells = concentration exceeds all three USEPA comparison criteria.

Shaded cells = concentration exceeds Weston (1995) background concentration.

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Loc ID	USEPA RSL Residential (HQ=0.1)[1]	USEPA RSL Industrial (HQ=0.1)	USEPA RSL Groundwater Protection (Risk-based)	Weston Background [2]	B-47		B-48		B-49		B-50		B-51		B-52		B-53		B-54		B-55		B-56		B-57		B-58	
Sample Date					05/05/98		05/05/98		05/05/98		05/05/98		05/05/98		05/06/98		05/06/98		05/06/98		05/06/98		05/11/98		05/11/98		05/11/98	
Volatile Organic Compounds (VOCS, µg/kg)																												
Lab Sample ID (VOCs only collected at approximately 24 in. bgs)					3547.03		3547.07		3547.11		3547.15		3547.19		3550.04		3550.08		3550.12		3550.16		3561.03		3561.07		3561.11	
Methylene Chloride	36,000	63,000,000	240	-	<510		<530		<540		<540		<560		<620		<540		<580		<620		<640		<720		<560	
Benzene	1,100	5,400	0.2	-	<250		<270		<270		<270		<280		<310		<270		<290		<310		<320		<360		<280	
Tetrachloroethene	8,600	41,000	1.6	-	<250		<270		<270		<270		<280		<310		<270		<290		<310		<320		<360		<280	
Chloroform	290	1,500	0.053	-	<250		<270		<270		<270		<280		<310		<270		<290		<310		<320		<360		<280	
Ethylbenzene	5,400	27,000	1.5	-	<510		<530		<540		<540		<560		<620		<540		<580		<620		<640		<720		<560	
TICs	NLE	NLE	NLE	-	ND		**2300**		**14500**		**7600**		ND		ND		**37700**		ND		ND		ND		ND		ND	
Semivolatile Organic Compounds (SVOCs, µg/kg)																												
Lab Sample ID (All analyses except VOCs collected at approximately 6-12 in. bgs)					3547.02		3547.06		3547.10		3547.14		3547.18		3550.03		3550.07		3550.11		3550.15		3561.02		3561.06		3561.10	
Naphthalene	3,600	18,000	0.47	-	<240		<260		<270		<260		<260		<260		<250		<260		<280		<280		<270		<260	
n-Nitrosodiphenylamine	99,000	350,000	57	-	<180		<190		<200		<200		<200		<190		<190		<190		<210		<210		<200		<190	
2-Methylnaphthalene	23,000	220,000	14	-	<270		<290		<300		<290		<300		<290		<280		<290		<310		<310		<300		<290	
4-Methylphenol	610,000	6,200,000	110	-	<270		<280		<300		<290		<290		<280		<270		<280		<300		<300		<290		<280	
Acenaphthylene	NLE	NLE	NLE	-	<190		<200		<210		<200		<210		<200		<200		<200		<220		<220		<210		<200	
Acenaphthene	340,000	3,300,000	410	-	<170		<180		<200		<190		<190		<190		<180		<190		<200		<200		<190		<180	
Dibenzofuran	7,800	100,000	11	-	<190		<190		<210		<200		<200		<200		<190		<200		<210		<210		<210		<200	
Diethylphthalate	4,900,000	49,000,000	470	-	**110**	JB	<210		<230		<220		<220		<220		<210		<220		<230		<230		<220		<210	
Fluorene	230,000	2,200,000	400	-	<190		<200		<210		<200		<210		<200		<190		<200		<220		<220		<210		<200	
Phenanthrene	NLE	NLE	NLE	-	<190		<200		<220		<210		**140**	J	**110**	J	**240**		**110**	J	<220		<220		**250**		<200	
Anthracene	1,700,000	17,000,000	4200	-	<190		<200		<220		<210		**130**	J	<200		**240**		<200		<220		<220		<210		<200	
Dimethylphthalate	NLE	NLE	NLE	-	<150		<160		<170		<160		<160		<160		<150		<160		<170		<170		<170		<160	
Di-n-butylphthalate	610,000	6,200,000	170	-	**960**	B	**630**	JB	**490**	JB	**260**	JB	**910**	B	<880		**350**	JB	**1600**	B	**900**	JB	**360**	JB	**570**	JB	**970**	B
Fluoranthene	230,000	2,200,000	7,000	-	<190		**120**	J	<220		**170**	J	**160**	J	<210		**260**		**160**	J	<220		<220		**300**		<200	
Pyrene	170,000	1,700,000	950	-	<230		<240		<250		**130**	J	**230**	J	**170**	J	**410**		**240**		<260		<260		**450**		<240	
Pyridine	7,800	100,000	0.53	-	<300		<310		**580**		<320		<320		<320		<310		<320		**420**		<340		<330		<310	
Butylbenzylphthalate	260,000	910,000	200	-	<250		<260		<280		<270		<270		<270		<260		<270		<290		<280		<280		<260	
Benzo(a)anthracene	150	2,100	10	-	<200		<210		<220		<210		<210		<210		**190**	J	**170**	J	<220		<220		**210**	J	<210	
3,3'-Dichlorobenzidine	1,100	3,800	0.71	-	<340		<360				<370		<370		<360		<350		<360		<390		<390		<380		<360	
Chrysene	15,000	210,000	1,100	-	<250		<260		<280		**130**	J	**180**	J	**140**	J	**370**		**230**	J	<290		<280		**290**		<260	
bis(2-Ethylhexyl)phthalate	35,000	120,000	1,100	-	<280		<290		**140**	J	**120**	J	**140**	J	<290		<280		**220**	J	**130**	J	<310		**140**	J	**200**	J
Benzo(b)fluoranthene	150	2,100	35	-	<240		<260		<270		<260		<270		<260		**110**	J	<260		<280		<280		<270		<260	
Benzo(k)fluoranthene	1,500	21,000	350	-	<180		<190		<200		<190		<200		<190		**140**	J	**110**	J	<210		<210		**130**	J	<190	
Benzo(a)pyrene	15	210	4	-	<190		<200		<210		<200		<200		<200		**170**	J	**110**	J	<210		<210		**150**	J	<200	
Indeno(1,2,3-cd)pyrene	150	2,100	200	-	<200		<210		<230		<220		<220		<220		**110**	J	<220		<230		<230		<220		<210	
Dibenz(a,h)anthracene	15	210	11	-	<240		<250		<270		<260		<260		<250		<240		<250		<270		<270		<260		<250	
Benzo(g,h,i)perylene	NLE	NLE	NLE	-	<240		<250		<270		<260		<260		<250		**110**	J	<250		<270		<270		<260		<250	
Total TICs	NLE	NLE	NLE	-	**13020**		**40900**		ND		**49200**		**28000**		**14200**		**28900**		**40500**		**9400**		**15300**		**34700**		**16400**	
Pesticides / PCBs (mg/kg)																												
Heptachlor	0.11	0.38	0.00014	-	<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0004		<0.0003		<0.0003	
Heptachlor Epoxide	0.053	0.19	0.000068	-	<0.0002		<0.0002		<0.0003		<0.0002		<0.0003		<0.0007		<0.0006		<0.0006		<0.0006		<0.0007		<0.0006		<0.0006	
4,4'-DDE	1.4	5.1	0.05	-	**0.004**		<0.0003		<0.0004		**0.004**		<0.0004		<0.0004		**0.027**		**0.009**		**0.006**		**0.227**		**0.039**		**0.004**	
Dieldrin	0.03	0.11	0.000061	-	<0.0002		<0.0002		<0.0002		<0.0002		<0.0002		<0.0006		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005		<0.0005	
Endrin	1.8	18	0.0068	-	<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0006		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005		<0.0005	
4,4'-DDD	2	7.2	0.01	-	<0.0007		<0.0007		**0.001**		**0.001**		<0.0007		<0.0007		<0.0006		**0.019**		**0.002**		<0.0007		<0.0006		<0.0006	
Endrin Aldehyde	NLE	NLE	NLE	-	<0.0005		<0.0005		<0.0005		<0.0005		<0.0006		<0.0006		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005		<0.0005	
4,4'-DDT	1.7	7	0.07	-	**0.004**		<0.0002		<0.0002		**0.01**		<0.0002		<0.0012		<0.0012		**0.092**		**0.012**		**0.17**		**0.06**		**0.007**	
Endosulfan I	37	370	0.11	-	<0.0002		<0.0002		<0.0003		<0.0002		<0.0003		<0.0006		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005		<0.0005	
Endosulfan II	37	370	0.11	-	<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		**0.013**		**0.019**		<0.0004		<0.0004		<0.0005		<0.0004		<0.0004	
Endosulfan-Sulfate	NLE	NLE	NLE	-	<0.0010		<0.0010		<0.0010		<0.0010		<0.0011		<0.0004		<0.0004		<0.0004		<0.0004		<0.0005		<0.0004		<0.0004	
gamma-Chlordane	1.6	6.5	0.013	-	<0.0010		<0.0010		<0.0010		<0.0010		<0.0011		<0.0006		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005		<0.0005	
alpha-Chlordane	1.6	6.5	0.013	-	<0.0010		<0.0010		<0.0010		<0.0010		<0.0011		<0.0006		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005		<0.0005	
Aroclor 1254	0.22	0.74	0.0082	-	<0.0502		<0.0500		<0.0524		<0.0501		<0.0547		<0.0044		<0.0042		<0.0041		<0.0043		<0.0048		<0.0043		<0.0041	

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Loc ID	USEPA RSL Residential (HQ=0.1)[1]	USEPA RSL Industrial (HQ=0.1)	USEPA RSL Groundwater Protection (Risk-based)	Weston Background [2]	B-47	B-48	B-49	B-50	B-51	B-52	B-53	B-54	B-55	B-56	B-57	B-58
Sample Date					05/05/98	05/05/98	05/05/98	05/05/98	05/05/98	05/06/98	05/06/98	05/06/98	05/06/98	05/11/98	05/11/98	05/11/98
Metals (mg/kg)																
Aluminum	7,700	99,000	2,300	15,200	**1986**	**3363**	**4876**	**3699**	**8596**	**8267**	**4460**	**6246**	**7988**	**11380**	**10290**	**1884**
Antimony	3.1	41	0.03	ND	**0.388**	**0.95**	**0.791**	**0.497**	**1.713**	**1.263**	**0.547**	**1.532**	**1.149**	**1.246**	**1.868**	**0.326**
Arsenic	0.61	2.4	0.0013	22.9	**1.719**	**8.626**	**12.79**	**3.172**	**27.93**	**14.36**	**4.293**	**147.5**	**10.36**	**16.81**	**14.94**	**1.201**
Barium	1,500	19,000	12	32.3	**10.23**	**113.8**	**76.99**	**16.51**	**27.23**	**29.54**	**25.47**	**14.72**	**101.2**	**44.19**	**88.58**	**5.948**
Beryllium	16	200	1.3	2	**10.23**	**0.4112**	**0.6963**	**0.7032**	**1.108**	**0.9403**	**0.412**	**0.7216**	**0.9041**	**1.233**	**0.9952**	**0.3044**
Cadmium	7	80	0.05	ND	<0.054	**0.2786**	**0.1114**	<0.051	**0.1293**	<0.068	<0.064	<0.063	<0.066	<0.069	**0.2176**	**0.1125**
Calcium	NLE	NLE	NLE	921	**277**	**933.3**	**1111**	**476.2**	**943.5**	**664.1**	**452.9**	**440.1**	**950.6**	**1662**	**1169**	**152.9**
Chromium	12,000	150,000	2,800,000	269	**21.36**	**23.73**	**52.57**	**30.82**	**108.5**	**87.14**	**31.37**	**81.6**	**58.97**	**90.25**	**78.52**	**14.29**
Cobalt	2.3	30	0.02	2.5	**0.3853**	**2.388**	**1.731**	**0.3871**	**3.129**	**6.072**	**1.335**	**0.8229**	**2.301**	**2.645**	**4.073**	**0.2267**
Copper	310	4,100	2.2	8	**2.913**	**532.4**	**60.76**	**4.304**	**7.103**	**15.39**	**17.84**	**6.733**	**14.76**	**15.96**	**83.51**	**3.742**
Iron	5500	72,000	27	55,800	**7617**	**20580**	**22280**	**10500**	**47660**	**40040**	**10340**	**30770**	**24580**	**32850**	**34590**	**5510**
Lead	400	800	NLE	19.5	**8.632**	**845.1**	**226.7**	**6.099**	**40.53**	**55.83**	**22.07**	**14.64**	**45.25**	**108.8**	**2379**	**8.725**
Magnesium	NLE	NLE	NLE	7,230	**534.1**	**574.5**	**1066**	**602.6**	**963.9**	**1089**	**698.6**	**2093**	**2144**	**3720**	**1506**	**335.4**
Manganese	180	2,300	2.1	90.7	**10.21**	**107.1**	**71.47**	**20.24**	**65.67**	**153.5**	**74.62**	**30.56**	**147.5**	**76.07**	**118.1**	**5.243**
Mercury	1	4.3	0.0033	ND	**0.039**	**0.51**	**5.141**	**0.074**	**0.225**	**0.588**	**0.037**	**0.036**	**0.213**	**0.9**	**0.459**	**0.039**
Nickel	150	2000	2	8.4	**2.299**	**7.715**	**6.521**	**3.713**	**12.48**	**11.51**	**2.826**	**3.717**	**7.104**	**8.858**	**13.31**	**1.59**
Potassium	NLE	NLE	NLE	15,400	**1048**	**1422**	**2485**	**918.9**	**2085**	**2466**	**1529**	**6333**	**5418**	**7138**	**4203**	**460.3**
Selenium	39	510	0.04	1.9	**0.372**	**0.4**	<0.401	<0.303	<0.397	<0.408	<0.383	**0.599**	<0.397	<0.411	<0.373	<0.352
Silver	39	510	0.06	1.1	<0.326	**1.123**	<0.401	<0.303	<0.397	<0.408	<0.383	<0.377	<0.397	<0.411	<0.373	<0.352
Sodium	NLE	NLE	NLE	51.6	**144.3**	**96.56**	**71.52**	**266.9**	**393.3**	**52.66**	**40.01**	**229.7**	**159.4**	**71.89**	**110.9**	**25.7**
Thallium	0.08	1	0.0011	ND	<0.326	<0.314	<0.401	<0.303	<0.397	<0.408	<0.383	<0.377	<0.397	<0.411	<0.373	<0.352
Vanadium	39	510	6.3	94.1	**16.22**	**17.18**	**39.23**	**26.17**	**126.4**	**79.15**	**18.81**	**32.76**	**29.63**	**42.8**	**82.13**	**13.82**
Zinc	2,300	31,000	29	81.4	**46.14**	**209.5**	**100.6**	**49.56**	**68.26**	**91.96**	**35.88**	**28.84**	**58.2**	**81.92**	**178.4**	**26.47**

Notes:

Historically, there have been up to 318 soil boring locations associated with FTMM-05. This analysis looks at only those boring locations that fall within the footprint of FTMM-05.

(1) U.S. Environmental Protection Agency, Regional Screening Levels (RSLs). Residential Soil (TR=1E-06, HQ = 0.1). (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Revised November 2013.

(2) Weston, 1995. Final Site Investigation - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December
USEPA RSL for Endosulfan is used for Endosulfan II
USEPA RSL for Chromium III is used for Chromium
RSL values were current at the time the screening was conducted.
Dash (--) = only background concentrations for metals are being used as comparison criteria.
B = Analyte detected in both sample and associated laboratory blank.
D = Result from dilution of sample.
DUP = field duplicate sample.
E = Estimated value.
J = Analyte detected between MDL and practical quantitation limit (PQL).
NA = not analyzed.
ND = not detected.
NLE = No limit established.
< = analyte not detected above method detection limit (MDL).
µg/kg = micrograms per kilogram.
mg/kg = milligrams per kilogram.
VOCs = volatile organic compounds.
in. = inches.
bgs = below ground surface.
Detections are bolded.
Shaded cells = concentration exceeds USEPA Groundwater Protection RSL.
Shaded cells = concentration exceeds USEPA Residential and/or Industrial RSL.
Shaded cells = concentration exceeds all three USEPA comparison criteria.
Shaded cells = concentration exceeds Weston (1995) background concentration.

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Loc ID	USEPA RSL Residential (HQ=0.1)[1]	USEPA RSL Industrial (HQ=0.1)	USEPA RSL Groundwater Protection (Risk-based)	Weston Background [2]	B-59		B-60		B-60 Dup		B-61		B-62		B-63		B-63		B-64		B-65		B-66		B-67		B-68	
Sample Date					05/11/98		05/14/98		05/14/98		05/14/98		05/14/98		05/14/98				05/14/98		05/15/98		05/15/98		05/15/98		05/15/98	
Volatile Organic Compounds (VOCS, µg/kg)																												
Lab Sample ID (VOCs only collected at approximately 24 in. bgs)					3561.15		3567.03		3567.24		3567.07		3567.11		3567.15		3567.16		3567.20		3571.03		3571.07		3571.11		3571.14	
Methylene Chloride	36,000	63,000,000	240	-	<530		<550		<540		<540		<560		<520		<520		<530		<540		<540		<540		<650	
Benzene	1,100	5,400	0.2	-	<270		<270		<270		<270		<280		<260		<260		<270		<270		<270		<270		<320	
Tetrachloroethene	8,600	41,000	1.6	-	<270		<270		<270		<270		<280		<260		<260		<270		<270		<270		<270		**1600**	
Chloroform	290	1,500	0.053	-	<270		<270		<270		<270		<280		<260		<260		<270		<270		<270		<270		<320	
Ethylbenzene	5,400	27,000	1.5	-	<530		<550		<540		<540		<560		<520		<520		<530		<540		<540		<540		<650	
TICs	NLE	NLE	NLE	-	ND		**1700**		**9100**		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Semivolatile Organic Compounds (SVOCs, µg/kg)																												
Lab Sample ID (All analyses except VOCs collected at approximately 6-12 in. bgs)					3561.14		3567.02		3567.23		3567.06		3567.10		3567.14				3567.19		3571.02		3571.06		3571.10		3571.13	
Naphthalene	3,600	18,000	0.47	-	<270		<280		<260		<270		<270		<260				<290		<270		<260		<280		<260	
n-Nitrosodiphenylamine	99,000	350,000	57	-	<210		<210		<190		<200		<200		<190				<220		<200		<190		<210		<200	
2-Methylnaphthalene	23,000	220,000	14	-	<310		<310		<290		<300		<300		<290				<330		<300		<290		<310		<290	
4-Methylphenol	610,000	6,200,000	110	-	<300		<300		<280		<300		<300		<280				<320		<290		<280		<300		<290	
Acenaphthylene	NLE	NLE	NLE	-	<220		<220		<200		<210		<210		**140**	J			**150**	J	<210		<200		**190**	J	<210	
Acenaphthene	340,000	3,300,000	410	-	<200		<200		<180		<190		<190		<180				<210		<190		<190		<200		<190	
Dibenzofuran	7,800	100,000	11	-	<210		<210		<200		<210		<210		<200				<220		<200		<200		<210		<200	
Diethylphthalate	4,900,000	49,000,000	470	-	<230		<230		<210		<230		<230		<210				<240		<220		<210		<230		<220	
Fluorene	230,000	2,200,000	400	-	<210		<220		<200		<210		<210		<200				<230		<210		<200		<220		<200	
Phenanthrene	NLE	NLE	NLE	-	<220		**440**		<200		<210		<210		**540**				**1100**		<210		<200		**1500**		**170**	J
Anthracene	1,700,000	17,000,000	4200	-	<220		<220		<200		<210		<210		<200				<230		<210		<200		<220		<210	
Dimethylphthalate	NLE	NLE	NLE	-	<170		<170		<160		<170		<170		<160				<180		<160		<160		<170		<160	
Di-n-butylphthalate	610,000	6,200,000	170	-	**430**	JB	**610**	JB	**1300**	B	**880**	JB	**450**	JB	**380**	JB			**820**	JB	**210**	JB	**590**	JB	**250**	JB	**180**	JB
Fluoranthene	230,000	2,200,000	7,000	-	**140**	J	**710**		<200		**140**	J	<220		**890**				**1200**		<210		**170**	J	**1200**		**140**	J
Pyrene	170,000	1,700,000	950	-	**120**	J	**530**		<240		**150**	J	<250		**1300**				**2200**		<250		**150**	J	**2100**		**200**	J
Pyridine	7,800	100,000	0.53	-	<340		<340		<320		<330		<330		<310				<360		<330		<320		<340		<320	
Butylbenzylphthalate	260,000	910,000	200	-	<280		<280		<260		<280		<280		<260				<300		<270		<270		<280		<270	
Benzo(a)anthracene	150	2,100	10	-	<220		**280**		<210		<220		<220		**560**				**660**		<210		<210		**760**		<210	
3,3'-Dichlorobenzidine	1,100	3,800	0.71	-	<390		<390		<360		<380		<380		<360				<410		<380		<360		<390		<370	
Chrysene	15,000	210,000	1,100	-	<280		**300**		<260		**130**	J	<280		**880**				**1500**		<270		**120**	J	**1200**		**180**	J
bis(2-Ethylhexyl)phthalate	35,000	120,000	1,100	-	<310		**200**	JB	**270**	JB	**220**	JB	**110**	JB	**210**	JB			**280**	JB	<300		**120**	JB	<310		<300	
Benzo(b)fluoranthene	150	2,100	35	-	<280		**220**	J	<260		<270		<270		**410**				**560**		<270		**110**	J	**410**		<260	
Benzo(k)fluoranthene	1,500	21,000	350	-	<200		**240**		<190		<200		<200		**520**				**560**		<200		**110**	J	**530**		<190	
Benzo(a)pyrene	15	210	4	-	<210		**260**		<200		<210		<210		**580**				**660**		<200		**120**	J	**720**		<200	
Indeno(1,2,3-cd)pyrene	150	2,100	200	-	<230		**180**	J	<210		<230		<230		**370**				**440**		<220		<220		**430**		<220	
Dibenz(a,h)anthracene	15	210	11	-	<270		<270		<250		<270		<270		<250				<290		<260		<250		<270		<260	
Benzo(g,h,i)perylene	NLE	NLE	NLE	-	<270		**170**	J	<250		<270		<270		**440**				**540**		<260		<250		**530**		<260	
Total TICs	NLE	NLE	NLE	-	**9580**		**50710**		**38600**		**25130**		**6900**		**14940**				**52760**		**9100**		**9050**		**12520**		**8600**	
Pesticides / PCBs (mg/kg)																												
Heptachlor	0.11	0.38	0.00014	-	**0.014**		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003				<0.0003		<0.0003		<0.0003		<0.0003		<0.0003	
Heptachlor Epoxide	0.053	0.19	0.000068	-	**0.261**		<0.0007		<0.0006		<0.0007		<0.0007		<0.0007				<0.0007		<0.0006		<0.0006		<0.0006		<0.0006	
4,4'-DDE	1.4	5.1	0.05	-	**2.058**		**0.003**		**0.002**		**0.005**		**0.001**		**0.007**				**1.184**		**0.002**		<0.0004		<0.0004		**0.041**	
Dieldrin	0.03	0.11	0.000061	-	<0.0005		<0.0006		<0.0005		<0.0006		<0.0006		<0.0006				<0.0006		<0.0005		<0.0005		<0.0005		<0.0005	
Endrin	1.8	18	0.0068	-	<0.0005		<0.0006		<0.0005		<0.0006		<0.0006		<0.0006				<0.0006		<0.0005		<0.0005		<0.0005		<0.0005	
4,4'-DDD	2	7.2	0.01	-	**2.68**		<0.0007		<0.0006		<0.0007		<0.0007		<0.0007				**0.196**		<0.0006		<0.0006		<0.0006		<0.0006	
Endrin Aldehyde	NLE	NLE	NLE	-	<0.0005		<0.0006		<0.0005		<0.0006		<0.0006		<0.0006				<0.0006		<0.0005		<0.0005		<0.0005		<0.0005	
4,4'-DDT	1.7	7	0.07	-	**11.182**		**0.002**		<0.0012		**0.007**		<0.0012		**0.01**				**0.532**		**0.002**		<0.0012		<0.0012		**0.069**	
Endosulfan I	37	370	0.11	-	<0.0005		<0.0006		<0.0005		<0.0006		<0.0006		<0.0006				<0.0006		<0.0005		<0.0005		<0.0005		<0.0005	
Endosulfan II	37	370	0.11	-	<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004				<0.0005		<0.0004		<0.0004		<0.0004		<0.0004	
Endosulfan-Sulfate	NLE	NLE	NLE	-	<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004				<0.0005		<0.0004		<0.0004		<0.0004		<0.0004	
gamma-Chlordane	1.6	6.5	0.013	-	**0.577**		<0.0006		<0.0005		<0.0006		<0.0006		<0.0006				<0.0006		<0.0005		<0.0005		<0.0005		<0.0005	
alpha-Chlordane	1.6	6.5	0.013	-	**0.409**		<0.0006		<0.0005		<0.0006		<0.0006		<0.0006				<0.0006		<0.0005		<0.0005		<0.0005		<0.0005	
Aroclor 1254	0.22	0.74	0.0082	-	<0.0043		<0.0045		<0.0042		<0.0045		<0.0045		<0.0044				<0.0047		<0.0042		<0.0042		<0.0043		<0.0043	

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Loc ID	USEPA RSL Residential (HQ=0.1)(1)	USEPA RSL Industrial (HQ=0.1)	USEPA RSL Groundwater Protection (Risk-based)	Weston Background (2)	B-59	B-60	B-60 Dup	B-61	B-62	B-63	B-63	B-64	B-65	B-66	B-67	B-68
Sample Date					05/11/98	05/14/98	05/14/98	05/14/98	05/14/98	05/14/98		05/14/98	05/15/98	05/15/98	05/15/98	05/15/98
Metals (mg/kg)																
Aluminum	7,700	99,000	2,300	15,200	**2975**	**13190**	**3373**	**9246**	**5436**	**7195**		**15670**	**8058**	**3044**	**7248**	**6761**
Antimony	3.1	41	0.03	ND	**0.48**	**1.266**	**0.739**	**0.86**	**0.921**	**1.01**		**1.059**	**0.997**	**0.443**	**0.35**	**1.209**
Arsenic	0.61	2.4	0.0013	22.9	**7.456**	**10.76**	**3.77**	**7.677**	**5.493**	**8.63**		**14.6**	**7.83**	**3.083**	**7.19**	**11.44**
Barium	1,500	19,000	12	32.3	**27.13**	**34.64**	**11.22**	**21.61**	**18.86**	**111.8**		**52.75**	**28.5**	**21.9**	**15.88**	**44.56**
Beryllium	16	200	1.3	2	**0.3715**	**1.496**	**0.4787**	**1.056**	**0.6189**	**0.8207**		**1.179**	**0.8404**	**0.4444**	**0.604**	**0.8332**
Cadmium	7	80	0.05	ND	**0.2638**	<0.062	<0.057	<0.051	**0.7023**	**0.2273**		<0.065	<0.055	<0.059	<0.057	**0.1382**
Calcium	NLE	NLE	NLE	921	**400.1**	**1188**	**91.75**	**491.6**	**181.1**	**1930**		**969**	**744.4**	**266.5**	**518.3**	**1209**
Chromium	12,000	150,000	2,800,000	269	**18.99**	**100.1**	**37.19**	**82.22**	**49.99**	**57.85**		**81.95**	**68.44**	**23.91**	**42.72**	**57.83**
Cobalt	2.3	30	0.02	2.5	**1.23**	**2.967**	**0.057**	**1.778**	**0.5732**	**1.54**		**4.367**	**3.136**	**0.5376**	**2.701**	**4.179**
Copper	310	4,100	2.2	8	**9.851**	**5.622**	**3.553**	**3.459**	**20.54**	**50.68**		**8.773**	**5.669**	**7.449**	**3.409**	**42.05**
Iron	5500	72,000	27	55,800	**7582**	**36290**	**12740**	**26710**	**15460**	**22510**		**34010**	**29740**	**8577**	**25900**	**27790**
Lead	400	800	NLE	19.5	**71.13**	**10.39**	**34.32**	**9.338**	**94.89**	**673.7**		**20.2**	**30.1**	**37.51**	**9.825**	**90.71**
Magnesium	NLE	NLE	NLE	7,230	**664.8**	**3941**	**498.5**	**2704**	**948.3**	**1648**		**2740**	**1237**	**710.2**	**895.3**	**730.7**
Manganese	180	2,300	2.1	90.7	**21.19**	**95.3**	**9.593**	**47.43**	**18.48**	**144**		**175.4**	**76.07**	**29.05**	**79.87**	**54.71**
Mercury	1	4.3	0.0033	ND	**17.584**	**0.671**	**0.104**	**0.058**	**0.161**	**0.115**		**0.17**	**0.074**	**0.088**	**0.0068**	**0.268**
Nickel	150	2000	2	8.4	**4.389**	**7.747**	**2.124**	**5.302**	**3.305**	**8.803**		**13.41**	**9.24**	**2.565**	**7.65**	**10.39**
Potassium	NLE	NLE	NLE	15,400	**1084**	**7084**	**839.2**	**5398**	**2311**	**3715**		**5202**	**3399**	**1602**	**1460**	**1202**
Selenium	39	510	0.04	1.9	<0.371	<0.369	<0.341	<0.307	<0.337	<0.315		<0.389	<0.329	<0.356	<0.340	<0.366
Silver	39	510	0.06	1.1	<0.371	<0.369	<0.341	<0.307	<0.337	<0.315		<0.389	<0.329	<0.356	<0.340	<0.366
Sodium	NLE	NLE	NLE	51.6	**57.27**	**81.7**	**7.482**	**49.79**	**51.48**	**439.1**		**287.7**	**56.68**	**11.9**	**43.74**	**72.72**
Thallium	0.08	1	0.0011	ND	<0.371	<0.369	<0.341	<0.307	<0.337	<0.315		<0.389	<0.329	<0.356	<0.340	<0.366
Vanadium	39	510	6.3	94.1	**18.5**	**44.53**	**33.17**	**37.72**	**39.39**	**27.81**		**74.48**	**74.42**	**14.64**	**56.21**	**74.83**
Zinc	2,300	31,000	29	81.4	**73.37**	**59.43**	**20.2**	**41.41**	**32.25**	**338.9**		**73.04**	**55.34**	**43.34**	**42.07**	**49.92**

Notes:

Historically, there have been up to 318 soil boring locations associated with FTMM-05. This analysis looks at only those boring locations that fall within the footprint of FTMM-05.

(1) U.S. Environmental Protection Agency, Regional Screening Levels (RSLs). Residential Soil (TR=1E-06, HQ = 0.1). (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Revised November 2013.

(2) Weston, 1995. Final Site Investigation - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December

USEPA RSL for Endosulfan is used for Endosulfan II
USEPA RSL for Chromium III is used for Chromium
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Dash (--) = only background concentrations for metals are being used as comparison criteria.
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D = Result from dilution of sample.
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Detections are bolded.
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Shaded cells = concentration exceeds USEPA Residential and/or Industrial RSL.
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TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Loc ID	USEPA RSL Residential (HQ=0.1)[1]	USEPA RSL Industrial (HQ=0.1)	USEPA RSL Groundwater Protection (Risk-based)	Weston Background [2]	B-69		B-70		B-71		B-72		B-73		B-74		B-75		B-76		B-77		B-78		B-79		B-80	
Sample Date					05/15/98		05/18/98		05/18/98		05/18/98		05/18/98		05/19/98		05/19/98		05/19/98		05/19/98		05/19/98		05/19/98		05/19/98	
Volatile Organic Compounds (VOCS, µg/kg)																												
Lab Sample ID (VOCs only collected at approximately 24 in. bgs)					3571.18		3576.03		3576.07		3576.11		3576.15		3580.03		3580.06		3580.09		3580.12		3580.15		3580.19		3580.23	
Methylene Chloride	36,000	63,000,000	240	-	<600		<600		<540		<550		<570		<540		<530		<580		<730		<560		<580		<560	
Benzene	1,100	5,400	0.2	-	<300		<300		<270		<280		<280		<270		<270		<290		<370		<280		<290		<280	
Tetrachloroethene	8,600	41,000	1.6	-	<300		<300		<270		<280		<280		<270		<270		**770**		<370		<280		<290		<280	
Chloroform	290	1,500	0.053	-	<300		<300		<270		<280		<280		<270		<270		<290		<370		<280		<290		<280	
Ethylbenzene	5,400	27,000	1.5	-	<600		<600		<540		<550		<570		<540		<530		<580		<730		<560		<580		<560	
TICs	NLE	NLE	NLE	-	ND		**25000**		**1700**		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Semivolatile Organic Compounds (SVOCs, µg/kg)																												
Lab Sample ID (All analyses except VOCs collected at approximately 6-12 in. bgs)					3571.17		3576.02		3576.06		3576.10		3576.14		3580.02		3580.05		3580.08		3580.11		3580.14		3580.18		3580.22	
Naphthalene	3,600	18,000	0.47	-	**120**	J	<260		**220**	J	**220**	J	<260		<250		<250		<240		<270		<250		<270		<270	
n-Nitrosodiphenylamine	99,000	350,000	57	-	<200		<200		<200		<200		<190		<190		<180		<180		<200		<190		<200		<200	
2-Methylnaphthalene	23,000	220,000	14	-	**140**	J	<290		**260**	J	**230**	J	<290		<290		<270		<270		<300		<280		<300		<300	
4-Methylphenol	610,000	6,200,000	110	-	<290		<290		<290		<300		<280		<280		<270		<270		<300		<280		<300		<290	
Acenaphthylene	NLE	NLE	NLE	-	<210		<210		**740**		<210		<200		<200		<190		<190		<210		<200		<210		<210	
Acenaphthene	340,000	3,300,000	410	-	<190		<190		**180**	J	<200		<180		<180		<180		<180		<190		<180		<190		<190	
Dibenzofuran	7,800	100,000	11	-	<200		<200		<200		<210		<200		<190		<190		<190		<210		<190		<210		<210	
Diethylphthalate	4,900,000	49,000,000	470	-	<220		<220		<220		<230		<210		<210		<200		<200		<230		<210		<220		<220	
Fluorene	230,000	2,200,000	400	-	<210		<200		**460**		<210		<200		<200		<190		<190		<210		<200		<210		<210	
Phenanthrene	NLE	NLE	NLE	-	**950**		<210		**3800**		**1200**		**250**		**120**	J	**480**		**720**		**170**	J	**130**	J	<210		<210	
Anthracene	1,700,000	17,000,000	4200	-	**150**	J	<210		**740**		**130**	J	<200		<200		<190		<190		<210		<200		<210		<210	
Dimethylphthalate	NLE	NLE	NLE	-	<160		<160		<160		<170		<160		<160		<150		<150		<170		<160		<170		<170	
Di-n-butylphthalate	610,000	6,200,000	170	-	**220**	JB	**540**	JB	**1000**	B	**820**	JB	**510**	JB	**320**	JB	**760**	JB	**780**	JB	**380**	JB	**670**	JB	**600**	JB	**270**	JB
Fluoranthene	230,000	2,200,000	7,000	-	**1500**		<210		**4500**		**2300**		**330**		**130**	J	**300**		**500**		**190**	J	<200		<210		<210	
Pyrene	170,000	1,700,000	950	-	**1300**		<240		**6400**		**2200**		**560**		**170**	J	**510**		**820**		**120**	J	**120**	J	<250		<250	
Pyridine	7,800	100,000	0.53	-	<320		<320		<330		<330		<310		<310		<300		<300		<330		<310		<330		<330	
Butylbenzylphthalate	260,000	910,000	200	-	<270		<270		<270		<280		<260		<260		<250		<250		<280		<260		<280		<280	
Benzo(a)anthracene	150	2,100	10	-	**700**		<210		**3100**		**970**		**240**		<200		**180**	J	**310**		<220		<200		<220		<220	
3,3'-Dichlorobenzidine	1,100	3,800	0.71	-	<370		<370		<380		<380		<360		<360		<350		<350		<380		<350		<380		<380	
Chrysene	15,000	210,000	1,100	-	**970**		<270		**5000**		**1700**		**430**		**120**	J	**300**		**520**		<280		<260		<280		<280	
bis(2-Ethylhexyl)phthalate	35,000	120,000	1,100	-	**110**	JB	<300		<300		<310		<290		<290		**280**	J	**100**	J	<310		<290		<310		<310	
Benzo(b)fluoranthene	150	2,100	35	-	**740**		<260		**2400**		**1200**		**210**	J	<260		**110**	J	**200**	J	<270		<250		<270		<270	
Benzo(k)fluoranthene	1,500	21,000	350	-	**700**		<190		**2400**		**1200**		**230**		<190		**130**	J	**220**		<200		<190		<200		<200	
Benzo(a)pyrene	15	210	4	-	**720**		<200		**3000**		**1100**		**260**		<200		**130**	J	**290**		<210		<190		<210		<210	
Indeno(1,2,3-cd)pyrene	150	2,100	200	-	**470**		<220		**1900**		**760**		<210		<210		<200		**160**	J	<230		<210		<230		<220	
Dibenz(a,h)anthracene	15	210	11	-	<260		<260		**1000**		<270		<250		<250		<240		<240		<260		<250		<260		<260	
Benzo(g,h,i)perylene	NLE	NLE	NLE	-	**450**		<260		**2300**		**770**		**220**	J	<250		<240		**190**	J	<260		<250		<260		<260	
Total TICs	NLE	NLE	NLE	-	**11750**		**9300**		**45860**		**16580**		**11170**		**6200**		**10100**		**9860**		**5400**		**9600**		**10400**		**7400**	
Pesticides / PCBs (mg/kg)																												
Heptachlor	0.11	0.38	0.00014	-	<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003	
Heptachlor Epoxide	0.053	0.19	0.000068	-	<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0007		<0.0006		<0.0007		<0.0006	
4,4'-DDE	1.4	5.1	0.05	-	**0.069**		**0.001**		**0.103**		**0.087**		**0.005**		**0.009**		<0.0004		<0.0004		<0.0005		<0.0004		**0.002**		**0.005**	
Dieldrin	0.03	0.11	0.000061	-	<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005		<0.0005		<0.0005	
Endrin	1.8	18	0.0068	-	<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005		<0.0005		<0.0005	
4,4'-DDD	2	7.2	0.01	-	**0.038**		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0007		<0.0006		<0.0007		<0.0006	
Endrin Aldehyde	NLE	NLE	NLE	-	<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005		<0.0005		<0.0005	
4,4'-DDT	1.7	7	0.07	-	**0.287**		**0.002**		**0.104**		**0.072**		**0.005**		**0.01**		<0.0011		<0.0012		<0.0013		**0.007**		**0.002**		**0.006**	
Endosulfan I	37	370	0.11	-	<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005		<0.0005		<0.0005	
Endosulfan II	37	370	0.11	-	<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0005		<0.0004		<0.0004		<0.0004	
Endosulfan-Sulfate	NLE	NLE	NLE	-	<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0005		<0.0004		<0.0004		<0.0004	
gamma-Chlordane	1.6	6.5	0.013	-	<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005		<0.0005		<0.0005	
alpha-Chlordane	1.6	6.5	0.013	-	<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006		<0.0005		<0.0005		<0.0005	
Aroclor 1254	0.22	0.74	0.0082	-	<0.0043		<0.0043		<0.0043		<0.0042		<0.0042		<0.0043		<0.0041		<0.0042		<0.0046		<0.0042		<0.0043		<0.0042	

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Loc ID	USEPA RSL Residential (HQ=0.1)(1)	USEPA RSL Industrial (HQ=0.1)	USEPA RSL Groundwater Protection (Risk-based)	Weston Background (2)	B-69	B-70	B-71	B-72	B-73	B-74	B-75	B-76	B-77	B-78	B-79	B-80
Sample Date					05/15/98	05/18/98	05/18/98	05/18/98	05/18/98	05/19/98	05/19/98	05/19/98	05/19/98	05/19/98	05/19/98	05/19/98
Metals (mg/kg)																
Aluminum	7,700	99,000	2,300	15,200	**7952**	**11120**	**9388**	**8881**	**8643**	**2868**	**1781**	**6780**	**8537**	**10590**	**10590**	**10450**
Antimony	3.1	41	0.03	ND	**1.305**	**1.249**	**0.789**	**0.724**	**1.158**	**0.57**	<0.219	**0.686**	**1.309**	**1.531**	**1.531**	**1.642**
Arsenic	0.61	2.4	0.0013	22.9	**10.21**	**10.11**	**9.62**	**8.338**	**7.981**	**4.511**	**1.452**	**6.874**	**8.003**	**10.88**	**10.88**	**10.26**
Barium	1,500	19,000	12	32.3	**125.5**	**25.88**	**51.51**	**58.95**	**25.84**	**12.69**	**5.525**	**26.72**	**24.35**	**24.94**	**24.94**	**24.91**
Beryllium	16	200	1.3	2	**0.8544**	**1.128**	**0.9041**	**0.6764**	**0.867**	**0.4361**	**0.2615**	**0.6806**	**0.9024**	**1.19**	**1.19**	**1.143**
Cadmium	7	80	0.05	ND	**1.154**	<0.056	<0.057	**0.1899**	<0.056	<0.061	<0.055	<0.055	<0.055	<0.058	<0.058	<0.054
Calcium	NLE	NLE	NLE	921	**1407**	**586.5**	**1169**	**1570**	**691**	**327.2**	**117.9**	**510**	**440.1**	**809.2**	**908.2**	**611.8**
Chromium	12,000	150,000	2,800,000	269	**51.07**	**114.5**	**77.94**	**46.85**	**85.23**	**27.92**	**18.67**	**61.92**	**97.55**	**96.08**	**96.08**	**112.3**
Cobalt	2.3	30	0.02	2.5	**5.826**	**4.8**	**3.255**	**3.326**	**5.769**	**0.7721**	**0.4013**	**2.925**	**2.623**	**5.587**	**5.587**	**5.818**
Copper	310	4,100	2.2	8	**1544**	**2.028**	**39.85**	**46.73**	**6.715**	**5.597**	**2.002**	**8.638**	**3.266**	**27.74**	**27.74**	**4.975**
Iron	5500	72,000	27	55,800	**27860**	**47050**	**33340**	**17160**	**34570**	**10120**	**6671**	**28090**	**36430**	**56400**	**56400**	**47360**
Lead	400	800	NLE	19.5	**852.3**	**11.87**	**122.6**	**58.5**	**75.52**	**18.46**	**5.525**	**48.57**	**16.89**	**33.19**	**33.19**	**65.52**
Magnesium	NLE	NLE	NLE	7,230	**817.3**	**1074**	**1435**	**1940**	**941**	**664.5**	**334.2**	**887.6**	**863.8**	**1385**	**1385**	**1003**
Manganese	180	2,300	2.1	90.7	**195.3**	**103.5**	**76.53**	**89.7**	**168.8**	**30.3**	**13.35**	**67.87**	**62.27**	**160.5**	**160.5**	**141.4**
Mercury	1	4.3	0.0033	ND	<0.044	<0.024	**0.079**	**0.115**	**0.053**	**0.041**	<0.023	**0.028**	**0.029**	<0.021	<0.021	<0.023
Nickel	150	2000	2	8.4	**17.71**	**16.38**	**10.52**	**8.935**	**11.23**	**2.749**	**1.679**	**8.334**	**10.82**	**13.68**	**13.68**	**15.43**
Potassium	NLE	NLE	NLE	15,400	**1922**	**2684**	**3817**	**4607**	**2201**	**1340**	**614.6**	**1966**	**2023**	**3911**	**3911**	**2351**
Selenium	39	510	0.04	1.9	<0.328	<0.336	<0.340	<0.335	<0.339	<0.366	<0.329	<0.331	<0.331	<0.350	<0.350	<0.325
Silver	39	510	0.06	1.1	**1.082**	<0.336	<0.340	<0.335	<0.339	<0.366	<0.329	<0.331	<0.331	<0.350	<0.350	<0.325
Sodium	NLE	NLE	NLE	51.6	**175.9**	**92.7**	**92.75**	**262.7**	**62.74**	**61.08**	**27.75**	**32.16**	**31.08**	**150.5**	**150.5**	**27.11**
Thallium	0.08	1	0.0011	ND	<0.328	<0.336	<0.340	<0.335	<0.339	<0.366	<0.329	<0.331	<0.331	<0.350	<0.350	<0.325
Vanadium	39	510	6.3	94.1	**52.52**	**148.9**	**82.7**	**34.6**	**101.9**	**22.17**	**16.56**	**73.25**	**103**	**123**	**123**	**154.8**
Zinc	2,300	31,000	29	81.4	**455**	**81.93**	**117.6**	**123.4**	**104.7**	**25.57**	**12.77**	**53.92**	**58.91**	**72.31**	**72.31**	**70.89**

Notes:

Historically, there have been up to 318 soil boring locations associated with FTMM-05. This analysis looks at only those boring locations that fall within the footprint of FTMM-05.

(1) U.S. Environmental Protection Agency, Regional Screening Levels (RSLs). Residential Soil (TR=1E-06, HQ = 0.1). (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Revised November 2013.

(2) Weston, 1995. Final Site Investigation - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December

USEPA RSL for Endosulfan is used for Endosulfan II
USEPA RSL for Chromium III is used for Chromium
RSL values were current at the time the screening was conducted.
Dash (--) = only background concentrations for metals are being used as comparison criteria.
B = Analyte detected in both sample and associated laboratory blank.
D = Result from dilution of sample.
DUP = field duplicate sample.
E = Estimated value.
J = Analyte detected between MDL and practical quantitation limit (PQL).
NA = not analyzed.
ND = not detected.
NLE = No limit established.
< = analyte not detected above method detection limit (MDL).
µg/kg = micrograms per kilogram.
mg/kg = milligrams per kilogram.
VOCs = volatile organic compounds.
in. = inches.
bgs = below ground surface.
Detections are bolded.
Shaded cells = concentration exceeds USEPA Groundwater Protection RSL.
Shaded cells = concentration exceeds USEPA Residential and/or Industrial RSL.
Shaded cells = concentration exceeds all three USEPA comparison criteria.
Shaded cells = concentration exceeds Weston (1995) background concentration.

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Loc ID	USEPA RSL Residential (HQ=0.1)[1]	USEPA RSL Industrial (HQ=0.1)	USEPA RSL Groundwater Protection (Risk-based)	Weston Background [2]	B-80 Dup		B-81		B-82		B-83		B-84		B-85		B-86		B-87		B-88		B-89	B-90		B-91	
Sample Date					05/19/98		05/19/98		05/19/98		05/19/98		05/20/98		05/20/98		05/20/98		05/20/98		05/20/98		05/20/98	05/20/98		05/20/98	
Volatile Organic Compounds (VOCS, µg/kg)																											
Lab Sample ID (VOCs only collected at approximately 24 in. bgs)					3580.39		3580.27		3580.31		3580.35		3584.03		3584.07		3584.11		3584.15		3584.19		3584.23	3584.27		3584.31	
Methylene Chloride	36,000	63,000,000	240	-	<570		<560		<540		<510		<510		<510		<560		<580		<630		<620	<610		<500	
Benzene	1,100	5,400	0.2	-	<290		<280		<270		<250		<260		<260		<280		<290		<310		<310	<300		<250	
Tetrachloroethene	8,600	41,000	1.6	-	<290		<280		<270		<250		<260		<260		<280		<290		<310		<310	<300		<250	
Chloroform	290	1,500	0.053	-	<290		<280		<270		<250		<260		<260		<280		<290		<310		<310	<300		<250	
Ethylbenzene	5,400	27,000	1.5	-	<570		<560		<540		<510		<510		<510		<560		<580		<630		<620	<610		<500	
TICs	NLE	NLE	NLE	-	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	ND		ND	
Semivolatile Organic Compounds (SVOCs, µg/kg)																											
Lab Sample ID (All analyses except VOCs collected at approximately 6-12 in. bgs)					3580.38		3580.26		3580.30		3580.34		3584.02		3584.06		3584.10		3584.14		3584.18		3584.22	3584.26		3584.30	
Naphthalene	3,600	18,000	0.47	-	<280		**400**		<250		<240		**2300**		<240		<260		<240		<270		<280	**130**	J	<240	
n-Nitrosodiphenylamine	99,000	350,000	57	-	<210		**150**	J	<180		<180		<190		<180		<190		<180		<210		<210	<200		<180	
2-Methylnaphthalene	23,000	220,000	14	-	<320		**660**		<280		<270		**4900**		<270		<290		<270		<310		<320	**170**	J	<270	
4-Methylphenol	610,000	6,200,000	110	-	<310		<270		<270		<270		<280		<270		<280		<270		<300		<310	<290		<270	
Acenaphthylene	NLE	NLE	NLE	-	<220		**110**	J	<190		<190		**4400**		<190		<200		<190		<220		<220	<210		<190	
Acenaphthene	340,000	3,300,000	410	-	<200		<180		<180		<170		**1900**		<180		<190		<180		<200		<200	<190		<170	
Dibenzofuran	7,800	100,000	11	-	<220		**250**		<190		<190		**540**		<190		<200		<190		<210		<220	<200		<180	
Diethylphthalate	4,900,000	49,000,000	470	-	<230		**170**	J	<210		<200		<210		<200		<220		<200		<230		<240	<220		<200	
Fluorene	230,000	2,200,000	400	-	<220		**110**	J	<190		<190		**5300**		<190		<200		<190		<210		<220	<210		<190	
Phenanthrene	NLE	NLE	NLE	-	<220		**570**		<200		<190		**29000**	E	<190		<200		<190		<220		<220	**480**		<190	
Anthracene	1,700,000	17,000,000	4200	-	<220		**160**	J	<200		<190		**3200**		<190		<200		<190		<220		<220	<210		<190	
Dimethylphthalate	NLE	NLE	NLE	-	<170		**120**	J	<150		<150		<160		<150		<160		<150		<170		<180	<160		<150	
Di-n-butylphthalate	610,000	6,200,000	170	-	**220**	JB	**840**	JB	**170**	JB	**180**	JB	**270**	JB	**640**	JB	**870**	JB	**660**	JB	**290**	JB	<970	**510**	JB	**320**	JB
Fluoranthene	230,000	2,200,000	7,000	-	<220		**400**		<200		<190		**16000**	E	<190		<210		<190		<220		<230	**480**		<190	
Pyrene	170,000	1,700,000	950	-	<260		**580**		<230		<230		**30000**	E	**140**	J	<240		<230		<250		<260	**840**		<220	
Pyridine	7,800	100,000	0.53	-	<350		<300		<300		<300		<310		<300		<320		<300		<340		<350	<320		<300	
Butylbenzylphthalate	260,000	910,000	200	-	<280		<260		<250		<250		<260		<250		<270		<250		<280		<290	<270		<250	
Benzo(a)anthracene	150	2,100	10	-	<230		**300**		<200		<200		**13000**	E	<200		<210		<200		<220		<230	**360**		<190	
3,3'-Dichlorobenzidine	1,100	3,800	0.71	-	<400		<350		<350		<340		**1000**		<340		<370		<340		<390		<400	<370		<340	
Chrysene	15,000	210,000	1,100	-	<290		**510**		<250		<250		**21000**	E	**120**	J	<270		<250		<280		<290	**590**		<250	
bis(2-Ethylhexyl)phthalate	35,000	120,000	1,100	-	<320		<280		<280		<280		**120**	J	**110**	J	**150**	J	**160**	J	<310		<320	**120**	J	**110**	J
Benzo(b)fluoranthene	150	2,100	35	-	<280		**180**	J	<250		<240		**9200**		<250		<260		<250		<270		<290	**250**	J	<240	
Benzo(k)fluoranthene	1,500	21,000	350	-	<210		**220**		<180		<180		**8800**		<180		<190		<180		<200		<210	**340**		<180	
Benzo(a)pyrene	15	210	4	-	<220		**240**		<190		<190		**11000**		<190		<200		<190		<210		<220	**410**		<190	
Indeno(1,2,3-cd)pyrene	150	2,100	200	-	<240		**150**	J	<210		<200		**4900**		<200		<220		<200		<230		<240	**200**	J	<200	
Dibenz(a,h)anthracene	15	210	11	-	<280		<240		<240		<240		**2900**		<240		<250		<240		<270		<280	<260		<240	
Benzo(g,h,i)perylene	NLE	NLE	NLE	-	<280		**190**	J	<240		<240		**5800**		<240		<250		<240		<270		<280	**230**	J	<240	
Total TICs	NLE	NLE	NLE	-	**1400**		**9820**		**1900**		**2500**		**72000**		**17900**		**9900**		**11650**		**16700**		**8600**	**1100**		**8400**	
Pesticides / PCBs (mg/kg)																											
Heptachlor	0.11	0.38	0.00014	-	<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003	<0.0003		<0.0003	
Heptachlor Epoxide	0.053	0.19	0.000068	-	<0.0007		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0007		<0.0007	<0.0006		<0.0006	
4,4'-DDE	1.4	5.1	0.05	-	**0.002**		<0.0004		**0.001**		**0.018**		**0.208**		<0.0004		**0.002**		**0.007**		<0.0005		**0.006**	**0.001**		**0.002**	
Dieldrin	0.03	0.11	0.000061	-	<0.0006		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006		<0.0006	<0.0005		<0.0005	
Endrin	1.8	18	0.0068	-	<0.0006		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006		<0.0006	<0.0005		<0.0005	
4,4'-DDD	2	7.2	0.01	-	<0.0007		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0006		<0.0007		<0.0007	<0.0006		<0.0006	
Endrin Aldehyde	NLE	NLE	NLE	-	<0.0006		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006		<0.0006	<0.0005		<0.0005	
4,4'-DDT	1.7	7	0.07	-	**0.002**		<0.0012		<0.0011		**0.028**		**0.803**		<0.0012		<0.0012		**0.003**		<0.0013		**0.003**	**0.002**		**0.002**	
Endosulfan I	37	370	0.11	-	<0.0006		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006		<0.0006	<0.0005		<0.0005	
Endosulfan II	37	370	0.11	-	<0.0005		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0005		<0.0004	<0.0004		<0.0004	
Endosulfan-Sulfate	NLE	NLE	NLE	-	<0.0005		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0005		<0.0004	<0.0004		<0.0004	
gamma-Chlordane	1.6	6.5	0.013	-	<0.0006		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006		<0.0006	<0.0005		<0.0005	
alpha-Chlordane	1.6	6.5	0.013	-	<0.0006		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0005		<0.0006		<0.0006	<0.0005		<0.0005	
Aroclor 1254	0.22	0.74	0.0082	-	<0.0045		<0.0042		<0.0042		<0.0042		<0.0042		<0.0042		<0.0043		<0.0041		<0.0046		<0.0045	<0.0043		<0.0042	

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Loc ID	USEPA RSL Residential (HQ=0.1)[1]	USEPA RSL Industrial (HQ=0.1)	USEPA RSL Groundwater Protection (Risk-based)	Weston Background [2]	B-80 Dup	B-81	B-82	B-83	B-84	B-85	B-86	B-87	B-88	B-89	B-90	B-91
Sample Date					05/19/98	05/19/98	05/19/98	05/19/98	05/20/98	05/20/98	05/20/98	05/20/98	05/20/98	05/20/98	05/20/98	05/20/98
Metals (mg/kg)																
Aluminum	7,700	99,000	2,300	15,200	**10910**	**2577**	**2449**	**1275**	**9216**	**6650**	**7711**	**7796**	**5870**	**4347**	**4758**	**2982**
Antimony	3.1	41	0.03	ND	**1.6**	**0.308**	**0.356**	**0.255**	**1.288**	**0.52**	**1.219**	**0.834**	**0.834**	**0.237**	**0.945**	**0.542**
Arsenic	0.61	2.4	0.0013	22.9	**11.24**	**5.594**	**1.387**	**0.858**	**11.23**	**4.61**	**8.103**	**10.68**	**12.43**	**2.981**	**15.53**	**4.745**
Barium	1,500	19,000	12	32.3	**21.68**	**36.08**	**15.13**	**4.896**	**29.34**	**14.66**	**14.57**	**29.97**	**192.3**	**25.61**	**8.797**	**21.03**
Beryllium	16	200	1.3	2	**1.322**	**0.2973**	**0.3248**	**0.1492**	**0.634**	**0.3893**	**0.9604**	**0.9373**	**4.787**	**0.3072**	**0.4409**	**0.3972**
Cadmium	7	80	0.05	ND	<0.064	**0.0968**	<0.056	<0.052	<0.061	<0.060	<0.059	<0.060	**0.674**	<0.067	<0.053	<0.055
Calcium	NLE	NLE	NLE	921	**297**	**865.2**	**316.7**	**134.9**	**817.1**	**590.2**	**646.2**	**1477**	**1547**	**1663**	**181.2**	**987.9**
Chromium	12,000	150,000	2,800,000	269	**149.7**	**11.66**	**19.27**	**12.27**	**62.61**	**37.09**	**91.08**	**88.9**	**54.19**	**7.984**	**58.29**	**27.55**
Cobalt	2.3	30	0.02	2.5	**4.822**	**1.554**	**0.4012**	**0.2038**	**1.854**	**2.493**	**2.845**	**3.717**	**7.393**	**3.526**	**0.5178**	**0.9371**
Copper	310	4,100	2.2	8	<0.386	**17.64**	**1.524**	**1.995**	**43.09**	**3.002**	**0.413**	**4.648**	**2314**	**46.74**	**139.2**	**10.16**
Iron	5500	72,000	27	55,800	**65860**	**6221**	**6563**	**4284**	**24830**	**13010**	**41350**	**41280**	**12220**	**5168**	**15660**	**12860**
Lead	400	800	NLE	19.5	**8.234**	**36.85**	**4.79**	**6.115**	**126.8**	**6.786**	**7.797**	**90.95**	**1267**	**15.43**	**19.27**	**50.74**
Magnesium	NLE	NLE	NLE	7,230	**848.1**	**318.6**	**568.3**	**317.3**	**1392**	**974.8**	**780.5**	**1019**	**614.5**	**359.5**	**1090**	**748**
Manganese	180	2,300	2.1	90.7	**68.32**	**17.63**	**12.37**	**8.873**	**40**	**85.56**	**49.43**	**101.9**	**175.7**	**97.42**	**9.783**	**28.45**
Mercury	1	4.3	0.0033	ND	<0.022	**0.061**	<0.022	<0.020	**0.123**	**0.024**	<0.023	**0.034**	**0.044**	**0.039**	**0.044**	**0.053**
Nickel	150	2000	2	8.4	**17.24**	**4.848**	**1.503**	**0.8202**	**7.483**	**3.728**	**12.44**	**14.15**	**22.36**	**10.93**	**2.453**	**3.39**
Potassium	NLE	NLE	NLE	15,400	**1996**	**648.6**	**1045**	**490**	**4076**	**1656**	**1321**	**1580**	**1654**	**633.6**	**3985**	**1988**
Selenium	39	510	0.04	1.9	<0.386	**0.385**	<0.338	<0.315	<0.365	<0.363	<0.355	<0.359	**1.379**	<0.405	**1.146**	<0.329
Silver	39	510	0.06	1.1	<0.386	<0.345	<0.338	<0.315	<0.365	<0.363	<0.355	<0.359	**3.472**	<0.405	<0.319	<0.329
Sodium	NLE	NLE	NLE	51.6	**90.62**	**138.3**	**13.7**	**23.19**	**61.43**	**38.89**	**40.52**	**116.5**	**335.1**	**440.7**	**186.3**	**128.8**
Thallium	0.08	1	0.0011	ND	<0.386	<0.345	<0.338	<0.315	<0.365	<0.363	<0.355	<0.359	<0.381	<0.405	<0.319	<0.329
Vanadium	39	510	6.3	94.1	**183.2**	**18.03**	**13.74**	**9.388**	**58.91**	**32.18**	**108.4**	**113.1**	**18.83**	**9.574**	**11.28**	**11.94**
Zinc	2,300	31,000	29	81.4	**74.82**	**29.27**	**12.57**	**7.018**	**46.59**	**20.41**	**57.83**	**79.89**	**500.7**	**26.7**	**35.88**	**76.22**

Notes:

Historically, there have been up to 318 soil boring locations associated with FTMM-05. This analysis looks at only those boring locations that fall within the footprint of FTMM-05.

(1) U.S. Environmental Protection Agency, Regional Screening Levels (RSLs). Residential Soil (TR=1E-06, HQ = 0.1). (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Revised November 2013.

(2) Weston, 1995. Final Site Investigation - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December

USEPA RSL for Endosulfan is used for Endosulfan II
USEPA RSL for Chromium III is used for Chromium
RSL values were current at the time the screening was conducted.
Dash (--) = only background concentrations for metals are being used as comparison criteria.
B = Analyte detected in both sample and associated laboratory blank.
D = Result from dilution of sample.
DUP = field duplicate sample.
E = Estimated value.
J = Analyte detected between MDL and practical quantitation limit (PQL).
NA = not analyzed.
ND = not detected.
NLE = No limit established.
< = analyte not detected above method detection limit (MDL).
µg/kg = micrograms per kilogram.
mg/kg = milligrams per kilogram.
VOCs = volatile organic compounds.
in. = inches.
bgs = below ground surface.
Detections are bolded.
Shaded cells = concentration exceeds USEPA Groundwater Protection RSL.
Shaded cells = concentration exceeds USEPA Residential and/or Industrial RSL.
Shaded cells = concentration exceeds all three USEPA comparison criteria.
Shaded cells = concentration exceeds Weston (1995) background concentration.

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Loc ID	USEPA RSL Residential (HQ=0.1)[1]	USEPA RSL Industrial (HQ=0.1)	USEPA RSL Groundwater Protection (Risk-based)	Weston Background [2]	B-92		B-93		B-94		B-95	B-96		B-97		B-98		B-99	B-158	B-159		B-160		B-160 Dup	
Sample Date					05/20/98		05/21/98		05/21/98		05/21/98	05/21/98		05/21/98		05/21/98		05/26/98	06/17/98	06/17/98		06/17/98		06/17/98	
Volatile Organic Compounds (VOCS, µg/kg)																									
Lab Sample ID (VOCs only collected at approximately 24 in. bgs)					3584.35		3588.03		3588.07		3588.11	3588.15		3588.19		3588.22		3593.03	3665.13	3665.17		3665.20		3665.26	
Methylene Chloride	36,000	63,000,000	240	-	<540		<570		<570		<550	<610		<580		<660		<610	<560	<570		<560		<550	
Benzene	1,100	5,400	0.2	-	<270		<280		<280		<270	<300		<290		<330		<300	<280	<290		<280		<280	
Tetrachloroethene	8,600	41,000	1.6	-	<270		<280		<280		<270	<300		<290		<330		<300	<280	<290		<280		<280	
Chloroform	290	1,500	0.053	-	<270		<280		<280		<270	<300		<290		<330		<300	<280	<290		<280		<280	
Ethylbenzene	5,400	27,000	1.5	-	<540		<570		<570		<550	<610		<580		<660		<610	<560	<570		<560		<550	
TICs	NLE	NLE	NLE	-	ND		ND		ND		ND	ND		ND		ND		ND	ND	ND		ND		ND	
Semivolatile Organic Compounds (SVOCs, µg/kg)																									
Lab Sample ID (All analyses except VOCs collected at approximately 6-12 in. bgs)					3584.34		3588.02		3588.06		3588.10	3588.14		3588.18		3588.22		3593.02	3665.12	3665.16		3665.19		3665.25	
Naphthalene	3,600	18,000	0.47	-	<250		<260		<250		<250	<260		<230		<290		<2600	<240	<270		<260		<270	
n-Nitrosodiphenylamine	99,000	350,000	57	-	<190		<200		<190		<190	<190		<170		<220		<1900	<180	<210		<190		<200	
2-Methylnaphthalene	23,000	220,000	14	-	<280		<290		<280		<280	<290		<260		<320		<2900	<270	<310		<290		<300	
4-Methylphenol	610,000	6,200,000	110	-	<280		<280		<270		<280	<280		<250		<320		<2800	<260	<300		<280		<290	
Acenaphthylene	NLE	NLE	NLE	-	<200		<200		<190		<200	<200		<180		<230		<2000	<190	<220		<200		<210	
Acenaphthene	340,000	3,300,000	410	-	**590**		<190		<180		<180	<180		<170		<210		<1800	<170	<200		<180		<190	
Dibenzofuran	7,800	100,000	11	-	**640**		<200		<190		<190	<200		<180		<220		<2000	<180	<210		<200		<210	
Diethylphthalate	4,900,000	49,000,000	470	-	<210		<220		<210		<210	<210		<190		<240		<2100	<200	<230		<210		<220	
Fluorene	230,000	2,200,000	400	-	**1100**		<200		<190		<200	<200		<180		<230		<2000	<190	<210		<200		<210	
Phenanthrene	NLE	NLE	NLE	-	<200		<210		<200		<200	<200		<180		**160**	J	<2000	<190	<220		<200		<210	
Anthracene	1,700,000	17,000,000	4200	-	**3300**		<210		<200		<200	<200		<180		<230		<2000	<190	<220		<200		<210	
Dimethylphthalate	NLE	NLE	NLE	-	<160		<160		<150		<160	<160		<140		<180		<1600	<150	<170		<160		<170	
Di-n-butylphthalate	610,000	6,200,000	170	-	**280**	JB	**470**	JB	**270**	JB	<860	**430**	JB	**730**	JB	**500**	JB	<8800	**230**	JB	**210**	JB	**900**	B	**490**	JB
Fluoranthene	230,000	2,200,000	7,000	-	<200		<210		<200		<200	<200		**240**		**210**	J	<2000	<190		<220		**300**		**150**	J
Pyrene	170,000	1,700,000	950	-	**11000**		<240		<230		<230	<240		**160**	J	**200**	J	<2400	<220		<250		**400**		**170**	J
Pyridine	7,800	100,000	0.53	-	<310		<320		<300		<310	<320		<280		<350		<3100	<290		<340		<310		<330	
Butylbenzylphthalate	260,000	910,000	200	-	<260		<270		<250		<260	<270		<2409		<300		<2600	<250		<280		<260		<280	
Benzo(a)anthracene	150	2,100	10	-	**7200**		<210		<200		<200	<210		**120**	J	**140**	J	<2100	<190		<220		**150**	J	<220	
3,3'-Dichlorobenzidine	1,100	3,800	0.71	-	<360		<370		<350		<360	<360		<330		<410		<3600	<340		<390		<360		<380	
Chrysene	15,000	210,000	1,100	-	**9700**		<270		<250		<260	<270		**170**	J	**290**	J	<2600	<250		<280		**340**		**180**	J
bis(2-Ethylhexyl)phthalate	35,000	120,000	1,100	-	<290		<300		<280		<290	<290		**100**	J	<330		<2900	<270		<310		<290		<310	
Benzo(b)fluoranthene	150	2,100	35	-	**5600**		<260		<250		<250	<260		**110**	J	**160**	J	<2600	<240		<270		**140**	J	<270	
Benzo(k)fluoranthene	1,500	21,000	350	-	**3900**		<190		<180		<190	<190		<170		<220		<1900	<180		<200		**130**	J	<200	
Benzo(a)pyrene	15	210	4	-	**5300**		<200		<190		<190	<200		**110**	J	<220		<2000	<180		<210		**130**	J	<210	
Indeno(1,2,3-cd)pyrene	150	2,100	200	-	**3000**		<220		<210		<210	<220		<190		<240		<2100	<200		<230		<210		<220	
Dibenz(a,h)anthracene	15	210	11	-	**640**		<250		<240		<250	<250		<230		<280		<2500	<230		<270		<250		<260	
Benzo(g,h,i)perylene	NLE	NLE	NLE	-	**2800**		<250		<240		<250	<250		<230		<280		<2500	<230		<270		<250		<260	
Total TICs	NLE	NLE	NLE	-	**47930**		**9080**		**9500**		**223800**	**8700**		**10620**		**8500**		**105300**	**1700**		**1600**		**1200**		ND	
Pesticides / PCBs (mg/kg)																									
Heptachlor	0.11	0.38	0.00014	-	<0.0003		<0.0003		<0.0003		<0.0003	<0.0003		<0.0003		<0.0003		<0.0003	<0.0003		<0.0003		**0.003**		<0.0003	
Heptachlor Epoxide	0.053	0.19	0.000068	-	<0.0006		<0.0006		<0.0006		<0.0006	<0.0006		**0.001**		<0.0007		<0.0006	<0.0006		<0.0006		<0.0006		<0.0006	
4,4'-DDE	1.4	5.1	0.05	-	<0.0004		**0.008**		**0.002**		<0.0004	**0.003**		**0.008**		**0.166**		**0.008**	<0.0004		**0.003**		**0.011**		**0.011**	
Dieldrin	0.03	0.11	0.000061	-	<0.0005		<0.0005		<0.0005		<0.0005	<0.0005		<0.0005		<0.0006		<0.0005	<0.0005		<0.0005		<0.0005		<0.0005	
Endrin	1.8	18	0.0068	-	<0.0005		<0.0005		<0.0005		<0.0005	<0.0005		<0.0005		<0.0006		<0.0005	<0.0005		<0.0005		<0.0005		<0.0005	
4,4'-DDD	2	7.2	0.01	-	<0.0006		**0.004**		<0.0006		<0.0006	<0.0006		**0.003**		**0.02**		<0.0006	<0.0006		<0.0006		<0.0006		<0.0006	
Endrin Aldehyde	NLE	NLE	NLE	-	<0.0005		<0.0005		<0.0005		<0.0005	<0.0005		<0.0005		<0.0006		<0.0005	<0.0005		<0.0005		<0.0005		<0.0005	
4,4'-DDT	1.7	7	0.07	-	<0.0012		**0.032**		**0.004**		<0.0011	**0.002**		**0.014**		**0.077**		**0.008**	<0.0011		**0.003**		**0.019**		**0.017**	
Endosulfan I	37	370	0.11	-	<0.0005		<0.0005		<0.0005		<0.0005	<0.0005		<0.0005		<0.0006		<0.0005	<0.0005		<0.0005		<0.0005		<0.0005	
Endosulfan II	37	370	0.11	-	<0.0004		<0.0004		<0.0004		<0.0004	<0.0004		<0.0004		<0.0005		<0.0004	<0.0004		<0.0004		<0.0004		<0.0004	
Endosulfan-Sulfate	NLE	NLE	NLE	-	<0.0004		<0.0005		<0.0004		<0.0004	<0.0004		<0.0004		**0.009**		<0.0004	<0.0004		<0.0004		<0.0004		<0.0004	
gamma-Chlordane	1.6	6.5	0.013	-	<0.0005		<0.0005		<0.0005		<0.0005	<0.0005		<0.0005		<0.0006		<0.0005	<0.0005		<0.0005		<0.0005		<0.0005	
alpha-Chlordane	1.6	6.5	0.013	-	<0.0005		<0.0005		<0.0005		<0.0005	<0.0005		<0.0005		<0.0006		<0.0005	<0.0005		<0.0005		<0.0005		<0.0005	
Aroclor 1254	0.22	0.74	0.0082	-	<0.0042		<0.0042		<0.0042		<0.0042	<0.0043		<0.0042		<0.0047		<0.0041	<0.0042		<0.0039		<0.0042		<0.0041	

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Loc ID	USEPA RSL Residential (HQ=0.1)[1]	USEPA RSL Industrial (HQ=0.1)	USEPA RSL Groundwater Protection (Risk-based)	Weston Background [2]	B-92	B-93	B-94	B-95	B-96	B-97	B-98	B-99	B-158	B-159	B-160	B-160 Dup
Sample Date					05/20/98	05/21/98	05/21/98	05/21/98	05/21/98	05/21/98	05/21/98	05/26/98	06/17/98	06/17/98	06/17/98	06/17/98
Metals (mg/kg)																
Aluminum	7,700	99,000	2,300	15,200	**2424**	**6587**	**7273**	**6776**	**1231**	**8665**	**2673**	**3319**	**2715**	**6285**		**6418**
Antimony	3.1	41	0.03	ND	**0.305**	**0.864**	**0.705**	**0.293**	**1.11**	**0.813**	**0.397**	**1.522**	**0.349**	**0.487**		**0.678**
Arsenic	0.61	2.4	0.0013	22.9	**1.092**	**9.735**	**9.53**	**7.075**	**12.33**	**9.33**	**7.349**	**4.823**	**1.328**	**8.398**		**8.753**
Barium	1,500	19,000	12	32.3	**12.71**	**18.68**	**21.47**	**50.99**	**96.83**	**35.87**	**108.4**	**25.33**	**15.24**	**16.27**		**18.2**
Beryllium	16	200	1.3	2	**0.3802**	**0.49**	**0.7067**	**0.591**	**0.1224**	**0.6407**	**0.2846**	**0.2113**	**0.401**	**0.5945**		**0.7039**
Cadmium	7	80	0.05	ND	<0.053	<0.060	<0.058	<0.061	<0.061	<0.060	**0.415**	**8.552**	**0.1991**	<0.062		<0.061
Calcium	NLE	NLE	NLE	921	**168.5**	**393.2**	**502.8**	**1605**	**383.6**	**1533**	**1042**	**1011**	**230.8**	**705.6**		**604.4**
Chromium	12,000	150,000	2,800,000	269	**16.35**	**56.44**	**57.07**	**28.21**	**11.51**	**41.47**	**11.65**	**20.07**	**20.65**	**48.92**		**53.4**
Cobalt	2.3	30	0.02	2.5	**0.4263**	**1.026**	**3.164**	**4.892**	**1.152**	**3.802**	**2.666**	**2.289**	**0.3999**	**2.458**		**2.825**
Copper	310	4,100	2.2	8	**2.46**	**11.74**	**2.615**	**19.37**	**26.15**	**14.07**	**48.11**	**1168**	**1.01**	**7.446**		**5.783**
Iron	5500	72,000	27	55,800	**6114**	**21140**	**28210**	**10070**	**7920**	**21290**	**4878**	**7295**	**7173**	**25200**		**28760**
Lead	400	800	NLE	19.5	**5.981**	**30.17**	**131.3**	**18.73**	**78.99**	**46.73**	**69.52**	**4549**	**3.345**	**22.86**		**17.83**
Magnesium	NLE	NLE	NLE	7,230	**517.9**	**879**	**895**	**1135**	**286**	**1372**	**342.3**	**783.4**	**712.5**	**914.9**		**859.9**
Manganese	180	2,300	2.1	90.7	**22.4**	**16.42**	**67.3**	**32.46**	**15.55**	**78.04**	**59.09**	**2581**	**20.15**	**50.78**		**63.65**
Mercury	1	4.3	0.0033	ND	**0.036**	**0.051**	**0.024**	**0.05**	**0.184**	**0.099**	**0.34**	**4.465**	<0.022	<0.025		<0.024
Nickel	150	2000	2	8.4	**1.526**	**4.015**	**8.536**	**14.98**	**4.765**	**11.81**	**8.137**	**6.487**	**1.697**	**6.746**		**7.369**
Potassium	NLE	NLE	NLE	15,400	**1086**	**2804**	**2075**	**2495**	**472.2**	**3002**	**456**	**1426**	**1740**	**1640**		**1671**
Selenium	39	510	0.04	1.9	<0.318	<0.363	<0.349	**0.627**	**3.91**	<0.358	**1.474**	**0.504**	<0.288	<0.369		<0.365
Silver	39	510	0.06	1.1	<0.318	<0.363	<0.349	<0.364	<0.367	<0.358	**0.421**	**37.83**	<0.288	<0.369		<0.365
Sodium	NLE	NLE	NLE	51.6	**22.98**	**91.43**	**37.29**	**216.6**	**58.66**	**183.9**	**177.3**	**235.1**	**61.53**	**62.96**		**34.22**
Thallium	0.08	1	0.0011	ND	<0.318	<0.363	<0.349	<0.364	<0.367	<0.358	<0.380	<0.363	<0.288	<0.369		<0.365
Vanadium	39	510	6.3	94.1	**9.943**	**51.64**	**75.4**	**25.26**	**9.353**	**50.3**	**10.97**	**16.76**	**11.98**	**58.35**		**66.43**
Zinc	2,300	31,000	29	81.4	**14.81**	**27.7**	**41.81**	**27.54**	**13.94**	**43.54**	**73.52**	**9772**	**15.95**	**39.62**		**41.11**

Notes:

Historically, there have been up to 318 soil boring locations associated with FTMM-05. This analysis looks at only those boring locations that fall within the footprint of FTMM-05.

(1) U.S. Environmental Protection Agency, Regional Screening Levels (RSLs). Residential Soil (TR=1E-06, HQ = 0.1). (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Revised November 2013.

(2) Weston, 1995. Final Site Investigation - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December

USEPA RSL for Endosulfan is used for Endosulfan II
USEPA RSL for Chromium III is used for Chromium
RSL values were current at the time the screening was conducted.
Dash (--) = only background concentrations for metals are being used as comparison criteria.
B = Analyte detected in both sample and associated laboratory blank.
D = Result from dilution of sample.
DUP = field duplicate sample.
E = Estimated value.
J = Analyte detected between MDL and practical quantitation limit (PQL).
NA = not analyzed.
ND = not detected.
NLE = No limit established.
< = analyte not detected above method detection limit (MDL).
µg/kg = micrograms per kilogram.
mg/kg = milligrams per kilogram.
VOCs = volatile organic compounds.
in. = inches.
bgs = below ground surface.
Detections are bolded.
Shaded cells = concentration exceeds USEPA Groundwater Protection RSL.
Shaded cells = concentration exceeds USEPA Residential and/or Industrial RSL.
Shaded cells = concentration exceeds all three USEPA comparison criteria.
Shaded cells = concentration exceeds Weston (1995) background concentration.

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Loc ID	USEPA RSL Residential (HQ=0.1)[1]	USEPA RSL Industrial (HQ=0.1)	USEPA RSL Groundwater Protection (Risk-based)	Weston Background [2]	B-161		B-162		B-163		B-164		B-164		B-165		B-166		B-167		B-168		B-169		B-178		B-179		B-180	
Sample Date					06/17/98		06/26/98		06/26/98		06/26/98				06/29/98		06/29/98		06/29/98		06/29/98		06/29/98		07/13/98		07/13/98		07/13/98	
Volatile Organic Compounds (VOCS, µg/kg)																														
Lab Sample ID (VOCs only collected at approximately 24 in. bgs)					3665.23		3686.05		3686.08		3686.11		3688.03		3688.07		3688.10		3688.13				3688.16		3722.13		3722.16		3722.19	
Methylene Chloride	36,000	63,000,000	240	-	<570		<630		<650		<530		<620		<560		<670		<660		NA		<670		<520		<540		<520	
Benzene	1,100	5,400	0.2	-	<280		<310		<330		<270		<310		<280		<340		<330		NA		<340		<260		<270		<260	
Tetrachloroethene	8,600	41,000	1.6	-	<280		<310		<330		<270		<310		<280		**3200**		<330		NA		<340		<260		<270		<260	
Chloroform	290	1,500	0.053	-	<280		<310		<330		<270		<310		<280		<340		<330		NA		<340		<260		<270		<260	
Ethylbenzene	5,400	27,000	1.5	-	<570		<630		<650		<530		<620		<560		<670		<660		NA		<670		<520		<540		<520	
TICs	NLE	NLE	NLE	-	ND		**1400**		ND		ND		ND		ND		ND		ND		NA		ND		ND		ND		ND	
Semivolatile Organic Compounds (SVOCs, µg/kg)																														
Lab Sample ID (All analyses except VOCs collected at approximately 6-12 in. bgs)					3665.22		3686.04		3686.07		3686.10				3688.02		3688.06		3688.09		3688.12		3688.15		3722.12		3722.15		3722.18	
Naphthalene	3,600	18,000	0.47	-	<250		<310		<270		<260				<270		<260		<260		<280		<320		<260		<240		<250	
n-Nitrosodiphenylamine	99,000	350,000	57	-	<190		<230		<200		<190				<200		<190		<200		<210		<240		<190		<180		<190	
2-Methylnaphthalene	23,000	220,000	14	-	<280		<340		<300		<290				<300		<290		<290		<310		<360		<290		<270		<280	
4-Methylphenol	610,000	6,200,000	110	-	<280		<330		<300		<280				<290		<280		<290		<310		<350		<280		<270		<270	
Acenaphthylene	NLE	NLE	NLE	-	<200		<240		<210		<200				<210		<200		<210		<220		<250		<200		<190		<200	
Acenaphthene	340,000	3,300,000	410	-	<180		<220		<190		<180				<190		<190		<190		<200		<230		<180		<170		<180	
Dibenzofuran	7,800	100,000	11	-	<190		<230		<210		<190				<200		<200		<200		<210		<240		<190		<180		<190	
Diethylphthalate	4,900,000	49,000,000	470	-	<210		<250		<220		<210				<220		<210		<220		<230		<270		<210		<200		<210	
Fluorene	230,000	2,200,000	400	-	<200		<240		<210		<200				<210		<200		<210		<220		<250		<200		<190		<190	
Phenanthrene	NLE	NLE	NLE	-	<200		<240		**230**		<200				<210		<200		**740**		<220		<250		<200		<190		**250**	
Anthracene	1,700,000	17,000,000	4200	-	<200		<240		<210		<200				<210		<200		<210		<220		<250		<200		<190		<200	
Dimethylphthalate	NLE	NLE	NLE	-	<160		<190		<170		<160				<170		<160		<160		<170		<200		<160		<150		<150	
Di-n-butylphthalate	610,000	6,200,000	170	-	**180**	JB	**460**	JB	**1100**	B	**380**	JB			**240**	JB	**290**	JB	**120**	JB	**480**	JB	**190**	JB	**580**	JB	**310**	JB	**610**	JB
Fluoranthene	230,000	2,200,000	7,000	-	<200		<240		**830**		<200				<210		<210		**470**		<220		<260		<200		<190		**230**	
Pyrene	170,000	1,700,000	950	-	<230		<280		**1100**		<240				**110**	J	<240		**920**		<260		<300		<240		<220		**370**	
Pyridine	7,800	100,000	0.53	-	<310		<370		<330		<310				<330		<320		<320		<340		<390		<310		<300		<300	
Butylbenzylphthalate	260,000	910,000	200	-	<260		<310		<280		<260				<280		<270		<270		<290		<330		<260		<250		<260	
Benzo(a)anthracene	150	2,100	10	-	<200		<250		**590**		<210				<220		<210		**280**		<230		<260		<210		<190		**140**	J
3,3'-Dichlorobenzidine	1,100	3,800	0.71	-	<360		<430		<380		<360				<380		<360		<370		<400		<450		<360		<340		<350	
Chrysene	15,000	210,000	1,100	-	<260		<310		**1100**		<260				<280		**160**	J	**580**		<290		<330		<260		<250		**390**	
bis(2-Ethylhexyl)phthalate	35,000	120,000	1,100	-	<290		<350		**13000**		<290				<310		<290		<300		<320		<360		<290		**110**	J	<280	
Benzo(b)fluoranthene	150	2,100	35	-	<250		<310		**610**		<260				<270		**170**	J	**200**	J	<280		<320		<260		<240		**110**	J
Benzo(k)fluoranthene	1,500	21,000	350	-	<190		<230		**630**		<190				<200		**140**	J	**220**		<210		<240		<190		<180		<190	
Benzo(a)pyrene	15	210	4	-	<190		<230		**530**		<200				<210		<200		**210**		<210		<250		<200		<190		<190	
Indeno(1,2,3-cd)pyrene	150	2,100	200	-	<210		<260		**290**		<210				<220		**120**	J	**120**	J	<230		<270		<210		<200		<210	
Dibenz(a,h)anthracene	15	210	11	-	<250		<300		<260		<250				<260		<250		<260		<270		<310		<250		<240		<240	
Benzo(g,h,i)perylene	NLE	NLE	NLE	-	<250		<300		**310**		<250				<260		<250		**140**	J	<270		<310		<250		<240		<240	
Total TICs	NLE	NLE	NLE	-	ND		ND		**18520**		**940**				**2990**		**2500**		**3000**		**3100**		ND		**15500**		**14830**		**16310**	
Pesticides / PCBs (mg/kg)																														
Heptachlor	0.11	0.38	0.00014	-	<0.0003		<0.0004		<0.0003		<0.0003				<0.0003		<0.0003		<0.0003		<0.0003		<0.0004		<0.0003		<0.0003		<0.0003	
Heptachlor Epoxide	0.053	0.19	0.000068	-	<0.0006		<0.0007		<0.0007		<0.0006				<0.0006		<0.0006		<0.0006		<0.0007		<0.0008		<0.0006		<0.0006		<0.0006	
4,4'-DDE	1.4	5.1	0.05	-	<0.0004		<0.0005		<0.0005		<0.0004				**0.011**		**0.003**		**0.067**		**0.003**		<0.0005		<0.0004		**0.002**		**0.006**	
Dieldrin	0.03	0.11	0.000061	-	<0.0005		<0.0006		<0.0006		<0.0005				<0.0005		<0.0005		<0.0005		<0.0006		<0.0007		<0.0005		<0.0005		<0.0005	
Endrin	1.8	18	0.0068	-	<0.0005		<0.0006		<0.0006		<0.0005				<0.0005		<0.0005		<0.0005		<0.0006		<0.0007		<0.0005		<0.0005		<0.0005	
4,4'-DDD	2	7.2	0.01	-	<0.0006		<0.0007		<0.0007		<0.0006				<0.0006		<0.0006		**0.016**		<0.0007		<0.0008		<0.0006		<0.0006		<0.0006	
Endrin Aldehyde	NLE	NLE	NLE	-	<0.0005		<0.0006		<0.0006		<0.0005				<0.0005		<0.0005		<0.0005		<0.0006		<0.0007		<0.0005		<0.0005		<0.0005	
4,4'-DDT	1.7	7	0.07	-	<0.0011		<0.0014		<0.0013		<0.0012				**0.01**		**0.01**		**0.091**		**0.002**		<0.0014		<0.0011		**0.002**		**0.009**	
Endosulfan I	37	370	0.11	-	<0.0005		<0.0006		<0.0006		<0.0005				<0.0005		<0.0005		<0.0005		<0.0006		<0.0007		<0.0005		<0.0005		<0.0005	
Endosulfan II	37	370	0.11	-	<0.0004		<0.0005		<0.0005		<0.0004				<0.0004		<0.0004		<0.0004		<0.0005		<0.0005		<0.0004		<0.0004		<0.0004	
Endosulfan-Sulfate	NLE	NLE	NLE	-	<0.0004		<0.0005		<0.0005		<0.0004				<0.0004		<0.0004		<0.0004		<0.0005		<0.0005		<0.0004		<0.0004		<0.0004	
gamma-Chlordane	1.6	6.5	0.013	-	<0.0005		<0.0006		<0.0006		<0.0005				<0.0005		<0.0005		<0.0005		<0.0006		<0.0007		<0.0005		<0.0005		<0.0005	
alpha-Chlordane	1.6	6.5	0.013	-	<0.0005		<0.0006		<0.0006		<0.0005				<0.0005		<0.0005		<0.0005		<0.0006		<0.0007		<0.0005		<0.0005		<0.0005	
Aroclor 1254	0.22	0.74	0.0082	-	<0.0040		<0.0050		<0.0046		<0.0043				<0.0042		<0.0042		<0.0042		<0.0045		<0.0052		<0.0042		<0.0041		<0.0042	

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Loc ID	USEPA RSL Residential (HQ=0.1)[1]	USEPA RSL Industrial (HQ=0.1)	USEPA RSL Groundwater Protection (Risk-based)	Weston Background [2]	B-161	B-162	B-163	B-164	B-164	B-165	B-166	B-167	B-168	B-169	B-178	B-179	B-180
Sample Date					06/17/98	06/26/98	06/26/98	06/26/98		06/29/98	06/29/98	06/29/98	06/29/98	06/29/98	07/13/98	07/13/98	07/13/98
Metals (mg/kg)																	
Aluminum	7,700	99,000	2,300	15,200	**5319**	**2685**	**7000**	**1807**		**5053**	**9267**	**6171**	**3375**	**1764**	**5330**	**1710**	**10000**
Antimony	3.1	41	0.03	ND	**0.579**	**0.337**	**4.693**	**0.31**		**0.822**	**1.298**	**0.638**	<0.261	**0.368**	**0.54**	**0.391**	**0.537**
Arsenic	0.61	2.4	0.0013	22.9	**4.368**	**5.292**	**67.77**	**0.977**		**6.525**	**17.45**	**9.463**	**4.215**	**3.946**	**6.39**	**1.55**	**9.99**
Barium	1,500	19,000	12	32.3	**11.72**	**35.73**	**180.7**	**8.533**		**15.48**	**14.34**	**54.63**	**31.47**	**45.13**	**21.4**	**5.27**	**42.8**
Beryllium	16	200	1.3	2	**0.4884**	**0.2658**	**0.562**	**0.3014**		**0.4805**	**0.5758**	**0.5529**	**0.3019**	**0.1749**	**0.728**	**0.255**	**1.35**
Cadmium	7	80	0.05	ND	<0.053	**0.4376**	<0.065	**0.4001**		**0.2383**	<0.061	**0.3187**	**0.3736**	**0.3013**	<4.182	<0.057	<0.050
Calcium	NLE	NLE	NLE	921	**395**	**1154**	**9589**	**211.4**		**665**	**441.5**	**1435**	**1273**	**624.1**	**851**	**127**	**1240**
Chromium	12,000	150,000	2,800,000	269	**41.48**	**13.87**	**65.41**	**14.53**		**55.07**	**72.9**	**47.49**	**10.58**	**3.82**	**58.8**	**19.6**	**110**
Cobalt	2.3	30	0.02	2.5	**1.602**	**2.082**	**14.15**	**0.2978**		**0.9522**	**0.8807**	**2.798**	**4.252**	**1.702**	**1.22**	**0.247**	**1.97**
Copper	310	4,100	2.2	8	**1.858**	**23.12**	**433**	**1.341**		**12.07**	**7.172**	**38.89**	**20.07**	**14.28**	**4.95**	**1**	**7.44**
Iron	5500	72,000	27	55,800	**13430**	**5905**	**131900**	**5494**		**18160**	**30120**	**21260**	**4301**	**2469**	**19400**	**7740**	**35100**
Lead	400	800	NLE	19.5	**4.473**	**46.83**	**98.63**	**2.754**		**42.83**	**14.31**	**94.14**	**20.43**	**18.74**	**7.58**	**7.32**	**14.6**
Magnesium	NLE	NLE	NLE	7,230	**1036**	**494.8**	**1008**	**363.8**		**983.2**	**902.7**	**1306**	**468.3**	**159.2**	**1620**	**436**	**4220**
Manganese	180	2,300	2.1	90.7	**36.64**	**24.99**	**623.9**	**17.74**		**30.92**	**12.46**	**59.92**	**34.87**	**17.16**	**38.7**	**4.3**	**45.3**
Mercury	1	4.3	0.0033	ND	<0.021	**0.031**	**0.067**	<0.022		**0.051**	**0.064**	**0.101**	**0.025**	<0.026	**1.68**	**0.013**	**0.042**
Nickel	150	2000	2	8.4	**2.982**	**5.629**	**67.18**	**1.4**		**3.563**	**4.461**	**8.902**	**11.23**	**4.544**	**3.57**	**1.14**	**5.91**
Potassium	NLE	NLE	NLE	15,400	**2860**	**716.6**	**1579**	**587.3**		**2960**	**2850**	**3105**	**598.3**	**193.8**	**3980**	**774**	**9010**
Selenium	39	510	0.04	1.9	<0.317	<0.430	<0.389	<0.333		<0.339	**0.371**	**0.342**	<0.392	<0.399	<25.092	<0.343	<0.300
Silver	39	510	0.06	1.1	<0.317	<0.430	<0.389	<0.333		<0.339	<0.365	<0.333	<0.392	<0.399	<25.092	<0.343	<0.300
Sodium	NLE	NLE	NLE	51.6	<2.112	**134.2**	**953.4**	**4.653**		**46.52**	**7.854**	**690**	**226.4**	**147.4**	**84.8**	**42.6**	**109**
Thallium	0.08	1	0.0011	ND	<0.317	<0.430	<0.389	<0.333		<0.339	<0.365	<0.333	<0.392	<0.399	<25.092	<0.343	<0.300
Vanadium	39	510	6.3	94.1	**30.25**	**17.05**	**15.28**	**10.23**		**43.13**	**62.26**	**41.98**	**14.73**	**9.161**	**18.3**	**17**	**40.3**
Zinc	2,300	31,000	29	81.4	**17.6**	**29.63**	**457.1**	**13.81**		**37.72**	**32.28**	**61.39**	**28.85**	**11.74**	**48.4**	**10.5**	**51.5**

Notes:

Historically, there have been up to 318 soil boring locations associated with FTMM-05. This analysis looks at only those boring locations that fall within the footprint of FTMM-05.

(1) U.S. Environmental Protection Agency, Regional Screening Levels (RSLs). Residential Soil (TR=1E-06, HQ = 0.1). (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Revised November 2013.

(2) Weston, 1995. Final Site Investigation - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December
USEPA RSL for Endosulfan is used for Endosulfan II
USEPA RSL for Chromium III is used for Chromium
RSL values were current at the time the screening was conducted.
Dash (--) = only background concentrations for metals are being used as comparison criteria.
B = Analyte detected in both sample and associated laboratory blank.
D = Result from dilution of sample.
DUP = field duplicate sample.
E = Estimated value.
J = Analyte detected between MDL and practical quantitation limit (PQL).
NA = not analyzed.
ND = not detected.
NLE = No limit established.
< = analyte not detected above method detection limit (MDL).
µg/kg = micrograms per kilogram.
mg/kg = milligrams per kilogram.
VOCs = volatile organic compounds.
in. = inches.
bgs = below ground surface.
Detections are bolded.
Shaded cells = concentration exceeds USEPA Groundwater Protection RSL.
Shaded cells = concentration exceeds USEPA Residential and/or Industrial RSL.
Shaded cells = concentration exceeds all three USEPA comparison criteria.
Shaded cells = concentration exceeds Weston (1995) background concentration.

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Loc ID	USEPA RSL Residential (HQ=0.1)[1]	USEPA RSL Industrial (HQ=0.1)	USEPA RSL Groundwater Protection (Risk-based)	Weston Background [2]	B-180 Dup		B-181		B-197	B-198		B-199		B-200		B-200 Dup	B-201	B-202		B-203		B-204		B-205		B-206	B-207	B-208	
Sample Date					07/13/98		07/13/98		08/12/98	08/12/98		08/12/98		08/12/98		08/12/98	08/12/98	08/12/98		08/12/98		08/12/98		08/12/98		08/12/98	08/12/98	08/12/98	
Volatile Organic Compounds (VOCS, µg/kg)																													
Lab Sample ID (VOCs only collected at approximately 24 in. bgs)					3722.25		3722.22		3805.03	3805.05		3805.07		3805.09		3805.33	3805.11	3805.13		3805.15		3805.17		3805.19		3805.21	3805.23	3805.25	
Methylene Chloride	36,000	63,000,000	240	-	<540		<560		<600	<910		<600		<740		<920	<660	<590		<560		<680		<640		<580	<630	<650	
Benzene	1,100	5,400	0.2	-	<270		<280		<300	<460		<300		<370		<460	<330	<290		<280		<340		<320		<290	<310	<320	
Tetrachloroethene	8,600	41,000	1.6	-	<270		<280		<300	<460		<300		<370		<460	<330	<290		**780**		<340		<320		<290	<310	<320	
Chloroform	290	1,500	0.053	-	<270		<280		<300	<460		<300		<370		**760**	<330	<290		<280		<340		<320		<290	<310	<320	
Ethylbenzene	5,400	27,000	1.5	-	<540		<560		<600	<910		<600		<740		<920	<660	<590		<560		<680		<640		<580	<630	<650	
TICs	NLE	NLE	NLE	-	ND		ND		ND	ND		ND		ND		ND	ND	ND		ND		ND		ND		ND	ND	ND	
Semivolatile Organic Compounds (SVOCs, µg/kg)																													
Lab Sample ID (All analyses except VOCs collected at approximately 6-12 in. bgs)					3722.24		3722.21		3805.02	3805.04		3805.06		3805.08		3805.32	3805.10	3805.12		3805.14		3805.16		3805.18		3805.20	3805.22	3805.24	
Naphthalene	3,600	18,000	0.47	-	<240		<280		<260	<260		<300		<250		<260	<280	**130**	J	<240		<270		<270		<280	<270	<290	
n-Nitrosodiphenylamine	99,000	350,000	57	-	<180		<210		<200	<190		<220		<190		<200	<210	<180		<180		<210		<200		<210	<200	<220	
2-Methylnaphthalene	23,000	220,000	14	-	<270		<310		<290	<290		<330		<290		<290	<320	<270		<270		<310		<300		<310	<300	<320	
4-Methylphenol	610,000	6,200,000	110	-	<260		<300		<290	<280		<330		<280		<290	<310	<260		<260		<300		<300		<310	<300	<320	
Acenaphthylene	NLE	NLE	NLE	-	<190		<220		<210	<200		**78**	J	<200		<210	<220	**530**		<190		<220		<210		<220	<210	<230	
Acenaphthene	340,000	3,300,000	410	-	<170		<200		<190	<180		<210		<180		<190	<200	<170		<170		<200		<190		<200	<190	<210	
Dibenzofuran	7,800	100,000	11	-	<180		<210		<200	<190		<230		<190		<200	<220	<180		<180		<210		<210		<210	<210	<220	
Diethylphthalate	4,900,000	49,000,000	470	-	<200		<230		<220	<210		<250		<210		<220	<240	<200		<200		<230		<220		<230	<220	<240	
Fluorene	230,000	2,200,000	400	-	<190		<220		<210	<200		<230		<200		<210	<220	<190		<190		<210		<210		<220	<210	<230	
Phenanthrene	NLE	NLE	NLE	-	**330**		<220		<210	<200		**260**		<200		<210	**1000**	**2100**		**380**		<220		<210		<220	<210	<230	
Anthracene	1,700,000	17,000,000	4200	-	<190		<220		<210	<200		<240		<200		<210	**280**	**390**		<190		<220		<210		<220	<210	<230	
Dimethylphthalate	NLE	NLE	NLE	-	<150		<170		<160	<160		<190		<160		<160	<170	<150		<150		<170		<170		<170	<170	<180	
Di-n-butylphthalate	610,000	6,200,000	170	-	**520**	JB	**760**	JB	<900	**720**	J	**700**	J	**630**	J	**1100**	**1200**	**570**	J	**210**	J	**210**	J	**270**	J	**240**	J <920	**250**	J
Fluoranthene	230,000	2,200,000	7,000	-	**360**		<220		<210	<200		**400**		**170**	J	<210	**1100**	**4500**		**510**		**140**	J	<210		<220	<210	<230	
Pyrene	170,000	1,700,000	950	-	**580**		<260		<240	<240		**560**		**260**		<240	**950**	**5100**		**740**		**260**		<250		<260	<250	<270	
Pyridine	7,800	100,000	0.53	-	<300		<340		<320	<310		<370		<310		<320	<350	<290		<290		<340		<330		<340	<330	<350	
Butylbenzylphthalate	260,000	910,000	200	-	<260		<280		<270	<260		<310		<260		<260	<290	<250		<250		<280		<280		<290	<280	<300	
Benzo(a)anthracene	150	2,100	10	-	**190**		<220		<210	<210		**230**	J	**130**	J	<210	**470**	**2700**		**260**		**120**	J	<220		<230	<220	<230	
3,3'-Dichlorobenzidine	1,100	3,800	0.71	-	<350		<390		<370	<360		<420		<360		<360	<400	<340		<340		<390		<380		<400	<380	<410	
Chrysene	15,000	210,000	1,100	-	**600**		<280		<270	<260		**460**		**290**		<270	**670**	**4900**		**490**		**240**	J	<280		<290	<280	<300	
bis(2-Ethylhexyl)phthalate	35,000	120,000	1,100	-	**100**	J	<310		<300	<290		<340		<290		<300	<320	<270		<270		<310		<310		<320	<310	<330	
Benzo(b)fluoranthene	150	2,100	35	-	**130**	J	<280		<260	<260		**220**	J	**160**	J	<260	**360**	**3100**		**230**	J	<280		<270		<280	<270	<290	
Benzo(k)fluoranthene	1,500	21,000	350	-	**190**		<210		<200	<190		**230**		**170**	J	<200	**360**	**2800**		**250**		<200		<200		<210	<200	<220	
Benzo(a)pyrene	15	210	4	-	**220**		<210		<200	<200		**240**		**130**	J	<200	**390**	**2900**		**260**		<210		<210		<210	<210	<220	
Indeno(1,2,3-cd)pyrene	150	2,100	200	-	<200		<230		<220	<210		<250		<210		<220	<240	**2100**		**150**	J	<230		<230		<230	<230	<240	
Dibenz(a,h)anthracene	15	210	11	-	<240		<270		<260	<250		<290		<250		<260	<280	**1500**		<240		<270		<260		<270	<260	<280	
Benzo(g,h,i)perylene	NLE	NLE	NLE	-	<240		<270		<260	<250		<290		<250		<260	<280	**2200**		**140**	J	<270		<260		<270	<260	<280	
Total TICs	NLE	NLE	NLE	-	**18820**		**18450**		**12130**	**9880**		**8800**		ND		**8200**	**16400**	**15260**		**4600**		**2500**		**2780**		**10400**	ND	**2200**	
Pesticides / PCBs (mg/kg)																													
Heptachlor	0.11	0.38	0.00014	-	<0.0003		<0.0003		<0.0003	<0.0003		<0.0004		<0.0003		<0.0003	<0.0003	<0.0003		<0.0003		<0.0003		<0.0003		<0.0004	<0.0003	<0.0004	
Heptachlor Epoxide	0.053	0.19	0.000068	-	<0.0006		<0.0007		<0.0007	<0.0006		<0.0007		<0.0007		<0.0006	<0.0007	<0.0006		<0.0006		<0.0007		<0.0006		<0.0007	<0.0007	<0.0008	
4,4'-DDE	1.4	5.1	0.05	-	**0.008**		<0.0004		**0.033**	**0.017**		**0.26**		**0.01**		<0.0004	**0.047**	**0.016**		**0.102**		**0.024**		<0.0004		**0.004**	<0.0005	**0.005**	
Dieldrin	0.03	0.11	0.000061	-	<0.0005		<0.0006		<0.0005	<0.0005		<0.0006		<0.0005		<0.0005	<0.0006	<0.0005		<0.0005		<0.0006		<0.0005		<0.0006	<0.0006	<0.0006	
Endrin	1.8	18	0.0068	-	<0.0005		<0.0006		<0.0005	<0.0005		<0.0006		<0.0005		<0.0005	<0.0006	<0.0005		<0.0005		<0.0006		<0.0005		<0.0006	<0.0006	<0.0006	
4,4'-DDD	2	7.2	0.01	-	<0.0006		<0.0007		**0.001**	**0.001**		**0.116**		<0.0007		<0.0006	<0.0007	<0.0006		**0.031**		**0.004**		<0.0006		**0.003**	<0.0007	<0.0008	
Endrin Aldehyde	NLE	NLE	NLE	-	<0.0005		<0.0006		<0.0005	<0.0005		<0.0006		<0.0005		<0.0005	<0.0006	<0.0005		<0.0005		<0.0006		<0.0005		<0.0006	<0.0006	<0.0006	
4,4'-DDT	1.7	7	0.07	-	**0.009**		<0.0012		**0.015**	**0.019**		**1.321**		**0.01**		<0.0011	<0.0013	**0.054**		**0.34**		**0.019**		<0.0011		**0.003**	<0.0013	**0.006**	
Endosulfan I	37	370	0.11	-	<0.0005		<0.0006		<0.0005	<0.0005		<0.0006		<0.0005		<0.0005	<0.0006	<0.0005		<0.0005		<0.0006		<0.0005		<0.0006	<0.0006	<0.0006	
Endosulfan II	37	370	0.11	-	<0.0004		<0.0004		<0.0004	<0.0004		<0.0005		<0.0004		<0.0004	<0.0005	<0.0004		<0.0004		<0.0005		<0.0004		<0.0005	<0.0005	<0.0005	
Endosulfan-Sulfate	NLE	NLE	NLE	-	<0.0004		<0.0004		<0.0004	<0.0004		<0.0005		<0.0004		<0.0004	<0.0005	<0.0004		<0.0004		<0.0005		<0.0004		<0.0005	<0.0005	<0.0005	
gamma-Chlordane	1.6	6.5	0.013	-	<0.0005		<0.0006		<0.0005	<0.0005		<0.0006		<0.0005		<0.0005	<0.0006	<0.0005		<0.0005		<0.0006		<0.0005		<0.0006	<0.0006	<0.0006	
alpha-Chlordane	1.6	6.5	0.013	-	<0.0005		<0.0006		<0.0005	<0.0005		<0.0006		<0.0005		<0.0005	<0.0006	<0.0005		<0.0005		<0.0006		<0.0005		<0.0006	<0.0006	<0.0006	
Aroclor 1254	0.22	0.74	0.0082	-	<0.0038		<0.0044		<0.0044	<0.0040		<0.0049		<0.0044		<0.0202	**1.499**	<0.0041		<0.0042		<0.0045		<0.0041		<0.0047	**0.165**	<0.0050	

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Loc ID	USEPA RSL Residential (HQ=0.1)[1]	USEPA RSL Industrial (HQ=0.1)	USEPA RSL Groundwater Protection (Risk-based)	Weston Background [2]	B-180 Dup	B-181	B-197	B-198	B-199	B-200	B-200 Dup	B-201	B-202	B-203	B-204	B-205	B-206	B-207	B-208
Sample Date					07/13/98	07/13/98	08/12/98	08/12/98	08/12/98	08/12/98	08/12/98	08/12/98	08/12/98	08/12/98	08/12/98	08/12/98	08/12/98	08/12/98	08/12/98
Metals (mg/kg)																			
Aluminum	7,700	99,000	2,300	15,200	**3330**	**12500**	**5970**	**4720**	**9820**	**10500**	**2490**	**5920**	**5990**	**6500**	**3940**	**4920**	**12300**	**3020**	**3420**
Antimony	3.1	41	0.03	ND	<0.226	**1.16**	**0.253**	**1.48**	**6.56**	**0.35**	<0.245	**0.617**	**0.751**	**0.359**	<0.250	<0.245	<0.255	**0.411**	**0.737**
Arsenic	0.61	2.4	0.0013	22.9	**3.72**	**11.6**	**4.98**	**59.1**	**11.5**	**8.59**	**4.96**	**5.5**	**7.11**	**6.34**	**5.27**	**7.61**	**8.46**	**6.07**	**10.7**
Barium	1,500	19,000	12	32.3	**21.7**	**14.2**	**47.1**	**68.6**	**363**	**147**	**50.1**	**84.6**	**113**	**25.5**	**35.5**	**61.6**	**99.6**	**22.3**	**71.1**
Beryllium	16	200	1.3	2	**0.492**	**1.8**	**0.53**	**0.548**	**0.9**	**0.743**	**0.266**	**0.92**	**0.58**	**0.428**	**0.389**	**0.354**	**0.985**	**0.288**	**0.525**
Cadmium	7	80	0.05	ND	<0.057	<0.062	<0.058	<0.051	<0.057	**0.543**	**823**	**0.929**	<0.059	<0.059	<0.062	<0.061	<0.064	<0.057	<0.070
Calcium	NLE	NLE	NLE	921	**668**	**86.4**	**1720**	**918**	**537**	**1390**	**823**	**1500**	**455**	**2470**	**1100**	**1010**	**1270**	**670**	**714**
Chromium	12,000	150,000	2,800,000	269	**34.5**	**139**	**17.1**	**19.5**	**77.4**	**25.8**	**5.31**	**37.8**	**49.8**	**36**	**19.8**	**12.9**	**26.4**	**18.4**	**32**
Cobalt	2.3	30	0.02	2.5	**1.34**	**1.1**	**5.69**	**11.4**	**5.14**	**7.57**	**1.77**	**5.81**	**1.98**	**4.27**	**4.61**	**4.8**	**9.39**	**3.91**	**2.42**
Copper	310	4,100	2.2	8	**9.92**	<0.374	**37.8**	**92.6**	**122**	**38.6**	**23.6**	**47.3**	**77.4**	**36.4**	**35**	**18.1**	**110**	**31.8**	**58**
Iron	5500	72,000	27	55,800	**12100**	**48800**	**7220**	**38400**	**33400**	**15300**	**4580**	**12600**	**23300**	**14600**	**8620**	**5100**	**10200**	**15100**	**14800**
Lead	400	800	NLE	19.5	**13.5**	**6.18**	**40**	**119**	**494**	**37.6**	**11.2**	**62.8**	**268**	**23.8**	**35**	**28.6**	**39.9**	**12.6**	**135**
Magnesium	NLE	NLE	NLE	7,230	**975**	**1660**	**791**	**491**	**1700**	**900**	**256**	**1430**	**1680**	**2450**	**630**	**342**	**540**	**329**	**995**
Manganese	180	2,300	2.1	90.7	**44.3**	**17.6**	**47.8**	**121**	**143**	**126**	**19.3**	**332**	**39.1**	**83.9**	**61.8**	**21.1**	**63.2**	**65.6**	**36.2**
Mercury	1	4.3	0.0033	ND	**0.019**	**0.028**	**0.063**	**0.029**	**0.153**	**0.044**	**0**	**0.391**	**0.115**	**0.602**	**0.064**	<0.035	<0.034	**0.047**	**0.075**
Nickel	150	2000	2	8.4	**3.9**	**6.24**	**14.9**	**18.2**	**23.6**	**19.6**	**5.28**	**10.5**	**5.95**	**11**	**8.78**	**14.5**	**24.5**	**11.9**	**7.99**
Potassium	NLE	NLE	NLE	15,400	**2050**	**3210**	**1300**	**1330**	**4160**	**3580**	**488**	**3670**	**3720**	**3560**	**1470**	**989**	**2280**	**852**	**3150**
Selenium	39	510	0.04	1.9	<0.340	<0.374	<0.348	<0.303	<0.345	<0.327	<0.367	<0.386	<0.352	<0.352	<0.375	**1.24**	<0.382	**0.606**	<0.419
Silver	39	510	0.06	1.1	<0.340	<0.374	<0.348	<0.303	<0.345	<0.327	<0.367	<0.386	<0.352	<0.352	<0.375	<0.368	<0.382	<0.340	<0.419
Sodium	NLE	NLE	NLE	51.6	**59.2**	**56.6**	**290**	**393**	**535**	**485**	**278**	**526**	**566**	**411**	**207**	**339**	**460**	**252**	**404**
Thallium	0.08	1	0.0011	ND	<0.340	<0.374	<0.348	<0.303	<0.345	<0.327	**0.513**	<0.386	**0.498**	<0.352	<0.375	<0.368	<0.382	<0.340	**0.505**
Vanadium	39	510	6.3	94.1	**21.7**	**92.1**	**23.2**	**17.5**	**43.5**	**30.9**	**11.8**	**25.3**	**31.2**	**36.7**	**22.9**	**23.7**	**31.5**	**17.1**	**21.1**
Zinc	2,300	31,000	29	81.4	**34.8**	**44.9**	**31.9**	**114**	**116**	**80.2**	**34.2**	**514**	**38.1**	**39.2**	**29.2**	**27.2**	**31.8**	**165**	**48.9**

Notes:

Historically, there have been up to 318 soil boring locations associated with FTMM-05. This analysis looks at only those boring locations that fall within the footprint of FTMM-05.

(1) U.S. Environmental Protection Agency, Regional Screening Levels (RSLs). Residential Soil (TR=1E-06, HQ = 0.1). (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Revised November 2013.

(2) Weston, 1995. Final Site Investigation - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December

USEPA RSL for Endosulfan is used for Endosulfan II
USEPA RSL for Chromium III is used for Chromium
RSL values were current at the time the screening was conducted.
Dash (--) = only background concentrations for metals are being used as comparison criteria.
B = Analyte detected in both sample and associated laboratory blank.
D = Result from dilution of sample.
DUP = field duplicate sample.
E = Estimated value.
J = Analyte detected between MDL and practical quantitation limit (PQL).
NA = not analyzed.
ND = not detected.
NLE = No limit established.
< = analyte not detected above method detection limit (MDL).
µg/kg = micrograms per kilogram.
mg/kg = milligrams per kilogram.
VOCs = volatile organic compounds.
in. = inches.
bgs = below ground surface.
Detections are bolded.
Shaded cells = concentration exceeds USEPA Groundwater Protection RSL.
Shaded cells = concentration exceeds USEPA Residential and/or Industrial RSL.
Shaded cells = concentration exceeds all three USEPA comparison criteria.
Shaded cells = concentration exceeds Weston (1995) background concentration.

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Loc ID	USEPA RSL Residential (HQ=0.1)[1]	USEPA RSL Industrial (HQ=0.1)	USEPA RSL Groundwater Protection (Risk-based)	Weston Background [2]	B-209		B-210		B-211		B-212		B-213		B-214		B-215		B-216		B-217		B-218		B-219		B-220		B-220 Dup	
Sample Date					08/12/98		08/12/98		08/12/98		08/13/98		08/13/98		08/13/98		08/13/98		08/13/98		08/13/98		08/13/98		08/13/98		08/13/98		08/13/98		
Volatile Organic Compounds (VOCS, µg/kg)																														
Lab Sample ID (VOCs only collected at approximately 24 in. bgs)					3805.27		3805.29		3805.31		3809.03		3809.05		3809.07		3809.09		3809.11		3809.13		3809.15		3809.17		3809.19		3809.25	
Methylene Chloride	36,000	63,000,000	240	-	<510		<580		<660		<710		<770		<580		<560		<560		<550		<640		<650		<1100		<700	
Benzene	1,100	5,400	0.2	-	<250		<290		<330		<350		<390		<290		<280		<280		<270		<320		<320		<540		<350	
Tetrachloroethene	8,600	41,000	1.6	-	<250		<290		<330		<350		<390		<290		<280		<280		<270		<320		<320		<540		<350	
Chloroform	290	1,500	0.053	-	**450**		**490**		**550**		**460**		**520**		**410**		**430**		**390**		**460**		**440**		**440**		<540		**410**	
Ethylbenzene	5,400	27,000	1.5	-	<510		<580		<660		<710		<770		<580		<560		<560		<550		<640		<650		<1100		**56**	J
TICs	NLE	NLE	NLE	-	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Semivolatile Organic Compounds (SVOCs, µg/kg)																														
Lab Sample ID (All analyses except VOCs collected at approximately 6-12 in. bgs)					3805.26		3805.28		3805.30		3809.02		3809.04		3809.06		3809.08		3809.10		3809.12		3809.14		3809.16		3809.18		3809.24	
Naphthalene	3,600	18,000	0.47	-	**120**	J	<240		<250		<1200		<1200		<1100		<970		<980		<1000		<1100		<1100		**4000**	JD	<1000	
n-Nitrosodiphenylamine	99,000	350,000	57	-	<180		**60**	J	<190		<1200		<1200		<1100		<970		<980		<1000		<1100		<1100		<9800		<1000	
2-Methylnaphthalene	23,000	220,000	14	-	**120**	J	<270		<280		<1200		<1200		<1100		<970		<980		<1000		<1100		<1100		**7600**	JD	<1000	
4-Methylphenol	610,000	6,200,000	110	-	<260		<260		<280		<1200		<1200		<1100		<970		<980		<1000		<1100		<1100		<9800		<1000	
Acenaphthylene	NLE	NLE	NLE	-	**260**		<190		<200		<1200		<1200		<1100		<970		<980		<1000		**480**	J	<1100		**6100**	JD	**170**	J
Acenaphthene	340,000	3,300,000	410	-	<170		<170		<180		<1200		<1200		<1100		<970		<980		<1000		<1100		<1100		<9800		<1000	
Dibenzofuran	7,800	100,000	11	-	<180		<180		<190		<1200		<1200		<1100		<970		<980		<1000		<1100		<1100		<9800		<1000	
Diethylphthalate	4,900,000	49,000,000	470	-	<200		<200		<210		<1200		<1200		<1100		<970		<980		<1000		<1100		<1100		<9800		<1000	
Fluorene	230,000	2,200,000	400	-	<190		<190		<200		<1200		<1200		<1100		<970		<980		<1000		<1100		<1100		<9800		<1000	
Phenanthrene	NLE	NLE	NLE	-	**760**		<190		**150**	J	**140**	J	**280**	J	**190**	J	**160**	J	<980		**140**	J	**1300**		**110**	J	**55000**	D	**490**	J
Anthracene	1,700,000	17,000,000	4200	-	**200**		<190		<200		<1200		<1200		<1100		<970		<980		<1000		**250**	J	<1100		**6700**	JD	<1000	
Dimethylphthalate	NLE	NLE	NLE	-	<150		<150		<160		<1200		<1200		<1100		<970		<980		<1000		<1100		<1100		<9800		<1000	
Di-n-butylphthalate	610,000	6,200,000	170	-	**540**	J	**840**		**580**	J	**330**	JB	**670**	JB	**260**	JB	**660**	JB	**250**	JB	**190**	JB	**650**	JB	**380**	JB	<9800		**580**	JB
Fluoranthene	230,000	2,200,000	7,000	-	**1400**		**190**	J	**160**	J	**370**	J	**370**	J	**220**	J	**160**	J	**280**	J	**190**	J	**2900**		**220**	J	**23000**	D	**620**	J
Pyrene	170,000	1,700,000	950	-	**1100**		**260**		**270**		**400**	J	**560**	J	**310**	J	**270**	J	**340**	J	**180**	J	**3500**		**280**	J	**44000**	D	**990**	J
Pyridine	7,800	100,000	0.53	-	<290		<290		<310		<1200		<1200		<1100		<970		<980		<1000		<1100		<1100		<9800		<1000	
Butylbenzylphthalate	260,000	910,000	200	-	<250		<250		<260		<1200		<1200		<1100		<970		<980		<1000		<1100		<1100		<9800		<1000	
Benzo(a)anthracene	150	2,100	10	-	<190		**110**	J	<200		**230**	J	**200**	J	**120**	J	<970		**140**	J	<1000		**1000**	J	**110**	J	**14000**	D	**350**	J
3,3'-Dichlorobenzidine	1,100	3,800	0.71	-	<340		<340		<350		<1200		<1200		<1100		<970		<980		<1000		<1100		<1100		<9800		<1000	
Chrysene	15,000	210,000	1,100	-	<250		**240**	J	<260		**360**	J	**460**	J	**240**	J	<970		**280**	J	<1000		**2500**		**280**	J	**25000**	D	**850**	J
bis(2-Ethylhexyl)phthalate	35,000	120,000	1,100	-	<270		<270		<290		<1200		<1200		<1100		<970		<980		<1000		<1100		**120**	J	<9800		<1000	
Benzo(b)fluoranthene	150	2,100	35	-	**530**		<240		<250		**180**	J	**190**	J	<1100		<970		<980		<1000		**1100**		**170**	J	**4700**	JD	**380**	J
Benzo(k)fluoranthene	1,500	21,000	350	-	<180		<180		<190		**220**	J	**240**	J	<1100		<970		<980		<1000		**1200**		<1100		**9000**	JD	**400**	J
Benzo(a)pyrene	15	210	4	-	**400**		<180		<190		**200**	J	**240**	J	<1100		<970		<980		<1000		**1000**	J	<1100		**8900**	JD	**380**	J
Indeno(1,2,3-cd)pyrene	150	2,100	200	-	**190**	J	<200		<210		**120**	J	**140**	J	<1100		<970		<980		<1000		**550**	J	<1100		**19000**	D	<1000	
Dibenz(a,h)anthracene	15	210	11	-	**170**	J	<230		<250		<1200		<1200		<1100		<970		<980		<1000		<1100		<1100		**25000**	D	<1000	
Benzo(g,h,i)perylene	NLE	NLE	NLE	-	**190**	J	<230		<250		**210**	J	<1200		<1100		<970		<980		<1000		**490**	J	<1100		**22000**	D	<1000	
Total TICs	NLE	NLE	NLE	-	ND		**3400**		**3400**		**1200**		**11700**		**25710**		**1200**		**1200**		**2300**		**11430**		**880**		**87910**		**32430**	
Pesticides / PCBs (mg/kg)																														
Heptachlor	0.11	0.38	0.00014	-	<0.0003		<0.0003		<0.0003		<0.0004		<0.0035		<0.0034		<0.0003		<0.0003		**0.004**		<0.0030		<0.0030		<0.0003		<0.0003	
Heptachlor Epoxide	0.053	0.19	0.000068	-	<0.0006		<0.0006		<0.0006		<0.0007		<0.0070		<0.0067		<0.0006		<0.0006		<0.0006		<0.0059		<0.0060		<0.0006		<0.0006	
4,4'-DDE	1.4	5.1	0.05	-	**0.028**		**0.057**		**0.057**		<0.0005		**0.473**		**0.313**		**0.013**		**0.088**		**0.013**		**0.315**		**0.233**		**0.104**		**0.457**	
Dieldrin	0.03	0.11	0.000061	-	<0.0005		<0.0005		<0.0005		<0.0006		<0.0058		<0.0056		<0.0005		<0.0005		**0.004**		<0.0049		<0.0050		<0.0005		<0.0005	
Endrin	1.8	18	0.0068	-	<0.0005		<0.0005		<0.0005		<0.0006		<0.0058		<0.0056		<0.0005		<0.0005		<0.0005		<0.0049		<0.0050		<0.0005		<0.0005	
4,4'-DDD	2	7.2	0.01	-	**0.025**		**0.014**		**0.008**		<0.0007		**0.814**		**0.214**		**0.004**		**0.008**		**0.012**		**0.17**		**0.082**		**0.021**		**0.069**	
Endrin Aldehyde	NLE	NLE	NLE	-	<0.0005		<0.0005		<0.0005		<0.0006		<0.0058		<0.0056		<0.0005		<0.0005		<0.0005		<0.0049		<0.0050		<0.0005		<0.0005	
4,4'-DDT	1.7	7	0.07	-	**0.167**		**0.025**		**0.014**		<0.0013		**1.042**		**0.463**		**0.015**		**0.106**		**0.039**		**0.444**		**0.472**		**0.15**		**0.491**	
Endosulfan I	37	370	0.11	-	<0.0005		<0.0005		<0.0005		<0.0006		<0.0058		<0.0056		<0.0005		<0.0005		<0.0005		<0.0049		<0.0050		<0.0005		<0.0005	
Endosulfan II	37	370	0.11	-	<0.0004		<0.0004		<0.0004		<0.0005		<0.0046		<0.0045		<0.0004		<0.0004		<0.0004		<0.0039		<0.0040		<0.0004		<0.0004	
Endosulfan-Sulfate	NLE	NLE	NLE	-	<0.0004		<0.0004		<0.0004		<0.0005		<0.0046		<0.0045		<0.0004		<0.0004		<0.0004		<0.0039		<0.0040		<0.0004		<0.0004	
gamma-Chlordane	1.6	6.5	0.013	-	<0.0005		<0.0005		<0.0005		<0.0006		<0.0058		<0.0056		<0.0005		<0.0005		**0.004**		<0.0049		<0.0050		<0.0005		<0.0005	
alpha-Chlordane	1.6	6.5	0.013	-	<0.0005		<0.0005		<0.0005		<0.0006		<0.0058		<0.0056		<0.0005		<0.0005		**0.001**		<0.0049		<0.0050		<0.0005		<0.0005	
Aroclor 1254	0.22	0.74	0.0082	-	<0.0037		<0.0041		<0.0042		<0.0048		<0.0464		<0.0449		<0.0041		<0.0041		<0.0040		<0.0393		<0.0400		<0.0042		<0.0041	

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Loc ID	USEPA RSL Residential (HQ=0.1)[1]	USEPA RSL Industrial (HQ=0.1)	USEPA RSL Groundwater Protection (Risk-based)	Weston Background [2]	B-209	B-210	B-211	B-212	B-213	B-214	B-215	B-216	B-217	B-218	B-219	B-220	B-220 Dup
Sample Date					08/12/98	08/12/98	08/12/98	08/13/98	08/13/98	08/13/98	08/13/98	08/13/98	08/13/98	08/13/98	08/13/98	08/13/98	08/13/98
Metals (mg/kg)																	
Aluminum	7,700	99,000	2,300	15,200	**6840**	**5330**	**958**	**3050**	**3690**	**6270**	**7680**	**10900**	**8370**	**2150**	**3880**	**4400**	**4200**
Antimony	3.1	41	0.03	ND	**0.87**	**0.665**	<0.229	<0.249	**0.466**	**1.24**	**0.827**	**1.7**	<0.229	<0.189	**0.285**	**0.763**	**0.382**
Arsenic	0.61	2.4	0.0013	22.9	**8.17**	**9.51**	**1.23**	**9**	**10.5**	**10.9**	**6.37**	**18.5**	**5.26**	**5.78**	**7.42**	**10**	**7.26**
Barium	1,500	19,000	12	32.3	**59.7**	**43.6**	**129**	**55.3**	**70.3**	**42.5**	**28.8**	**9.95**	**25**	**24.4**	**98.9**	**70.6**	**36**
Beryllium	16	200	1.3	2	**0.671**	**0.525**	**0.0934**	**0.423**	**0.492**	**0.591**	**0.885**	**1.27**	**0.422**	**0.227**	**0.804**	**0.534**	**0.449**
Cadmium	7	80	0.05	ND	<0.047	<0.055	<0.057	<0.062	<0.069	<0.055	<0.057	<0.052	<0.057	<0.047	**0.115**	<0.053	<0.054
Calcium	NLE	NLE	NLE	921	**1740**	**2000**	**405**	**1440**	**777**	**320**	**747**	**511**	**774**	**901**	**1700**	**983**	**779**
Chromium	12,000	150,000	2,800,000	269	**43.7**	**36.8**	**2.75**	**5.38**	**26.1**	**67.3**	**78.2**	**122**	**28.8**	**12.9**	**21.4**	**37.5**	**25.5**
Cobalt	2.3	30	0.02	2.5	**3.08**	**2.66**	**1.56**	**2.47**	**2.82**	**0.937**	**1.07**	**0.799**	**1.68**	**1.77**	**2.73**	**2.52**	**2.24**
Copper	310	4,100	2.2	8	**36.6**	**26.3**	**12.1**	**14.6**	**33.1**	**7.75**	**4.39**	**3.87**	**4.41**	**24.9**	**30.3**	**29.8**	**30**
Iron	5500	72,000	27	55,800	**18600**	**15500**	**2220**	**5180**	**16000**	**36000**	**24600**	**36400**	**11900**	**6370**	**10700**	**19400**	**14500**
Lead	400	800	NLE	19.5	**289**	**73.8**	**7.32**	**25.3**	**146**	**20.2**	**11.8**	**12.6**	**23.4**	**54.3**	**117**	**122**	**162**
Magnesium	NLE	NLE	NLE	7,230	**1800**	**1850**	**136**	**316**	**918**	**2080**	**2350**	**3600**	**1120**	**443**	**2390**	**1440**	**839**
Manganese	180	2,300	2.1	90.7	**72.7**	**73.2**	**25.5**	**23.1**	**105**	**13**	**31.9**	**26.6**	**48.9**	**30**	**103**	**49.5**	**43.7**
Mercury	1	4.3	0.0033	ND	**0.072**	**0.036**	<0.020	**0.041**	**0.645**	**0.244**	**0.061**	**0.042**	**0.095**	**0.159**	**0.236**	**2.341**	**31.452**
Nickel	150	2000	2	8.4	**10.4**	**7.49**	**3.63**	**5.3**	**11**	**4.41**	**4.35**	**4.77**	**4.55**	**4.61**	**6.11**	**6.6**	**6.3**
Potassium	NLE	NLE	NLE	15,400	**2920**	**3840**	**248**	**369**	**2690**	**4850**	**4890**	**6900**	**3200**	**882**	**2270**	**4340**	**2170**
Selenium	39	510	0.04	1.9	<0.282	<0.331	<0.343	<0.373	**0.618**	<0.331	<0.342	<0.312	<0.343	**0.582**	<0.359	<0.315	<0.327
Silver	39	510	0.06	1.1	<0.282	<0.331	<0.343	<0.373	<0.411	<0.331	<0.342	<0.312	<0.343	<0.284	<0.359	<0.315	<0.327
Sodium	NLE	NLE	NLE	51.6	**294**	**327**	**159**	**349**	**412**	**650**	**132**	**101**	**95.2**	**142**	**491**	**386**	**218**
Thallium	0.08	1	0.0011	ND	<0.282	<0.331	**0.422**	**0.437**	<0.411	**0.564**	**0.531**	**0.738**	<0.343	**0.348**	<0.359	**0.54**	<0.327
Vanadium	39	510	6.3	94.1	**38.1**	**32.7**	**5.82**	**11.2**	**21.5**	**38.4**	**48.5**	**45.5**	**24.2**	**16**	**20.5**	**28.3**	**25.1**
Zinc	2,300	31,000	29	81.4	**197**	**48**	**11.7**	**22.3**	**178**	**27.8**	**43.1**	**34**	**28.6**	**30.6**	**67.3**	**57.2**	**31.1**

Notes:

Historically, there have been up to 318 soil boring locations associated with FTMM-05. This analysis looks at only those boring locations that fall within the footprint of FTMM-05.

(1) U.S. Environmental Protection Agency, Regional Screening Levels (RSLs). Residential Soil (TR=1E-06, HQ = 0.1). (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Revised November 2013.

(2) Weston, 1995. Final Site Investigation - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December
USEPA RSL for Endosulfan is used for Endosulfan II
USEPA RSL for Chromium III is used for Chromium
RSL values were current at the time the screening was conducted.
Dash (--) = only background concentrations for metals are being used as comparison criteria.
B = Analyte detected in both sample and associated laboratory blank.
D = Result from dilution of sample.
DUP = field duplicate sample.
E = Estimated value.
J = Analyte detected between MDL and practical quantitation limit (PQL).
NA = not analyzed.
ND = not detected.
NLE = No limit established.
< = analyte not detected above method detection limit (MDL).
µg/kg = micrograms per kilogram.
mg/kg = milligrams per kilogram.
VOCs = volatile organic compounds.
in. = inches.
bgs = below ground surface.
Detections are bolded.
Shaded cells = concentration exceeds USEPA Groundwater Protection RSL.
Shaded cells = concentration exceeds USEPA Residential and/or Industrial RSL.
Shaded cells = concentration exceeds all three USEPA comparison criteria.
Shaded cells = concentration exceeds Weston (1995) background concentration.

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Loc ID	USEPA RSL Residential (HQ=0.1)[1]	USEPA RSL Industrial (HQ=0.1)	USEPA RSL Groundwater Protection (Risk-based)	Weston Background [2]	B-221		B-222		B-223		B-224		B-225		B-226		B-227		B-228		B-229		B-230		B-231		B-232		B-233	
Sample Date					08/13/98		08/13/98		08/14/98		08/14/98		08/14/98		08/14/98		08/14/98		08/14/98		08/14/98		08/14/98		08/14/98		08/25/98		08/25/98	
Volatile Organic Compounds (VOCS, µg/kg)																														
Lab Sample ID (VOCs only collected at approximately 24 in. bgs)					3809.21		3809.23		3812.03		3812.05		3812.07		3812.09		3812.11		3812.13		3812.15		3812.17		3812.19		3827.03		3827.05	
Methylene Chloride	36,000	63,000,000	240	-	<690		<840		<530		<470		<500		<490		<600		<510		<540		<480		<480		<510		<530	
Benzene	1,100	5,400	0.2	-	<340		<420		<260		<240		<250		<240		<300		<260		<270		<240		<240		<250		<260	
Tetrachloroethene	8,600	41,000	1.6	-	<340		<420		<260		<240		<250		<240		<300		<260		<270		<240		<240		<250		<260	
Chloroform	290	1,500	0.053	-	**400**		**480**		<260		<240		<250		<240		<300		<260		<270		<240		<240		<250		<260	
Ethylbenzene	5,400	27,000	1.5	-	<690		<840		<530		<470		<500		<490		<600		<510		<540		<480		<480		<510		<530	
TICs	NLE	NLE	NLE	-	ND		**2700**		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		**1600**	
Semivolatile Organic Compounds (SVOCs, µg/kg)																														
Lab Sample ID (All analyses except VOCs collected at approximately 6-12 in. bgs)					3809.20		3809.22		3812.02		3812.04		3812.06		3812.08		3812.10		3812.12		3812.14		3812.16		3812.18		3827.02		3827.04	
Naphthalene	3,600	18,000	0.47	-	<1100		<1100		<1100		<950		<1000		<1000		<1200		<1000		<1100		<960		<970		<1000		<1100	
n-Nitrosodiphenylamine	99,000	350,000	57	-	<1100		<1100		<1100		<950		<1000		<1000		<1200		<1000		<1100		<960		<970		<1000		<1100	
2-Methylnaphthalene	23,000	220,000	14	-	<1100		<1100		<1100		<950		<1000		<1000		<1200		<1000		<1100		<960		<970		<1000		<1100	
4-Methylphenol	610,000	6,200,000	110	-	<1100		<1100		<1100		<950		<1000		<1000		<1200		<1000		<1100		<960		<970		<1000		<1100	
Acenaphthylene	NLE	NLE	NLE	-	**120**	J	<1100		**260**	J	<950		**120**	J	**110**	J	<1200		<1000		<1100		<960		<970		<1000		**230**	J
Acenaphthene	340,000	3,300,000	410	-	<1100		<1100		<1100		<950		<1000		<1000		<1200		<1000		<1100		<960		<970		<1000		<1100	
Dibenzofuran	7,800	100,000	11	-	<1100		<1100		<1100		<950		<1000		<1000		<1200		<1000		<1100		<960		<970		<1000		<1100	
Diethylphthalate	4,900,000	49,000,000	470	-	<1100		<1100		<1100		<950		<1000		<1000		<1200		<1000		<1100		<960		<970		<1000		<1100	
Fluorene	230,000	2,200,000	400	-	<1100		<1100		<1100		<950		<1000		<1000		<1200		<1000		<1100		<960		<970		<1000		<1100	
Phenanthrene	NLE	NLE	NLE	-	**560**	J	**220**	J	**1000**	J	<950		**420**	J	**360**	J	<1200		**170**	J	**280**	J	**310**	J	<970		<1000		**590**	J
Anthracene	1,700,000	17,000,000	4200	-	<1100		<1100		**150**	J	<950		<1000		<1000		<1200		<1000		<1100		<960		<970		<1000		**170**	J
Dimethylphthalate	NLE	NLE	NLE	-	<1100		<1100		<1100		<950		<1000		<1000		<1200		<1000		<1100		<960		<970		<1000		<1100	
Di-n-butylphthalate	610,000	6,200,000	170	-	**220**	JB	**1000**	JB	**310**	JB	**490**	JB	**210**	JB	**530**	JB	**210**	JB	**670**	JB	**710**	JB	**470**	JB	**160**	JB	**420**	J	**450**	J
Fluoranthene	230,000	2,200,000	7,000	-	**640**	J	**270**	J	**1300**		**95**	J	**710**	J	**500**	J	<1200		**160**	J	**290**	J	**360**	J	**250**	J	**130**	J	**950**	J
Pyrene	170,000	1,700,000	950	-	**900**	J	**370**	J	**1900**		**110**	J	**890**	J	**700**	J	**140**	J	**270**	J	**430**	J	**550**	J	**380**	J	**200**	J	**1200**	
Pyridine	7,800	100,000	0.53	-	<1100		<1100		<1100		<950		<1000		<1000		<1200		<1000		<1100		<960		<970		<1000		<1100	
Butylbenzylphthalate	260,000	910,000	200	-	<1100		<1100		<1100		<950		<1000		<1000		<1200		<1000		<1100		<960		<970		<1000		<1100	
Benzo(a)anthracene	150	2,100	10	-	**320**	J	**160**	J	**700**	J	<950		**240**	J	**280**	J	<1200		<1000		**160**	J	**190**	J	**130**	J	<1000		**570**	J
3,3'-Dichlorobenzidine	1,100	3,800	0.71	-	<1100		<1100		<1100		<950		<1000		<1000		<1200		<1000		<1100		<960		<970		<1000		<1100	
Chrysene	15,000	210,000	1,100	-	**680**	J	**290**	J	**1500**		<950		**720**	J	**610**	J	<1200		**200**	J	**340**	J	**450**	J	**350**	J	<1000		**1000**	J
bis(2-Ethylhexyl)phthalate	35,000	120,000	1,100	-	<1100		<1100		<1100		<950		<1000		<1000		<1200		<1000		<1100		<960		<970		<1000		<1100	
Benzo(b)fluoranthene	150	2,100	35	-	**330**	J	**140**	J	**670**	J	<950		**320**	J	**310**	J	<1200		<1000		**130**	J	**180**	J	**140**	J	<1000		**450**	J
Benzo(k)fluoranthene	1,500	21,000	350	-	**430**	J	**180**	J	**720**	J	<950		**380**	J	**360**	J	<1200		<1000		**200**	J	**210**	J	**160**	J	<1000		**620**	J
Benzo(a)pyrene	15	210	4	-	**360**	J	**130**	J	**770**	J	<950		**280**	J	**320**	J	<1200		<1000		**150**	J	**210**	J	**150**	J	<1000		**570**	J
Indeno(1,2,3-cd)pyrene	150	2,100	200	-	<1100		<1100		**550**	J	<950		**200**	J	**200**	J	<1200		<1000		<1100		**120**	J	<970		<1000		**330**	J
Dibenz(a,h)anthracene	15	210	11	-	<1100		<1100		<1100		<950		<1000		<1000		<1200		<1000		<1100		<960		<970		<1000		<1100	
Benzo(g,h,i)perylene	NLE	NLE	NLE	-	<1100		<1100		**490**	J	<950		**210**	J	**190**	J	<1200		<1000		<1100		**130**	J	<970		<1000		**290**	J
Total TICs	NLE	NLE	NLE	-	**32510**		**41840**		**24000**		**8810**		**13740**		**25150**		ND		**6050**		**15710**		**22080**		**3400**		**7200**		**5400**	
Pesticides / PCBs (mg/kg)																														
Heptachlor	0.11	0.38	0.00014	-	<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0037		<0.0033		<0.0032		<0.0015		<0.0015		<0.0032		<0.0007	
Heptachlor Epoxide	0.053	0.19	0.000068	-	<0.0007		<0.0007		<0.0006		**0.01**		<0.0006		<0.0006		<0.0074		<0.0066		<0.0064		<0.0031		<0.0031		<0.0064		<0.0013	
4,4'-DDE	1.4	5.1	0.05	-	**0.433**		**0.068**		**0.644**		**0.024**		**0.422**		**0.612**		**0.241**		**0.262**		**0.169**		**0.483**		**0.366**		<0.0043		**0.104**	
Dieldrin	0.03	0.11	0.000061	-	<0.0006		<0.0006		<0.0005		**0.003**		<0.0005		<0.0005		<0.0062		<0.0055		<0.0053		<0.0026		<0.0025		<0.0053		<0.0011	
Endrin	1.8	18	0.0068	-	<0.0006		<0.0006		<0.0005		<0.0005		<0.0005		<0.0005		<0.0062		<0.0055		<0.0053		<0.0026		<0.0025		<0.0053		<0.0011	
4,4'-DDD	2	7.2	0.01	-	**2.225**		**0.03**		<0.0006		**0.004**		**0.048**		**0.164**		**0.276**		**0.419**		**0.179**		**0.127**		**0.089**		**0.181**		**0.068**	
Endrin Aldehyde	NLE	NLE	NLE	-	<0.0006		<0.0006		**0.061**		<0.0005		<0.0005		<0.0005		<0.0062		<0.0055		<0.0053		<0.0026		<0.0025		<0.0053		<0.0011	
4,4'-DDT	1.7	7	0.07	-	**5.604**		**0.427**		**1.237**		**0.05**		**1**		**0.973**		**0.859**		<0.0121		**1.07**		**0.833**		**0.626**		**1.344**		**0.345**	
Endosulfan I	37	370	0.11	-	<0.0006		<0.0006		<0.0005		<0.0005		<0.0005		<0.0005		<0.0062		<0.0055		<0.0053		<0.0026		<0.0025		<0.0053		<0.0011	
Endosulfan II	37	370	0.11	-	<0.0005		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0049		<0.0044		<0.0042		<0.0021		<0.0020		<0.0043		<0.0009	
Endosulfan-Sulfate	NLE	NLE	NLE	-	<0.0005		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0049		<0.0439		**2.215**		<0.0021		<0.0020		<0.0043		<0.0009	
gamma-Chlordane	1.6	6.5	0.013	-	<0.0006		<0.0006		<0.0005		**0.002**		<0.0005		<0.0005		<0.0062		<0.0055		<0.0053		<0.0026		<0.0025		**0.007**		<0.0011	
alpha-Chlordane	1.6	6.5	0.013	-	<0.0006		<0.0006		<0.0005		<0.0005		<0.0005		<0.0005		<0.0062		<0.0055		<0.0053		<0.0026		<0.0025		**0.01**		<0.0011	
Aroclor 1254	0.22	0.74	0.0082	-	<0.0045		<0.0044		<0.0039		<0.0039		<0.0041		<0.0043		<0.0492		<0.0439		<0.0424		<0.0205		<0.0203		<0.0426		<0.0087	

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Loc ID	USEPA RSL Residential (HQ=0.1)(1)	USEPA RSL Industrial (HQ=0.1)	USEPA RSL Groundwater Protection (Risk-based)	Weston Background (2)	B-221	B-222	B-223	B-224	B-225	B-226	B-227	B-228	B-229	B-230	B-231	B-232	B-233
Sample Date					08/13/98	08/13/98	08/14/98	08/14/98	08/14/98	08/14/98	08/14/98	08/14/98	08/14/98	08/14/98	08/14/98	08/25/98	08/25/98
Metals (mg/kg)																	
Aluminum	7,700	99,000	2,300	15,200	**7220**	**6310**	**8000**	**8920**	**3360**	**5370**	**6730**	**8520**	**4570**	**6620**	**7420**	**7250**	**3370**
Antimony	3.1	41	0.03	ND	**1.38**	**0.483**	**0.759**	<0.200	**0.444**	**0.648**	<0.220	**1.17**	**1.06**	**0.918**	**1.12**	**1.28**	**0.374**
Arsenic	0.61	2.4	0.0013	22.9	**9.59**	**10.2**	**8.04**	**4.76**	**6.16**	**7.7**	**6.64**	**8.79**	**11**	**9.13**	**7.76**	**9.52**	**6.66**
Barium	1,500	19,000	12	32.3	**55.2**	**26**	**40.3**	**25.7**	**28.3**	**47.9**	**38.5**	**39.9**	**31.5**	**19**	**31**	**45.3**	**35.5**
Beryllium	16	200	1.3	2	**1.1**	**0.446**	**0.764**	**0.399**	**0.336**	**0.719**	**0.916**	**1.43**	**0.514**	**0.723**	**0.786**	**0.958**	**0.5**
Cadmium	7	80	0.05	ND	<0.060	<0.059	<0.056	<0.050	<0.054	<0.059	<0.055	<0.056	<0.057	<0.048	<0.053	<0.060	<0.061
Calcium	NLE	NLE	NLE	921	**654**	**314**	**1210**	**606**	**631**	**1020**	**519**	**395**	**344**	**420**	**786**	**862**	**708**
Chromium	12,000	150,000	2,800,000	269	**74.3**	**69**	**60.4**	**27.1**	**22.4**	**44.1**	**73.2**	**92.1**	**51.5**	**62.7**	**59.1**	**74.3**	**20.6**
Cobalt	2.3	30	0.02	2.5	**1.09**	**1.08**	**2.47**	**1.6**	**1.47**	**2.1**	**0.94**	**1.42**	**0.718**	**1.55**	**2.61**	**1.36**	**3.37**
Copper	310	4,100	2.2	8	**32.9**	**4.04**	**22**	**3.7**	**23.1**	**32.9**	**8.81**	**5.93**	**17.7**	**11.6**	**12.9**	**14.2**	**11.9**
Iron	5500	72,000	27	55,800	**28900**	**17800**	**21500**	**11300**	**10800**	**18800**	**25700**	**30100**	**30800**	**20200**	**26600**	**29600**	**12200**
Lead	400	800	NLE	19.5	**137**	**12.9**	**67.7**	**15.3**	**81.2**	**111**	**21.4**	**23.9**	**18.8**	**36.3**	**47.5**	**55.9**	**25.5**
Magnesium	NLE	NLE	NLE	7,230	**2280**	**1680**	**2160**	**1040**	**748**	**1470**	**2690**	**2940**	**1530**	**1890**	**1430**	**2260**	**684**
Manganese	180	2,300	2.1	90.7	**20.7**	**12.9**	**69.5**	**46.6**	**29.2**	**40**	**11.5**	**26.8**	**10.5**	**45.2**	**45.2**	**21.2**	**61.6**
Mercury	1	4.3	0.0033	ND	**0.392**	**0.197**	**0.096**	**0.351**	**0.301**	**0.283**	**0.198**	**0.212**	**0.182**	**0.067**	**0.078**	**0.278**	**0.22**
Nickel	150	2000	2	8.4	**5.86**	**4.76**	**8.15**	**4.31**	**5.43**	**7.43**	**4.49**	**5.39**	**3.49**	**5.19**	**9.07**	**6.07**	**6.49**
Potassium	NLE	NLE	NLE	15,400	**4950**	**5820**	**4300**	**3180**	**1920**	**4750**	**5430**	**6580**	**3610**	**3780**	**5360**	**4740**	**1950**
Selenium	39	510	0.04	1.9	<0.360	**0.353**	<0.335	<0.300	<0.325	<0.355	<0.329	<0.336	<0.344	<0.289	<0.317	<0.359	<0.365
Silver	39	510	0.06	1.1	<0.360	<0.352	<0.335	<0.300	<0.325	<0.355	<0.329	<0.336	<0.344	<0.289	<0.317	<0.359	<0.365
Sodium	NLE	NLE	NLE	51.6	**723**	**572**	**168**	**94.2**	**262**	**448**	**483**	**315**	**565**	**135**	**241**	**360**	**297**
Thallium	0.08	1	0.0011	ND	<0.360	**0.527**	<0.335	<0.300	**0.457**	**0.457**	**0.898**	**0.567**	**0.69**	<0.289	**0.429**	**0.725**	**0.456**
Vanadium	39	510	6.3	94.1	**34.4**	**38.7**	**41.8**	**23.5**	**23.1**	**28.9**	**24.8**	**32.1**	**34**	**42.3**	**60.8**	**40.3**	**15.7**
Zinc	2,300	31,000	29	81.4	**62**	**25.8**	**79.5**	**23.5**	**48**	**50.3**	**34.3**	**50.8**	**43.5**	**32.1**	**36.3**	**43.4**	**59.6**

Notes:

Historically, there have been up to 318 soil boring locations associated with FTMM-05. This analysis looks at only those boring locations that fall within the footprint of FTMM-05.

(1) U.S. Environmental Protection Agency, Regional Screening Levels (RSLs). Residential Soil (TR=1E-06, HQ = 0.1). (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Revised November 2013.

(2) Weston, 1995. Final Site Investigation - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December
USEPA RSL for Endosulfan is used for Endosulfan II
USEPA RSL for Chromium III is used for Chromium
RSL values were current at the time the screening was conducted.
Dash (--) = only background concentrations for metals are being used as comparison criteria.
B = Analyte detected in both sample and associated laboratory blank.
D = Result from dilution of sample.
DUP = field duplicate sample.
E = Estimated value.
J = Analyte detected between MDL and practical quantitation limit (PQL).
NA = not analyzed.
ND = not detected.
NLE = No limit established.
< = analyte not detected above method detection limit (MDL).
µg/kg = micrograms per kilogram.
mg/kg = milligrams per kilogram.
VOCs = volatile organic compounds.
in. = inches.
bgs = below ground surface.
Detections are bolded.
Shaded cells = concentration exceeds USEPA Groundwater Protection RSL.
Shaded cells = concentration exceeds USEPA Residential and/or Industrial RSL.
Shaded cells = concentration exceeds all three USEPA comparison criteria.
Shaded cells = concentration exceeds Weston (1995) background concentration.

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Loc ID	USEPA RSL Residential (HQ=0.1)[1]	USEPA RSL Industrial (HQ=0.1)	USEPA RSL Groundwater Protection (Risk-based)	Weston Background [2]	B-234		B-235		B-236		B-237		B-238		B-239		B-240		B-240 Dup		B-241		B-242		B-243		B-244		B-245		B-246		B-247	
Sample Date					08/25/98		08/25/98		08/25/98		08/26/98		08/26/98		08/26/98		08/26/98		08/26/98		08/26/98		08/26/98		08/26/98		08/26/98		08/26/98		08/26/98		08/26/98	
Volatile Organic Compounds (VOCS, µg/kg)																																		
Lab Sample ID (VOCs only collected at approximately 24 in. bgs)					3827.07		3827.09		3827.11		3836.03		3836.05		3836.07		3836.09		3836.39		3836.11		3836.13		3836.15		3836.17		3836.19		3836.21		3836.23	
Methylene Chloride	36,000	63,000,000	240	-	<580		<520		<550		<550		<610		<840		<760		**6400**		<1000		<670		<670		<570		<620		<940		<620	
Benzene	1,100	5,400	0.2	-	<290		<260		**340**		<270		<300		<420		<380		<350		<500		<330		<340		<290		<310		<470		<310	
Tetrachloroethene	8,600	41,000	1.6	-	<290		<260		<280		<270		<300		<420		<380		<350		<500		<330		<340		<290		<310		<470		<310	
Chloroform	290	1,500	0.053	-	<290		<260		<280		<270		<300		<420		<380		<350		<500		<330		<340		<290		<310		<470		<310	
Ethylbenzene	5,400	27,000	1.5	-	<580		<520		<550		<550		<610		<840		<760		<700		<1000		<670		<670		<570		<620		<940		<620	
TICs	NLE	NLE	NLE	-	**1900**		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	
Semivolatile Organic Compounds (SVOCs, µg/kg)																																		
Lab Sample ID (All analyses except VOCs collected at approximately 6-12 in. bgs)					3827.06		3827.08		3827.10		3836.02		3836.04		3836.06		3836.08		3836.38		3836.10		3836.12		3836.14		3836.16		3836.18		3836.20		3836.22	
Naphthalene	3,600	18,000	0.47	-	<1200		<1000		<1100		<1100		<1000		<1100		<1000		<1100		<1000		<990		<1400		<1100		<1100		<1100		<1000	
n-Nitrosodiphenylamine	99,000	350,000	57	-	<1200		<1000		<1100		<1100		<1000		<1100		<1000		<1100		<1000		<990		<1400		<1100		<1100		<1100		<1000	
2-Methylnaphthalene	23,000	220,000	14	-	<1200		<1000		<1100		<1100		<1000		<1100		<1000		<1100		<1000		<990		<1400		<1100		<1100		<1100		<1000	
4-Methylphenol	610,000	6,200,000	110	-	<1200		<1000		<1100		<1100		<1000		<1100		<1000		<1100		<1000		<990		<1400		<1100		<1100		<1100		<1000	
Acenaphthylene	NLE	NLE	NLE	-	<1200		<1000		**200**	J	<1100		<1000		**340**	J	**260**	J	**280**	J	<1000		<990		<1400		**210**	J	<1100		<1100		<1000	
Acenaphthene	340,000	3,300,000	410	-	**210**	J	<1000		<1100		<1100		<1000		<1100		<1000		<1100		<1000		<990		<1400		<1100		<1100		<1100		<1000	
Dibenzofuran	7,800	100,000	11	-	<1200		<1000		<1100		<1100		<1000		<1100		<1000		<1100		<1000		<990		<1400		<1100		<1100		<1100		<1000	
Diethylphthalate	4,900,000	49,000,000	470	-	<1200		<1000		<1100		<1100		<1000		<1100		<1000		<1100		<1000		<990		<1400		<1100		<1100		<1100		<1000	
Fluorene	230,000	2,200,000	400	-	**260**	J	<1000		<1100		<1100		<1000		<1100		<1000		<1100		<1000		<990		<1400		<1100		<1100		<1100		<1000	
Phenanthrene	NLE	NLE	NLE	-	**3200**		**370**	J	**670**	J	**300**	J	**440**	J	**1000**	J	**990**	J	**2800**		**210**	J	<990		<1400		**1100**		**440**	J	**360**	J	<1000	
Anthracene	1,700,000	17,000,000	4200	-	**750**	J	<1000		**120**	J	<1100		<1000		<1100		<1000		**440**	J	<1000		<990		<1400		<1100		<1100		<1100		<1000	
Dimethylphthalate	NLE	NLE	NLE	-	<1200		<1000		<1100		<1100		<1000		<1100		<1000		<1100		<1000		<990		<1400		<1100		<1100		<1100		<1000	
Di-n-butylphthalate	610,000	6,200,000	170	-	**580**	J	**410**	J	**280**	J	**320**	J	<1000		**190**	J	**440**	J	<1100		**420**	J	<990		**290**	J	**960**	J	**460**	J	**960**	J	**440**	J
Fluoranthene	230,000	2,200,000	7,000	-	**5100**		**410**	J	**700**	J	**310**	J	**350**	J	**950**	J	**850**	J	**2900**		**250**	J	**180**	J	<1400		**720**	J	**420**	J	**360**	J	**190**	J
Pyrene	170,000	1,700,000	950	-	**4700**		**570**	J	**1100**		**610**	J	**580**	J	**1800**		**1600**		**3600**		**390**	J	**310**	J	<1400		**1400**		**680**	J	**570**	J	**310**	J
Pyridine	7,800	100,000	0.53	-	<1200		<1000		<1100		<1100		<1000		<1100		<1000		<1100		<1000		<990		<1400		<1100		<1100		<1100		<1000	
Butylbenzylphthalate	260,000	910,000	200	-	<1200		<1000		<1100		<1100		<1000		<1100		<1000		<1100		<1000		<990		<1400		<1100		<1100		<1100		<1000	
Benzo(a)anthracene	150	2,100	10	-	**2100**		**220**	J	**380**	J	**220**	J	**200**	J	**550**	J	**510**	J	**1200**		<1000		<990		<1400		**410**	J	**220**	J	<1100		<1000	
3,3'-Dichlorobenzidine	1,100	3,800	0.71	-	<1200		<1000		<1100		<1100		<1000		<1100		<1000		<1100		<1000		<990		<1400		<1100		<1100		<1100		<1000	
Chrysene	15,000	210,000	1,100	-	**3100**		**450**	J	**860**	J	**490**	J	**410**	J	**1300**		**1100**		**2100**		<1000		<990		<1400		**880**	J	**460**	J	<1100		<1000	
bis(2-Ethylhexyl)phthalate	35,000	120,000	1,100	-	**130**	J	<1000		<1100		<1100		<1000		<1100		<1000		<1100		<1000		<990		<1400		<1100		<1100		<1100		<1000	
Benzo(b)fluoranthene	150	2,100	35	-	**1600**		**200**	J	**340**	J	<1100		<1000		**500**	J	**410**	J	**1100**	J	<1000		<990		<1400		<1100		<1100		<1100		<1000	
Benzo(k)fluoranthene	1,500	21,000	350	-	**1500**		**240**	J	**420**	J	<1100		<1000		**520**	J	**470**	J	**1000**	J	<1000		<990		<1400		<1100		<1100		<1100		<1000	
Benzo(a)pyrene	15	210	4	-	**1600**		**210**	J	**400**	J	<1100		<1000		**560**	J	**510**	J	**1100**	J	<1000		<990		<1400		<1100		<1100		<1100		<1000	
Indeno(1,2,3-cd)pyrene	150	2,100	200	-	**880**	J	<1000		**180**	J	<1100		<1000		**240**	J	**210**	J	**590**	J	<1000		<990		<1400		<1100		<1100		<1100		<1000	
Dibenz(a,h)anthracene	15	210	11	-	<1200		<1000		<1100		<1100		<1000		<1100		<1000		<1100		<1000		<990		<1400		<1100		<1100		<1100		<1000	
Benzo(g,h,i)perylene	NLE	NLE	NLE	-	**650**	J	**120**	J	**190**	J	<1100		<1000		**230**	J	**220**	J	**540**	J	<1000		<990		<1400		<1100		<1100		<1100		<1000	
Total TICs	NLE	NLE	NLE	-	**16500**		**20710**		**15570**		**4500**		**4950**		ND		**44620**		**20300**		**12700**		**7250**		**23700**		**32940**		**15450**		**20700**		**10500**	
Pesticides / PCBs (mg/kg)																																		
Heptachlor	0.11	0.38	0.00014	-	<0.0017		<0.0016		<0.0033		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0004		<0.0003		<0.0003		<0.0003		<0.0003	
Heptachlor Epoxide	0.053	0.19	0.000068	-	<0.0034		<0.0032		<0.0066		<0.0006		<0.0006		<0.0006		<0.0007		<0.0007		<0.0006		<0.0006		<0.0008		<0.0007		<0.0007		<0.0006		<0.0006	
4,4'-DDE	1.4	5.1	0.05	-	**0.08**		**0.204**		**0.272**		**0.275**		**0.412**		**0.592**		**0.445**		**0.34**		**0.195**		**0.036**		**0.135**		**1.003**		**0.164**		**0.33**		**0.408**	
Dieldrin	0.03	0.11	0.000061	-	<0.0028		<0.0026		<0.0055		<0.0005		<0.0005		**0.049**		<0.0006		<0.0006		<0.0005		<0.0005		<0.0007		<0.0005		<0.0005		<0.0005		<0.0005	
Endrin	1.8	18	0.0068	-	<0.0028		<0.0026		<0.0055		<0.0005		<0.0005		<0.0005		<0.0006		<0.0006		<0.0005		<0.0005		<0.0007		<0.0005		<0.0005		<0.0005		<0.0005	
4,4'-DDD	2	7.2	0.01	-	**0.143**		**0.209**		**0.158**		**0.021**		**0.033**		**0.779**		**0.287**		**0.109**		**0.077**		**0.056**		**0.037**		**0.178**		**0.08**		**0.171**		**0.145**	
Endrin Aldehyde	NLE	NLE	NLE	-	<0.0028		<0.0026		<0.0055		<0.0005		<0.0005		<0.0005		<0.0006		<0.0006		<0.0005		<0.0005		<0.0007		<0.0005		<0.0005		<0.0005		<0.0005	
4,4'-DDT	1.7	7	0.07	-	**1.143**		**1.028**		**1.28**		**0.65**		**1.438**		**2.914**		**1.636**		**0.822**		**0.599**		**0.07**		**0.62**		**2.781**		**0.789**		**2.226**		**1.918**	
Endosulfan I	37	370	0.11	-	<0.0028		<0.0026		<0.0055		<0.0005		<0.0005		<0.0005		<0.0006		<0.0006		<0.0005		<0.0005		<0.0007		<0.0005		<0.0006		<0.0005		<0.0005	
Endosulfan II	37	370	0.11	-	<0.0023		<0.0021		<0.0044		<0.0004		<0.0004		<0.0004		<0.0004		<0.0005		<0.0004		<0.0004		<0.0006		<0.0004		<0.0004		<0.0004		<0.0004	
Endosulfan-Sulfate	NLE	NLE	NLE	-	<0.0023		<0.0021		<0.0044		<0.0004		<0.0004		<0.0004		<0.0004		<0.0005		<0.0004		<0.0004		<0.0006		<0.0004		<0.0004		<0.0004		<0.0004	
gamma-Chlordane	1.6	6.5	0.013	-	<0.0028		<0.0026		<0.0055		**0.012**		**0.007**		**0.004**		<0.0006		<0.0006		<0.0005		<0.0005		<0.0007		<0.0005		<0.0005		<0.0005		<0.0005	
alpha-Chlordane	1.6	6.5	0.013	-	<0.0028		<0.0026		<0.0055		**0.011**		**0.007**		**0.003**		**0.002**		<0.0006		<0.0005		<0.0005		<0.0007		<0.0005		<0.0005		**0.003**		<0.0005	
Aroclor 1254	0.22	0.74	0.0082	-	<0.0226		<0.0211		<0.0442		<0.0042		<0.0040		<0.0042		<0.0044		<0.0046		<0.0042		<0.0042		<0.0056		<0.0043		<0.0044		<0.0043		<0.0043	

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Loc ID	USEPA RSL Residential (HQ=0.1)[1]	USEPA RSL Industrial (HQ=0.1)	USEPA RSL Groundwater Protection (Risk-based)	Weston Background [2]	B-234	B-235	B-236	B-237	B-238	B-239	B-240	B-240 Dup	B-241	B-242	B-243	B-244	B-245	B-246	B-247
Sample Date					08/25/98	08/25/98	08/25/98	08/26/98	08/26/98	08/26/98	08/26/98	08/26/98	08/26/98	08/26/98	08/26/98	08/26/98	08/26/98	08/26/98	08/26/98
Metals (mg/kg)																			
Aluminum	7,700	99,000	2,300	15,200	**4870**	**5200**	**10200**	**4020**	**6180**	**5840**	**7580**	**6210**	**5080**	**5800**	**7380**	**3900**	**8730**	**5890**	**5890**
Antimony	3.1	41	0.03	ND	**0.9**	**1.04**	**1.67**	**0.604**	**0.948**	**0.721**	**1.16**	**0.999**	**0.821**	**0.593**	**1.15**	**0.495**	**1.28**	**0.94**	**0.931**
Arsenic	0.61	2.4	0.0013	22.9	**6.23**	**7.87**	**9.48**	**5.11**	**8.95**	**9.08**	**12.6**	**9.78**	**7.6**	**6.45**	**10**	**6.62**	**9.43**	**8.91**	**8.61**
Barium	1,500	19,000	12	32.3	**25.8**	**36.4**	**36.3**	**16.8**	**20.1**	**49.4**	**48.1**	**45.3**	**46.5**	**24.5**	**51**	**34.5**	**53.7**	**53.3**	**40.9**
Beryllium	16	200	1.3	2	**0.861**	**0.887**	**1.39**	**0.479**	**0.733**	**0.799**	**0.949**	**0.775**	**1.15**	**0.736**	**0.927**	**0.45**	**1.25**	**0.811**	**1.02**
Cadmium	7	80	0.05	ND	<0.065	<0.057	<0.063	<0.050	<0.054	<0.060	<0.058	<0.059	<0.059	**45.8**	<0.079	<0.059	<0.064	<0.059	<0.059
Calcium	NLE	NLE	NLE	921	**199**	**442**	**583**	**595**	**290**	**371**	**421**	**508**	**332**	**575**	**427**	**929**	**396**	**306**	**787**
Chromium	12,000	150,000	2,800,000	269	**55.4**	**57.3**	**112**	**40.3**	**59.8**	**61.8**	**71.4**	**61.9**	**52.1**	**45.8**	**72**	**31.3**	**88.1**	**63.2**	**60.5**
Cobalt	2.3	30	0.02	2.5	**0.88**	**0.948**	**1.67**	**1.79**	**2.79**	**1.01**	**1.26**	**1.07**	**1.11**	**0.951**	**2.04**	**1.85**	**1.68**	**0.96**	**0.998**
Copper	310	4,100	2.2	8	**2.95**	**10.5**	**5.84**	**8.44**	**1.78**	**17.6**	**18.4**	**13.4**	**6.5**	**7.62**	**12.3**	**27**	**45.3**	**22.5**	**18**
Iron	5500	72,000	27	55,800	**19900**	**22900**	**41300**	**17300**	**31700**	**24100**	**28500**	**25000**	**21100**	**17000**	**33900**	**13200**	**33700**	**28200**	**24400**
Lead	400	800	NLE	19.5	**14.4**	**30.7**	**21.9**	**26**	**13.4**	**50.6**	**55.8**	**43.4**	**28.5**	**19.4**	**17**	**94.5**	**50.5**	**53.2**	**47.4**
Magnesium	NLE	NLE	NLE	7,230	**1640**	**1690**	**4380**	**928**	**872**	**1690**	**2060**	**1810**	**1470**	**1420**	**1930**	**1090**	**2980**	**1660**	**1830**
Manganese	180	2,300	2.1	90.7	**14.7**	**14.1**	**15.7**	**53.3**	**60.2**	**13.9**	**16.9**	**15.2**	**13**	**28.1**	**24.9**	**53.9**	**18.8**	**15**	**19**
Mercury	1	4.3	0.0033	ND	**0.213**	**0.288**	**0.217**	**0.037**	**0.015**	**0.38**	**0.391**	**0.393**	**0.332**	**0.19**	**0.255**	**0.228**	**0.355**	**0.385**	**0.371**
Nickel	150	2000	2	8.4	**3.35**	**4.77**	**6.44**	**5.85**	**7.59**	**4.97**	**6.16**	**5.16**	**5**	**431**	**8.64**	**5.75**	**7.73**	**4.64**	**4.52**
Potassium	NLE	NLE	NLE	15,400	**6550**	**3720**	**10200**	**2360**	**2490**	**6150**	**4130**	**6560**	**5540**	**4830**	**7840**	**3120**	**7070**	**3650**	**3760**
Selenium	39	510	0.04	1.9	<0.390	<0.341	<0.378	<0.298	<0.321	<0.359	<0.345	<0.357	<0.355	<0.335	<0.477	<0.354	<0.386	<0.356	<0.351
Silver	39	510	0.06	1.1	<0.390	<0.341	<0.378	<0.298	<0.321	<0.359	<0.345	<0.357	<0.355	<0.335	<0.477	<0.354	<0.386	<0.356	<0.351
Sodium	NLE	NLE	NLE	51.6	**194**	**431**	**582**	**104**	**97**	**320**	**374**	**463**	**304**	**362**	**898**	**262**	**303**	**310**	**349**
Thallium	0.08	1	0.0011	ND	**0.68**	**0.475**	**0.589**	**0.402**	**0.57**	**0.606**	**1.06**	**0.945**	**1.03**	**0.426**	**0.71**	**0.389**	**0.969**	**0.665**	**0.863**
Vanadium	39	510	6.3	94.1	**17.6**	**22.7**	**51.8**	**39.8**	**74.9**	**28.9**	**40.4**	**34.5**	**21.3**	**19.8**	**59.3**	**27.8**	**45.4**	**28.6**	**27.3**
Zinc	2,300	31,000	29	81.4	**28.8**	**43.8**	**43.6**	**39.1**	**46.3**	**39.6**	**43.7**	**38.5**	**43.8**	**53.5**	**35.8**	**65.6**	**47.6**	**181**	**43.6**

Notes:

Historically, there have been up to 318 soil boring locations associated with FTMM-05. This analysis looks at only those boring locations that fall within the footprint of FTMM-05.

(1) U.S. Environmental Protection Agency, Regional Screening Levels (RSLs). Residential Soil (TR=1E-06, HQ = 0.1). (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Revised November 2013.

(2) Weston, 1995. Final Site Investigation - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December
USEPA RSL for Endosulfan is used for Endosulfan II
USEPA RSL for Chromium III is used for Chromium
RSL values were current at the time the screening was conducted.
Dash (--) = only background concentrations for metals are being used as comparison criteria.
B = Analyte detected in both sample and associated laboratory blank.
D = Result from dilution of sample.
DUP = field duplicate sample.
E = Estimated value.
J = Analyte detected between MDL and practical quantitation limit (PQL).
NA = not analyzed.
ND = not detected.
NLE = No limit established.
< = analyte not detected above method detection limit (MDL).
µg/kg = micrograms per kilogram.
mg/kg = milligrams per kilogram.
VOCs = volatile organic compounds.
in. = inches.
bgs = below ground surface.
Detections are bolded.
Shaded cells = concentration exceeds USEPA Groundwater Protection RSL.
Shaded cells = concentration exceeds USEPA Residential and/or Industrial RSL.
Shaded cells = concentration exceeds all three USEPA comparison criteria.
Shaded cells = concentration exceeds Weston (1995) background concentration.

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Loc ID	USEPA RSL Residential (HQ=0.1)[1]	USEPA RSL Industrial (HQ=0.1)	USEPA RSL Groundwater Protection (Risk-based)	Weston Background [2]	B-248		B-249		B-250		B-251		B-252		B-253		B-254	
Sample Date					08/26/98		08/26/98		08/26/98		08/26/98		08/26/98		08/26/98		08/26/98	
Volatile Organic Compounds (VOCS, µg/kg)																		
Lab Sample ID (VOCs only collected at approximately 24 in. bgs)					3836.25		3836.27		3836.29		3836.31		3836.33		3836.35		3836.37	
Methylene Chloride	36,000	63,000,000	240	-	<630		<780		<640		<510		<620		<600		<550	
Benzene	1,100	5,400	0.2	-	<310		<390		<320		<250		<310		<300		**340**	
Tetrachloroethene	8,600	41,000	1.6	-	<310		<390		<320		<250		<310		<300		<280	
Chloroform	290	1,500	0.053	-	<310		<390		<320		<250		<310		<300		<280	
Ethylbenzene	5,400	27,000	1.5	-	<630		<780		<640		<510		<620		<600		<550	
TICs	NLE	NLE	NLE	-	ND		ND		ND		ND		ND		ND		ND	
Semivolatile Organic Compounds (SVOCs, µg/kg)																		
Lab Sample ID (All analyses except VOCs collected at approximately 6-12 in. bgs)					3836.24		3836.26		3836.28		3836.30		3836.32		3836.34		3836.36	
Naphthalene	3,600	18,000	0.47	-	<1000		<1000		<1100		<1100		<1000		<1000		<990	
n-Nitrosodiphenylamine	99,000	350,000	57	-	<1000		<1000		<1100		<1100		<1000		<1000		<990	
2-Methylnaphthalene	23,000	220,000	14	-	<1000		<1000		<1100		<1100		<1000		<1000		<990	
4-Methylphenol	610,000	6,200,000	110	-	<1000		<1000		<1100		<1100		<1000		<1000		<990	
Acenaphthylene	NLE	NLE	NLE	-	<1000		<1000		<1100		<1100		<1000		<1000		**250**	J
Acenaphthene	340,000	3,300,000	410	-	<1000		<1000		<1100		<1100		<1000		<1000		<990	
Dibenzofuran	7,800	100,000	11	-	<1000		<1000		<1100		<1100		<1000		<1000		<990	
Diethylphthalate	4,900,000	49,000,000	470	-	<1000		<1000		<1100		<1100		<1000		<1000		<990	
Fluorene	230,000	2,200,000	400	-	<1000		<1000		<1100		<1100		<1000		<1000		<990	
Phenanthrene	NLE	NLE	NLE	-	<1000		<1000		**400**	J	**300**	J	**240**	J	<1000		**1800**	
Anthracene	1,700,000	17,000,000	4200	-	<1000		<1000		<1100		<1100		<1000		<1000		<990	
Dimethylphthalate	NLE	NLE	NLE	-	<1000		<1000		<1100		<1100		<1000		<1000		<990	
Di-n-butylphthalate	610,000	6,200,000	170	-	**440**	J	**350**	J	**780**	J	**390**	J	**370**	J	<1000		<990	
Fluoranthene	230,000	2,200,000	7,000	-	**190**	J	<1000		**310**	J	**290**	J	**300**	J	<1000		**1300**	
Pyrene	170,000	1,700,000	950	-	**300**	J	<1000		**560**	J	**450**	J	**570**	J	<1000		**2400**	
Pyridine	7,800	100,000	0.53	-	<1000		<1000		<1100		<1100		<1000		<1000		<990	
Butylbenzylphthalate	260,000	910,000	200	-	<1000		<1000		<1100		<1100		<1000		<1000		<990	
Benzo(a)anthracene	150	2,100	10	-	<1000		<1000		<1100		<1100		**220**	J	<1000		**690**	J
3,3'-Dichlorobenzidine	1,100	3,800	0.71	-	<1000		<1000		<1100		<1100		<1000		<1000		<990	
Chrysene	15,000	210,000	1,100	-	<1000		<1000		<1100		<1100		**430**	J	<1000		**1400**	
bis(2-Ethylhexyl)phthalate	35,000	120,000	1,100	-	<1000		<1000		<1100		<1100		<1000		<1000		<990	
Benzo(b)fluoranthene	150	2,100	35	-	<1000		<1000		<1100		<1100		<1000		<1000		**480**	J
Benzo(k)fluoranthene	1,500	21,000	350	-	<1000		<1000		<1100		<1100		<1000		<1000		**510**	J
Benzo(a)pyrene	15	210	4	-	<1000		<1000		<1100		<1100		<1000		<1000		**520**	J
Indeno(1,2,3-cd)pyrene	150	2,100	200	-	<1000		<1000		<1100		<1100		<1000		<1000		**310**	J
Dibenz(a,h)anthracene	15	210	11	-	<1000		<1000		<1100		<1100		<1000		<1000		<990	
Benzo(g,h,i)perylene	NLE	NLE	NLE	-	<1000		<1000		<1100		<1100		<1000		<1000		**320**	J
Total TICs	NLE	NLE	NLE	-	**11300**		**4500**		**17500**		**18050**		**5100**		**8840**		**83770**	
Pesticides / PCBs (mg/kg)																		
Heptachlor	0.11	0.38	0.00014	-	<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003		<0.0003	
Heptachlor Epoxide	0.053	0.19	0.000068	-	<0.0006		<0.0006		<0.0007		<0.0006		<0.0006		<0.0006		<0.0006	
4,4'-DDE	1.4	5.1	0.05	-	**0.083**		**0.903**		**3.33**		**0.742**		**1.104**		**0.23**		**4.185**	
Dieldrin	0.03	0.11	0.000061	-	<0.0005		<0.0005		<0.0006		<0.0005		<0.0005		<0.0005		<0.0005	
Endrin	1.8	18	0.0068	-	<0.0005		<0.0005		<0.0006		<0.0005		<0.0005		<0.0005		<0.0005	
4,4'-DDD	2	7.2	0.01	-	**0.045**		**0.378**		**0.729**		**0.046**		**0.041**		**0.043**		**3.787**	
Endrin Aldehyde	NLE	NLE	NLE	-	<0.0005		<0.0005		<0.0006		<0.0005		<0.0005		<0.0005		<0.0005	
4,4'-DDT	1.7	7	0.07	-	**0.525**		**13.949**		**23.629**		**2.094**		**1.746**		**0.856**		**56.446**	
Endosulfan I	37	370	0.11	-	<0.0005		<0.0005		<0.0006		<0.0005		<0.0005		<0.0005		<0.0005	
Endosulfan II	37	370	0.11	-	<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004	
Endosulfan-Sulfate	NLE	NLE	NLE	-	<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004		<0.0004	
gamma-Chlordane	1.6	6.5	0.013	-	<0.0005		<0.0005		**0.015**		<0.0005		<0.0005		<0.0005		**0.021**	
alpha-Chlordane	1.6	6.5	0.013	-	<0.0005		<0.0005		**0.023**		<0.0005		<0.0005		<0.0005		**0.026**	
Aroclor 1254	0.22	0.74	0.0082	-	<0.0040		<0.0041		<0.0044		<0.0041		<0.0040		<0.0040		<0.0042	

TABLE 4.2
SOIL SAMPLING SUMMARY RESULTS - COMPARISON TO USEPA CRITERIA
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Loc ID	USEPA RSL Residential (HQ=0.1)[1]	USEPA RSL Industrial (HQ=0.1)	USEPA RSL Groundwater Protection (Risk-based)	Weston Background [2]	B-248	B-249	B-250	B-251	B-252	B-253	B-254
Sample Date					08/26/98	08/26/98	08/26/98	08/26/98	08/26/98	08/26/98	08/26/98
Metals (mg/kg)											
Aluminum	7,700	99,000	2,300	15,200	**6970**	**3390**	**8150**	**6430**	**5560**	**4350**	**6740**
Antimony	3.1	41	0.03	ND	**1.14**	**0.654**	**1.43**	**1.31**	**0.774**	**0.688**	**0.916**
Arsenic	0.61	2.4	0.0013	22.9	**9.13**	**5.72**	**7.84**	**11.3**	**9.19**	**5.88**	**10.1**
Barium	1,500	19,000	12	32.3	**34.6**	**25.1**	**31.1**	**69.6**	**32.2**	**17**	**48.4**
Beryllium	16	200	1.3	2	**0.945**	**0.538**	**1.02**	**0.824**	**0.736**	**0.84**	**2.05**
Cadmium	7	80	0.05	ND	<0.049	<0.058	<0.047	<0.056	<0.053	<0.045	<0.053
Calcium	NLE	NLE	NLE	921	**1140**	**278**	**389**	**828**	**1100**	**563**	**143**
Chromium	12,000	150,000	2,800,000	269	**72.5**	**39.3**	**90.1**	**72.6**	**56.7**	**46.7**	**52.8**
Cobalt	2.3	30	0.02	2.5	**1.55**	**0.926**	**1.02**	**1.36**	**1.43**	**1.21**	**2.76**
Copper	310	4,100	2.2	8	**10.1**	**5.01**	**5.52**	**110**	**15.8**	**11.9**	**10.1**
Iron	5500	72,000	27	55,800	**30600**	**17500**	**32800**	**31400**	**21200**	**16400**	**27700**
Lead	400	800	NLE	19.5	**21.6**	**23.1**	**20.2**	**163**	**69.8**	**12.4**	**40.3**
Magnesium	NLE	NLE	NLE	7,230	**2730**	**1160**	**3380**	**2210**	**1920**	**1330**	**1130**
Manganese	180	2,300	2.1	90.7	**33.2**	**8.41**	**12.4**	**38.5**	**49.7**	**15.4**	**38**
Mercury	1	4.3	0.0033	ND	**0.229**	**0.267**	**0.163**	**0.275**	**0.361**	**0.069**	**0.706**
Nickel	150	2000	2	8.4	**6.14**	**2.99**	**4.74**	**5.81**	**5.24**	**3.33**	**6.57**
Potassium	NLE	NLE	NLE	15,400	**5980**	**4390**	**8120**	**4900**	**3860**	**5380**	**4170**
Selenium	39	510	0.04	1.9	<0.296	<0.346	<0.282	<0.336	<0.321	<0.267	<0.316
Silver	39	510	0.06	1.1	<0.296	<0.346	<0.282	<0.336	<0.321	<0.267	**0.413**
Sodium	NLE	NLE	NLE	51.6	**360**	**336**	**342**	**388**	**147**	**84.6**	**99.8**
Thallium	0.08	1	0.0011	ND	**0.563**	**0.681**	**0.6**	**0.709**	**0.535**	**0.332**	**0.691**
Vanadium	39	510	6.3	94.1	**33**	**15.9**	**40**	**35.1**	**25.7**	**13.5**	**26.8**
Zinc	2,300	31,000	29	81.4	**69.5**	**27.2**	**39.4**	**123**	**115**	**32.1**	**51.5**

Notes:

Historically, there have been up to 318 soil boring locations associated with FTMM-05. This analysis looks at only those boring locations that fall within the footprint of FTMM-05.

(1) U.S. Environmental Protection Agency, Regional Screening Levels (RSLs). Residential Soil (TR=1E-06, HQ = 0.1). (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Revised November 2013.

(2) Weston, 1995. Final Site Investigation - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December
USEPA RSL for Endosulfan is used for Endosulfan II
USEPA RSL for Chromium III is used for Chromium
RSL values were current at the time the screening was conducted.
Dash (--) = only background concentrations for metals are being used as comparison criteria.
B = Analyte detected in both sample and associated laboratory blank.
D = Result from dilution of sample.
DUP = field duplicate sample.
E = Estimated value.
J = Analyte detected between MDL and practical quantitation limit (PQL).
NA = not analyzed.
ND = not detected.
NLE = No limit established.
< = analyte not detected above method detection limit (MDL).
µg/kg = micrograms per kilogram.
mg/kg = milligrams per kilogram.
VOCs = volatile organic compounds.
in. = inches.
bgs = below ground surface.
Detections are bolded.
Shaded cells = concentration exceeds USEPA Groundwater Protection RSL.
Shaded cells = concentration exceeds USEPA Residential and/or Industrial RSL.
Shaded cells = concentration exceeds all three USEPA comparison criteria.
Shaded cells = concentration exceeds Weston (1995) background concentration.

TABLE 4.3
SOIL SAMPLING SUMMARY OF EXCEEDANCES
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Analyte	Maximum Detected Concentration		Location of Maximum Concentration	Number of Samples	Number of Detections	Number of Exceedances							Identification of COPCs	
						Residential Direct Contact		Non-Residential Direct Contact		Impact to Groundwater		Background		
						NJDEP RDCSRS (1)	USEPA RSL Residential (HQ=0.1) (2)	NJDEP NRDCSRS (1)	USEPA Industrial RSL (2)	NJDEP Impact to Groundwater (3)	USEPA Groundwater Protection RSL	Maximum Background (Weston, 1995) (4)	Evaluated as COPC in Risk Assessment?	Rationale
Volatile Organic Compounds (VOCs, µg/kg)														
Methylene Chloride	6400		B-240	183	1	0	0	0	0	1	1	n/a	No	No Residential RSL exceedances.
Benzene	340		B-254	183	2	0	0	0	0	2	2	n/a	No	No Residential RSL exceedances.
Tetrachloroethene	5000		B-15	183	10	5	0	0	0	10	10	n/a	No	No Residential RSL exceedances.
Chloroform	760		B-200	183	15	1	15	0	0	13	15	n/a	**Yes**	15 exceedances of the Residential RSL.
Ethylbenzene	56	J	B-220	183	1	0	0	0	0	0	1	n/a	No	No Residential RSL exceedances.
TICs	37700		B-53	183	21	NLE	NLE	NLE	NLE	NLE	NLE	n/a	No	No Residential RSL exceedances.
Semivolatile Organic Compounds (SVOCs, µg/kg)														
Naphthalene	4000	JD	B-220	182	16	0	1	0	0	0	16	n/a	**Yes**	1 exceedance of the Residential RSL
n-Nitrosodiphenylamine	150	J	B-81	182	2	0	0	0	0	0	2	n/a	No	No Residential RSL exceedances.
2-Methylnaphthalene	7600	JD	B-220	182	18	0	0	0	0	0	18	n/a	No	No Residential RSL exceedances.
4-Methylphenol	160	J	B-46	182	1	0	0	0	0	NLE	1	n/a	No	No Residential RSL exceedances.
Acenaphthylene	6100	JD	B-220	182	23	NLE	NLE	0	NLE	NLE	NLE	n/a	No	No Residential RSL established.
Acenaphthene	1900		B-84	182	4	0	0	0	0	0	2	n/a	No	No Residential RSL exceedances.
Dibenzofuran	640		B-92	182	4	NLE	0	NLE	0	NLE	4	n/a	No	No Residential RSL exceedances.
Diethylphthalate	300		B-33	182	9	0	0	0	0	0	0	n/a	No	No Residential RSL exceedances.
Fluorene	5300		B-84	182	5	0	0	0	0	0	3	n/a	No	No Residential RSL exceedances.
Phenanthrene	55000	D	B-220	182	95	NLE	NLE	0	NLE	NLE	NLE	n/a	No	No Residential RSL established.
Anthracene	6700	JD	B-220	182	23	0	0	0	0	0	1	n/a	No	No Residential RSL exceedances.
Dimethylphthalate	120	J	B-81	182	1	NLE	NLE	NLE	NLE	NLE	NLE	n/a	No	No Residential RSL established.
Di-n-butylphthalate	35000	BD	B-39	182	170	0	0	0	0	0	167	n/a	No	No Residential RSL exceedances.
Fluoranthene	23000	D	B-220	182	110	0	0	0	0	0	2	n/a	No	No Residential RSL exceedances.
Pyrene	44000	D	B-220	182	116	0	0	0	0	0	28	n/a	No	No Residential RSL exceedances.
Pyridine	780		B-10	182	4	NLE	0	NLE	0	NLE	4	n/a	No	No Residential RSL exceedances.
Butylbenzylphthalate	120	J	B-26	182	1	0	0	0	0	0	0	n/a	No	No Residential RSL exceedances.
Benzo[a]anthracene	14000	D	B-220	182	84	19	70	6	5	12	84	n/a	**Yes**	70 exceedances of the Residential RSL.
3,3'-Dichlorobenzidine	1000		B-84	181	1	0	0	0	0	1	1	n/a	No	No Residential RSL exceedances.
Chrysene	25000	D	B-220	182	101	0	2	0	0	0	18	n/a	**Yes**	2 exceedances of the Residential RSL.
bis(2-Ethylhexyl)phthalate	13000		B-163	182	66	0	0	0	0	0	3	n/a	No	No Residential RSL exceedances.
Benzo[b]fluoranthene	9200		B-84	182	75	18	61	5	5	5	75	n/a	**Yes**	61 exceedances of the Residential RSL.
Benzo[k]fluoranthene	9000	JD	B-220	182	71	2	5	0	0	0	34	n/a	**Yes**	5 exceedances of the Residential RSL.
Benzo[a]pyrene	11000		B-84	182	74	53	73	53	50	53	74	n/a	**Yes**	73 exceedances of the Residential RSL.
Indeno[1,2,3-cd]pyrene	19000	D	B-220	182	52	9	40	4	3	1	31	n/a	**Yes**	40 exceedances of the Residential RSL.
Dibenz[a,h]anthracene	25000	D	B-220	182	12	8	12	8	8	4	12	n/a	**Yes**	12 exceedances of the Residential RSL.
Benzo[g,h,i]perylene	22000	D	B-220	182	51	0	NLE	0	NLE	NLE	NLE	n/a	No	No Residential RSL established
Total TICs	249600		B-9	182	170	NLE	NLE	NLE	NLE	NLE	NLE	n/a	No	No Residential RSL established
Pesticides / PCBs (mg/kg)														
Heptachlor	0.014		B-59	182	4	0	0	0	0	0	3	n/a	No	No Residential RSL exceedances.
Heptachlor Epoxide	0.261		B-59	182	4	1	1	0	1	1	3	n/a	**Yes**	1 exceedance of the residential RSL
4,4'-DDE	4.185		B-254	182	130	3	3	0	0	0	56	n/a	**Yes**	3 exceedances of the Residential RSL.
Dieldrin	0.049		B-239	182	4	1	1	0	0	2	3	n/a	**Yes**	1 exceedance of the residential RSL
Endrin	0.023		B-35	182	2	0	0	0	0	0	1	n/a	No	No Residential RSL exceedances.
4,4'-DDD	3.787		B-254	182	78	1	3	0	0	0	51	n/a	**Yes**	3 exceedances of the Residential RSL.
Endrin Aldehyde	0.061		B-223	182	2	NLE	NLE	NLE	NLE	NLE	NLE	n/a	No	No Residential RSL established
4,4'-DDT	56.446		B-254	182	119	9	11	4	4	4	54	n/a	**Yes**	11 exceedances of the Residential RSL.
Endosulfan I	0.008		B-12	182	2	0	0	0	0	0	0	n/a	No	No Residential RSL exceedances.
Endosulfan II	0.019		B-53	182	11	0	0	0	0	0	0	n/a	No	No Residential RSL exceedances.
Endosulfan-Sulfate	2.215		B-229	182	2	0	NLE	0	NLE	1	NLE	n/a	No	No Residential RSL established
gamma-Chlordane	0.577		B-59	182	9	1	0	0	0	1	3	n/a	No	No Residential RSL exceedances.
alpha-Chlordane	0.409		B-59	182	10	1	0	0	0	1	3	n/a	No	No Residential RSL exceedances.
Aroclor 1254	1.499		B-201	182	2	1	1	1	1	1	2	n/a	**Yes**	1 exceedance of the residential RSL

TABLE 4.3
SOIL SAMPLING SUMMARY OF EXCEEDANCES
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Analyte	Maximum Detected Concentration		Location of Maximum Concentration	Number of Samples	Number of Detections	Number of Exceedances							Identification of COPCs	
						Residential Direct Contact		Non-Residential Direct Contact		Impact to Groundwater		Background		
						NJDEP RDCSRS (1)	USEPA RSL Residential (HQ=0.1) (2)	NJDEP NRDCSRS (1)	USEPA Industrial RSL (2)	NJDEP Impact to Groundwater (3)	USEPA Groundwater Protection RSL	Maximum Background (Weston, 1995) (4)	Evaluated as COPC in Risk Assessment?	Rationale
Metals (mg/kg)														
Aluminum	15670		B-64	181	181	0	65	NLE	0	101	170	1	No	Exceeds background but only slightly, 15,670 mg/kg versus max background at the MP of 15,200 mg/kg. At the CWA max background is 15,700.
Antimony	6.56		B-199	181	167	0	3	0	0	1	167	167	**Yes**	Exceeds residential RSL and maximum background concentration at 3 locations.
Arsenic	1030		B-19	181	181	10	180	10	169	10	181	8	**Yes**	Exceeds residential RSL and maximum background concentration at 8 locations.
Barium	513.9		B-44	181	181	0	0	0	0	0	171	84	No	No Residential RSL exceedances.
Beryllium	10.89		B-35	181	181	0	0	0	0	99	15	4	No	No Residential RSL exceedances.
Cadmium	823		B-200	181	70	1	4	1	1	6	70	70	**Yes**	Exceeds residential RSL and maximum background concentration at 4 locations.
Calcium	10360		B-45	181	181	NLE	NLE	NLE	NLE	NLE	NLE	71	No	Essential nutrient.
Chromium	152.8		B-200	181	181	NLE	0	NLE	0	NLE	0	0	No	No Residential RSL exceedances.
Cobalt	55.97		B-35	181	181	0	99	0	1	0	181	90	**Yes**	Exceeds residential RSL and maximum background concentration at 90 locations.
Copper	2837		B-9	181	179	0	14	0	0	0	168	110	**Yes**	Exceeds residential RSL and maximum background concentration at 14 locations.
Iron	131900		B-163	181	181	NLE	170	NLE	1	NLE	181	6	No	Essential nutrient.
Lead	4549		B-99	181	181	15	15	10	10	47	NLE	116	**Yes**	Exceeds residential RSL and maximum background concentration at 15 locations.
Magnesium	5665		B-45	181	181	NLE	NLE	NLE	NLE	NLE	NLE	0	No	Essential nutrient.
Manganese	2581		B-99	181	181	0	8	0	1	80	181	43	**Yes**	Exceeds residential RSL and maximum background concentration at 8 locations.
Mercury	31.452		B-220	181	156	1	10	0	6	81	155	156	**Yes**	Exceeds residential RSL and maximum background concentration at 10 locations.
Nickel	431		B-242	181	181	0	1	0	0	3	172	82	**Yes**	Exceeds residential RSL and maximum background concentration at 1 location.
Potassium	10200		B-236	181	181	NLE	NLE	NLE	NLE	NLE	NLE	0	No	Essential nutrient.
Selenium	50.7		B-35	181	32	0	1	0	0	1	32	2	**Yes**	Exceeds residential RSL and maximum background concentration at 1 location.
Silver	37.83		B-99	181	17	0	0	0	0	10	17	9	No	No Residential RSL exceedances.
Sodium	969.8		B-7	181	180	NLE	NLE	NLE	NLE	NLE	NLE	144	No	Essential nutrient.
Thallium	47.42		B-35	181	42	1	42	0	3	1	42	42	**Yes**	Exceeds residential RSL and maximum background concentration at 42 locations.
Vanadium	200.1		B-2	181	181	36	81	0	0	NLE	180	28	**Yes**	Exceeds residential RSL and maximum background concentration at 28 locations.
Zinc	9772		B-99	181	181	0	1	0	0	4	152	41	**Yes**	Exceeds residential RSL and maximum background concentration at 1 location.

Notes:

Historically, there have been up to 318 soil boring locations associated with FTMM-05. This analysis looks at only those boring locations that fall within the footprint of FTMM-05.

RSL values were current at the time the screening was conducted.
(1) New Jersey Department of Environmental Protection (NJDEP) Residential Direct Contact Soil Remediation Standards (RDCSRS) and Non-Residential Direct Contact Soil Remediation Standards (NRDCSRS) (N.J.A.C 7:26D; amended May 7, 2012). Available at: http://www.state.nj.us/dep/srp/regs/rs/.
NJDEP Non-Residential standard is based a risk of 1x10E6 cancer or non-cancer HQ = 1.0.
(2) U.S. Environmental Protection Agency, Regional Screening Levels (RSLs). Residential Soil (TR=1E-06, HQ = 0.1). (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Revised November 2013.
(3) Weston, 1995. Final Site Investigation - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December.
(4) Analytes with no screening criteria (i.e., no limit established [NLE]) are carried through to the risk assessment as COPCs.
(5) B and BJ qualified data were treated as nondetected chemicals and are not considered COPCs.
(6) Essential nutrients (calcium, iron, magnesium, potassium, and sodium) are not considered COPCs.
µg/kg = micrograms per kilogram; mg/kg = milligrams per kilogram.
There are no NJDEP soil standards for individual PCB Arcolors; the total PCB NJDEP standards were used for individual Arcolors
Dash (--) = only background concentrations for metals are being used as comparison criteria.
B = Analyte detected in both sample and blank.
COPC = contaminant of potential concern.
D = Results from dilution of sample.
DUP = Field duplicate sample.
n/a = not applicable.

TABLE 4.4
GROUNDWATER SAMPLING SUMMARY RESULTS - MARCH 2008 TO AUGUST 2011
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

	NJDEP Ground Water Quality Criteria (1)	USEPA Tapwater RSL (HQ = 0.1) (2)	Background Concentration (3)	M5MW09			M5MW10																				
Round No.				LF1	LF2	LF3	46	46 Dup	47	47 Dup	48	48 Dup	49	49 Dup	50	51		52	53	LF54		LF55		LF56		LF57	LF58	LF59	LF60
Date Collected				3/9/2011	6/8/2011	8/13/2011	3/11/2008	3/11/2008	6/3/2008	6/3/2008	8/25/2008	8/25/2008	11/10/2008	11/10/2008	2/26/2009	6/12/2009		9/18/2009	12/28/2009	3/31/2010		6/30/2010		9/26/2010		1/11/2011	2/23/2011	6/8/2011	8/13/2011
ANALYTE/Lab ID				1109501	1124305	1134008	80077.04	80077.03	80185.04	80185.03	80306.04	80306.03	80404.04	80404.03	90077.04	90235.04		90390.04	90490.04	10115.04		10298.08		10411.05		1101905	1106512	1124306	1134007
Volatile Organic Compounds (µg/L)																											
Acetone	6000	1,200	-	<0.32	<0.32	<7.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND		ND		ND		<0.32	<0.32	<0.32	<7.6
Bromodichloromethane	1	0.12	-	<0.12	<0.12	<0.23	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND		ND		ND		<0.12	<0.12	<0.12	<0.23
2-Butanone	300	490	-	<0.22	<0.22	<2.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND		ND		ND		<0.22	<0.22	<0.22	<2.9
Carbon disulfide	700	72	-	<0.12	<0.12	<0.18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND		ND		ND		<0.12	<0.12	<0.12	<0.18
Chloroform	70	0.19	-	<0.35	<0.35	<0.21	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND		ND		ND		<0.35	<0.35	<0.35	<0.21
1,3-Dichlorobenzene	600	NLE	-	<0.16	<0.16	<0.29	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND		ND		ND		<0.16	<0.16	<0.16	<0.29
1,1-Dichloroethene	1	26	-	<0.15	<0.15	<0.28	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND		ND		ND		<0.15	<0.15	<0.15	<0.28
cis-l,2-Dichloroethene	70	2.8	-	<0.12	<0.12	**2.6**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND		ND		ND		<0.12	<0.12	<0.12	<0.22
trans -1,2-Dichloroethene	100	8.6	-	<0.14	<0.14	<0.31	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND		ND		ND		<0.14	<0.14	<0.14	<0.31
Methylene chloride	3	8.4	-	<0.26	<0.26	<0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND		ND		ND		<0.26	<0.26	<0.26	<0.2
Tetrachloroethene	1	3.5	-	<0.14	<0.14	<0.32	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND		ND		ND		<0.14	<0.14	<0.14	<0.32
Toluene	600	86	-	<0.12	<0.12	<0.15	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.65**	J	ND	ND	ND		ND		ND		<0.12	<0.12	<0.12	<0.15
Trichloroethene	1	0.26	-	<0.11	<0.11	<0.21	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND		ND		ND		<0.11	<0.11	<0.11	<0.21
Vinyl chloride	1	0.015	-	<0.22	<0.22	<0.27	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND		ND		ND		<0.22	<0.22	<0.22	<0.27
TICs*	500	NLE	-	**0**	**0**	**0**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND	ND	ND		ND		ND		**0**	**0**	**0**	**0**
Metals (µg/L)																											
Aluminum	200	1,600	121,000	<200	<200	<200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	**20.7**		ND		**13.8**		<200	<200	<200	<200
Antimony	6	0.60	20.7	<6.0	<6.0	<6.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	**5.45**	ER	ND		**7.59**	ER	<6.0	<6.0	<6.0	<6.0
Arsenic	3	0.05	89.3	<3.0	**5.9**	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	ND		ND		ND		<3.0	<3.0	<3.0	<3.0
Barium	6000	290	699	**473**	**817**	**416**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	**24.6**		**24**		**36.2**		<200	<200	<200	<200
Beryllium	1	1.60	2.1	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	ND		ND		ND		<1.0	<1.0	<1.0	<1.0
Cadmium	4	0.69	9.5	<3.0	<3.0	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	ND		ND		ND		<3.0	<3.0	<3.0	<3.0
Calcium	NLE	NLE	45,400	**94300**	**91600**	**54600**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	**14100**		**12600**		**14000**		**38800**	**33900**	**16600**	**13500**
Chromium	70	1600	191	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	ND		**1.17**	ER	**1.15**	ER	<10	<10	<10	<10
Cobalt	NLE	0.47	18.3	<50	<50	<50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	ND		ND		ND		<50	<50	<50	<50
Copper	1300	62	65.6	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	ND		**3.14**	ER	ND		<10	<10	<10	<10
Iron	300	1,100	431,000	**17000**	**65600**	**29100**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	**4230**		**3660**		**3880**		**4990**	**4810**	**5190**	**4200**
Lead	5	NLE	22.7	<3.0	**10.4**	**5.6**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	ND		ND		ND		<3.0	<3.0	<3.0	<3.0
Magnesium	NLE	NLE	62,700	**11500**	**11100**	**8030**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	**15500**		**17000**		**18800**		**44100**	**33200**	**20200**	**17800**
Manganese	50	32	331	**483**	**723**	**402**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	**185**		**40.1**		**41.3**		**286**	**557**	**77.3**	**46.2**
Mercury	2	0.06	0.26	<0.2	<0.2	<0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	ND		ND		ND		NA	<0.2	<0.2	<0.2
Nickel	100	30	187	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	ND		ND		**0.42**	ER	<10	<10	<10	<10
Potassium	NLE	NLE	137,000	<10000	<10000	<10000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	**12700**		**17800**		**18800**		**27400**	**16000**	**17100**	**18600**
Selenium	40	7.80	29.6	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	**13.7**		NR		ND		<10	<10	<10	<10
Silver	40	7.10	ND	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	ND		**0.81**	ER	**0.531**		<10	<10	<10	<10
Sodium	50000	NLE	21500	**39800**	**40100**	**46800**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	**59900**		**19800**		**25900**		**292000**	**267000**	**67400**	**37600**
Thallium	2	0.02	5.5	<2.0	<2.0	<2.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	ND		ND		ND		<2.0	<2.0	<2.0	<2.0
Vanadium	NLE	6.3	108	<50	<50	<50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	ND		ND		ND		<50	<50	<50	<50
Zinc	2000	470	233	**589**	**831**	**175**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		NA	NA	**3.3**	ER	ND		ND		<20	<20	<20	<20

Notes:

RSL values were current at the time the screening was conducted.

(1) New Jersey Department of Environmental Protection Ground Water Quality Standards, Specific Ground Water Quality Criteria - Class IIA and Practical Quantitation Levels. (http://www.state.nj.us/dep/wms/bwqsa/Appendix_Table_1.htm)

(2) U.S. Environmental Protection Agency, Regional Screening Levels (RSLs). (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Revised November 2013.

(3) Background data from Weston. 1995. Site Investigation Report - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December.

NA = Not analyzed.

ND = Not detected.

NLE = No limit established.

< = analyte not detected above method detection limit (MDL).

µg/L = micrograms per liter.

Detections are bolded

Shaded cells = concentration exceeds NJDEP GWQS

Shaded cells = concentration exceeds USEPA Tapwater RSLs

Shaded cells = concentration exceeds NJDEP GWQS and USEPA Tapwater RSLs.

Shaded cells = concentration exceeds Weston (1995) background

TABLE 4.4
GROUNDWATER SAMPLING SUMMARY RESULTS - MARCH 2008 TO AUGUST 2011
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

	NJDEP Ground Water Quality Criteria (1)	USEPA Tapwater RSL (HQ = 0.1) (2)	Background Concentration (3)	M5MW 11																						
Round No.				45		46		47	48	49		49 Dup		50	51	52	LF53		LF54		LF54 Dup		LF55		LF56	LF56 Dup	LF57	LF58	LF59	LF60	LF61	LF62	LF63
Date Collected				3/11/2008		6/3/2008		8/25/2008	11/10/2008	2/26/2009		2/26/2009		6/12/2009	9/18/2009	12/28/2009	3/30/2010		6/30/2010		6/30/2010		9/26/2010		1/5/2011	1/5/2011	2/23/2011	4/12/2011	4/15/2011	4/22/2011	4/29/2011	6/6/2011	7/5/2011
ANALYTE/Lab ID				80077.05		80185.05		80306.05	80404.05	90077.05		90077.03		90235.05	90390.05	90490.05	10113.01		10298.04		10298.03		10411.11		1100904	1100903	1106509	1114205	1114905	1116504	1118204	1123709	1127604
Volatile Organic Compounds (µg/L)																																	
Acetone	6000	1,200	-	ND		ND		ND	ND	ND		ND		ND	ND	ND	ND		ND		ND		ND		<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<7.6
Bromodichloromethane	1	0.12	-	ND		ND		ND	ND	ND		ND		ND	ND	ND	ND		ND		ND		ND		<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.23
2-Butanone	300	490	-	ND		ND		ND	ND	ND		ND		ND	ND	ND	ND		ND		ND		ND		<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<2.9
Carbon disulfide	700	72	-	ND		ND		ND	ND	ND		ND		ND	ND	ND	ND		ND		ND		ND		<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.18
Chloroform	70	0.19	-	ND		ND		ND	ND	ND		ND		ND	ND	ND	ND		ND		ND		ND		<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.21
1,3-Dichlorobenzene	600	NLE	-	ND		ND		ND	ND	ND		ND		ND	ND	ND	ND		**0.31**	J	ND		ND		<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.29
1,1-Dichloroethene	1	26	-	ND		ND		ND	ND	ND		ND		ND	ND	ND	ND		ND		ND		ND		<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.28
cis-l,2-Dichloroethene	70	2.8	-	**0.4**	J	**0.53**	J	**8.4**	**6.93**	**1.55**	J	**1.28**	J	**2.6**	**11.56**	**1.62**	ND		**2.22**		**2.18**		**17.06**		**5.89**	**6.02**	**5.05**	**11.31**	**7.14**	**3.58**	**0.63**	**7.47**	**3**
trans -1,2-Dichloroethene	100	8.6	-	ND		ND		ND	ND	ND		ND		ND	ND	ND	ND		ND		ND		ND		<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.31
Methylene chloride	3	8.4	-	ND		ND		ND	ND	ND		ND		ND	ND	ND	ND		ND		ND		ND		<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.2
Tetrachloroethene	1	3.5	-	**2.02**		**2.93**		ND	**2.47**	**0.94**		**1.16**	J	**2.74**	**1**	**1.73**	**0.69**		**2.51**		**2.61**		**0.85**		**2.28**	**2.33**	**2.23**	**1.16**	**2.04**	**2.63**	**3.08**	**1.35**	**3.6**
Toluene	600	86	-	ND		ND		ND	ND	ND		ND		ND	ND	ND	ND		ND		ND		ND		<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.15
Trichloroethene	1	0.26	-	ND		ND		ND	ND	ND		ND		ND	ND	ND	ND		ND		ND		ND		<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11	<0.21
Vinyl chloride	1	0.015	-	ND		ND		ND	ND	ND		ND		ND	ND	ND	ND		ND		ND		ND		<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.27
TICs*	500	NLE	-	ND		ND		ND	ND	ND		ND		ND	ND	ND	ND		ND		ND		ND		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Metals (µg/L)																																	
Aluminum	200	1,600	121,000	NA		NA		NA	NA	NA		NA		NA	NA	NA	**292**		**29.5**		**45.3**		**23.8**		<200	<200	<200	NA	NA	NA	NA	<200	NA
Antimony	6	0.60	20.7	NA		NA		NA	NA	NA		NA		NA	NA	NA	ND		ND		**6.9**	ER	**9.99**	ER	<6.0	<6.0	<6.0	NA	NA	NA	NA	<6.0	NA
Arsenic	3	0.05	89.3	NA		NA		NA	NA	NA		NA		NA	NA	NA	ND		**1.04**	ER	**0.95**	ER	**1.07**	ER	<3.0	<3.0	<3.0	NA	NA	NA	NA	**5.2**	NA
Barium	6000	290	699	NA		NA		NA	NA	NA		NA		NA	NA	NA	**8.74**		**9.71**		**9.96**		**10.9**		<200	<200	<200	NA	NA	NA	NA	<200	NA
Beryllium	1	1.60	2.1	NA		NA		NA	NA	NA		NA		NA	NA	NA	ND		ND		ND		ND		<1.0	<1.0	<1.0	NA	NA	NA	NA	<1.0	NA
Cadmium	4	0.69	9.5	NA		NA		NA	NA	NA		NA		NA	NA	NA	ND		**0.555**	ER	**0.672**	ER	**1.71**	ER	<3.0	<3.0	<3.0	NA	NA	NA	NA	<3.0	NA
Calcium	NLE	NLE	45,400	NA		NA		NA	NA	NA		NA		NA	NA	NA	**13000**		**38000**		**38900**		**22700**		**20400**	**21000**	**16500**	NA	NA	NA	NA	**18000**	NA
Chromium	70	1600	191	NA		NA		NA	NA	NA		NA		NA	NA	NA	**1.7**	ER	ND		ND		**1.27**	ER	<10	<10	<10	<0.01[1]	NA	NA	NA	<10	<0.01[a]
Cobalt	NLE	0.47	18.3	NA		NA		NA	NA	NA		NA		NA	NA	NA	ND		ND		ND		**1.27**		<50	<50	<50	NA	NA	NA	NA	<50	NA
Copper	1300	62	65.6	NA		NA		NA	NA	NA		NA		NA	NA	NA	**2.42**	ER	**3.72**	ER	**3.86**	ER	**2.17**	ER	<10	<10	<10	NA	NA	NA	NA	<10	NA
Iron	300	1,100	431,000	NA		NA		NA	NA	NA		NA		NA	NA	NA	**1670**		**3040**		**3780**		**38000**		**1500**	**1640**	**782**	**12600**	**3950**	**4690**	**2670**	**38600**	**7110**
Lead	5	NLE	22.7	NA		NA		NA	NA	NA		NA		NA	NA	NA	ND		ND		**2.77**	ER	**4.45**	ER	<3.0	<3.0	<3.0	NA	NA	NA	NA	<3.0	NA
Magnesium	NLE	NLE	62,700	NA		NA		NA	NA	NA		NA		NA	NA	NA	**1610**		**15300**		**15600**		**8810**		**5330**	**5510**	<5000	NA	NA	NA	NA	**6770**	NA
Manganese	50	32	331	NA		NA		NA	NA	NA		NA		NA	NA	NA	**2.98**	ER	**26.4**		**29.8**		**70.5**		<15	<15	<15	**26.7**	<15	<15	<15	**63.2**	**25.3**
Mercury	2	0.06	0.26	NA		NA		NA	NA	NA		NA		NA	NA	NA	**0.12**	ER	ND		ND		ND		NA	NA	<0.2	NA	NA	NA	NA	<0.2	NA
Nickel	100	30	187	NA		NA		NA	NA	NA		NA		NA	NA	NA	**1.47**	ER	**1.83**	ER	**2.05**	ER	**2.97**	ER	<10	<10	<10	NA	NA	NA	NA	<10	NA
Potassium	NLE	NLE	137,000	NA		NA		NA	NA	NA		NA		NA	NA	NA	**2700**		**2760**		**2820**		**1580**		<10000	<10000	<10000	NA	NA	NA	NA	<10000	NA
Selenium	40	7.80	29.6	NA		NA		NA	NA	NA		NA		NA	NA	NA	**21.4**		NR		NR		ND		<10	<10	<10	NA	NA	NA	NA	<10	NA
Silver	40	7.10	ND	NA		NA		NA	NA	NA		NA		NA	NA	NA	**1.11**	ER	ND		ND		**5**		<10	<10	<10	NA	NA	NA	NA	<10	NA
Sodium	50000	NLE	21500	NA		NA		NA	NA	NA		NA		NA	NA	NA	**3720**		**40400**		**41800**		**58400**		**22200**	**22800**	**18400**	NA	NA	NA	NA	**53600**	NA
Thallium	2	0.02	5.5	NA		NA		NA	NA	NA		NA		NA	NA	NA	ND		ND		ND		ND		<2.0	<2.0	<2.0	NA	NA	NA	NA	<2.0	NA
Vanadium	NLE	6.3	108	NA		NA		NA	NA	NA		NA		NA	NA	NA	**2.15**	ER	ND		**0.735**	ER	ND		<50	<50	<50	NA	NA	NA	NA	<50	NA
Zinc	2000	470	233	NA		NA		NA	NA	NA		NA		NA	NA	NA	**20.7**	ER	**133**		**139**		**147**		**86.2**	**89.5**	**82.7**	NA	NA	NA	NA	**88.9**	NA

Notes:

RSL values were current at the time the screening was conducted.

(1) New Jersey Department of Environmental Protection Ground Water Quality Standards, Specific Ground Water Quality Criteria - Class IIA and Practical Quantitation Levels. (http://www.state.nj.us/dep/wms/bwqsa/Appendix_Table_1.htm)

(2) U.S. Environmental Protection Agency, Regional Screening Levels (RSLs). (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Revised November 2013.

(3) Background data from Weston. 1995. Site Investigation Report - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December.

NA = Not analyzed.

ND = Not detected.

NLE = No limit established.

< = analyte not detected above method detection limit (MDL).

µg/L = micrograms per liter.

Detections are bolded

Shaded cells = concentration exceeds NJDEP GWQS

Shaded cells = concentration exceeds USEPA Tapwater RSLs

Shaded cells = concentration exceeds NJDEP GWQS and USEPA Tapwater RSLs.

Shaded cells = concentration exceeds Weston (1995) background

TABLE 4.4
GROUNDWATER SAMPLING SUMMARY RESULTS - MARCH 2008 TO AUGUST 2011
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

	NJDEP Ground Water Quality Criteria (1)	USEPA Tapwater RSL (HQ = 0.1) (2)	Background Concentration (3)	M5MW 11				M5MW12																
Round No.				LF64	LF65	LF66	LF66 Dup	38	39	40	41	42	43	43 Dup	44	45	LF46		LF47		LF48		LF48 Dup		LF49	LF49 Dup	LF50
Date Collected				7/29/2011	8/13/2011	8/19/2011	8/19/2011	3/11/2008	6/3/2008	8/25/2008	11/10/2008	2/26/2009	6/12/2009	6/12/2009	9/18/2009	12/28/2009	3/31/2010		6/30/2010		9/26/2010		9/26/2010		1/11/2011	1/11/2011	2/23/2011
ANALYTE/Lab ID				1131504	1134012	1134804		80077.06	80185.06	80306.06	80404.06	90077.06	90235.06	90235.03	90390.06	90490.06	10115.03		10298.07		10411.04		10411.03		1101904	1101903	1106511
Volatile Organic Compounds (µg/L)																										
Acetone	6000	1,200	-	<7.6	<7.6	<7.6	<7.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND		ND		<0.32	<0.32	<0.32
Bromodichloromethane	1	0.12	-	<0.23	<0.23	<0.23	<0.23	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND		ND		<0.12	<0.12	<0.12
2-Butanone	300	490	-	<2.9	<2.9	<2.9	<2.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND		ND		<0.22	<0.22	<0.22
Carbon disulfide	700	72	-	<0.18	<0.18	<0.18	<0.18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND		ND		<0.12	<0.12	<0.12
Chloroform	70	0.19	-	<0.21	<0.21	<0.21	<0.21	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND		ND		<0.35	<0.35	<0.35
1,3-Dichlorobenzene	600	NLE	-	<0.29	<0.29	<0.29	<0.29	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND		ND		<0.16	<0.16	<0.16
1,1-Dichloroethene	1	26	-	<0.28	<0.28	<0.28	<0.28	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND		ND		<0.15	<0.15	<0.15
cis-l,2-Dichloroethene	70	2.8	-	**4.7**	**10.4**	**2.2**	**1.5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND		ND		<0.12	<0.12	<0.12
trans -1,2-Dichloroethene	100	8.6	-	<0.31	<0.31	<0.31	<0.31	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND		ND		<0.14	<0.14	<0.14
Methylene chloride	3	8.4	-	<0.2	<0.2	<0.2	<0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND		ND		<0.26	<0.26	<0.26
Tetrachloroethene	1	3.5	-	**1.1**	<0.32	**4.9**	**5.2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND		ND		<0.14	<0.14	<0.14
Toluene	600	86	-	<0.15	<0.15	<0.15	<0.15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND		ND		<0.12	<0.12	<0.12
Trichloroethene	1	0.26	-	<0.21	<0.21	<0.21	<0.21	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND		ND		<0.11	<0.11	<0.11
Vinyl chloride	1	0.015	-	<0.27	<0.27	<0.27	<0.27	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND		ND		<0.22	<0.22	<0.22
TICs*	500	NLE	-	**0**	**0**	**0**	**0**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND		ND		**0**	**0**	**0**
Metals (µg/L)																										
Aluminum	200	1,600	121,000	NA	<200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**46.6**		**24.2**		**14.6**		**8.4**		<200	<200	<200
Antimony	6	0.60	20.7	NA	<6.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**7.31**	ER	**5.26**	ER	**27.5**		**24.1**		<6.0	<6.0	<6.0
Arsenic	3	0.05	89.3	NA	**5.7**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND		**1.03**	ER	**6.08**		**5.98**		<3.0	<3.0	<3.0
Barium	6000	290	699	NA	<200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**64.3**		**21.5**		**214**		**203**		**415**	**426**	**313**
Beryllium	1	1.60	2.1	NA	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND		ND		ND		ND		<1.0	<1.0	<1.0
Cadmium	4	0.69	9.5	NA	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND		**0.692**	ER	**1.57**	ER	**1.44**	ER	<3.0	<3.0	<3.0
Calcium	NLE	NLE	45,400	NA	**19900**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**26500**		**24700**		**131000**		**120000**		**99900**	**105000**	**68100**
Chromium	70	1600	191	NA	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND		**1.79**	ER	ND		ND		<10	<10	<10
Cobalt	NLE	0.47	18.3	NA	<50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND		ND		ND		ND		<50	<50	<50
Copper	1300	62	65.6	NA	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND		**4.17**	ER	**2.5**	ER	**2.57**	ER	<10	<10	<10
Iron	300	1,100	431,000	**31100**	**38500**	**6340**	**5720**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**11600**		**9260**		**38800**		**35900**		**35700**	**37600**	**25400**
Lead	5	NLE	22.7	NA	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND		ND		**4.43**	ER	**4.66**	ER	<3.0	<3.0	<3.0
Magnesium	NLE	NLE	62,700	NA	**7450**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**32400**		**39000**		**143000**		**129000**		**76900**	**82200**	**47700**
Manganese	50	32	331	**62.9**	**67.6**	**20.5**	**17.7**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**176**		**64.9**		**1230**		**1170**		**1320**	**1350**	**978**
Mercury	2	0.06	0.26	NA	<0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND		ND		ND		ND		NA	NA	<0.2
Nickel	100	30	187	NA	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND		ND		ND		ND		<10	<10	<10
Potassium	NLE	NLE	137,000	NA	<10000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**21000**		**25500**		**53600**		**47400**		**32200**	**34200**	**17700**
Selenium	40	7.80	29.6	NA	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**42.9**		NR		ND		ND		<10	<10	<10
Silver	40	7.10	ND	NA	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND		**1.38**	ER	**3.88**		**3.42**		<10	<10	<10
Sodium	50000	NLE	21500	NA	**64500**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**109000**		**89100**		**744000**		**683000**		**544000**	**625000**	**400000**
Thallium	2	0.02	5.5	NA	<2.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND		ND		ND		ND		<2.0	<2.0	<2.0
Vanadium	NLE	6.3	108	NA	<50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.38**	ER	ND		ND		ND		<50	<50	<50
Zinc	2000	470	233	NA	**109**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.37**	ER	ND		ND		ND		<20	<20	<20

Notes:

RSL values were current at the time the screening was conducted.

(1) New Jersey Department of Environmental Protection Ground Water Quality Standards, Specific Ground Water Quality Criteria - Class IIA and Practical Quantitation Levels. (http://www.state.nj.us/dep/wms/bwqsa/Appendix_Table_1.htm)

(2) U.S. Environmental Protection Agency, Regional Screening Levels (RSLs). (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Revised November 2013.

(3) Background data from Weston. 1995. Site Investigation Report - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December.

NA = Not analyzed.

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µg/L = micrograms per liter.

Detections are bolded

Shaded cells = concentration exceeds NJDEP GWQS

Shaded cells = concentration exceeds USEPA Tapwater RSLs

Shaded cells = concentration exceeds NJDEP GWQS and USEPA Tapwater RSLs.

Shaded cells = concentration exceeds Weston (1995) background

TABLE 4.4
GROUNDWATER SAMPLING SUMMARY RESULTS - MARCH 2008 TO AUGUST 2011
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

	NJDEP Ground Water Quality Criteria (1)	USEPA Tapwater RSL (HQ = 0.1) (2)	Background Concentration (3)	M5MW12				M5MW13															M5MW14		
Round No.				LF51	LF51 Dup	LF52	LF52 Dup	42	43	44	45	46	47	48	49	LF50	LF51	LF52	LF53	LF54	LF55	LF56	41	42	43
Date Collected				6/8/2011	6/8/2011	8/13/2011	8/13/2011	3/11/2008	6/3/2008	8/25/2008	11/10/2008	2/26/2009	6/12/2009	9/18/2009	12/28/2009	3/31/2010	6/30/2010	9/26/2010	1/11/2011	2/23/2011	6/8/2011	8/13/2011	3/11/2008	6/3/2008	8/25/2008
ANALYTE/Lab ID				1124304	1124303	1134004	11340	80077.07	80185.07	80306.07	80404.07	90077.07	90235.07	90390.07	90490.07	10115.05	10298.09	10411.06	1101906	1106513	1124307	1134005	80077.08	80185.08	80306.08
Volatile Organic Compounds (µg/L)																									
Acetone	6000	1,200	-	<0.32	<0.32	<7.6	<7.6	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND		<0.32	<0.32	<0.32	<7.6	ND	ND	ND
Bromodichloromethane	1	0.12	-	<0.12	<0.12	<0.23	<0.23	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND		<0.12	<0.12	<0.12	<0.23	ND	ND	ND
2-Butanone	300	490	-	<0.22	<0.22	<2.9	<2.9	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND		<0.22	<0.22	<0.22	<2.9	ND	ND	ND
Carbon disulfide	700	72	-	<0.12	<0.12	<0.18	<0.18	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND		<0.12	<0.12	<0.12	<0.18	ND	ND	ND
Chloroform	70	0.19	-	<0.35	<0.35	<0.21	<0.21	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND		<0.35	<0.35	<0.35	<0.21	ND	ND	ND
1,3-Dichlorobenzene	600	NLE	-	<0.16	<0.16	<0.29	<0.29	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND		<0.16	<0.16	<0.16	<0.29	ND	ND	ND
1,1-Dichloroethene	1	26	-	<0.15	<0.15	<0.28	<0.28	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND		<0.15	<0.15	<0.15	<0.28	ND	ND	ND
cis-l,2-Dichloroethene	70	2.8	-	<0.12	<0.12	<0.22	<0.22	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND		<0.12	<0.12	<0.12	<0.22	ND	ND	ND
trans -1,2-Dichloroethene	100	8.6	-	<0.14	<0.14	<0.31	<0.31	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND		<0.14	<0.14	<0.14	<0.31	ND	ND	ND
Methylene chloride	3	8.4	-	<0.26	<0.26	<0.2	<0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND		<0.26	<0.26	<0.26	<0.2	ND	ND	ND
Tetrachloroethene	1	3.5	-	<0.14	<0.14	<0.32	<0.32	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND		<0.14	<0.14	<0.14	<0.32	ND	ND	ND
Toluene	600	86	-	<0.12	<0.12	<0.15	<0.15	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND		<0.12	<0.12	<0.12	<0.15	ND	ND	ND
Trichloroethene	1	0.26	-	<0.11	<0.11	<0.21	<0.21	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND		<0.11	<0.11	<0.11	<0.21	ND	ND	ND
Vinyl chloride	1	0.015	-	<0.22	<0.22	<0.27	<0.27	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND		<0.22	<0.22	<0.22	<0.27	ND	ND	ND
TICs*	500	NLE	-	**0**	**0**	**0**	**0**	ND	ND	ND	ND	ND	ND	ND	ND	ND		ND		ND		**0**	**0**	**0**	**0**	ND	ND	ND
Metals (µg/L)																									
Aluminum	200	1,600	121,000	<200	**350**	**725**	**791**	NA	NA	NA	NA	NA	NA	NA	NA	**19.5**		**22.4**		ND		<200	<200	<200	<200	NA	NA	NA
Antimony	6	0.60	20.7	<6.0	<6.0	<6.0	<6.0	NA	NA	NA	NA	NA	NA	NA	NA	**6.28**	ER	**6.32**	ER	**30.1**		<6.0	<6.0	<6.0	<6.0	NA	NA	NA
Arsenic	3	0.05	89.3	<3.0	<3.0	<3.0	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	ND		ND		**6.4**		<3.0	<3.0	<3.0	<3.0	NA	NA	NA
Barium	6000	290	699	<200	<200	<200	<200	NA	NA	NA	NA	NA	NA	NA	NA	**114**		**91.7**		**359**		**436**	**238**	<200	<200	NA	NA	NA
Beryllium	1	1.60	2.1	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	ND		ND		ND		<1.0	<1.0	<1.0	<1.0	NA	NA	NA
Cadmium	4	0.69	9.5	<3.0	<3.0	<3.0	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	**0.514**	ER	ND		**1.25**	ER	<3.0	<3.0	<3.0	<3.0	NA	NA	NA
Calcium	NLE	NLE	45,400	**36200**	**37700**	**33800**	**31900**	NA	NA	NA	NA	NA	NA	NA	NA	**28400**		**23900**		**154000**		**79500**	**49700**	**33400**	**29800**	NA	NA	NA
Chromium	70	1600	191	<10	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA	NA	ND		ND		ND		<10	<10	<10	**14.3**	NA	NA	NA
Cobalt	NLE	0.47	18.3	<50	<50	<50	<50	NA	NA	NA	NA	NA	NA	NA	NA	ND		ND		ND		<50	<50	<50	<50	NA	NA	NA
Copper	1300	62	65.6	<10	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA	NA	ND		**3.12**	ER	**1.94**	ER	<10	<10	<10	<10	NA	NA	NA
Iron	300	1,100	431,000	**21500**	**30800**	**28300**	**19700**	NA	NA	NA	NA	NA	NA	NA	NA	**8990**		**8550**		**24400**		**7830**	**7190**	**8040**	**8180**	NA	NA	NA
Lead	5	NLE	22.7	<3.0	<3.0	**5**	**5.1**	NA	NA	NA	NA	NA	NA	NA	NA	ND		ND		**3.4**	ER	<3.0	<3.0	<3.0	<3.0	NA	NA	NA
Magnesium	NLE	NLE	62,700	**42000**	**43200**	**41600**	**40100**	NA	NA	NA	NA	NA	NA	NA	NA	**19200**		**20600**		**245000**		**82000**	**43700**	**27000**	**27100**	NA	NA	NA
Manganese	50	32	331	**251**	**271**	**192**	**160**	NA	NA	NA	NA	NA	NA	NA	NA	**320**		**195**		**1170**		**885**	**600**	**391**	**313**	NA	NA	NA
Mercury	2	0.06	0.26	<0.2	<0.2	<0.2	<0.2	NA	NA	NA	NA	NA	NA	NA	NA	ND		ND		ND		NA	<0.2	<0.2	<0.2	NA	NA	NA
Nickel	100	30	187	<10	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA	NA	ND		ND		ND		<10	<10	<10	<10	NA	NA	NA
Potassium	NLE	NLE	137,000	**23000**	**23800**	**25800**	**24400**	NA	NA	NA	NA	NA	NA	NA	NA	**9190**		**12600**		**68300**		**33300**	**15100**	**11300**	**14000**	NA	NA	NA
Selenium	40	7.80	29.6	<10	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA	NA	**40.2**		NR		ND		<10	<10	<10	<10	NA	NA	NA
Silver	40	7.10	ND	<10	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA	NA	ND		**1.7**	ER	**0.529**		<10	<10	<10	<10	NA	NA	NA
Sodium	50000	NLE	21500	**173000**	**188000**	**177000**	**171000**	NA	NA	NA	NA	NA	NA	NA	NA	**143000**		**106000**		**1870000**		**587000**	**378000**	**217000**	**233000**	NA	NA	NA
Thallium	2	0.02	5.5	<2.0	<2.0	<2.0	<2.0	NA	NA	NA	NA	NA	NA	NA	NA	ND		ND		ND		<2.0	<2.0	<2.0	<2.0	NA	NA	NA
Vanadium	NLE	6.3	108	<50	<50	<50	<50	NA	NA	NA	NA	NA	NA	NA	NA	**0.817**	ER	ND		ND		<50	<50	<50	<50	NA	NA	NA
Zinc	2000	470	233	<20	<20	**32.9**	**40.3**	NA	NA	NA	NA	NA	NA	NA	NA	**1.26**		ND		ND		<20	<20	<20	<20	NA	NA	NA

Notes:

RSL values were current at the time the screening was conducted.

(1) New Jersey Department of Environmental Protection Ground Water Quality Standards, Specific Ground Water Quality Criteria - Class IIA and Practical Quantitation Levels. (http://www.state.nj.us/dep/wms/bwqsa/Appendix_Table_1.htm)

(2) U.S. Environmental Protection Agency, Regional Screening Levels (RSLs). (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Revised November 2013.

(3) Background data from Weston. 1995. Site Investigation Report - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December.

NA = Not analyzed.

ND = Not detected.

NLE = No limit established.

< = analyte not detected above method detection limit (MDL).

µg/L = micrograms per liter.

Detections are bolded

Shaded cells = concentration exceeds NJDEP GWQS

Shaded cells = concentration exceeds USEPA Tapwater RSLs

Shaded cells = concentration exceeds NJDEP GWQS and USEPA Tapwater RSLs.

Shaded cells = concentration exceeds Weston (1995) background

TABLE 4.4
GROUNDWATER SAMPLING SUMMARY RESULTS - MARCH 2008 TO AUGUST 2011
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

	NJDEP Ground Water Quality Criteria [1]	USEPA Tapwater RSL (HQ = 0.1) [2]	Background Concentration [3]	M5MW14													M5MW16								
Round No.				44	45	46	47	47 Dup	LF48	LF49	LF50	LF51	LF52	LF53	LF54	LF55	38	39	40	41	42	43	44	45	LF46
Date Collected				11/10/2008	2/26/2009	6/12/2009	9/18/2009	9/18/2009	12/28/2009	3/31/2010	6/30/2010	9/26/2010	1/11/2011	2/23/2011	6/8/2011	8/13/2011	3/11/2008	6/3/2008	8/25/2008	11/10/2008	2/26/2009	6/12/2009	9/18/2009	12/28/2009	3/30/2010
ANALYTE/Lab ID				80404.08	90077.08	90235.08	90390.08	90390.03	90490.08	10115.06	10298.1	10411.07	1101907	1106510	1124308	1134006	80077.09	80185.09	80306.09	80404.09	90077.09	90235.09	90390.09	90490.09	10113.03
Volatile Organic Compounds (µg/L)																									
Acetone	6000	1,200	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.32	<0.32	<0.32	<7.6	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	1	0.12	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.12	<0.12	<0.12	<0.23	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	490	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.22	<0.22	<0.22	<2.9	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	700	72	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.12	<0.12	<0.12	<0.18	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	70	0.19	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.35	<0.35	<0.35	<0.21	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	600	NLE	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.16	<0.16	<0.16	<0.29	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	1	26	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.15	<0.15	<0.15	<0.28	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-l,2-Dichloroethene	70	2.8	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.12	<0.12	<0.12	<0.22	**8.48**	**3.23**	**13.2**	**4.23**	**14.93**	**5.14**	**1.87**	**2.52**	**10.26**
trans -1,2-Dichloroethene	100	8.6	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.14	<0.14	<0.14	<0.31	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	3	8.4	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.26	<0.26	<0.26	<0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	3.5	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.14	<0.14	<0.14	<0.32	**6.93**	**4.42**	**5.92**	**4.43**	**1.75** J	**2.99**	**1.95**	**4.9**	**1.36**
Toluene	600	86	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.12	<0.12	<0.12	<0.15	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1	0.26	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.11	<0.11	<0.11	<0.21	**0.74** J	**0.75** J	**1.99** J	**1.36** J	**1.58** J	**0.5** J	ND	ND	**1.84**
Vinyl chloride	1	0.015	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.22	<0.22	<0.22	<0.27	ND	ND	**1.2** J	ND	**1.28** J	ND	ND	ND	ND
TICs*	500	NLE	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0**	**0**	**0**	**0**	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals (µg/L)																									
Aluminum	200	1,600	121,000	NA	NA	NA	NA	NA	NA	**21.2**	ND	ND	<200	<200	<200	<200	NA	NA	NA	NA	NA	NA	NA	NA	**334**
Antimony	6	0.60	20.7	NA	NA	NA	NA	NA	NA	**10.4**	**6.04** ER	**15.4**	<6.0	<6.0	<6.0	<6.0	NA	NA	NA	NA	NA	NA	NA	NA	**6.25** ER
Arsenic	3	0.05	89.3	NA	NA	NA	NA	NA	NA	ND	**1.24** ER	ND	<3.0	<3.0	<3.0	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	**1.26** ER
Barium	6000	290	699	NA	NA	NA	NA	NA	NA	**26.9**	**25.6**	**30.7**	<200	<200	<200	<200	NA	NA	NA	NA	NA	NA	NA	NA	**66.7**
Beryllium	1	1.60	2.1	NA	NA	NA	NA	NA	NA	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	**0.079** ER
Cadmium	4	0.69	9.5	NA	NA	NA	NA	NA	NA	ND	ND	ND	<3.0	<3.0	<3.0	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	**0.667** ER
Calcium	NLE	NLE	45,400	NA	NA	NA	NA	NA	NA	**43800**	**49600**	**63300**	**45600**	**51000**	**59700**	**54300**	NA	NA	NA	NA	NA	NA	NA	NA	**11500**
Chromium	70	1600	191	NA	NA	NA	NA	NA	NA	ND	ND	ND	<10	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA	NA	ND
Cobalt	NLE	0.47	18.3	NA	NA	NA	NA	NA	NA	ND	ND	ND	<50	<50	<50	<50	NA	NA	NA	NA	NA	NA	NA	NA	**0.746**
Copper	1300	62	65.6	NA	NA	NA	NA	NA	NA	ND	**2.22** ER	**1.02** ER	<10	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA	NA	ND
Iron	300	1,100	431,000	NA	NA	NA	NA	NA	NA	**1080**	**563**	**701**	**5010**	**1550**	**13900**	**11500**	NA	NA	NA	NA	NA	NA	NA	NA	**12700**
Lead	5	NLE	22.7	NA	NA	NA	NA	NA	NA	ND	ND	ND	<3.0	<3.0	<3.0	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	ND
Magnesium	NLE	NLE	62,700	NA	NA	NA	NA	NA	NA	**16000**	**16300**	**20600**	**20200**	**17800**	**18900**	**19800**	NA	NA	NA	NA	NA	NA	NA	NA	**4400**
Manganese	50	32	331	NA	NA	NA	NA	NA	NA	**16.5**	**14.7**	**17.4**	**73**	**27.6**	**112**	**79.3**	NA	NA	NA	NA	NA	NA	NA	NA	**57.4**
Mercury	2	0.06	0.26	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	<0.2	**0.28**	**0.46**	NA	NA	NA	NA	NA	NA	NA	NA	**0.12** ER
Nickel	100	30	187	NA	NA	NA	NA	NA	NA	ND	ND	ND	<10	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA	NA	**2.27** ER
Potassium	NLE	NLE	137,000	NA	NA	NA	NA	NA	NA	**12900**	**12200**	**15700**	**13200**	**13200**	**12000**	**12700**	NA	NA	NA	NA	NA	NA	NA	NA	**5510**
Selenium	40	7.80	29.6	NA	NA	NA	NA	NA	NA	**60.8**	NR	ND	<10	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA	NA	**7.16**
Silver	40	7.10	ND	NA	NA	NA	NA	NA	NA	**2.04**	ND	ND	<10	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA	NA	ND
Sodium	50000	NLE	21500	NA	NA	NA	NA	NA	NA	**8060**	**8900**	**11100**	**42400**	**10200**	**64600**	**89400**	NA	NA	NA	NA	NA	NA	NA	NA	**50600**
Thallium	2	0.02	5.5	NA	NA	NA	NA	NA	NA	ND	ND	ND	<2.0	<2.0	<2.0	<2.0	NA	NA	NA	NA	NA	NA	NA	NA	ND
Vanadium	NLE	6.3	108	NA	NA	NA	NA	NA	NA	ND	ND	ND	<50	<50	<50	<50	NA	NA	NA	NA	NA	NA	NA	NA	**1.04** ER
Zinc	2000	470	233	NA	NA	NA	NA	NA	NA	**1.44** ER	ND	ND	<20	<20	**71.8**	**35.8**	NA	NA	NA	NA	NA	NA	NA	NA	**19.9** ER

Notes:

RSL values were current at the time the screening was conducted.

(1) New Jersey Department of Environmental Protection Ground Water Quality Standards, Specific Ground Water Quality Criteria - Class IIA and Practical Quantitation Levels. (http://www.state.nj.us/dep/wms/bwqsa/Appendix_Table_1.htm)

(2) U.S. Environmental Protection Agency, Regional Screening Levels (RSLs). (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Revised November 2013.

(3) Background data from Weston. 1995. Site Investigation Report - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December.

NA = Not analyzed.

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Detections are bolded

Shaded cells = concentration exceeds NJDEP GWQS

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Shaded cells = concentration exceeds NJDEP GWQS and USEPA Tapwater RSLs.

Shaded cells = concentration exceeds Weston (1995) background

TABLE 4.4
GROUNDWATER SAMPLING SUMMARY RESULTS - MARCH 2008 TO AUGUST 2011
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

	NJDEP Ground Water Quality Criteria (1)	USEPA Tapwater RSL (HQ = 0.1) (2)	Background Concentration (3)	M5MW16																										
Round No.				LF47		LF48		LF48 Dup		LF49		LF49 Dup		LF50	LF51		LF51 Dup		LF52		LF52 Dup		LF53		LF53 Dup		LF54		LF54 Dup		LF55		LF55 Dup		LF56		LF56 Dup		LF57	
Date Collected				6/30/2010		9/27/2010		9/27/2010		1/4/2011		1/4/2011		2/23/2011	4/12/2011		4/12/2011		4/15/2011		4/15/2011		4/22/2011		4/22/2011		4/29/2011		4/29/2011		6/6/2011		6/6/2011		7/5/2011		7/5/2011		7/29/2011	
ANALYTE/Lab ID				10298.05		10412.04		10412.03		1100704		1100703		1106505	1114204		1114203		1114904		1114903		1116505		1116503		1118205		1118203		1123704		1123703		1127605		1127603		1131505	
Volatile Organic Compounds (µg/L)																																							
Acetone	6000	1,200	-	ND		ND		ND		<0.32		<0.12		<0.12	<0.12		<0.12		<0.12		<0.12		<0.12		<0.12		<0.12		<0.12		<0.12		<0.12		<7.6		<7.6		**15.3**	
Bromodichloromethane	1	0.12	-	ND		ND		ND		<0.12		<0.12		<0.12	<0.12		<0.12		<0.12		<0.12		<0.12		<0.12		<0.12		<0.12		<0.12		<0.12		<0.23		<0.23		<0.23	
2-Butanone	300	490	-	ND		ND		ND		<0.22		<0.22		<0.22	<0.22		<0.22		<0.22		<0.22		<0.22		<0.22		<0.22		<0.22		<0.22		<0.22		<2.9		<2.9		<2.9	
Carbon disulfide	700	72	-	ND		ND		ND		<0.12		<0.12		<0.12	<0.12		<0.12		<0.12		<0.12		<0.12		<0.12		<0.12		<0.12		<0.12		<0.12		<0.18		<0.18		**0.4**	J
Chloroform	70	0.19	-	ND		ND		ND		<0.35		<0.35		<0.35	<0.35		<0.35		<0.35		<0.35		<0.35		<0.35		<0.35		<0.35		<0.35		<0.35		<0.21		<0.21		**2.9**	
1,3-Dichlorobenzene	600	NLE	-	ND		ND		ND		<0.16		<0.16		<0.16	<0.16		<0.16		<0.16		<0.16		<0.16		<0.16		<0.16		<0.16		<0.16		<0.16		<0.29		<0.29		<0.29	
1,1-Dichloroethene	1	26	-	ND		ND		ND		<0.15		<0.15		<0.15	<0.15		<0.15		<0.15		<0.15		<0.15		<0.15		<0.15		<0.15		<0.15		<0.15		<0.28		<0.28		<0.28	
cis-l,2-Dichloroethene	70	2.8	-	**10.27**		**1.71**		**1.84**		**4.64**		**4.37**		**33.47**	**8.45**		**9.11**		**4.13**		**3.57**		**16.63**		**15.21**		**8.57**		**8.94**		**5.17**		**4.97**		**2.1**		**2.1**		**22**	
trans -1,2-Dichloroethene	100	8.6	-	ND		ND		ND		<0.14		<0.14		<0.14	<0.14		<0.14		<0.14		<0.14		<0.14		<0.14		<0.14		<0.14		<0.14		<0.14		<0.31		<0.31		<0.31	
Methylene chloride	3	8.4	-	ND		ND		ND		<0.26		<0.26		<0.26	<0.26		<0.26		<0.26		<0.26		<0.26		<0.26		<0.26		<0.26		<0.26		<0.26		**1.2**		<0.2		<0.2	
Tetrachloroethene	1	3.5	-	**1.56**		**3.39**		**3.86**		**3.72**		**3.6**		<0.14	**0.86**		**0.88**		**1.57**		<0.14		**1.12**		**0.94**		**0.88**		**1.06**		**0.96**		**0.88**		**1.8**		**1.8**		**3.2**	
Toluene	600	86	-	ND		ND		ND		<0.12		<0.12		<0.12	<0.12		<0.12		<0.12		<0.12		<0.12		<0.12		<0.12		<0.12		<0.12		<0.12		<0.15		<0.15		<0.15	
Trichloroethene	1	0.26	-	**1.13**		**0.73**		**0.81**		**0.45**	J	**0.41**	J	**0.97**	**0.88**		**0.94**		**0.44**	J	**0.42**	J	**1.54**		**1.36**		**0.89**		**1.02**		**0.38**	J	**0.35**	J	<0.21		<0.21		**1.9**	
Vinyl chloride	1	0.015	-	**1.15**		ND		ND		<0.22		<0.22		**1.65**	**0.34**	J	**0.36**	J	<0.22		<0.22		**0.46**	J	**0.41**	J	**0.28**	J	**0.27**	J	**0.33**	J	**0.28**	J	<0.27		<0.27		**1.9**	
TICs*	500	NLE	-	ND		ND		ND		**0**		**0**		**0**	**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**	
Metals (µg/L)																																							
Aluminum	200	1,600	121,000	**155**		**203**		**210**		**208**		**225**		**297**	NA		NA		NA		NA		NA		NA		NA		NA		**398**		**788**		NA		NA		NA	
Antimony	6	0.60	20.7	ND		ND		ND		<6.0		<6.0		<6.0	NA		NA		NA		NA		NA		NA		NA		NA		<6.0		<6.0		NA		NA		NA	
Arsenic	3	0.05	89.3	**4.51**	ER	**4.68**	ER	**4.52**	ER	<3.0		<3.0		<3.0	NA		NA		NA		NA		NA		NA		NA		NA		**6.8**		**6.5**		NA		NA		NA	
Barium	6000	290	699	**128**		**91.2**		**91.7**		<200		<200		<200	NA		NA		NA		NA		NA		NA		NA		NA		<200		<200		NA		NA		NA	
Beryllium	1	1.60	2.1	**0.124**	ER	**0.171**		**0.213**	ER	<1.0		<1.0		<1.0	NA		NA		NA		NA		NA		NA		NA		NA		<1.0		<1.0		NA		NA		NA	
Cadmium	4	0.69	9.5	**0.785**	ER	ND		ND		<3.0		<3.0		<3.0	NA		NA		NA		NA		NA		NA		NA		NA		<3.0		<3.0		NA		NA		NA	
Calcium	NLE	NLE	45,400	**14600**		**8510**		**8610**		<5000		<5000		**7180**	NA		NA		NA		NA		NA		NA		NA		NA		**6320**		**5660**		NA		NA		NA	
Chromium	70	1600	191	ND		ND		ND		<10		<10		<10	<0.01	a	<0.01	a	NA		NA		NA		NA		NA		NA		<10		<10		<0.01	a	<0.01	a	NA	
Cobalt	NLE	0.47	18.3	**2.24**		**0.84**		**0.742**		<50		<50		<50	NA		NA		NA		NA		NA		NA		NA		NA		<50		<50		NA		NA		NA	
Copper	1300	62	65.6	**3.15**	ER	**1.09**	ER	**1.05**	ER	<10		<10		<10	NA		NA		NA		NA		NA		NA		NA		NA		<10		<10		NA		NA		NA	
Iron	300	1,100	431,000	**15500**		**5640**		**5400**		**563**		**586**		**8110**	**17500**		**15200**		**8210**		**8740**		**10500**		**12400**		**8390**		**7740**		**9280**		**10400**		**5440**		**7110**		**74300**	
Lead	5	NLE	22.7	ND		ND		ND		<3.0		<3.0		<3.0	NA		NA		NA		NA		NA		NA		NA		NA		<3.0		<3.0		NA		NA		NA	
Magnesium	NLE	NLE	62,700	**6260**		**3670**		**3710**		<5000		<5000		<5000	NA		NA		NA		NA		NA		NA		NA		NA		<5000		<5000		NA		NA		NA	
Manganese	50	32	331	**87.8**		**65.2**		**65.4**		**35.4**		**35.8**		**33.3**	**106**		**107**		**132**		**134**		**34.9**		**33.1**		**73.6**		**70.6**		**45.3**		**43.2**		**27.3**		**27.9**		**79.8**	
Mercury	2	0.06	0.26	ND		ND		ND		NA		NA		<0.2	NA		NA		NA		NA		NA		NA		NA		NA		<0.2		<0.2		NA		NA		NA	
Nickel	100	30	187	**5.05**		**3.12**	ER	**3.07**	ER	<10		<10		<10	NA		NA		NA		NA		NA		NA		NA		NA		<10		<10		NA		NA		NA	
Potassium	NLE	NLE	137,000	**5410**		**4350**		**4290**		<10000		<10000		<10000	NA		NA		NA		NA		NA		NA		NA		NA		<10000		<10000		NA		NA		NA	
Selenium	40	7.80	29.6	NR		**1.56**	ER	ND		<10		<10		<10	NA		NA		NA		NA		NA		NA		NA		NA		<10		<10		NA		NA		NA	
Silver	40	7.10	ND	**2.81**		**1.05**	ER	**0.606**		<10		<10		<10	NA		NA		NA		NA		NA		NA		NA		NA		<10		<10		NA		NA		NA	
Sodium	50000	NLE	21500	**93500**		**109000**		**109000**		**52600**		**52900**		**37400**	NA		NA		NA		NA		NA		NA		NA		NA		**106000**		**101000**		NA		NA		NA	
Thallium	2	0.02	5.5	ND		ND		ND		<2.0		<2.0		<2.0	NA		NA		NA		NA		NA		NA		NA		NA		<2.0		<2.0		NA		NA		NA	
Vanadium	NLE	6.3	108	ND		ND		ND		<50		<50		<50	NA		NA		NA		NA		NA		NA		NA		NA		<50		<50		NA		NA		NA	
Zinc	2000	470	233	**46.7**		**43.5**		**44.1**		**50.9**		**61**		**50.8**	NA		NA		NA		NA		NA		NA		NA		NA		**56.9**		**56.7**		NA		NA		NA	

Notes:

RSL values were current at the time the screening was conducted.

(1) New Jersey Department of Environmental Protection Ground Water Quality Standards, Specific Ground Water Quality Criteria - Class IIA and Practical Quantitation Levels. (http://www.state.nj.us/dep/wms/bwqsa/Appendix_Table_1.htm)

(2) U.S. Environmental Protection Agency, Regional Screening Levels (RSLs). (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Revised November 2013.

(3) Background data from Weston. 1995. Site Investigation Report - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December.

NA = Not analyzed.

ND = Not detected.

NLE = No limit established.

< = analyte not detected above method detection limit (MDL).

µg/L = micrograms per liter.

Detections are bolded

Shaded cells = concentration exceeds NJDEP GWQS

Shaded cells = concentration exceeds USEPA Tapwater RSLs

Shaded cells = concentration exceeds NJDEP GWQS and USEPA Tapwater RSLs.

Shaded cells = concentration exceeds Weston (1995) background

TABLE 4.4
GROUNDWATER SAMPLING SUMMARY RESULTS - MARCH 2008 TO AUGUST 2011
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Round No.	NJDEP Ground Water Quality Criteria (1)	USEPA Tapwater RSL (HQ = 0.1) (2)	Background Concentration (3)	M5MW16			M5MW18																	M5MW19		
				LF57 Dup	LF58	LF59	38	39	40	41	42	43	44	45	45 Dup	LF46	LF47	LF48	LF49	LF50	LF51	LF52	38	39	40
Date Collected				7/29/2011	8/13/2011	8/19/2011	3/11/2008	6/3/2008	8/25/2008	11/10/2008	2/26/2009	6/12/2009	9/18/2009	12/28/2009	12/28/2009	3/31/2010	6/29/2010	9/26/2010	1/4/2011	2/23/2011	6/6/2011	8/13/2011	3/11/2008	6/3/2008	8/25/2008
ANALYTE/Lab ID				1131503	1134013	1134805	80077.10	80185.10	80306.10	80404.10	90077.10	90235.10	90390.10	90490.10	90490.03	10115.02	10294.01	10411.08	1100707	1106504	1123705	1134009	80077.11	80185.11	80306.11
Volatile Organic Compounds (µg/L)																										
Acetone	6000	1,200	-	**15.8**	**11.6**	<7.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.32	<0.32	<0.32	<7.6	ND	ND	ND
Bromodichloromethane	1	0.12	-	<0.23	<0.23	<0.23	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.12	<0.12	<0.12	<0.23	ND	ND	ND
2-Butanone	300	490	-	<2.9	**7.4**	<2.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.22	<0.22	<0.22	<2.9	ND	ND	ND
Carbon disulfide	700	72	-	**0.42** J	<0.18	<0.18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.12	<0.12	<0.12	<0.18	ND	ND	ND
Chloroform	70	0.19	-	**2.9**	**1.7**	**0.86**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.35	<0.35	<0.35	<0.21	ND	ND	ND
1,3-Dichlorobenzene	600	NLE	-	<0.29	<0.29	<0.29	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.16	<0.16	<0.16	<0.29	ND	ND	ND
1,1-Dichloroethene	1	26	-	<0.28	<0.28	<0.28	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.15	<0.15	<0.15	<0.28	ND	ND	ND
cis-l,2-Dichloroethene	70	2.8	-	**23.2**	**50**	**29.2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.12	<0.12	<0.12	<0.22	**1.25** J	**1.11** J	**0.57** J
trans -1,2-Dichloroethene	100	8.6	-	<0.31	<0.31	<0.31	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.14	<0.14	<0.14	<0.31	ND	ND	ND
Methylene chloride	3	8.4	-	<0.2	**0.5** J	<0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.26	<0.26	<0.26	<0.2	ND	ND	ND
Tetrachloroethene	1	3.5	-	**3.2**	**3.2**	**3**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.14	<0.14	<0.14	<0.32	**0.58** J	ND	**0.75** J
Toluene	600	86	-	<0.15	<0.15	<0.15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.12	<0.12	<0.12	<0.15	ND	ND	ND
Trichloroethene	1	0.26	-	**2.1**	**3.2**	**2**	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0.28** J	ND	ND	<0.11	**0.16** J	<0.11	<0.21	**1.34** J	ND	**0.33** J
Vinyl chloride	1	0.015	-	**2**	**7.1**	**3.9**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.22	<0.22	<0.22	<0.27	ND	ND	ND
TICs*	500	NLE	-	**0**	**0**	**0**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0**	**0**	**0**	**0**	ND	ND	ND
Metals (µg/L)																										
Aluminum	200	1,600	121,000	NA	**7510**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**30.6**	ND	**44.2**	<200	<200	<200	<200	NA	NA	NA
Antimony	6	0.60	20.7	NA	<6.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	**9.81** ER	<6.0	<6.0	<6.0	<6.0	NA	NA	NA
Arsenic	3	0.05	89.3	NA	**24.5**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**3.77** ER	**3.26** ER	**1.38** ER	<3.0	<3.0	**9.4**	**3.3**	NA	NA	NA
Barium	6000	290	699	NA	**242**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**131**	**112**	**259**	<200	<200	**416**	**229**	NA	NA	NA
Beryllium	1	1.60	2.1	NA	**1.2**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	<1.0	<1.0	<1.0	<1.0	NA	NA	NA
Cadmium	4	0.69	9.5	NA	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.23** ER	**1.07** ER	**0.661** ER	<3.0	<3.0	<3.0	<3.0	NA	NA	NA
Calcium	NLE	NLE	45,400	NA	**30300**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**27200**	**27200**	**23400**	**19500**	**27500**	**28300**	**34000**	NA	NA	NA
Chromium	70	1600	191	NA	**90.4**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	<10	<10	<10	<10	NA	NA	NA
Cobalt	NLE	0.47	18.3	NA	<50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	<50	<50	<50	<50	NA	NA	NA
Copper	1300	62	65.6	NA	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	**4.85** ER	ND	<10	<10	<10	<10	NA	NA	NA
Iron	300	1,100	431,000	**160000** b	**49800**	**12700**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**32400**	**21700**	**19100**	**4270**	**22800**	**76400**	**33200**	NA	NA	NA
Lead	5	NLE	22.7	NA	**12.2**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	**2.99** ER	ND	<3.0	<3.0	<3.0	<3.0	NA	NA	NA
Magnesium	NLE	NLE	62,700	NA	**13700**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**4830**	**4770**	**4030**	<5000	<5000	<5000	**5880**	NA	NA	NA
Manganese	50	32	331	**108** b	**112**	**73.1**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**61.4**	**63.2**	**42.6**	**41.9**	**69.7**	**74.1**	**81.6**	NA	NA	NA
Mercury	2	0.06	0.26	NA	<0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	NA	<0.2	<0.2	<0.2	NA	NA	NA
Nickel	100	30	187	NA	**39.7**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	**0.446** ER	**1.1** ER	<10	<10	<10	<10	NA	NA	NA
Potassium	NLE	NLE	137,000	NA	**11800**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**9040**	**8550**	**9820**	<10000	<10000	<10000	<10000	NA	NA	NA
Selenium	40	7.80	29.6	NA	**14.4**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**21.9**	NR	ND	<10	<10	<10	<10	NA	NA	NA
Silver	40	7.10	ND	NA	<10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	**4.35** ER	**2.09**	<10	<10	<10	<10	NA	NA	NA
Sodium	50000	NLE	21500	NA	**615000**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**9240**	**8930**	**19700**	**16700**	**10600**	**10700**	**17000**	NA	NA	NA
Thallium	2	0.02	5.5	NA	<2.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	<2.0	<2.0	<2.0	<2.0	NA	NA	NA
Vanadium	NLE	6.3	108	NA	<50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.17** ER	ND	ND	<50	<50	<50	<50	NA	NA	NA
Zinc	2000	470	233	NA	**144**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**4.9** ER	**3.32** ER	**5.55**	<20	<20	<20	<20	NA	NA	NA

Notes:

RSL values were current at the time the screening was conducted.

(1) New Jersey Department of Environmental Protection Ground Water Quality Standards, Specific Ground Water Quality Criteria - Class IIA and Practical Quantitation Levels. (http://www.state.nj.us/dep/wms/bwqsa/Appendix_Table_1.htm)

(2) U.S. Environmental Protection Agency, Regional Screening Levels (RSLs). (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Revised November 2013.

(3) Background data from Weston. 1995. Site Investigation Report - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December.

NA = Not analyzed.

ND = Not detected.

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< = analyte not detected above method detection limit (MDL).

µg/L = micrograms per liter.

Detections are bolded

Shaded cells = concentration exceeds NJDEP GWQS

Shaded cells = concentration exceeds USEPA Tapwater RSLs

Shaded cells = concentration exceeds NJDEP GWQS and USEPA Tapwater RSLs.

Shaded cells = concentration exceeds Weston (1995) background

TABLE 4.4
GROUNDWATER SAMPLING SUMMARY RESULTS - MARCH 2008 TO AUGUST 2011
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

				M5MW19														M5MW20								
Round No.	**NJDEP Ground Water Quality Criteria (1)**	**USEPA Tapwater RSL (HQ = 0.1) (2)**	**Background Concentration (3)**	41	42	43	44	45	LF46	LF47	LF48	LF49	LF50	LF50 Dup	LF51	LF52	38	39	40	41	42	43	44	45	LF46
Date Collected				11/10/2008	2/26/2009	6/12/2009	9/18/2009	12/28/2009	3/31/2010	6/30/2010	9/27/2010	1/4/2011	2/23/2011	2/23/2011	6/6/2011	8/13/2011	3/11/2008	6/3/2008	8/25/2008	11/10/2008	2/26/2009	6/12/2009	9/18/2009	12/28/2009	3/30/2010
ANALYTE/Lab ID				80404.11	90077.11	90235.11	90390.11	90490.11	10115.01	10298.06	10412.05	1100706	1106507	1106503	1123706	1134014	80077.12	80185.12	80306.12	80404.12	90077.12	90235.12	90390.12	90490.12	10113.04
Volatile Organic Compounds (µg/L)																									
Acetone	6000	1,200	-	ND	ND	ND		ND	ND		ND		ND		<0.32	<0.32	<0.32	<0.32		<7.6	**2.15**		ND		ND		ND	ND		ND	ND		ND	
Bromodichloromethane	1	0.12	-	ND	ND	ND		ND	ND		ND		ND		<0.12	<0.12	<0.12	**2.13**		<0.23	ND		ND		ND		ND	ND		ND	ND		ND	
2-Butanone	300	490	-	ND	ND	ND		ND	ND		ND		ND		<0.22	<0.22	<0.22	<0.22		<2.9	ND		ND		ND		ND	ND		ND	ND		ND	
Carbon disulfide	700	72	-	ND	ND	ND		ND	ND		ND		ND		<0.12	<0.12	<0.12	<0.12		<0.18	ND		ND		ND		ND	ND		ND	ND		ND	
Chloroform	70	0.19	-	ND	ND	ND		ND	ND		ND		ND		<0.35	<0.35	<0.35	**18.2**		**10.4**	ND		ND		ND		ND	ND		ND	ND		ND	
1,3-Dichlorobenzene	600	NLE	-	ND	ND	ND		ND	ND		ND		ND		<0.16	<0.16	<0.16	<0.16		<0.29	ND		ND		ND		ND	ND		ND	ND		ND	
1,1-Dichloroethene	1	26	-	ND	ND	ND		ND	ND		ND		ND		<0.15	<0.15	<0.15	<0.15		<0.28	ND		ND		ND		ND	ND		ND	ND		ND	
cis-l,2-Dichloroethene	70	2.8	-	**8.5**	**2.96**	**5.05**		**1.75**	**1.4**		**0.48**	J	**3.35**		**2.12**		**6.91**	**1.82**	**1.91**	**0.48**	J	<0.22	ND		**3.71**		**21.55**		**6.61**		**20.33**	**2.91**		**13.16**	**1.44**		**2.4**	
trans -1,2-Dichloroethene	100	8.6	-	ND	ND	ND		ND	ND		ND		ND		<0.14	<0.14	<0.14	<0.14		<0.31	ND		ND		ND		ND	ND		ND	ND		ND	
Methylene chloride	3	8.4	-	ND	ND	ND		ND	ND		ND		ND		<0.26	<0.26	<0.26	<0.26		<0.2	ND		ND		ND		ND	ND		ND	ND		ND	
Tetrachloroethene	1	3.5	-	**2.01**	**3.03**	**3.17**		ND	**0.44**	J	**0.66**		ND		<0.14	**1.1**	**1.2**	**0.38**	J	<0.32	**0.95**	J	**1.28**	J	**2.41**		**2.19**		**2.13**	**1.86**	J	**1.73**	**0.96**		**6.79**	
Toluene	600	86	-	ND	ND	ND		ND	ND		ND		ND		<0.12	<0.12	<0.12	<0.12		<0.15	ND		ND		ND		ND	ND		ND	ND		ND	
Trichloroethene	1	0.26	-	**3.68**	**2.9**	**0.51**	J	ND	**0.88**		**0.86**		**0.53**		ND	**0.84**	**0.9**	**0.97**	**0.25**	J	<0.21	ND		**0.55**	J	**1.65**	J	**0.7**	J	**3.59**	**0.7**	J	**1.7**	**0.3**	J	**2.47**	
Vinyl chloride	1	0.015	-	ND	ND	ND		ND	ND		ND		ND		<0.22	<0.22	<0.22	<0.22		<0.27	ND		ND		ND		ND	ND		ND	ND		ND	
TICs*	500	NLE	-	ND	ND	ND		ND	ND		ND		ND		**0**	**0**	**0**	**0**		**0**	ND		ND		ND		ND	ND		ND	ND		ND	
Metals (µg/L)																									
Aluminum	200	1,600	121,000	NA	NA	NA		NA	NA		ND		**16.2**		**57.4**		<200	<200	<200	<200		<200	NA		NA		NA		NA	NA		NA	NA		**574**	
Antimony	6	0.60	20.7	NA	NA	NA		NA	NA		**6.48**	ER	ND		ND		<6.0	<6.0	<6.0	<6.0		<6.0	NA		NA		NA		NA	NA		NA	NA		**14.1**	
Arsenic	3	0.05	89.3	NA	NA	NA		NA	NA		**1.98**	ER	**2.01**	ER	**4**	ER	<3.0	<3.0	<3.0	**3.4**		<3.0	NA		NA		NA		NA	NA		NA	NA		ND	
Barium	6000	290	699	NA	NA	NA		NA	NA		**45.2**		**48.5**		**29.7**		<200	<200	<200	<200		<200	NA		NA		NA		NA	NA		NA	NA		**13.7**	
Beryllium	1	1.60	2.1	NA	NA	NA		NA	NA		ND		ND		ND		<1.0	<1.0	<1.0	<1.0		<1.0	NA		NA		NA		NA	NA		NA	NA		ND	
Cadmium	4	0.69	9.5	NA	NA	NA		NA	NA		**0.724**	ER	**0.754**	ER	ND		<3.0	<3.0	<3.0	<3.0		<3.0	NA		NA		NA		NA	NA		NA	NA		ND	
Calcium	NLE	NLE	45,400	NA	NA	NA		NA	NA		**20400**		**21600**		**8860**		**6790**	**18400**	**17700**	**14000**		**12700**	NA		NA		NA		NA	NA		NA	NA		**33000**	
Chromium	70	1600	191	NA	NA	NA		NA	NA		ND		ND		ND		<10	<10	<10	<10		<10	NA		NA		NA		NA	NA		NA	NA		**3.22**	ER
Cobalt	NLE	0.47	18.3	NA	NA	NA		NA	NA		ND		ND		ND		<50	<50	<50	<50		<50	NA		NA		NA		NA	NA		NA	NA		ND	
Copper	1300	62	65.6	NA	NA	NA		NA	NA		ND		**2.75**	ER	ND		<10	<10	<10	<10		<10	NA		NA		NA		NA	NA		NA	NA		ND	
Iron	300	1,100	431,000	NA	NA	NA		NA	NA		**11400**		**12000**		**3040**		**1590**	**10700**	**10900**	**10100**		**5300**	NA		NA		NA		NA	NA		NA	NA		**2140**	
Lead	5	NLE	22.7	NA	NA	NA		NA	NA		ND		ND		ND		<3.0	<3.0	<3.0	<3.0		<3.0	NA		NA		NA		NA	NA		NA	NA		ND	
Magnesium	NLE	NLE	62,700	NA	NA	NA		NA	NA		**3700**		**4040**		**2270**		<5000	<5000	<5000	<5000		<5000	NA		NA		NA		NA	NA		NA	NA		**8890**	
Manganese	50	32	331	NA	NA	NA		NA	NA		**45.3**		**48.2**		**22**		**23.9**	**46.2**	**47.5**	**36.1**		**32.1**	NA		NA		NA		NA	NA		NA	NA		**29.2**	
Mercury	2	0.06	0.26	NA	NA	NA		NA	NA		ND		ND		ND		NA	<0.2	<0.2	<0.2		<0.2	NA		NA		NA		NA	NA		NA	NA		**0.12**	ER
Nickel	100	30	187	NA	NA	NA		NA	NA		ND		ND		ND		<10	<10	<10	<10		<10	NA		NA		NA		NA	NA		NA	NA		**2.12**	ER
Potassium	NLE	NLE	137,000	NA	NA	NA		NA	NA		**8800**		**8480**		**4660**		<10000	<10000	<10000	<10000		<10000	NA		NA		NA		NA	NA		NA	NA		**4420**	
Selenium	40	7.80	29.6	NA	NA	NA		NA	NA		**32.3**		NR		ND		<10	<10	<10	<10		<10	NA		NA		NA		NA	NA		NA	NA		**45.6**	
Silver	40	7.10	ND	NA	NA	NA		NA	NA		ND		**1.95**	ER	ND		<10	<10	<10	<10		<10	NA		NA		NA		NA	NA		NA	NA		**1.87**	ER
Sodium	50000	NLE	21500	NA	NA	NA		NA	NA		**7460**		**8590**		**22500**		**25100**	**15000**	**15400**	**26500**		**23000**	NA		NA		NA		NA	NA		NA	NA		**134000**	
Thallium	2	0.02	5.5	NA	NA	NA		NA	NA		ND		ND		ND		<2.0	<2.0	<2.0	<2.0		<2.0	NA		NA		NA		NA	NA		NA	NA		ND	
Vanadium	NLE	6.3	108	NA	NA	NA		NA	NA		ND		ND		**1.49**	ER	<50	<50	<50	<50		<50	NA		NA		NA		NA	NA		NA	NA		**3.35**	ER
Zinc	2000	470	233	NA	NA	NA		NA	NA		**2.59**	ER	**7.44**	ER	**4.87**	ER	<20	<20	<20	<20		<20	NA		NA		NA		NA	NA		NA	NA		**9.67**	ER

Notes:

RSL values were current at the time the screening was conducted.

(1) New Jersey Department of Environmental Protection Ground Water Quality Standards, Specific Ground Water Quality Criteria - Class IIA and Practical Quantitation Levels. (http://www.state.nj.us/dep/wms/bwqsa/Appendix_Table_1.htm)

(2) U.S. Environmental Protection Agency, Regional Screening Levels (RSLs). (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Revised November 2013.

(3) Background data from Weston. 1995. Site Investigation Report - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December.

NA = Not analyzed.

ND = Not detected.

NLE = No limit established.

< = analyte not detected above method detection limit (MDL).

µg/L = micrograms per liter.

Detections are bolded

Shaded cells = concentration exceeds NJDEP GWQS

Shaded cells = concentration exceeds USEPA Tapwater RSLs

Shaded cells = concentration exceeds NJDEP GWQS and USEPA Tapwater RSLs.

Shaded cells = concentration exceeds Weston (1995) background

TABLE 4.4
GROUNDWATER SAMPLING SUMMARY RESULTS - MARCH 2008 TO AUGUST 2011
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

	NJDEP Ground Water Quality Criteria (1)	USEPA Tapwater RSL (HQ = 0.1) (2)	Background Concentration (3)	M5MW20						M5MW23																		
Round No.				LF47	LF48	LF49	LF50	LF51	LF52	38	39	40	41	42	43	44	45	LF46	LF47	LF48	LF49	LF50	LF51	LF52	LF53	LF54
Date Collected				6/29/2010	9/26/2010	1/4/2011	2/23/2011	6/6/2011	8/13/2011	3/11/2008	6/3/2008	8/25/2008	11/10/2008	2/26/2009	6/12/2009	9/18/2009	12/28/2009	3/30/2010	6/29/2010	9/26/2010	1/4/2011	2/23/2011	4/12/2011	4/15/2011	4/22/2011	4/29/2011
ANALYTE/Lab ID				10294.03	10411.1	1100705.00	1106508	1123707	1134011	80077.13	80185.13	80306.13	80404.13	90077.13	90235.13	90390.13	90490.13	10113.02	10294.02	10411.09	1100708	1106506	1114206	1114906	1116506	1118206
Volatile Organic Compounds (µg/L)																											
Acetone	6000	1,200	-	ND	ND	<0.32	<0.32	<0.32	<7.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32	<0.32
Bromodichloromethane	1	0.12	-	ND	ND	<0.12	<0.12	<0.12	<0.23	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
2-Butanone	300	490	-	ND	ND	<0.22	<0.22	<0.22	<2.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
Carbon disulfide	700	72	-	ND	ND	<0.12	<0.12	<0.12	<0.18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
Chloroform	70	0.19	-	ND	ND	<0.35	<0.35	**0.91**	**1.4**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35
1,3-Dichlorobenzene	600	NLE	-	ND	ND	<0.16	<0.16	<0.16	<0.29	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
1,1-Dichloroethene	1	26	-	**0.36** J	ND	<0.15	<0.15	<0.15	<0.28	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15
cis-l,2-Dichloroethene	70	2.8	-	**111.95**	**35.5**	**8.79**	**4.65**	**1.23**	**4**	ND	ND	**0.29** J	ND	ND	ND	ND	ND	ND	ND	ND	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
trans -1,2-Dichloroethene	100	8.6	-	**0.29** J	ND	<0.14	<0.14	<0.14	<0.31	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14
Methylene chloride	3	8.4	-	ND	ND	<0.26	<0.26	<0.26	<0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26
Tetrachloroethene	1	3.5	-	**11.13**	**2.21**	**0.67**	**0.99**	**1.5**	**1.7**	**1.86** J	**4.5**	**2.74**	**3.34**	**29.15**	**8.26**	**3.94**	**1.76**	**36.3**	**39.94**	**46.64**	**29.04**	**2.56**	**30.03**	**21.14**	**18.94**	**22.07**
Toluene	600	86	-	ND	ND	<0.12	<0.12	<0.12	<0.15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12	<0.12
Trichloroethene	1	0.26	-	**51.25**	**6.57**	**1.3**	**0.78**	**0.43** J	**0.99**	ND	ND	ND	ND	ND	ND	ND	ND	**1.77**	**2.15**	**2.62**	**1.82**	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11
Vinyl chloride	1	0.015	-	ND	ND	<0.22	<0.22	<0.22	<0.27	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22
TICs*	500	NLE	-	ND	**7**	**0**	**0**	**0**	**0**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Metals (µg/L)																											
Aluminum	200	1,600	121,000	**245**	**412**	**472**	**252**	**2630**	**1140**	NA	NA	NA	NA	NA	NA	NA	NA	**479**	**51.1**	**54.9**	<200	<200	NA	NA	NA	NA	NA
Antimony	6	0.60	20.7	**5.07** ER	**6.68** ER	<6.0	<6.0	<6.0	<6.0	NA	NA	NA	NA	NA	NA	NA	NA	**7.41** ER	ND	**11.5**	<6.0	<6.0	NA	NA	NA	NA	NA
Arsenic	3	0.05	89.3	**0.78** ER	**0.65** ER	<3.0	<3.0	<3.0	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	**2.46** ER	**3.76** ER	**2.85** ER	<3.0	<3.0	NA	NA	NA	NA	NA
Barium	6000	290	699	**28.7**	**13.7**	<200	<200	<200	<200	NA	NA	NA	NA	NA	NA	NA	NA	**15.1**	**19.1**	**37.4**	<200	<200	NA	NA	NA	NA	NA
Beryllium	1	1.60	2.1	**0.108** ER	**0.068** ER	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	<1.0	<1.0	NA	NA	NA	NA	NA
Cadmium	4	0.69	9.5	**0.719** ER	ND	<3.0	<3.0	<3.0	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	ND	**0.764** ER	**0.766** ER	<3.0	<3.0	NA	NA	NA	NA	NA
Calcium	NLE	NLE	45,400	**27200**	**22800**	**11900**	**28800**	**11300**	**10400**	NA	NA	NA	NA	NA	NA	NA	NA	**16000**	**15600**	**17700**	**14900**	**11100**	NA	NA	NA	NA	NA
Chromium	70	1600	191	**1.46** ER	**3.19** ER	<10	<10	**23.7**	**10.3**	NA	NA	NA	NA	NA	NA	NA	NA	**1.97** ER	ND	ND	<10	<10	<0.01 a	NA	NA	NA	NA
Cobalt	NLE	0.47	18.3	**3.09**	**0.989**	<50	<50	<50	<50	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	<50	<50	NA	NA	NA	NA	NA
Copper	1300	62	65.6	**3.83** ER	**1.73** ER	<10	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA	NA	ND	**4.45** ER	**1.47** ER	<10	<10	NA	NA	NA	NA	NA
Iron	300	1,100	431,000	**7860**	**2090**	**3790**	**1250**	**7090**	**3950**	NA	NA	NA	NA	NA	NA	NA	NA	**9070**	**16600**	**20100**	**10300**	**1150**	**1260**	**1760**	**1210**	**428**
Lead	5	NLE	22.7	ND	**2.52**	<3.0	<3.0	<3.0	<3.0	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	**3.1** ER	<3.0	<3.0	NA	NA	NA	NA	NA
Magnesium	NLE	NLE	62,700	**9310**	**7110**	<5000	**7100**	<5000	<5000	NA	NA	NA	NA	NA	NA	NA	NA	**2570**	**2570**	**3920**	<5000	<5000	NA	NA	NA	NA	NA
Manganese	50	32	331	**71.4**	**38.2**	**27.8**	**24.5**	<15	**18**	NA	NA	NA	NA	NA	NA	NA	NA	**38.4**	**49.9**	**54.4**	**41.8**	<15	**24.3**	<15	<15	<15	<15
Mercury	2	0.06	0.26	ND	ND	NA	<0.2	<0.2	<0.2	NA	NA	NA	NA	NA	NA	NA	NA	**0.13** ER	ND	ND	NA	<0.2	NA	NA	NA	NA	NA
Nickel	100	30	187	**8.27**	**4.09** ER	<10	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA	NA	**0.514** ER	ND	ND	<10	<10	NA	NA	NA	NA	NA
Potassium	NLE	NLE	137,000	**4230**	**4150**	<10000	<10000	<10000	<10000	NA	NA	NA	NA	NA	NA	NA	NA	**8500**	**7140**	**8430**	<10000	<10000	NA	NA	NA	NA	NA
Selenium	40	7.80	29.6	NR	ND	<10	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA	NA	**18.7**	NR	ND	<10	<10	NA	NA	NA	NA	NA
Silver	40	7.10	ND	**1.63** ER	ND	<10	<10	<10	<10	NA	NA	NA	NA	NA	NA	NA	NA	ND	**3.25** ER	**3.02**	<10	<10	NA	NA	NA	NA	NA
Sodium	50000	NLE	21500	**43600**	**77600**	**62300**	**128000**	**83600**	**79000**	NA	NA	NA	NA	NA	NA	NA	NA	**9990**	**7520**	**7880**	<10000	**59600**	NA	NA	NA	NA	NA
Thallium	2	0.02	5.5	**1.3** ER	ND	<2.0	<2.0	<2.0	<2.0	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	<2.0	<2.0	NA	NA	NA	NA	NA
Vanadium	NLE	6.3	108	ND	**1.85** ER	<50	<50	<50	<50	NA	NA	NA	NA	NA	NA	NA	NA	**1.92** ER	ND	ND	<50	<50	NA	NA	NA	NA	NA
Zinc	2000	470	233	**55.2**	**24** ER	<20	<20	<20	<20	NA	NA	NA	NA	NA	NA	NA	NA	**4.63** ER	**2.76** ER	**2.76** ER	<20	<20	NA	NA	NA	NA	NA

Notes:

RSL values were current at the time the screening was conducted.

(1) New Jersey Department of Environmental Protection Ground Water Quality Standards, Specific Ground Water Quality Criteria - Class IIA and Practical Quantitation Levels. (http://www.state.nj.us/dep/wms/bwqsa/Appendix_Table_1.htm)

(2) U.S. Environmental Protection Agency, Regional Screening Levels (RSLs). (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Revised November 2013.

(3) Background data from Weston. 1995. Site Investigation Report - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December.

NA = Not analyzed.

ND = Not detected.

NLE = No limit established.

< = analyte not detected above method detection limit (MDL).

µg/L = micrograms per liter.

Detections are bolded

Shaded cells = concentration exceeds NJDEP GWQS

Shaded cells = concentration exceeds USEPA Tapwater RSLs

Shaded cells = concentration exceeds NJDEP GWQS and USEPA Tapwater RSLs.

Shaded cells = concentration exceeds Weston (1995) background

TABLE 4.4
GROUNDWATER SAMPLING SUMMARY RESULTS - MARCH 2008 TO AUGUST 2011
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

	NJDEP Ground Water Quality Criteria [1]	USEPA Tapwater RSL (HQ = 0.1) [2]	Background Concentration [3]	M5MW23									
Round No.				LF55		LF56		LF57	LF58	LF59			
Date Collected				6/6/2011		7/5/2011		7/29/2011	8/13/2011	8/19/2011			
ANALYTE/Lab ID				1123708		1127606		1131506	1134010	1134806			
Volatile Organic Compounds (µg/L)													
Acetone	6000	1,200	-	<0.32		<7.6		<7.6	<7.6	<7.6			
Bromodichloromethane	1	0.12	-	<0.12		<0.23		<0.23	<0.23	<0.23			
2-Butanone	300	490	-	<0.22		<2.9		<2.9	<2.9	<2.9			
Carbon disulfide	700	72	-	<0.12		<0.18		<0.18	<0.18	<0.18			
Chloroform	70	0.19	-	<0.35		<0.21		<0.21	<0.21	<0.21			
1,3-Dichlorobenzene	600	NLE	-	<0.16		<0.29		<0.29	<0.29	<0.29			
1,1-Dichloroethene	1	26	-	<0.15		<0.28		<0.28	<0.28	<0.28			
cis-l,2-Dichloroethene	70	2.8	-	<0.12		<0.22		<0.22	<0.22	<0.22			
trans -1,2-Dichloroethene	100	8.6	-	<0.14		<0.31		<0.31	<0.31	<0.31			
Methylene chloride	3	8.4	-	<0.26		**1.2**	J	<0.2	<0.2	<0.2			
Tetrachloroethene	1	3.5	-	**47.83**		**12.5**		**7.5**	**5.2**	**3.3**			
Toluene	600	86	-	<0.12		<0.15		<0.15	<0.15	<0.15			
Trichloroethene	1	0.26	-	<0.11		<0.21		<0.21	<0.21	<0.21			
Vinyl chloride	1	0.015	-	<0.22		<0.27		<0.27	<0.27	<0.27			
TICs*	500	NLE	-	**0**		**0**		**0**	**0**	**0**			
Metals (µg/L)													
Aluminum	200	1,600	121,000	<2000	b	NA		NA	<200	NA			
Antimony	6	0.60	20.7	<60	b	NA		NA	<6.0	NA			
Arsenic	3	0.05	89.3	<30	b	NA		NA	<3.0	NA			
Barium	6000	290	699	<2000	b	NA		NA	<200	NA			
Beryllium	1	1.60	2.1	<10	b	NA		NA	<1.0	NA			
Cadmium	4	0.69	9.5	<30	b	NA		NA	<3.0	NA			
Calcium	NLE	NLE	45,400	**135000**	b	NA		NA	**9070**	NA			
Chromium	70	1600	191	<100	b	<0.01	a	NA	<10	NA			
Cobalt	NLE	0.47	18.3	<500	b	NA		NA	<50	NA			
Copper	1300	62	65.6	<100	b	NA		NA	<10	NA			
Iron	300	1,100	431,000	**88400**	b	**2250**		**2210**	**1630**	**6670**			
Lead	5	NLE	22.7	<302		NA		NA	<3.0	NA			
Magnesium	NLE	NLE	62,700	<50000	b	NA		NA	<5000	NA			
Manganese	50	32	331	**245**	b	<15		<15	<15	<15			
Mercury	2	0.06	0.26	<0.2	b	NA		NA	<0.2	NA			
Nickel	100	30	187	<100	b	NA		NA	<10	NA			
Potassium	NLE	NLE	137,000	<100000	b	NA		NA	<10000	NA			
Selenium	40	7.80	29.6	<100	b	NA		NA	<10	NA			
Silver	40	7.10	ND	<100	b	NA		NA	<10	NA			
Sodium	50000	NLE	21500	**474000**	b	NA		NA	**31000**	NA			
Thallium	2	0.02	5.5	<20	b	NA		NA	<2.0	NA			
Vanadium	NLE	6.3	108	<500	b	NA		NA	<50	NA			
Zinc	2000	470	233	<200	b	NA		NA	<20	NA			

Notes:

RSL values were current at the time the screening was conducted.

(1) New Jersey Department of Environmental Protection Ground Water Quality Standards, Specific Ground Water Quality Criteria - Class IIA and Practical Quantitation Levels. (http://www.state.nj.us/dep/wms/bwqsa/Appendix_Table_1.htm)

(2) U.S. Environmental Protection Agency, Regional Screening Levels (RSLs). (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Revised November 2013.

(3) Background data from Weston. 1995. Site Investigation Report - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December.

NA = Not analyzed.

ND = Not detected.

NLE = No limit established.

< = analyte not detected above method detection limit (MDL).

µg/L = micrograms per liter.

Detections are bolded

Shaded cells = concentration exceeds NJDEP GWQS

Shaded cells = concentration exceeds USEPA Tapwater RSLs

Shaded cells = concentration exceeds NJDEP GWQS and USEPA Tapwater RSLs.

Shaded cells = concentration exceeds Weston (1995) background

TABLE 4.5
GROUNDWATER SAMPLING SUMMARY RESULTS FOR
AUGUST 2013 AND DECEMBER 2014
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

SAMPLE ID:		NJDEP GWQS[1]	USEPA Tapwater RSL (HQ = 0.1) [2]	FTMM-5-GW-M5MW10-9.9		FTMM-5-GW-M5MW10-14.9		FTMM-5-GW-M5MW11-9.46		FTMM-5-GW-M5MW11-14.4		FTMM-5-GW-M5MW11-14.4LF	
DATE SAMPLED:				27-Aug-2013		27-Aug-2013		27-Aug-2013		27-Aug-2013		27-Aug-2013	
LAB SAMPLE ID:				R1306281-030		R1306281-031		R1306281-003		R1306281-004		R1306281-007	
SAMPLE DEPTH (ft bgs):				9.9		14.9		9.46		14.4		14.4	
Volatile Organics - SW8260C	**Unit**												
Acetone	µg/L	6,000	1,200	**2**	BJ	**2.1**	BJ	**2**	BJ	**1.6**	BJ	**1.4**	BJ
Chloroethane	µg/L	5 [3]	2,100	1	U	1	U	1	U	1	U	1	U
cis-1,2-Dichloroethene	µg/L	70	3	1	U	1	U	1	U	1	U	**0.33**	J
Tetrachloroethene (PCE)	µg/L	1	3.5	1	U	1	U	**1.1**	J	**1**	J	**3.5**	J
trans-1,2-Dichloroethene	µg/L	100	8.6	1	U	1	U	1	U	1	U	1	U
Trichloroethene (TCE)	µg/L	1	0.26	1	U	1	U	1	U	1	U	1	U
Vinyl chloride	µg/L	1	0.015	1	U	1	U	1	U	1	U	1	U

Notes:

RSLs were current at the time the screening was conducted.

(1) New Jersey Department of Environmental Protection Ground Water Quality Standards Specific Ground Water Quality Standards (GWQS) - Class IIA and Practical Quantitation Levels. (http://www.state.nj.us/dep/wms/bwqsa/Appendix_Table_1.htm)

(2) U.S. Environmental Protection Agency, Regional Screening Levels (RSLs). (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Revised November 2013.

(3) Interim generic groundwater quality criteria.

B = The analyte was found in an associated blank at concentration above one half the LOQ, as well as in the sample.

BJ = Analyte detected, estimated concentration. Analyte also found in an associated blank at concentration above one half the LOQ.

ft bgs = feet below ground surface.

J = Analyte detected, estimated concentration.

NLE = No screening level established.

U = Analyte was not detected above the indicated limit of detection (LOD).

Detections are bolded.

Shaded cells = concentration exceeds NJDEP GWQS.

Shaded cells = concentration exceeds USEPA Tapwater RSL.

Shaded cells = concentration exceeds NJDEP GWQS and USEPA Tapwater RSLs.

TABLE 4.5
GROUNDWATER SAMPLING SUMMARY RESULTS FOR
AUGUST 2013 AND DECEMBER 2014
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

SAMPLE ID:		NJDEP GWQS[1]	USEPA Tapwater RSL (HQ = 0.1) [2]	FTMM-5-GWM5M11-9.46		FTMM-5-GW-M5MW12-10.4		FTMM-5-GW-M5MW12-15.4		FTMM-5-GW-M5MW13-7.87		FTMM-5-GW-M5MW13-12.87	
DATE SAMPLED:				18-Dec-2014		27-Aug-2013		27-Aug-2013		27-Aug-2013		27-Aug-2013	
LAB SAMPLE ID:						R1306281-028		R1306281-029		R1306281-032		R1306281-033	
SAMPLE DEPTH (ft bgs):				9.46		10.4		15.4		7.87		12.87	
Volatile Organics - SW8260C	**Unit**												
Acetone	µg/L	6,000	1,200	**2.5**	J	**1.7**	BJ	**1.6**	BJ	**1.5**	BJ	**1.8**	BJ
Chloroethane	µg/L	5 [3]	2,100	1	U	1	U	1	U	1	U	1	U
cis-1,2-Dichloroethene	µg/L	70	3	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene (PCE)	µg/L	1	3.5	**1.8**	J	1	U	1	U	1	U	1	U
trans-1,2-Dichloroethene	µg/L	100	8.6	1	U	1	U	1	U	1	U	1	U
Trichloroethene (TCE)	µg/L	1	0.26	1	U	1	U	1	U	1	U	1	U
Vinyl chloride	µg/L	1	0.015	1	U	1	U	1	U	1	U	1	U

Notes:

RSLs were current at the time the screening was conducted.

(1) New Jersey Department of Environmental Protection Ground Water Quality Standards Specific Ground Water Quality Standards (GWQS) - Class IIA and Practical Quantitation Levels. (http://www.state.nj.us/dep/wms/bwqsa/Appendix_Table_1.htm)

(2) U.S. Environmental Protection Agency, Regional Screening Levels (RSLs). (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Revised November 2013.

(3) Interim generic groundwater quality criteria.

B = The analyte was found in an associated blank at concentration above one half the LOQ, as well as in the sample.

BJ = Analyte detected, estimated concentration. Analyte also found in an associated blank at concentration above one half the LOQ.

ft bgs = feet below ground surface.

J = Analyte detected, estimated concentration.

NLE = No screening level established.

U = Analyte was not detected above the indicated limit of detection (LOD).

Detections are bolded.

Shaded cells = concentration exceeds NJDEP GWQS.

Shaded cells = concentration exceeds USEPA Tapwater RSL.

Shaded cells = concentration exceeds NJDEP GWQS and USEPA Tapwater RSLs.

TABLE 4.5
GROUNDWATER SAMPLING SUMMARY RESULTS FOR
AUGUST 2013 AND DECEMBER 2014
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

SAMPLE ID:		NJDEP GWQS[1]	USEPA Tapwater RSL (HQ = 0.1) [2]	FTMM-5-GW-M5MW14-8.63		FTMM-5-GW-M5MW14-13.65		FTMM-5-GW-M5MW14-18.63		FTMM-5-GW-M5MW16-8.8		FTMM-5-GW-M5MW16-14.57	
DATE SAMPLED:				27-Aug-2013		27-Aug-2013		27-Aug-2013		27-Aug-2013		27-Aug-2013	
LAB SAMPLE ID:				R1306281-025		R1306281-026		R1306281-027		R1306281-034		R1306281-035	
SAMPLE DEPTH (ft bgs):				8.63		13.65		18.63		8.8		14.57	
Volatile Organics - SW8260C	**Unit**												
Acetone	µg/L	6,000	1,200	**2.8**	BJ	**2.2**	BJ	**2**	BJ	**2.3**	BJ	**2.2**	BJ
Chloroethane	µg/L	5 [3]	2,100	1	U	1	U	1	U	**0.37**	J	**0.54**	J
cis-1,2-Dichloroethene	µg/L	70	3	1	U	1	U	1	U	**6**		**8**	
Tetrachloroethene (PCE)	µg/L	1	3.5	1	U	1	U	1	U	**0.67**	J	**0.3**	J
trans-1,2-Dichloroethene	µg/L	100	8.6	1	U	1	U	1	U	1	U	1	U
Trichloroethene (TCE)	µg/L	1	0.26	1	U	1	U	1	U	**0.43**	J	**0.45**	J
Vinyl chloride	µg/L	1	0.015	1	U	1	U	1	U	**1.2**	J	**2.2**	J

Notes:

RSLs were current at the time the screening was conducted.

(1) New Jersey Department of Environmental Protection Ground Water Quality Standards Specific Ground Water Quality Standards (GWQS) - Class IIA and Practical Quantitation Levels. (http://www.state.nj.us/dep/wms/bwqsa/Appendix_Table_1.htm)

(2) U.S. Environmental Protection Agency, Regional Screening Levels (RSLs). (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Revised November 2013.

(3) Interim generic groundwater quality criteria.

B = The analyte was found in an associated blank at concentration above one half the LOQ, as well as in the sample.

BJ = Analyte detected, estimated concentration. Analyte also found in an associated blank at concentration above one half the LOQ.

ft bgs = feet below ground surface.

J = Analyte detected, estimated concentration.

NLE = No screening level established.

U = Analyte was not detected above the indicated limit of detection (LOD).

Detections are bolded.

Shaded cells = concentration exceeds NJDEP GWQS.

Shaded cells = concentration exceeds USEPA Tapwater RSL.

Shaded cells = concentration exceeds NJDEP GWQS and USEPA Tapwater RSLs.

TABLE 4.5
GROUNDWATER SAMPLING SUMMARY RESULTS FOR
AUGUST 2013 AND DECEMBER 2014
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

SAMPLE ID:		NJDEP GWQS[1]	USEPA Tapwater RSL (HQ = 0.1) [2]	FTMM-5-GW-M5MW16-14.5LF		FTMM-5-GW-M5MW16-14.5		FTMM-5-GW-M5MW18-8.6		FTMM-5-GW-M5MW18-16.98		FTMM-5-GW-M5MW19-10.34	
DATE SAMPLED:				28-Aug-2013		18-Dec-2014		27-Aug-2013		27-Aug-2013		27-Aug-2013	
LAB SAMPLE ID:				R1306302-015				R1306281-008		R1306281-009		R1306281-021	
SAMPLE DEPTH (ft bgs):				14.5		14.5		8.6		16.98		10.34	
Volatile Organics - SW8260C	**Unit**												
Acetone	µg/L	6,000	1,200	**1.5**	BJ	**3.3**	J	**1.4**	BJ	**2.5**	BJ	**2.2**	BJ
Chloroethane	µg/L	5 [3]	2,100	**0.5**	J	1	U	1	U	1	U	1	U
cis-1,2-Dichloroethene	µg/L	70	3	**8.7**		**1.6**	J	1	U	1	U	**1.2**	J
Tetrachloroethene (PCE)	µg/L	1	3.5	**0.86**	J	**1.7**	J	1	U	1	U	1	U
trans-1,2-Dichloroethene	µg/L	100	8.6	1	U	1	U	1	U	1	U	1	U
Trichloroethene (TCE)	µg/L	1	0.26	**0.47**	J	1	U	**0.22**	J	1	U	**0.69**	J
Vinyl chloride	µg/L	1	0.015	**2.6**	J	1	U	1	U	1	U	1	U

Notes:

RSLs were current at the time the screening was conducted.

(1) New Jersey Department of Environmental Protection Ground Water Quality Standards Specific Ground Water Quality Standards (GWQS) - Class IIA and Practical Quantitation Levels. (http://www.state.nj.us/dep/wms/bwqsa/Appendix_Table_1.htm)

(2) U.S. Environmental Protection Agency, Regional Screening Levels (RSLs). (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Revised November 2013.

(3) Interim generic groundwater quality criteria.

B = The analyte was found in an associated blank at concentration above one half the LOQ, as well as in the sample.

BJ = Analyte detected, estimated concentration. Analyte also found in an associated blank at concentration above one half the LOQ.

ft bgs = feet below ground surface.

J = Analyte detected, estimated concentration.

NLE = No screening level established.

U = Analyte was not detected above the indicated limit of detection (LOD).

Detections are bolded.

Shaded cells = concentration exceeds NJDEP GWQS.

Shaded cells = concentration exceeds USEPA Tapwater RSL.

Shaded cells = concentration exceeds NJDEP GWQS and USEPA Tapwater RSLs.

TABLE 4.5
GROUNDWATER SAMPLING SUMMARY RESULTS FOR
AUGUST 2013 AND DECEMBER 2014
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

SAMPLE ID:		NJDEP GWQS[1]	USEPA Tapwater RSL (HQ = 0.1) [2]	FTMM-5-GW-M5MW19-16.35		FTMM-5-GW-M5MW20-8.65		FTMM-5-GW-M5MW20-13.65		FTMM-5-GW-M5MW20-13.65LF	
DATE SAMPLED:				27-Aug-2013		27-Aug-2013		27-Aug-2013		28-Aug-2013	
LAB SAMPLE ID:				R1306281-022		R1306281-023		R1306281-024		R1306302-039	
SAMPLE DEPTH (ft bgs):				16.35		8.65		13.65		13.65	
Volatile Organics - SW8260C	**Unit**										
Acetone	µg/L	6,000	1,200	**2.7**	BJ	**1.7**	BJ	**1.9**	BJ	5	U
Chloroethane	µg/L	5 [3]	2,100	1	U	1	U	1	U	1	U
cis-1,2-Dichloroethene	µg/L	70	3	1	U	**15**		**42**		**46**	
Tetrachloroethene (PCE)	µg/L	1	3.5	1	U	1	U	**0.45**	J	**0.57**	J
trans-1,2-Dichloroethene	µg/L	100	8.6	1	U	1	U	1	U	**0.72**	J
Trichloroethene (TCE)	µg/L	1	0.26	1	U	**2.8**	J	**5.4**		**8**	
Vinyl chloride	µg/L	1	0.015	1	U	1	U	1	U	1	U

Notes:

RSLs were current at the time the screening was conducted.

(1) New Jersey Department of Environmental Protection Ground Water Quality Standards Specific Ground Water Quality Standards (GWQS) - Class IIA and Practical Quantitation Levels. (http://www.state.nj.us/dep/wms/bwqsa/Appendix_Table_1.htm)

(2) U.S. Environmental Protection Agency, Regional Screening Levels (RSLs). (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Revised November 2013.

(3) Interim generic groundwater quality criteria.

B = The analyte was found in an associated blank at concentration above one half the LOQ, as well as in the sample.

BJ = Analyte detected, estimated concentration. Analyte also found in an associated blank at concentration above one half the LOQ.

ft bgs = feet below ground surface.

J = Analyte detected, estimated concentration.

NLE = No screening level established.

U = Analyte was not detected above the indicated limit of detection (LOD).

Detections are bolded.

Shaded cells = concentration exceeds NJDEP GWQS.

Shaded cells = concentration exceeds USEPA Tapwater RSL.

Shaded cells = concentration exceeds NJDEP GWQS and USEPA Tapwater RSLs.

TABLE 4.5
GROUNDWATER SAMPLING SUMMARY RESULTS FOR
AUGUST 2013 AND DECEMBER 2014
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

SAMPLE ID:		NJDEP GWQS[1]	USEPA Tapwater RSL (HQ = 0.1) [2]	FTMM-5-GW-M5MW20-13.65		FTMM-5-GW-M5MW23-10.82		FTMM-5-GW-M5MW23-17.02		FTMM-5-GW-M5MW23-10.82	
DATE SAMPLED:				18-Dec-2014		27-Aug-2013		27-Aug-2013		18-Dec-2014	
LAB SAMPLE ID:						R1306281-005		R1306281-006			
SAMPLE DEPTH (ft bgs):				13.65		10.82		17.02		10.82	
Volatile Organics - SW8260C	**Unit**										
Acetone	µg/L	6,000	1,200	**2.1**	J	**1.8**	BJ	**1.4**	BJ	**1.4**	J
Chloroethane	µg/L	5 [3]	2,100	1	U	1	U	1	U	1	U
cis-1,2-Dichloroethene	µg/L	70	3	**2.5**	J	1	U	1	U	1	U
Tetrachloroethene (PCE)	µg/L	1	3.5	**1.2**	J	**50**		**47**		**23**	
trans-1,2-Dichloroethene	µg/L	100	8.6	1	U	1	U	1	U	1	U
Trichloroethene (TCE)	µg/L	1	0.26	**0.73**	**J**	**1.3**	J	**2.1**	J	**2.1**	J
Vinyl chloride	µg/L	1	0.015	1	U	1	U	1	U	1	U

Notes:

RSLs were current at the time the screening was conducted.

(1) New Jersey Department of Environmental Protection Ground Water Quality Standards Specific Ground Water Quality Standards (GWQS) - Class IIA and Practical Quantitation Levels. (http://www.state.nj.us/dep/wms/bwqsa/Appendix_Table_1.htm)

(2) U.S. Environmental Protection Agency, Regional Screening Levels (RSLs). (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Revised November 2013.

(3) Interim generic groundwater quality criteria.

B = The analyte was found in an associated blank at concentration above one half the LOQ, as well as in the sample.

BJ = Analyte detected, estimated concentration. Analyte also found in an associated blank at concentration above one half the LOQ.

ft bgs = feet below ground surface.

J = Analyte detected, estimated concentration.

NLE = No screening level established.

U = Analyte was not detected above the indicated limit of detection (LOD).

Detections are bolded.

Shaded cells = concentration exceeds NJDEP GWQS.

Shaded cells = concentration exceeds USEPA Tapwater RSL.

Shaded cells = concentration exceeds NJDEP GWQS and USEPA Tapwater RSLs.

TABLE 4.6
GROUNDWATER SAMPLING SUMMARY OF EXCEEDANCES
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Analyte	Maximum Concentration		Location of Maximum Concentration	Date of Maximum Concentration	Number of Samples [1]	Number of Detections	Number of Exceedances			Identification of COPCs	
							NJDEP GWQS [2]	USEPA Tapwater RSL (HQ = 0.1)[3]	Maximum Background (Weston, 1995)[4]	Evaluated as COPC in Risk Assessment?	Rationale
Volatile Organic Compounds (µg/L)											
Acetone	15.80		MSMW16	7/29/2011	150	30	0	0	n/a	No	No RSL exceedances.
Bromodichloromethane	2.13		MSMW19	6/6/2011	126	1	1	1	n/a	No	Single detection is not representative.
2-Butanone	7.40		MSMW16	8/13/2011	126	1	0	0	n/a	No	No RSL exceedances.
Carbon disulfide	0.42	J	MSMW16	7/29/2011	126	2	0	0	n/a	No	No RSL exceedances.
Chloroethane	0.54	J	MSMW16	8/27/2013	28	3	0	0	n/a	No	No RSL exceedances.
Chloroform	18.20		MSMW19	6/6/2011	126	8	0	8	n/a	No	Upgradient source; 6 of 8 RSL exceedances detected in upgradient wells and remaining 2 exceedances detected in M5MW20 near upgradient site boundary.
1,3-Dichlorobenzene	0.31	J	MSMW11	6/30/2010	126	1	0	NLE	n/a	No	No RSL established.
1,1-Dichloroethene	0.36	J	MSMW20	6/29/2010	126	1	0	0	n/a	No	No RSL exceedances.
cis-l,2-Dichloroethene	111.95		MSMW20	6/29/2010	150	68	1	43	n/a	**Yes**	Potentially site related based on PCE detections in site soil samples and locations/magnitudes of detections in site wells.
trans -1,2-Dichloroethene	0.72	J	MSMW20	8/28/2013	150	2	0	0	n/a	No	No RSL exceedances.
Methylene chloride	1.20		MSMW16	7/5/2011	126	3	0	0	n/a	No	No RSL exceedances.
Tetrachloroethene	50.00		MSSMW23	8/27/2013	150	81	65	25	n/a	**Yes**	Potentially site related based on PCE detections in site soil samples and locations/magnitudes of detections in site wells.
Toluene	All non-detect		n/a	n/a	126	0	0	0	n/a	No	All recent sampling data has been non-detect for toluene.
Trichloroethene	51.25		MSMW20	6/29/2010	150	54	24	68	n/a	**Yes**	Potentially site related based on PCE detections in site soil samples and locations/magnitudes of detections in site wells.
Vinyl chloride	7.10		MSMW16	8/13/2011	150	17	9	17	n/a	No	All RSL exceedances are in distant upgradient well M5MW16.
TICs*	7.00		MSMW20	9/26/2010	126	79	0	NLE	n/a	No	No RSL established.
Metals (µg/L)											
Aluminum	7,510.00		MSMW16	8/13/2011	82	40	21	2	0	No	Less than maximum background.
Antimony	30.10		MSMW13	9/26/2010	82	22	19	22	3	No	These exceedances of RSL and maximum background are anomalous and not representative.
Arsenic	24.50		MSMW16	8/13/2011	82	32	19	32	0	No	Less than maximum background.
Barium	817.00		MSMW09	6/8/2011	82	44	0	9	1	No	These exceedances of RSL and maximum background are anomalous and not representative.
Beryllium	1.20		MSMW16	8/13/2011	82	7	1	0	0	No	No RSL exceedances.
Cadmium	1.71	ER	MSMW11	9/26/2010	82	18	0	13	0	No	Less than maximum background.
Calcium[6]	154,000.00		MSMW13	9/26/2010	82	81	NLE	NLE	18	No	Essential nutrient.
Chromium	90.40		MSMW16	8/13/2011	90	13	1	0	0	No	No RSL exceedances.
Cobalt	3.09		MSMW20	6/29/2010	82	7	NLE	7	0	No	Less than maximum background.
Copper	4.85	ER	MSMW18	6/29/2010	82	21	0	0	0	No	No RSL exceedances.
Iron[6]	160,000.00	b	MSMW16	7/29/2011	109	111	111	104	0	No	Essential nutrient.
Lead	12.20		MSMW16	8/13/2011	83	13	4	0	0	No	Less than maximum background.
Magnesium[6]	245,000.00		MSMW13	9/26/2010	82	62	NLE	0	6	No	Essential nutrient.
Manganese	1,350.00		MSMW12	1/11/2011	109	96	54	76	13	No	The most recent sampling events are close to or below max background values. Historical remediation efforts that included HRC and RegenOx injections may have also contributed to the varying levels of manganese in groundwater.

TABLE 4.6
GROUNDWATER SAMPLING SUMMARY OF EXCEEDANCES
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Analyte	Maximum Concentration		Location of Maximum Concentration	Date of Maximum Concentration	Number of Samples (1)	Number of Detections	Number of Exceedances			Identification of COPCs	
							NJDEP GWQS (2)	USEPA Tapwater RSL (HQ = 0.1)(3)	Maximum Background (Weston, 1995)(4)	Evaluated as COPC in Risk Assessment?	Rationale
Mercury	0.46		MSMW14	8/13/2011	69	6	0	6	2	No	These exceedances of RSL and maximum background are isolated and not representative.
Nickel	39.70		MSMW16	8/13/2011	82	16	0	1	0	No	Less than maximum background.
Potassium(6)	68,300.00		MSMW13	9/26/2010	82	53	NLE	NLE	0	No	Essential nutrient.
Selenium	60.80		MSMW14	3/31/2010	71	12	4	10	5	No	All background exceedances occurred during the March 2010 sampling event in 5 separate wells (1 exceedance per well), and were followed by 5-6 non-detect results at each well. Exceedances not representative of data set.
Silver	5.00		MSMW11	9/26/2010	82	20	0	0	20	No	No RSL exceedances.
Sodium(6)	1,870,000.00		MSMW13	9/26/2010	82	82	44	NLE	61	No	Essential nutrient.
Thallium	1.30	ER	MSMW20	6/29/2010	82	1	0	1	0	No	Less than maximum background.
Vanadium	3.35	ER	MSMW20	3/30/2010	82	10	NLE	0	0	No	No RSL exceedances.
Zinc	831.00		MSMW09	6/8/2011	82	42	0	2	2	No	These exceedances of RSL and maximum background are isolated and not representative.

Notes:

RSL values were current at the time the screening was conducted.

(1) Data from the most recent 8 quarters of groundwater sampling are included here, plus data from August 2013 and December 2014 sampling events.

(2) New Jersey Department of Environmental Protection Ground Water Quality Standards, Specific Ground Water Quality Criteria - Class IIA and Practical Quantitation Levels. (http://www.state.nj.us/dep/wms/bwqsa/Appendix_Table_1.htm)

(3) U.S. Environmental Protection Agency, Regional Screening Levels (RSLs). Residential Tapwaters (TR=1E-06, THQ = 0.1). (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/index.htm). Revised November 2013.

(4) Weston, 1995. Final Site Investigation - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey, December.

(5) B and BJ qualified data were treated as nondetected chemicals and are not considered COPCs.

(6) Essential nutrients (calcium, iron, magnesium, potassium, and sodium) are not considered COPCs.

(7) If there is NLE for an analyte, it is considered a COPC. Essential nutrients (calcium, iron, magnesium, potassium, and sodium) are not considered COPCs.

µg/L = micrograms/liter.

COPC = contaminant of potential concern.

Dash (--) = only background concentrations for metals are being used as comparison criteria.

BJ = Analyte detected, estimated concentration. Analyte also found in an associated blank at concentration above one half the LOQ.

ER = Estimated Result.

UJ - Analyte not detected, reported LOD may be inaccurate or imprecise.

n/a = not applicable.

NLE = No limit established.

TABLE 4.7
SURFACE WATER SUMMARY SAMPLING RESULTS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

	NJDEP Saline Water (SE) Criteria[1]	USEPA Human Health Criterion [2]	SS-5														
Round Number			42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
Date Collected			3/13/2007	6/26/2007	9/13/2007	12/19/2007	3/25/2008	6/26/2008	9/30/2008	12/29/2008	3/24/2009	6/29/2009	9/25/2009	12/7/2009	3/28/2010	6/22/2010	9/21/2010
Volatile Organic Compounds (VOCs; µg/L)																	
Acetone [3]	NLE	1200	**1.31** J	**7.15**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	17	17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	2,100	470	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene [3]	NLE	2.8	**0.79** J	ND	**0.67** J	ND	**0.79** J	**1.5** J	**0.6** J	**0.58** J	ND	**1.02** J	ND	**0.41** J	**0.79**	**0.91**	**0.95**
Methyl *tert* -butyl ether [3]	NLE	12	**0.44** J	ND	**0.33** J	ND	**0.66** J	**0.34** J	ND	ND	ND	ND	ND	ND	ND	ND	ND
tert -Butyl alcohol	NLE	NLE	ND	ND	**8.65** J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1.6	3.3	**1.86** J	ND	**0.29**	**0.84** J	**1.4** J	**1.15** J	ND	**0.97** J	**0.47** J	**1.24** J	ND	**0.61**	**2.19**	**1**	**0.42** J
Trichloroethene	12.0	30	**0.58** J	ND	ND	ND	**0.6** J	**0.55** J	ND	ND	ND	**0.5** J	ND	ND	**0.64**	**0.37** J	**0.24** J
TICs	NLE	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**8**	ND	**0**	ND	ND
Metals (µg/L)																	
Antimony	640	640	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	0.061	0.14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	NLE	1,000 *	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium [3]	42.0	1.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium **[3]**	16	0.69	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium [3]	750	1600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	NLE	1300 *	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead [4]	NLE	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury [3]	0.051	0.06	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	1,700	4600	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	4200	4200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Wet Chemistry																	
Ammonia (mg/L)	NLE	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
Fecal Coliform (cfu/100mL)	NLE	NLE	NA	**4500**	**3200**	**50**	**20**	**100**	**300**	**120**	ND	NA	NA	NA	NA	NA	NA
Nitrates (mg/L)	NLE	10	ND	ND	ND	NA	**4.02**	**5.92**	ND	ND	ND	**0.689**	NA	NA	NA	NA	NA
Oxygen (dissolved; mg/L)	NLE	NLE	**7.73**	**6.46**	**6.54**	**4.74**	**8.58**	**8.07**	**8.44**	**7.38**	**7.73**	**6.51**	**6.73**	**3.84**	**4.3**	**6.24**	**3.91**
pH	NLE	5-9	**7.37**	**6.52**	**7.59**	**7.36**	**7.76**	**8.54**	**6.94**	**7.22**	**7.6**	**7.94**	**6.26**	**6.78**	**6.59**	**6.54**	**6.57**
Phosphate (mg/L)	NLE	NLE	ND	ND	ND	NA	**0.09**	ND	ND	ND	**0.02**	ND	NA	NA	NA	NA	NA
Sulfate (mg/L)	NLE	NLE	**26.6**	**19**	**226**	NA	**22.9**	**64.4**	**43**	**29.4**	**93.2**	**23.7**	NA	NA	NA	NA	NA
Temperature (ºC)	NLE	NLE	**11.56**	**27.3**	**20.9**	**5.89**	**10**	**23.25**	**19.22**	**7.78**	**8.46**	**23.16**	**20.32**	**4.26**	**6.85**	**23.79**	**21.62**
Total Coliform (cfu/100mL)	NLE	NLE	**500**	**37500**	**12400**	**700**	**100**	**5760**	**1450**	**500**	**160**	NA	NA	NA	NA	NA	NA

Notes:

RSLs were current at the time the screening was conducted.

(1) New Jersey Department of Environmental Protection (NJDEP) Surface Water Quality Standards (N.J.A.C. 7:9B), Human Health standards for Saline Waters of estuaries (SE).

(2) United States Environmental Protection Agency (USEPA) National Recommended Water Quality Criteria (Human Health Criteria, Organism Only).
(http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm#htable)

(3) Tapwater RSL was used in place of NRWQC, available at http://www.epa.gov/region9/superfund/prg/. Revised November 2013.

(4) USEPA Action level, available at http://water.epa.gov/drink/contaminants/index.cfm

< = analyte not detected above method detection limit (MDL).
B = Compound detected in the sample and its associated blank sample.
ER = Estimated result.
J = Estimated concentration exceeds the MDL and is less than the RL.
mg/L = milligrams/liter; µg/L = micrograms/liter; cfu/100 mL = colony-forming units/100 milliliters.
NA = Not analyzed.
ND = Not detected.
NLE = No limit established.
* = Water + Organism.
Detections are Bolded.
Shaded cells = concentration exceeds NJDEP Saline Criterion.
Shaded cells = concentration exceeds USEPA National Recommended Water Quality Criteria.
Shaded cells = concentration exceeds NJDEP and USEPA criteria.

TABLE 4.7
SURFACE WATER SUMMARY SAMPLING RESULTS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Round Number	NJDEP Saline Water (SE) Criteria[1]	USEPA Human Health Criterion [2]	SS-15																													
			42		43		44		45		46		47		48		49		50		51		52	53		54		55		56			
Date Collected			3/13/2007		6/26/2007		9/13/2007		12/19/2007		3/25/2008		6/26/2008		9/30/2008		12/29/2008		3/24/2009		6/29/2009		9/25/2009	12/7/2009		3/28/2010		6/22/2010		9/21/2010			
Volatile Organic Compounds (VOCs; µg/L)																																
Acetone [3]	NLE	1200	**0.92**	J	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	ND		ND		ND		ND		
Bromodichloromethane	17	17	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA		NA		NA		NA		
Chloroform	2,100	470	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	NA		NA		NA		NA		
cis -1,2-Dichloroethene [3]	NLE	2.8	**0.81**	J	**2.14**		**2.81**		ND		**1.35**	J	**2.89**		**0.88**	J	**0.94**	J	**0.96**	J	**1.33**	J	**1.92**	**0.7**		**1.04**		**1.96**		**2.81**			
Methyl *tert* -butyl ether [3]	NLE	12	**0.47**	J	ND		**1**	J	ND		**0.88**	J	**0.63**	J	ND		ND		ND		ND		ND	**0.18**	J	**0.24**	J	ND		ND			
tert -Butyl alcohol	NLE	NLE	ND		ND		**20.81**		**14.52**		ND		ND		ND		ND		ND		ND		ND	**9.16**		ND		ND		ND			
Tetrachloroethene	1.6	3.3	**2.21**		ND		**1.54**	J	**0.93**	J	**2.42**		**2.28**		ND		**1.55**	J	**3.03**		**2.02**		**1.87**	**1.11**		**3.01**		**1.99**		**1.03**			
Trichloroethene	12.0	30	**0.65**	J	ND		ND		ND		**1.02**	J	**1.01**	J	ND		ND		**1.26**	J	**0.77**	J	**0.96**	**0.44**	J	**0.88**		**0.75**		**0.61**			
TICs	NLE	NLE	ND		ND		ND		**7**		ND		ND		ND		ND		ND		ND		ND	ND		ND		ND		ND		
Metals (µg/L)																																
Antimony	640	640	ND		ND		ND		ND		ND		ND		ND		ND		**17.8**	ER	**5.52**		**6.06**	ND		**6.44**	ER	**6.18**	ER	**10.8**	ER		
Arsenic	0.061	0.14	ND		**3.12**	ER	ND		ND		ND		**3.37**	ER	**3.5**	ER	ND		**66.6**		**14.1**		**19.6**	ND		**1.45**	ER	ND		**1.13**	ER		
Barium	NLE	1,000 *	**58.8**		**52.6**		**52.5**		**50.6**		**57.4**		**61.5**		**58.4**		**58.3**		**60.1**		**58.3**		**61.2**	**47.5**		**59.6**		**61.4**		**49.8**			
Beryllium [3]	42.0	1.6	**0.156**		ND		ND		**0.106**		ND		ND		**0.247**	ER	**0.336**	ER	ND		ND		ND	**0.0702**	ER	**0.082**	ER	ND		ND			
Cadmium [3]	16	0.69	**0.857**	ER	**0.435**	ER	ND		**0.879**	ER	**0.298**	ER	ND		**1.08**	ER	**0.471**	ER	ND		ND		ND	**0.608**	ER	ND		ND		**0.512**	ER		
Chromium [3]	750	1600	**0.692**	ER	**0.432**	ER	**0.906**	ER	**1.44**	ER	**0.433**	ER	**0.758**	ER	**3.66**	ER	**3.37**	ER	**0.838**	ER	**0.628**		ND	**3.85**	ER	**1.07**	ER	ND		ND			
Copper	NLE	1300 *	ND		**1.84**	ER	**0.801**	ER	**2.5**	ER	**2**	ER	ND		ND		ND		**1.45**	ER	**2.49**		**4.6**	ND		ND		**2.49**	ER	**1.4**	ER		
Lead [4]	NLE	15	ND		ND		ND		ND		ND		**1.49**	ER	ND		**5.74**		**2.59**	ER	ND		ND	ND		ND		ND		ND			
Mercury [3]	0.051	0.06	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND	**0.18**	ER	ND		ND		ND			
Nickel	1,700	4600	**9.76**		**6.09**		**6.44**		**14.4**		**13**		**6.15**		**10.6**		**11.9**		**11.2**		**12**		**9.18**	**8.05**		**16**		**8.07**		**8.88**			
Selenium	4200	4200	**7.29**	ER	**6.39**	ER	ND		ND		ND		**6.62**	ER	**8.61**	ER	ND		**104**		**24.3**		**24.5**	ND		NR		NR		NR			
Wet Chemistry																																
Ammonia (mg/L)	NLE	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		NA	NA		NA		NA		NA		
Fecal Coliform (cfu/100mL)	NLE	NLE	NA		**100**		**2000**		**50**		ND		ND		**50**		**20**		ND		NA		NA	NA		NA		NA		NA		
Nitrates (mg/L)	NLE	10	**1.05**		ND		ND		NA		**2.76**		**5.97**		ND		ND		ND		ND		NA	NA		NA		NA		NA		
Oxygen (dissolved; mg/L)	NLE	NLE	**8.41**		**6.94**		**6.54**		**3.01**		**9.47**		**8.28**		**7.55**		**6.99**		**7.85**		**8.08**		**8.61**	**4.65**		**4.45**		**7.86**		**4.67**			
pH	NLE	5-9	**6.87**		**6.86**		**7.81**		**6.63**		**7.87**		**8.22**		**6.97**		**7.09**		**7.11**		**7.42**		**7.05**	**7.21**		**6.96**		**7.34**		**5.92**			
Phosphate (mg/L)	NLE	NLE	ND		ND		ND		NA		**0.07**		ND		ND		ND		**0.03**		ND		NA	NA		NA		NA		NA		
Sulfate (mg/L)	NLE	NLE	**30**		**20.9**		**22.8**		NA		**21.2**		**17.63**		**18.4**		**19.1**		**29**		**18.9**		NA	NA		NA		NA		NA		
Temperature (ºC)	NLE	NLE	**8.21**		**22.3**		**18.7**		**4.82**		**8.62**		**23.47**		**17.6**		**8.33**		**6.59**		**23.58**		**18.31**	**4.79**		**7.5**		**22.74**		**16.01**			
Total Coliform (cfu/100mL)	NLE	NLE	**600**		**2450**		**11400**		**800**		**120**		**4080**		**2650**		**600**		**1460**		NA		NA	NA		NA		NA		NA			

Notes:

RSLs were current at the time the screening was conducted.

(1) New Jersey Department of Environmental Protection (NJDEP) Surface Water Quality Standards (N.J.A.C. 7:9B), Human Health standards for Saline Waters of estuaries (SE).

(2) United States Environmental Protection Agency (USEPA) National Recommended Water Quality Criteria (Human Health Criteria, Organism Only).
(http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm#htable)

(3) Tapwater RSL was used in place of NRWQC, available at http://www.epa.gov/region9/superfund/prg/. Revised November 2013.

(4) USEPA Action level, available at http://water.epa.gov/drink/contaminants/index.cfm

< = analyte not detected above method detection limit (MDL).
B = Compound detected in the sample and its associated blank sample.
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mg/L = milligrams/liter; µg/L = micrograms/liter; cfu/100 mL = colony-forming units/100 milliliters.
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TABLE 4.7
SURFACE WATER SUMMARY SAMPLING RESULTS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

| Round Number | NJDEP Saline Water (SE) Criteria[1] | USEPA Human Health Criterion [2] | SS-27 | | |

TABLE 4.8
SURFACE WATER SAMPLING SUMMARY OF EXCEEDANCES
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Analyte	Maximum Concentration		Location of Maximum Concentration	Date of Maximum Concentration	Number of Samples (1)	Number of Detections	Number of Exceedances		Identification of COPCs	
							NJDEP Saline Water (SE) Criteria (2)	USEPA National Recommended Water Quality Criteria (3)	Evaluated as COPC in Risk Assessment?	Rationale
Volatile Organic Compounds (µg/L)										
Acetone	No detections		--	--	24	0	NLE	0	No	Less than NRWQC
Bromodichloromethane	0.27	J	SS-27	6/22/2010	8	1	0	0	No	Less than NRWQC
Chloroform	0.61		SS-27	6/22/2010	16	1	0	0	No	Less than NRWQC
cis-1,2-Dichloroethene	2.81		SS-15	9/21/2010	24	20	NLE	1	No	Detected upstream at similar concentration
Methyl *tert*-butyl ether	0.24	J	SS-15	3/28/2010	24	2	NLE	0	No	Less than NRWQC
tert-Butyl alcohol	9.16		SS-15	12/7/2009	16	1	NLE	NLE	No	No NRWQC
Tetrachloroethene	3.03		SS-15	3/24/2009	24	21	6	0	No	Less than NRWQC
Trichloroethene	1.26	J	SS-15	3/24/2009	24	13	0	0	No	Less than NRWQC
TICs	19		SS-27	9/25/2009	24	5	NLE	NLE	No	No NRWQC
Metals (µg/L)										
Antimony	27.1		SS-27	9/21/2010	16	13	0	0	No	Less than NRWQC
Arsenic	66.6		SS-15	3/24/2009	22	12	12	12	No	Detected upstream at variable concentrations
Barium	64		M5-SW4-diss	6/8/2010	22	16	NLE	0	No	Less than NRWQC
Beryllium	0.336	ER	SS-15	12/29/2008	16	5	0	0	No	Less than NRWQC
Cadmium	0.608	ER	SS-15	12/7/2009	16	4	0	0	No	Less then NRWQC
Chromium	7.1		SS-27	9/25/2009	16	9	0	0	No	No NRWQC
Copper	7.56		SS-27	6/22/2010	16	11	NLE	0	No	Less than NRWQC
Lead	18.2		SS-27	12/7/2009	22	5	NLE	1	No	Less than NRWQC
Mercury	0.18	ER	SS-15	12/7/2009	16	3	3	3	No	Detected upstream at similar concentration
Nickel	16		SS-15	3/28/2010	18	16	0	0	No	Less than NRWQC
Selenium	119		SS-27	3/24/2009	16	7	0	0	No	Less than NRWQC
Wet Chemistry										
Ammonia (mg/L)	0.581		SS-27	6/29/2009	9	1	NLE	NLE	No	No NRWQC
Fecal Coliform (cfu/100mL)	120		SS-27	12/29/2008	6	3	NLE	NLE	No	No NRWQC
Nitrates (mg/L)	0.689		SS-5	6/29/2009	9	1	NLE	0	No	Less than NRWQC
Oxygen (dissolved; mg/L)	8.61		SS-15	9/25/2009	24	24	NLE	NLE	No	No NRWQC
pH	7.94		SS-5	6/29/2009	24	24	NLE	NLE	No	No NRWQC
Phosphate (mg/L)	0.03		SS-15	3/24/2009	9	3	NLE	NLE	No	No NRWQC
Salinity (%)	0.08		SS-27	9/21/2010	24	24	NLE	NLE	No	No NRWQC
Sulfate (mg/L)	239		SS-27	3/24/2009	9	9	NLE	NLE	No	No NRWQC
Temperature (ºC)	23.79		SS-5	6/22/2010	24	24	NLE	NLE	No	No NRWQC
Total Coliform (cfu/100mL)	1460		SS-15	3/24/2009	6	6	NLE	NLE	No	No NRWQC

Notes:

RSL values were current at the time the screening was conducted.

(1) The samples from the most recent eight quarters of surface water sampling are included in this summary.

(2) New Jersey Department of Environmental Protection (NJDEP) Surface Water Quality Standards (N.J.A.C. 7:9B), Human Health standards for Saline Waters of estuaries (SE).

cfu/100 mL = colony-forming units/100 milliliters.

COPC = contaminant of potential concern.

ER = estimated result.

J = Estimated concentration exceeds the method detection limit (MDL) and is less than the reporting limit (RL).

mg/L = milligrams/liter.

µg/L = micrograms/liter.

n/a = all concentrations were less than the detection limit, therefore, no location of maximum value identified.

NLE = no limit established.

TABLE 4.9
SEDIMENT PCB RESULTS
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Boring ID	Sample Depth (bgs)	Date Collected	Total PCBs (mg/kg)	Aroclor 1254 (mg/kg)
B-1	0-6"	4/13/2000	< 0.0130	< 0.0007
	6"-12"	4/13/2000	< 0.0130	< 0.0007
B-2	0-6"	4/13/2000	**0.054**	**0.054**
	6"-12"	4/13/2000	< 0.0122	< 0.0006
B-3	0-6"	4/13/2000	< 0.0123	< 0.0006
	6"-12"	4/13/2000	< 0.0128	< 0.0007
B-4	0-6"	4/13/2000	< 0.0122	< 0.0006
	6"-12"	4/13/2000	< 0.0126	< 0.0007
B-5	0-6"	4/13/2000	< 0.0114	< 0.0006
	6"-12"	4/13/2000	< 0.0123	< 0.0006
B-6	0-6"	4/13/2000	< 0.0121	< 0.0006
	6"-12"	4/13/2000	< 0.0127	< 0.0007
	18"-24"	4/13/2000	< 0.0120	< 0.0006
B-6 (Dup)	0-6"	4/13/2000	< 0.0128	< 0.0007
	6"-12"	4/13/2000	< 0.0124	< 0.0007
	18"-24"	4/13/2000	< 0.0129	< 0.0007

NJDEP RDCSRS	0.2	0.2
NJDEP NRDCSRS	1	1
USEPA RSL - Residential	0.22	0.11
USEPA RSL - NonResidential	0.74	0.74

Notes:
There are no NJDEP soil standards for individual PCB Arcolors; the total PCB NJDEP standards were used for individual Arcolors.
PCBs = Polychlorinated Biphenyls.
bgs = below ground surface.
mg/kg = milligram per kilogram.
Dup = duplicate sample.
NLE = No limit established.
NJDEP = New Jersey Department of Environmental Protection.
USEPA = United States Environmental Protection Agency.
RDCSRS = Residential Direct Contact Soil Remediation Standard.
NRDCSRS = Non-Residential Direct Contact Soil Remediation Standard.
RSL = Regional Screening Level.

TABLE 6.1
RISK RATIO CALCULATIONS FOR POTENTIAL EXPOSURE TO SOIL BY A CURRENT/FUTURE OUTDOOR WORKER
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

CAS No.	Compound	Exposure Point Concentration (EPC) (mg/kg) [1]		USEPA Regional Screening Level Industrial Soil (HQ = 1.0) (mg/kg) [2]		Carcinogenic? [3]	Percent of cumulative non-carcinogenic risk?	Percent of cumulative carcinogenic risk?	Outdoor worker Non-Carcinogenic Risk Ratio (EPC/USEPA RSL)	Outdoor worker Carcinogenic Risk Ratio (EPC/USEPA RSL)
				non-carcinogenic	carcinogenic					
	Volatile Organic Coumpounds									
67-66-3	Chloroform	1	Max	1000	1.4	both	0.085%	1.2%	0.00076	5.4E-07
	Semivolatile Organic Coumpounds									
91-20-3	Naphthalene	4 JD	Max	590	17	both	0.76%	0.54%	0.0068	2.4E-07
56-55-3	Benzo[a]anthracene	14 D	Max	--	2.9	yes	--	11%	--	4.8E-06
218-01-9	Chrysene	25 D	Max	--	290	yes	--	0.20%	--	8.6E-08
205-99-2	Benzo[b]fluoranthene	9	Max	--	2.9	yes	--	7.2%	--	3.2E-06
207-08-9	Benzo[k]fluoranthene	9 JD	Max	--	29	yes	--	0.71%	--	3.1E-07
50-32-8	Benzo[a]pyrene	0.6	UCL	--	0.29	yes	--	4.5%	--	2.0E-06
193-39-5	Indeno[1,2,3-cd]pyrene	19 D	Max	--	2.9	yes	--	15%	--	6.6E-06
53-70-3	Dibenz[a,h]anthracene	0.65	UCL	--	0.29	yes	--	5.1%	--	2.2E-06
	Pesticides / PCBs									
1024-57-3	Heptachlor Epoxide	0.26	Max	15	0.33	both	1.9%	1.8%	0.017	7.9E-07
72-55-9	4,4'-DDE	4.2	Max	--	9.3	yes	--	1.0%	--	4.5E-07
60-57-1	Dieldrin	0.049	Max	41	0.14	both	0.13%	0.80%	0.0012	3.5E-07
72-54-8	4,4'-DDD	3.8	Max	--	9.6	yes	--	0.90%	--	3.9E-07
50-29-3	4,4'-DDT	56	Max	520	8.5	both	12%	15%	0.11	6.6E-06
11097-69-1	Aroclor 1254	1.5	Max	15	0.97	both	11%	3.5%	0.10	1.5E-06
	Metals									
7440-36-0	Antimony	6.6	Max	470	--	no	1.6%	--	0.014	--
7440-38-2	Arsenic	41	UCL	480	3.0	both	9.6%	31%	0.086	1.4E-05
7440-43-9	Cadmium	14	UCL	980	9300	both	1.6%	0.0035%	0.015	1.5E-09
7440-48-4	Cobalt	56	Max	350	1900	both	18%	0.067%	0.16	2.9E-08
7440-50-8	Copper	2837	Max	47000	--	no	6.8%	--	0.060	--
7439-96-5	Manganese	2581	Max	26000	--	no	11%	--	0.099	--
7439-97-6	Mercury	1.9	UCL	40	--	no	5.3%	--	0.048	--
7440-02-0	Nickel	431	Max	22000	64000	both	2.2%	0.015%	0.020	6.7E-09
7782-49-2	Selenium	51	Max	5800	--	no	0.98%	--	0.0087	--
7440-28-0	Thallium	1.0	UCL	12	--	no	10%	--	0.087	--
7440-62-2	Vanadium	200	Max	5800	--	no	3.9%	--	0.035	--
7440-66-6	Zinc	9772	Max	350000	--	no	3.1%	--	0.028	--
	Metals									
7439-92-1	Lead	319	UCL	800	--	no	--	--	0.4	--
					Cumulative Risk Ratio				**0.9**	**4E-05**

(1) Exposure point concentration (EPC) is the maximum detected concentration or 95% UCL for each analyte for all soil samples combined. 95% UCLs are calculated using ProUCL (version 5.0) and the output files are presented in Appendix B. 95% UCLs are presented in blue font.

(2) USEPA Regional Screening Level (RSL) for Industrail soil, Target Risk (TR) = 1 x 10^{-6} and Target Hazard Quotient (THQ) = 1.0. Revised June 2015. http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/docs/master_sl_table_run_JUNE2015_rev.pdf

(3) "yes" indicates that the chemical exerts carcinogenic effects; "no" indicates that the chemical exerts non-carcinogenic effects; and "both" indicates that the chemical exerts both carcinogenic and non-carcinogenic effects

mg/kg = milligrams per kilogram

Max = Maximum detected concentration

UCL = Upper confidence limit

D = Result from dilution of sample

J = Analyte detected between MDL and practical quantitation limit (PQL).

TABLE 6.2
RISK RATIO CALCULATIONS FOR POTENTIAL EXPOSURE TO SOIL BY A FUTURE UTILITY WORKER
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

CAS No.	Compound	Exposure Point Concentration (EPC) (mg/kg) [1]		Utility Worker Screening Level (SL) (HQ = 1.0) (mg/kg) [2]		Carcinogenic? [3]	Percent of cumulative non-carcinogenic risk?	Percent of cumulative carcinogenic risk?	Utility Worker Non-Carcinogenic Risk Ratio (EPC/SL)	Utility Worker Carcinogenic Risk Ratio (EPC/SL)
				non-carcinogenic	carcinogenic					
	Volatile Organic Coumpounds									
67-66-3	Chloroform	1	Max	8990	380	both	0.027%	0.35%	0.000085	2.0E-09
	Semivolatile Organic Coumpounds									
91-20-3	Naphthalene	4 JD	Max	6140	4790	both	0.21%	0.15%	0.00065	8.4E-10
56-55-3	Benzo[a]anthracene	14 D	Max	--	243	yes	--	10%	--	5.8E-08
218-01-9	Chrysene	25 D	Max	--	24300	yes	--	0.18%	--	1.0E-09
205-99-2	Benzo[b]fluoranthene	9	Max	--	243	yes	--	6.7%	--	3.8E-08
207-08-9	Benzo[k]fluoranthene	9 JD	Max	--	2430	yes	--	0.66%	--	3.7E-09
50-32-8	Benzo[a]pyrene	0.6	UCL	--	24	yes	--	4.2%	--	2.4E-08
193-39-5	Indeno[1,2,3-cd]pyrene	19 D	Max	--	243	yes	--	14%	--	7.8E-08
53-70-3	Dibenz[a,h]anthracene	1	UCL	--	24	yes	--	4.8%	--	2.7E-08
	Pesticides / PCBs									
1024-57-3	Heptachlor Epoxide	0.26	Max	38	22	both	2.1%	2.1%	0.0068	1.2E-08
72-55-9	4,4'-DDE	4.2	Max	--	602	yes	--	1.2%	--	7.0E-09
60-57-1	Dieldrin	0.049	Max	131	12	both	0.12%	0.76%	0.00037	4.3E-09
72-54-8	4,4'-DDD	3.8	Max	--	764	yes	--	0.88%	--	5.0E-09
50-29-3	4,4'-DDT	56	Max	1420	585	both	13%	17%	0.040	9.6E-08
11097-69-1	Aroclor 1254	1.5	Max	50	86	both	9.4%	3.1%	0.030	1.7E-08
	Metals									
7440-36-0	Antimony	6.6	Max	1180	--	no	1.8%	--	0.0056	--
7440-38-2	Arsenic	41	UCL	1390	216	both	9.3%	34%	0.030	1.9E-07
7440-43-9	Cadmium	14	UCL	2800	4590000	both	1.6%	0.00055%	0.0051	3.1E-12
7440-48-4	Cobalt	56	Max	884	918000	both	20%	0.011%	0.063	6.1E-11
7440-50-8	Copper	2837	Max	118000	--	no	7.6%	--	0.024	--
7439-96-5	Manganese	2581	Max	69900	--	no	12%	--	0.037	--
7439-97-6	Mercury	2	UCL	455	--	no	1.3%	--	0.0042	--
7440-02-0	Nickel	431	Max	58700	31800000	both	2.3%	0.0024%	0.0073	1.4E-11
7782-49-2	Selenium	51	Max	14700	--	no	1.1%	--	0.0034	--
7440-28-0	Thallium	1	UCL	30	--	no	11%	--	0.035	--
7440-62-2	Vanadium	200	Max	14800	--	no	4.3%	--	0.014	--
7440-66-6	Zinc	9772	Max	885000	--	no	3.5%	--	0.011	--
	Metals									
7439-92-1	Lead [4]	319	UCL	1400	--	no	--	--	0.2	--
						Cumulative Risk Ratio			**0.3**	**6E-07**

(1) Exposure point concentration (EPC) is the maximum detected concentration or 95% UCL for each analyte for all soil samples combined. 95% UCLs are calculated using ProUCL (version 5.0) and the output files are presented in Appendix B. 95% UCLs are presented in blue font.

(2) Calculated screening level for utility workers using the USEPA RSL calculator for outdoor worker, using site-specific and receptor-specific exposure parameters. The calculations and exposure parameters are provided in Appendix B.

(3) "yes" indicates that the chemical exerts carcinogenic effects; "no" indicates that the chemical exerts non-carcinogenic effects; and "both" indicates that the chemical exerts both carcinogenic and non-carcinogenic effects

(4) Utility Worker Soil Screening Level for Lead was generated using USEPA's Adult Lead Model (ALM). ALM inputs provided in Appendix B.
mg/kg = milligrams per kilogram
Max = Maximum detected concentration
UCL = Upper confidence limit
D = Result from dilution of sample
J = Analyte detected between MDL and practical quantitation limit (PQL).

TABLE 6.3
RISK RATIO CALCULATIONS FOR POTENTIAL EXPOSURE TO SOIL BY A FUTURE RECREATIONAL USER
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

CAS No.	Compound	Exposure Point Concentration (EPC) (mg/kg) [1]		Recreational User Soil Calculated Screening Level (SL) (HQ = 1.0) (mg/kg) [2]		Carcinogenic? [3]	Percent of cumulative non-carcinogenic risk?	Percent of cumulative carcinogenic risk?	Recreational User Non-Carcinogenic Risk Ratio (EPC/SL)	Recreational User Carcinogenic Risk Ratio (EPC/SL)
				non-carcinogenic	carcinogenic					
	Volatile Organic Coumpounds									
67-66-3	Chloroform	1	Max	21200.00	38	both	0.025%	0.18%	0.000036	2.0E-08
	Semivolatile Organic Coumpounds									
91-20-3	Naphthalene	4 JD	Max	14300.00	479	both	0.19%	0.075%	0.00028	8.4E-09
56-55-3	Benzo[a]anthracene	14 D	Max	--	7.6	yes	--	17%	--	1.8E-06
218-01-9	Chrysene	25 D	Max	--	763	yes	--	0.30%	--	3.3E-08
205-99-2	Benzo[b]fluoranthene	9	Max	--	8	yes	--	11%	--	1.2E-06
207-08-9	Benzo[k]fluoranthene	9 JD	Max	--	76	yes	--	1.1%	--	1.2E-07
50-32-8	Benzo[a]pyrene	0.6	UCL	--	0.76	yes	--	6.8%	--	7.5E-07
193-39-5	Indeno[1,2,3-cd]pyrene	19 D	Max	--	7.6	yes	--	22%	--	2.5E-06
53-70-3	Dibenz[a,h]anthracene	1	UCL	--	0.76	yes	--	7.7%	--	8.5E-07
	Pesticides / PCBs									
1024-57-3	Heptachlor Epoxide	0.26	Max	87	2.1	both	2.1%	1.1%	0.0030	1.2E-07
72-55-9	4,4'-DDE	4.2	Max	--	57	yes	--	0.66%	--	7.3E-08
60-57-1	Dieldrin	0.049	Max	261	0.95	both	0.13%	0.47%	0.00019	5.2E-08
72-54-8	4,4'-DDD	3.8	Max	--	63	yes	--	--	--	6.0E-08
50-29-3	4,4'-DDT	56	Max	3090	53	both	13%	--	0.018	1.1E-06
11097-69-1	Aroclor 1254	1.5	Max	96	6.9	both	11%	--	0.016	2.2E-07
	Metals									
7440-36-0	Antimony	6.6	Max	2680	--	no	1.7%	--	0.0024	--
7440-38-2	Arsenic	41	UCL	2930	19	both	10%	20%	0.014	2.2E-06
7440-43-9	Cadmium	14	UCL	6000	459000	both	1.7%	0.00028%	0.0024	3.1E-11
7440-48-4	Cobalt	56	Max	2010	91800	both	19%	0.0055%	0.028	6.1E-10
7440-50-8	Copper	2837	Max	268000	--	no	7.4%	--	0.011	--
7439-96-5	Manganese	2581	Max	159000	--	no	11%	--	0.016	--
7439-97-6	Mercury	2	UCL	1090	--	no	1.2%	--	0.0017	--
7440-02-0	Nickel	431	Max	133000	3180000	both	2.3%	0.0012%	0.0032	1.4E-10
7782-49-2	Selenium	51	Max	33500	--	no	1.1%	--	0.0015	--
7440-28-0	Thallium	1	UCL	67	--	no	11%	--	0.016	--
7440-62-2	Vanadium	200	Max	33700	--	no	4.1%	--	0.0059	--
7440-66-6	Zinc	9772	Max	2010000	--	no	3.4%	--	0.0049	--
	Metals									
7439-92-1	Lead [4]	319	UCL	2700	--	no	--	--	0.1	--
						Cumulative Risk Ratio			**0.1**	**1E-05**

(1) Exposure point concentration (EPC) is the maximum detected concentration or 95% UCL for each analyte for all soil samples combined. 95% UCLs are calculated using ProUCL (version 5.0) and the output files are presented in Appendix B. 95% UCLs are presented in blue font.

(2) Calculated screening level for recreational users using the USEPA RSL calculator for recreator, using site-specific and receptor-specific exposure parameters. The calculations and exposure parameters are provided in Appendix B.

(3) "yes" indicates that the chemical exerts carcinogenic effects; "no" indicates that the chemical exerts non-carcinogenic effects; and "both" indicates that the chemical exerts both carcinogenic and non-carcinogenic effects

(4) Future Recreational User Soil Screening Level for Lead was generated using USEPA's Adult Lead Model (ALM). ALM inputs provided in **Appendix B**.
mg/kg = milligrams per kilogram
Max = Maximum detected concentration
SL = Screening level
UCL = Upper confidence limit
D = Result from dilution of sample
J = Analyte detected between MDL and practical quantitation limit (PQL).

TABLE 6.4
RISK RATIO CALCULATIONS FOR POTENTIAL EXPOSURE TO GROUNDWATER BY A FUTURE UTILITY WORKER
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

CAS No.	Compound	Exposure Point Concentration (EPC) (µg/L) [1]		Utility Worker Screening Level (SL) (HQ = 1.0) (µg/L) [2]		Carcinogenic?	Percent of cumulative non-carcinogenic risk?	Percent of cumulative carcinogenic risk?	Outdoor worker Non-Carcinogenic Risk Ratio (EPC/SL)	Outdoor worker Carcinogenic Risk Ratio (EPC/SL)
				non-carcinogenic	carcinogenic					
	Volatile Organic Compounds									
156-59-2	cis-l,2-Dichloroethene	112	max	11900	--	no	27%	--	0.0094	--
127-18-4	Tetrachloroethene	50	max	9470	52500	both	15%	12%	0.0053	1E-09
79-01-6	Trichloroethene	51	max	2500	7520	both	58%	88%	0.021	7E-09
						Cumulative Risk Ratio			**0.04**	**8E-09**

(1) Exposure Point Concentration is the maximum detected concentration for all soil samples combined.

(2) Calculated screening level for utility workers using the USEPA RSL calculator for recreator, using site-specific and receptor-specific exposure parameters. The calculations and exposure parameters are provided in Appendix B.

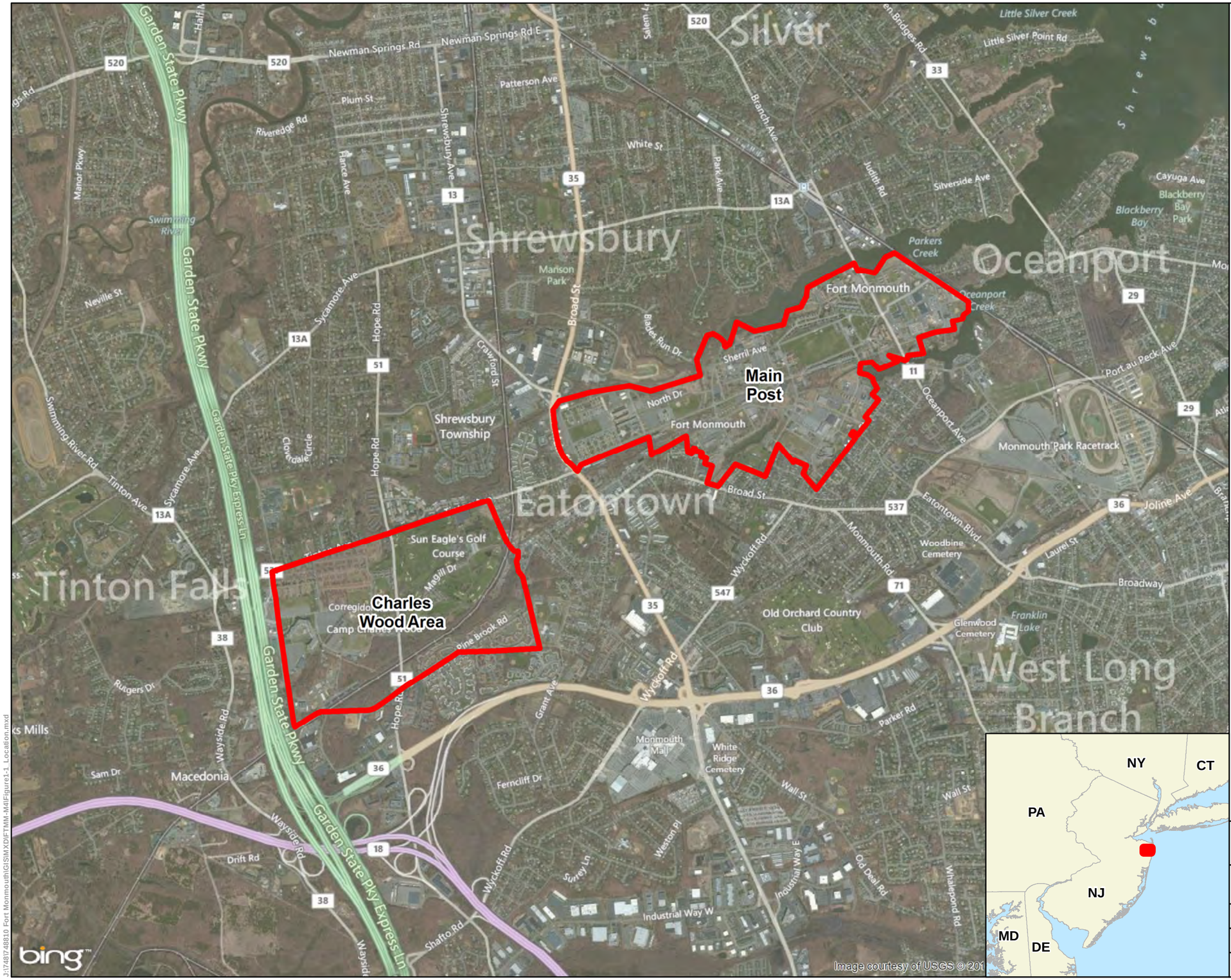
µg/L = micrograms per liter

Max = Maximum detected concentration

J = Analyte detected between MDL and practical quantitation limit (PQL).

FIGURES

Figure 1.1 Fort Monmouth Location
Figure 1.2 FTMM-05 Location
Figure 1.3 Layout of FTMM-05
Figure 2.1 FTMM-05 Soil Sample Locations
Figure 2.2 FTMM-05 Remedial Activity Injection Areas
Figure 2.3 FTMM-05 Surface Water and Sediment Sample Locations
Figure 4.1 Summary of Method to Determine COPCs
Figure 6.1 Evaluation of Risk to Human Receptors
Figure 6.2 Human Health Conceptual Site Model



Legend

Installation Boundary

Site Description:
Fort Monmouth
Main Post & Charles Wood Area
Monmouth County, NJ
Longitude: 74˚ 2' 33.39" W
Latitude: 40˚ 18' 49.33" N
Longitude and Latitude represent the center point of Main Post.

N

1 inch = 2,500 feet

0 0.5 1 Miles

Source: Bing Maps online imagery; ESRI Data and Maps, 2011.

PARSONS 401 Diamond Drive NW, Huntsville AL	**Fort Monmouth** **New Jersey**

Fort Monmouth Location

CREATED BY: TS	REVIEWED BY: JH
DATE: September 2013	FIGURE NUMBER: Figure 1.1
PROJECT NUMBER: 748810.02030	FILE: Figure1-1_Location.mxd

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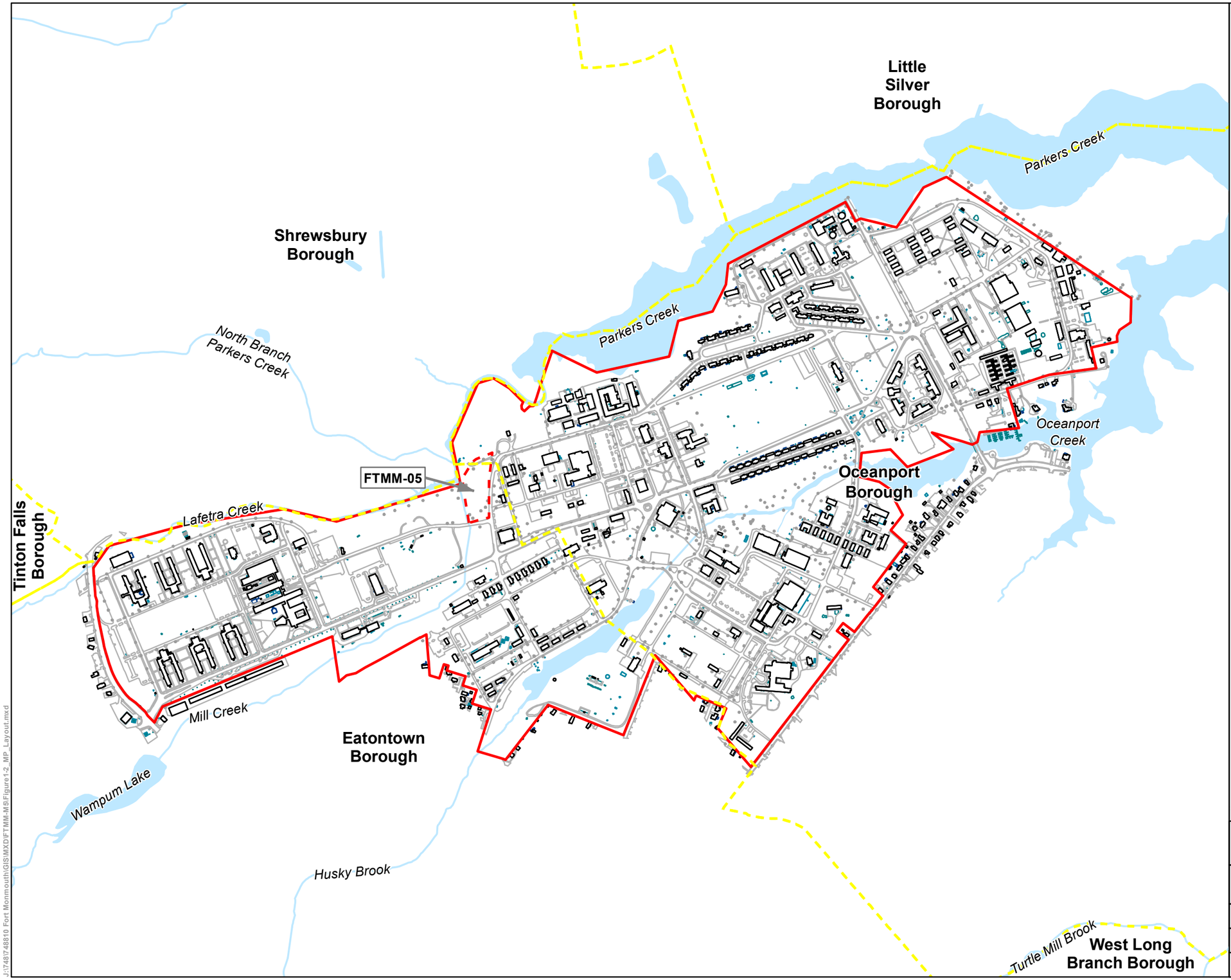

Legend

- FTMM-05 Landfill Boundary
- Surface Water Feature
- Municipal Boundary
- Installation Boundary

N

1 inch = 1,000 feet

0 250 500 1,000 1,500 2,000 2,500 Feet

Source: FTMM Supplied CAD, 2013; ESRI Data and Maps, 2011; USGS NHD, 2012.

PARSONS 401 Diamond Drive NW, Huntsville AL	Fort Monmouth New Jersey
FTMM-05 Location	
CREATED BY: TS	REVIEWED BY: JH
DATE: May 2014	FIGURE NUMBER: Figure 1.2
PROJECT NUMBER: 748810.02040	FILE: Figure1-2_MP_Layout.mxd

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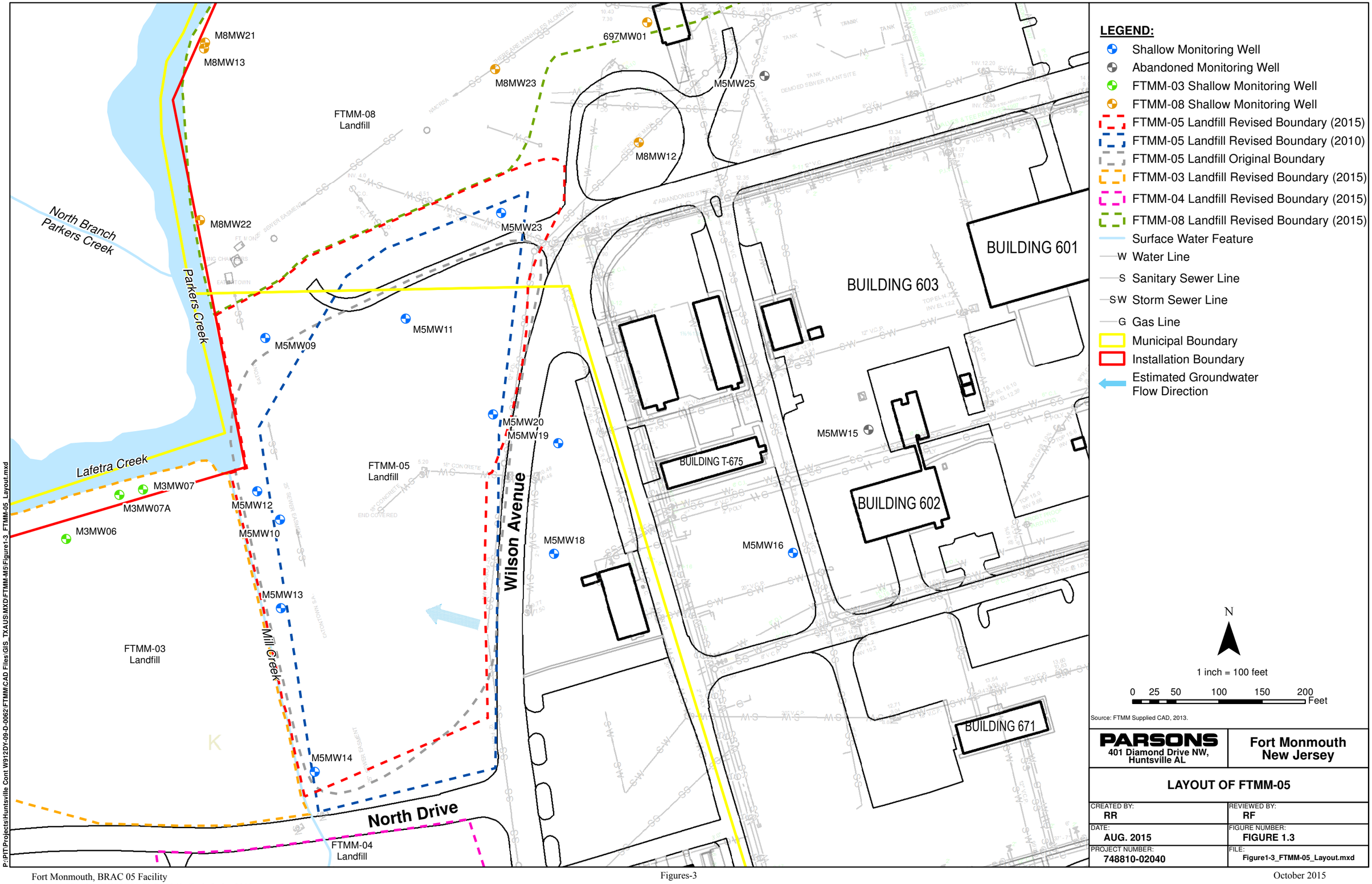

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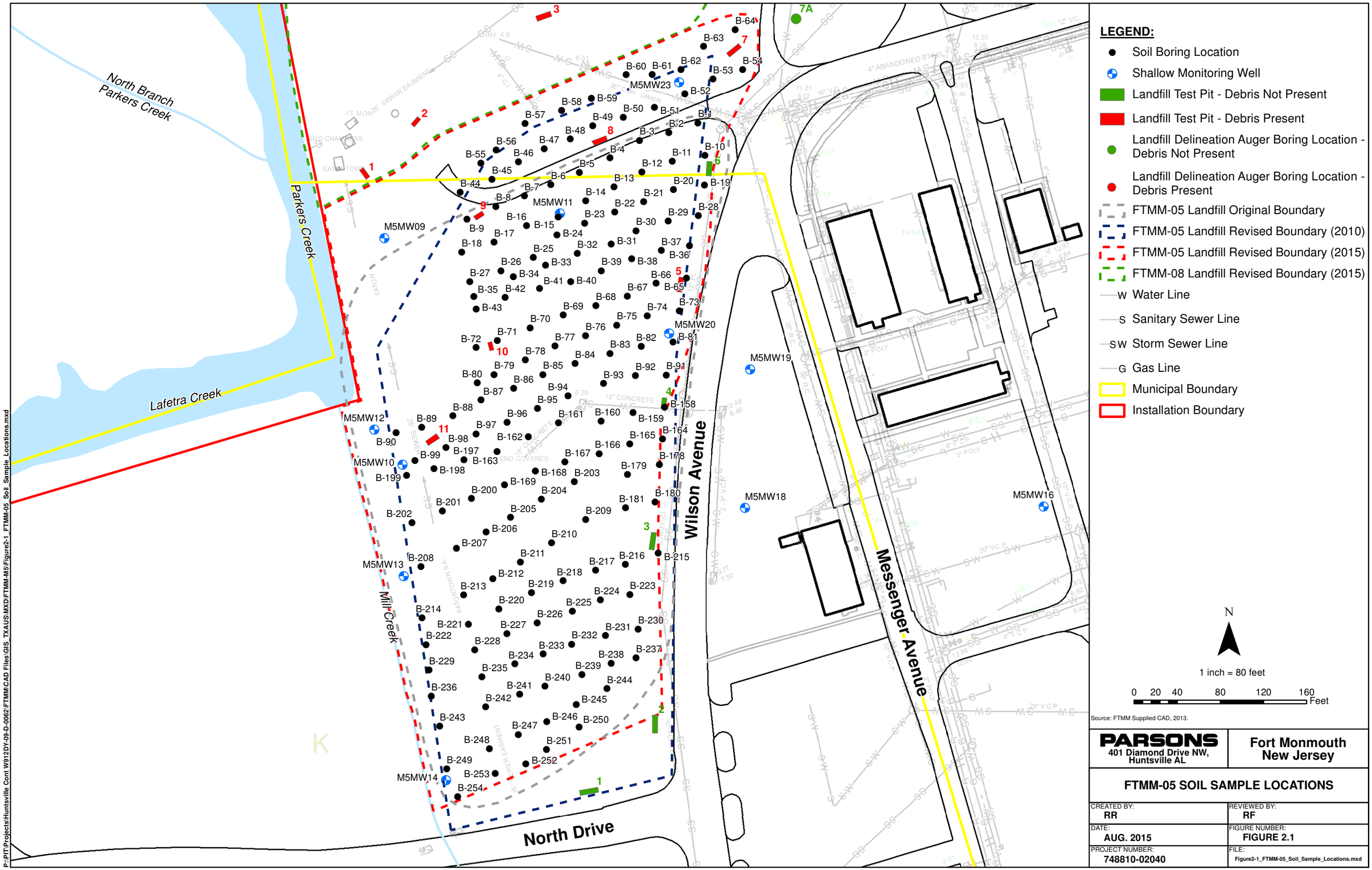
North Branch Parkers Creek
Parkers Creek
Lafetra Creek
Mill Creek
Wilson Avenue
Messenger Avenue
North Drive
M5MW09
M5MW10
M5MW11
M5MW12
M5MW13
M5MW14
M5MW16
M5MW18
M5MW19
M5MW20
M5MW23
7A
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LEGEND:
Soil Boring Location
Shallow Monitoring Well
Landfill Test Pit - Debris Not Present
Landfill Test Pit - Debris Present
Landfill Delineation Auger Boring Location - Debris Not Present
Landfill Delineation Auger Boring Location - Debris Present
FTMM-05 Landfill Original Boundary
FTMM-05 Landfill Revised Boundary (2010)
FTMM-05 Landfill Revised Boundary (2015)
FTMM-08 Landfill Revised Boundary (2015)
W Water Line
S Sanitary Sewer Line
SW Storm Sewer Line
G Gas Line
Municipal Boundary
Installation Boundary
N
1 inch = 80 feet
0 20 40 80 120 160 Feet
Source: FTMM Supplied CAD, 2013.
PARSONS
401 Diamond Drive NW, Huntsville AL
Fort Monmouth New Jersey
FTMM-05 SOIL SAMPLE LOCATIONS
CREATED BY: RR
REVIEWED BY: RF
DATE: AUG. 2015
FIGURE NUMBER: FIGURE 2.1
PROJECT NUMBER: 748810-02040
FILE: Figure2-1_FTMM-05_Soil_Sample_Locations.mxd
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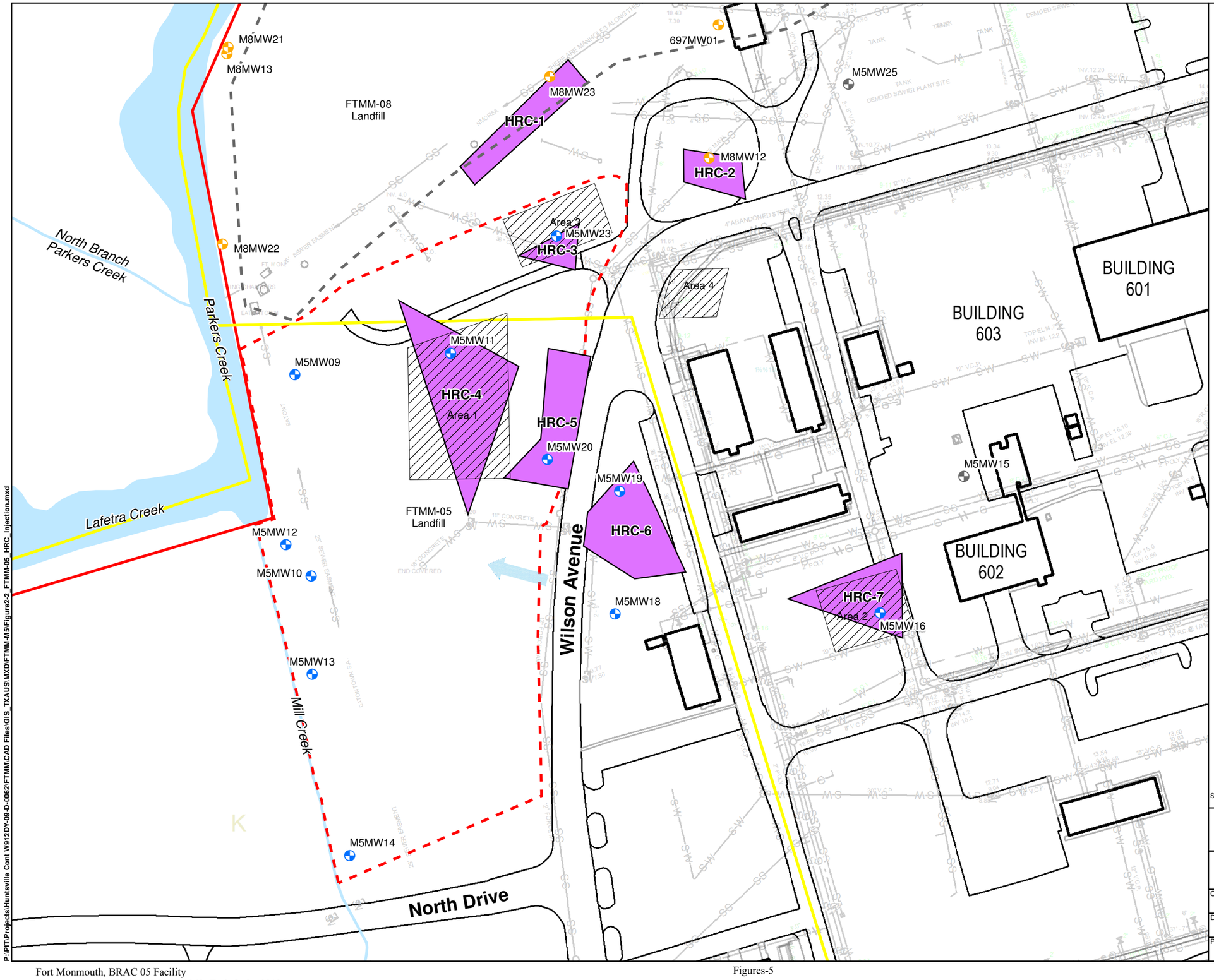

LEGEND:

- FTMM-05 Shallow Monitoring Well
- FTMM-05 Abandoned Monitoring
- FTMM-08 Shallow Monitoring Well
- Hydrogen Releasing Compound Treatment Area
- RegenOx Injection Areas
- FTMM-05 Landfill Revised Boundary (2015)
- FTMM-08 Landfill Boundary
- W Water Line
- S Sanitary Sewer Line
- SW Storm Sewer Line
- G Gas Line
- Municipal Boundary
- Installation Boundary
- Estimated Groundwater Flow Direction

N

1 inch = 100 feet

0 25 50 100 150 200 Feet

Source: FTMM Supplied CAD, 2013.

PARSONS 401 Diamond Drive NW, Huntsville AL	Fort Monmouth New Jersey
FTMM-05 REMEDIAL ACTIVITY INJECTION AREAS	
CREATED BY: RR	REVIEWED BY: JH
DATE: AUG. 2015	FIGURE NUMBER: FIGURE 2.2
PROJECT NUMBER: 748810-02040	FILE: Figure2-2_FTMM-05_HRC_Injection.mxd

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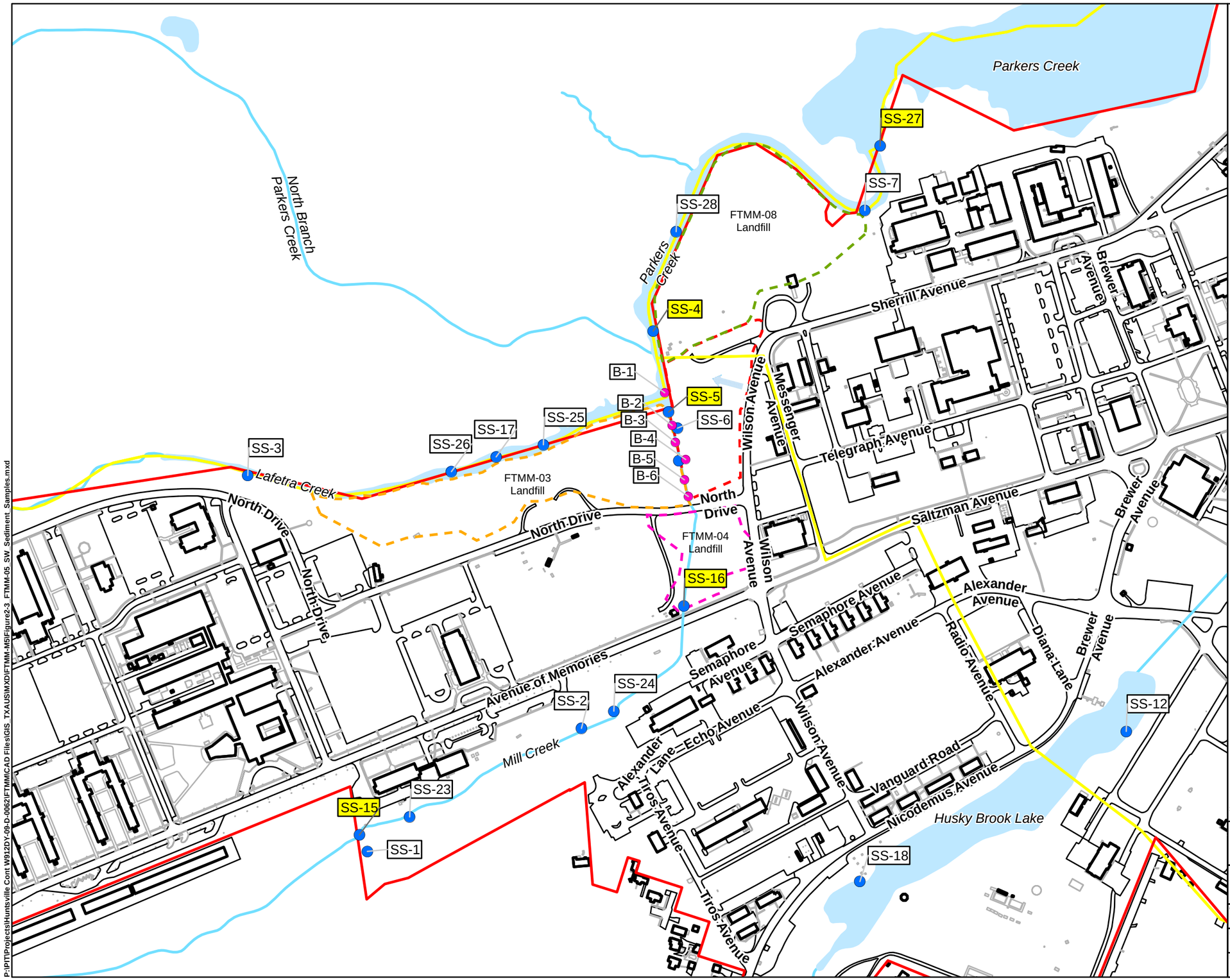

LEGEND:

- Sediment Sample Location
- Surface Water Sample Location
- FTMM-05 Landfill Revised Boundary (2015)
- FTMM-03 Landfill Revised Boundary (2015)
- FTMM-04 Landfill Revised Boundary (2015)
- FTMM-08 Landfill Revised Boundary (2015)
- Installation Boundary
- Municipal Boundary
- Estimated Groundwater Flow Direction
- SS-4 Surface Water Sample Location Associated with FTMM-05

Source: FTMM Supplied CAD, 2013.

PARSONS 401 Diamond Drive NW, Huntsville AL	**Fort Monmouth New Jersey**
FTMM-05 SURFACE WATER AND SEDIMENT SAMPLE LOCATIONS	
CREATED BY: RR	REVIEWED BY: JH
DATE: SEP. 2015	FIGURE NUMBER: FIGURE 2.3
PROJECT NUMBER: 748810-02040	FILE: Figure2-3_FTMM-05_SW_Sediment_Samples.mxd

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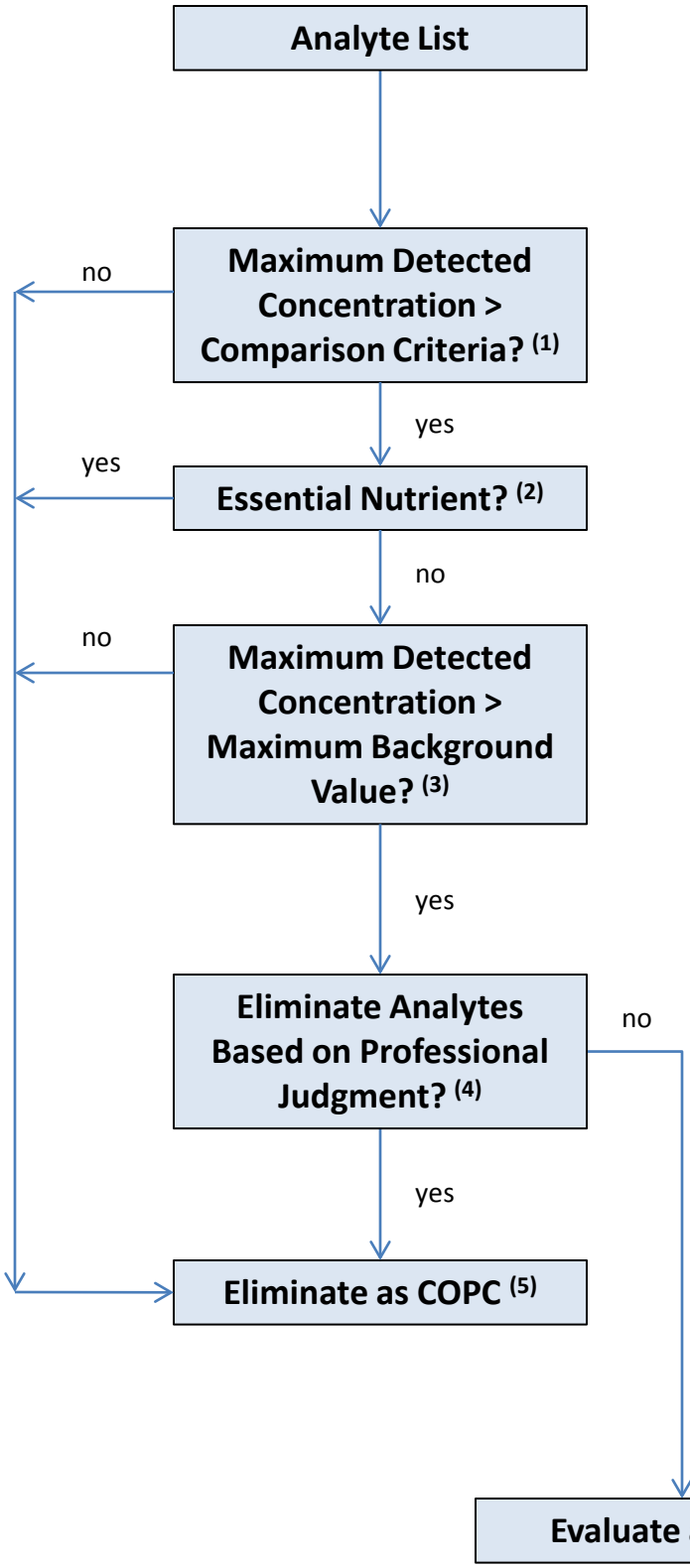
FIGURE 4.1
Summary of Method to Determine COPCs



(1) Preliminary Comparison Criteria are:

a. Soil: USEPA Residential Regional Screening Levels (RSLs) (Target Risk [TR] = 1 X 10^{-6} and Target Hazard Quotient [THQ] = 0.1)
b. Groundwater: USEPA Tapwater RSLs (TR = 1 X 10^{-6} and THQ = 0.1)
c. Surface Water: A hierarchy of USEPA human health criteria was used in the priority shown below.
    1. National Recommended Water Quality Criteria (NRWQC) (organism only),
    2. NRWQC (water + organism),
    3. Tapwater RSLs, and
    4. Maximum Contaminant Levels (MCLs)
d. Sediment: USEPA Residential RSLs for Soil (TR = 1 X 10^{-6} and THQ = 0.1)

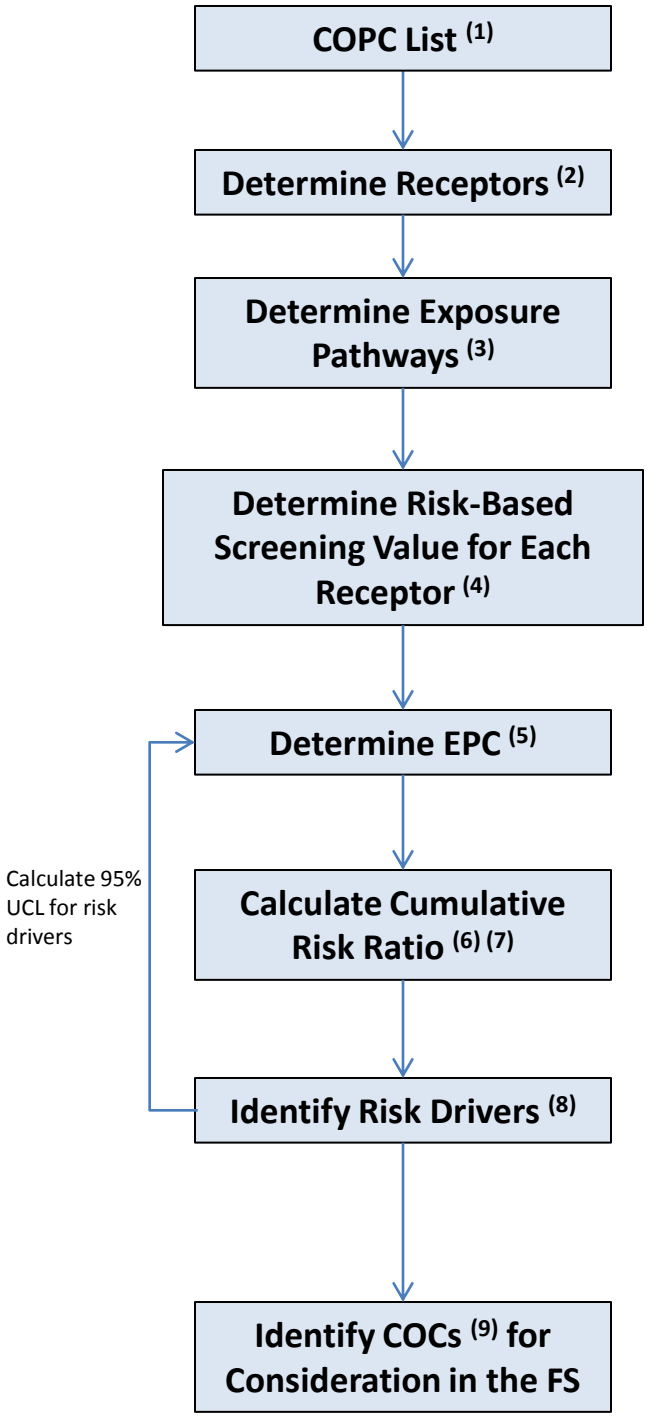
(2) Essential nutrients: calcium, iron, magnesium, sodium, and potassium

(3) Maximum background concentrations for metals were used because background data set was small (10 data points) and did not follow a parametric distribution. Weston (1995) concluded that the maximum background was approximately equivalent to a 95% Upper Tolerance Limit (UTL) for metals.

(4) Assessment (primarily for groundwater and surface water) as to whether exceedances of comparison criteria are representative of site-related contamination or are due to turbidity, upstream/upgradient sources, laboratory contamination, natural background conditions, etc.

(5) Constituent of potential concern

Figure 6.1
Evaluation of Risk to Human Receptors



(1) COPCs determined from comparison to screening criteria (see previous flow chart)

(2) Receptors include current and future outdoor workers, utility workers, and future recreational users

(3) Soil: incidental ingestion, dermal contact and inhalation of particulates and volatiles
Groundwater: ingestion as drinking water and dermal contact
Surface water/sediment: incidental ingestion and dermal contact

(4) The screening values used in the risk ratio will be:
- Soil: USEPA Industrial worker regional screening level (RSL) (Target Risk (TR) = 1 X 10^{-6} and Target Hazard Quotient (THQ) = 1.0); site-specific recreational user screening level calculated for each analyte
- Groundwater: USEPA tap water RSL (TR = 1 X 10^{-6} and THQ=1.0) (which includes outdoor workers and recreational users)
- Surface water: USEPA National Recommended Water Quality Criteria, Human Health Criteria, Organism Only
- Sediment: USEPA Industrial worker RSL (TR = 1 X 10^{-6} and THQ=1.0)

(5) Exposure Point Concentration, initially the maximum detected concentration

(6) Risk ratio calculated for carcinogens as:
Cumulative risk = Σ(Target Risk) x (EPC/Screening level)
For non-carcinogens as:
HI = Σ(Target Hazard Index) x (EPC/Screening level)

(7) Lead is evaluated based on the potential for exposure to increase blood lead levels. Therefore, lead is not included in the cumulative non-carcinogenic and carcinogenic risk estimates. The risk ratio for lead is calculated as: lead risk = (EPC/Screening level)

(8) Risk drivers are the individual analytes that contribute more than 25% to the cumulative risk ratio. For risk drivers a 95% Upper Confidence Limit (UCL) will be calculated.

(9) Constituent of Concern

Figure 6.2
Human Health Conceptual Site Model
Site FTMM-05
Fort Monmouth, New Jersey

Potential Medium of Concern	Potential Route of Exposure	Potentially Exposed Population	Pathway Completeness and Assumptions
Soil	• Incidental ingestion of soil • Inhalation of volatiles and particulates from soil • Dermal contact with soil	• Current outdoor worker • Future outdoor worker • Future indoor worker • Future recreational user • Future utility worker	• FTMM-05 is a landfill that was used for domestic and industrial waste disposal. It is currently vacant and unused. There are no new development activities occurring. The Fort Monmouth Economic Redevelopment Planning Authority reuse plan calls for the Fort Monmouth landfills to be designated as passive open space. • There are potentially complete exposure pathways associated with the current outdoor worker via incidental ingestion, inhalation of volatiles and particulates, and dermal contact. An exposure frequency of 225 days per year and an exposure duration of 25 years are assumed for this scenario. Thus, it is a very conservative evaluation for a potential current outdoor worker who would have much less exposure (*e.g.*, current worker that visits the site to perform mowing and landscaping activities). • There are potentially complete exposure pathways associated with the future outdoor worker via incidental ingestion, inhalation of volatiles and particulates, and dermal contact. This pathway is not included in the risk ratio analysis because it is assumed to be conservatively evaluated under the current outdoor worker scenario (based on the exposure frequency and exposure duration). There are potentially complete exposure pathways associated with the future indoor worker via incidental ingestion, inhalation of volatiles and particulates, and dermal contact, if commercial buildings were constructed on the site. This pathway is not included in the risk ratio analysis because it is assumed to be conservatively evaluated under the current outdoor worker scenario (future indoor workers would have much less exposure to soil).

Figure 6.2
Human Health Conceptual Site Model
Site FTMM-05
Fort Monmouth, New Jersey

Potential Medium of Concern	Potential Route of Exposure	Potentially Exposed Population	Pathway Completeness and Assumptions
			• Future recreational users have a complete exposure pathway to soil via incidental ingestion, inhalation of volatiles and particulates, and dermal contact, in part as an adolescent (aged 6-16) and in part as an adult (aged 16-30 for non carcinogens). An exposure frequency of 50 days per year and an exposure duration of 24 years are assumed for this scenario. This potentially exposed population also includes persons who may be trespassing at the site, as they are expected to be on-site no more frequently than recreational users. • Future utility workers have a complete exposure pathway to soil via incidental ingestion, inhalation of volatiles and particulates, and dermal contact. An exposure frequency of 30 days per year for a one year project duration are assumed for this scenario. • The site is not residential and is not planned for residential use. Therefore, residential exposure pathways are incomplete.

Figure 6.2
Human Health Conceptual Site Model
Site FTMM-05
Fort Monmouth, New Jersey

Potential Medium of Concern	Potential Route of Exposure	Potentially Exposed Population	Pathway Completeness and Assumptions
Surface Water/Sediment	• Ingestion of aquatic organisms (e.g., fish and shellfish) • Incidental ingestion of surface water/sediment • Inhalation of volatiles from sediment • Dermal contact with surface water/sediment	• Current outdoor worker • Future outdoor worker • Future recreational user • Future utility workers	• Mill Creek flows north along the western border of FTMM-05. The surface water is not used as a potable water supply. • No COPCs were identified in the surface water or sediment, so the surface water and sediment exposure pathways are incomplete for all receptors.

Figure 6.2
Human Health Conceptual Site Model
Site FTMM-05
Fort Monmouth, New Jersey

Potential Medium of Concern	Potential Route of Exposure	Potentially Exposed Population	Pathway Completeness and Assumptions
Groundwater	• Incidental ingestion of groundwater • Dermal contact with groundwater	• Future utility worker	• FTMM-05 is a landfill that was used for domestic and industrial waste disposal. It is currently vacant and unused. There are no new development activities occurring. The Fort Monmouth Economic Redevelopment Planning Authority reuse plan calls for the Fort Monmouth landfills to be designated as passive open space. • Future utility workers may be present on the site, involved in single short-term excavation projects at a given location, such as would be expected to be associated with repair or installation of utility lines. Utility workers are assumed to be on-site for 30 days of the year, for one year and would be expected to come in contact with shallow groundwater during excavation activities. Future utility workers have a complete exposure pathway to soil via incidental ingestion, inhalation of volatiles and particulates, and dermal contact. An exposure frequency of 30 days per year for a one year project duration are assumed for this scenario. • The site is not residential and is not planned for residential use. Therefore, residential exposure pathways are incomplete.

APPENDICES

Appendix A Key Historical Reports and Background Information (included electronically on CD)

Appendix B Utility Worker and Recreational User Exposure Parameters; Utility Worker and Recreational User Screening Level Calculations; ProUCL Output (included electronically on CD); and

Appendix C Cost Estimate

APPENDIX A
KEY HISTORICAL REPORTS AND BACKGROUND INFORMATION

(Appendix A is included separately on the CD of this report)

Notes from review of aerial photos conducted at NJDEP in March and April 2010

April 6, 1940 – Photo print

- M14 Landfill: Area undisturbed. Natural stream present that is oriented East-West.

September 19, 1947 (CNB-83D-55, CNB-3D-56) – Photo Prints

- M3 Landfill: Some minor disturbance on east end – inconsequential
- M4 Landfill: undisturbed (all vegetated, i.e., non-existent)
- M5 Landfill: void of vegetation except for tires near Sherrill Avenue
- M8 Landfill (former incinerator building): Truck ramp visible
- M12 and M14 Landfills: Void of vegetation but no distinct evidence of landfilling
- M18 Landfill: No activity

February 25, 1951 (289831, 289832) – Photo Prints

- Area labeled "1" on map: It appears this area on M-14 undergoing disruption and a structure/vehicle is present.
- Area labeled "2" on map: Area on M-12 Landfill has shows some disturbance but it does not appear to be as active as "1".
- Area labeled "3" on map: Area of M-3 Landfill appears to show a pistol range with a building/shack on northeastern most portion of M-3 Landfill.
- Bldg 1122 does not exist – this area was vegetated.

April 9, 1954 (778-111) – Photo Print (B&W)

- M2 Landfill: undisturbed and vegetated
- M8 Landfill (former incinerator building): Truck ramp visible
- M12 and M14 Landfills: Void of vegetation but no distinct evidence of landfilling
- M14 Landfill: disturbed
- M18 Landfill: No activity

May 2, 1957 (CNB-8R-145, CNB-85-146) – B&W Transparency

The edge of M14 Landfill appears near 332 Gosselin Avenue and extends to 334 Gosselin Avenue (see attached map for approximate edges of landfill observed on aerial photo). It also appears that the edge of the landfill near 332 Gosselin Avenue is slightly elevated than the area adjacent to Murphy Drive.

May 4, 1961 (1116-48-2781, 1116-48-2782) – B&W Transparency

The photos clearly show the areal extent of the M-14 Landfill. In comparison to the 1957 aerial photo, it appears the 1961 landfill is more reflective of current edges of the landfill. It would appear that the western edge of the 'landfill' observed in the 1957 aerial photo is cleared of vegetation. Also, it appears that rectangular shaped debris (e.g., refrigerators) appeared in the eastern portion of the landfill, south of 239 Gosselin Avenue.

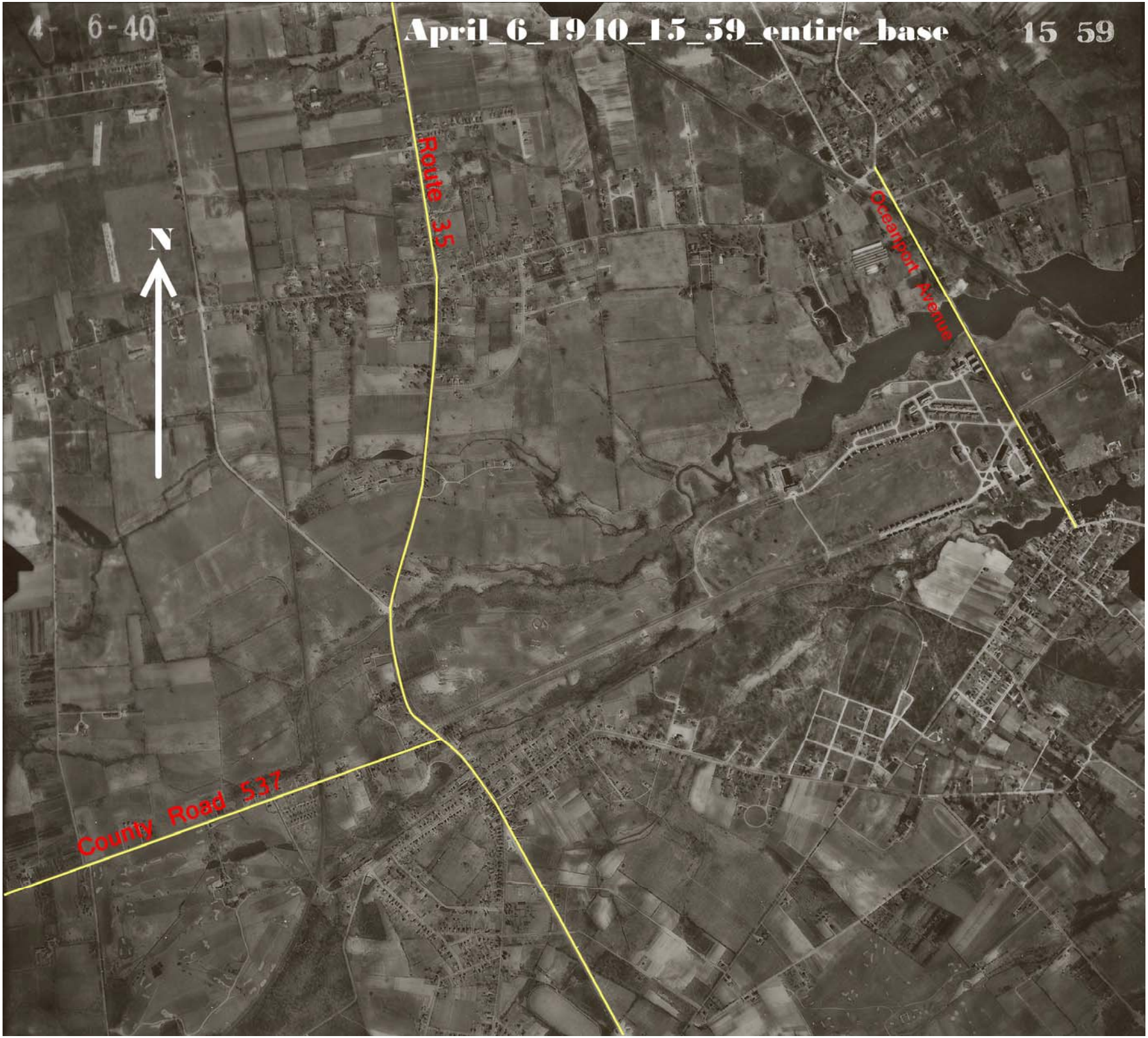
A small area in the westernmost portion of the M-2 Landfill and south of Bldg 1150 appears undisturbed. The remainder of the landfill appeared operational.

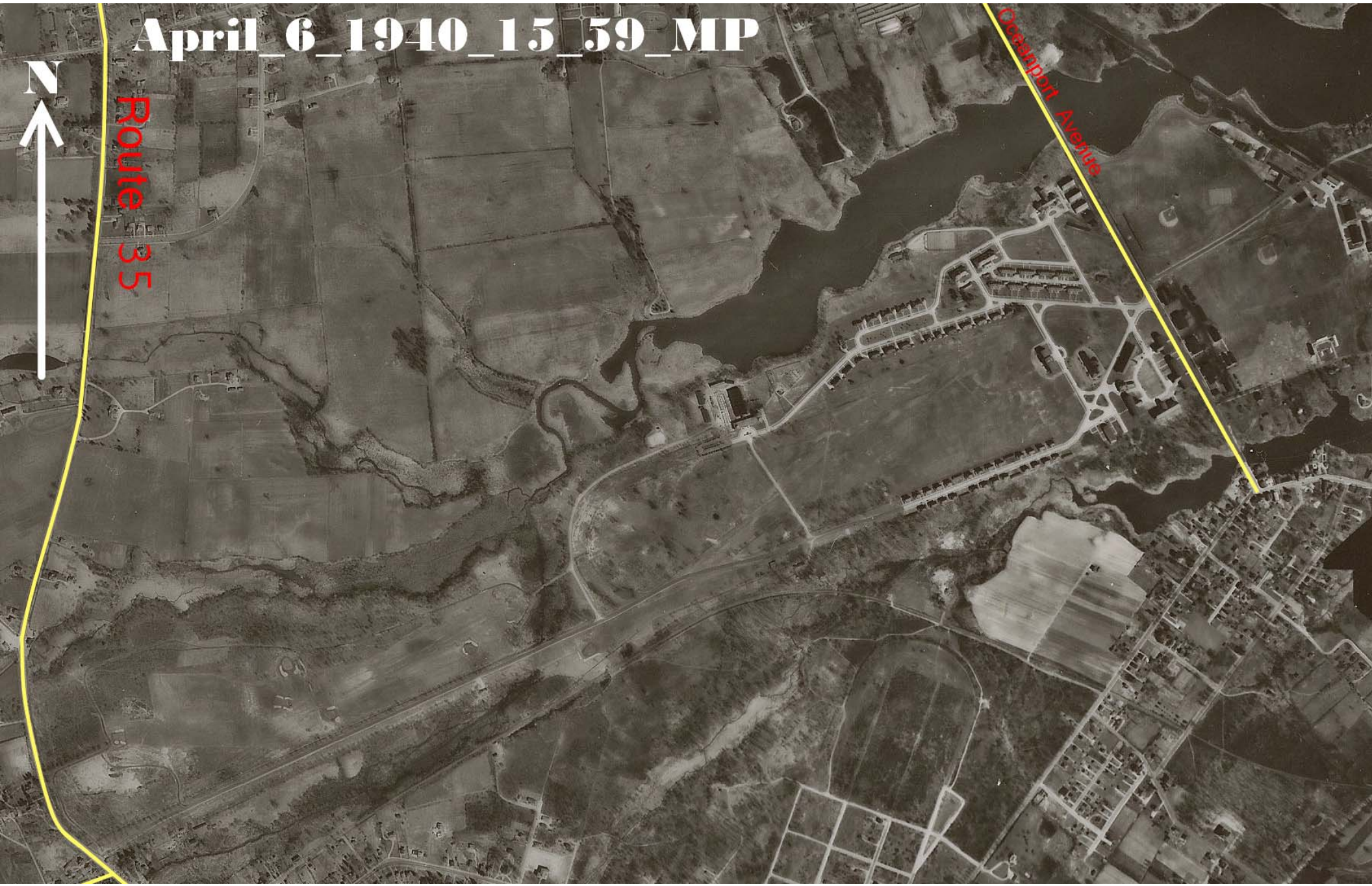
August 24, 1971 (CJP-COL-580, CJP-COL-581) Color transparency (scanned copy too dark to display)

- M4 Landfill: large concrete pad with overhead lighting constructed due west of Bldg 689 near middle of landfill.
- M5 Landfill: is being utilized for activities other than landfilling.
- M8 Landfill: Significant operations are evident on this parcel as seen on CJP-COL-443 photo
- M14 Landfill: Not in use

September 9, 1977 Color transparency (scanned copy too dark to display)

- M3, M4, and M5 Landfills: No landfill activities. Concrete pad at M-4 evident.
- M8 Landfill: Still active.
- M18 Landfill: No activity.


4- 6-40
April_6_1940_15_59_entire_base
15 59
Route 35
Oceanport Avenue
N
County Road 537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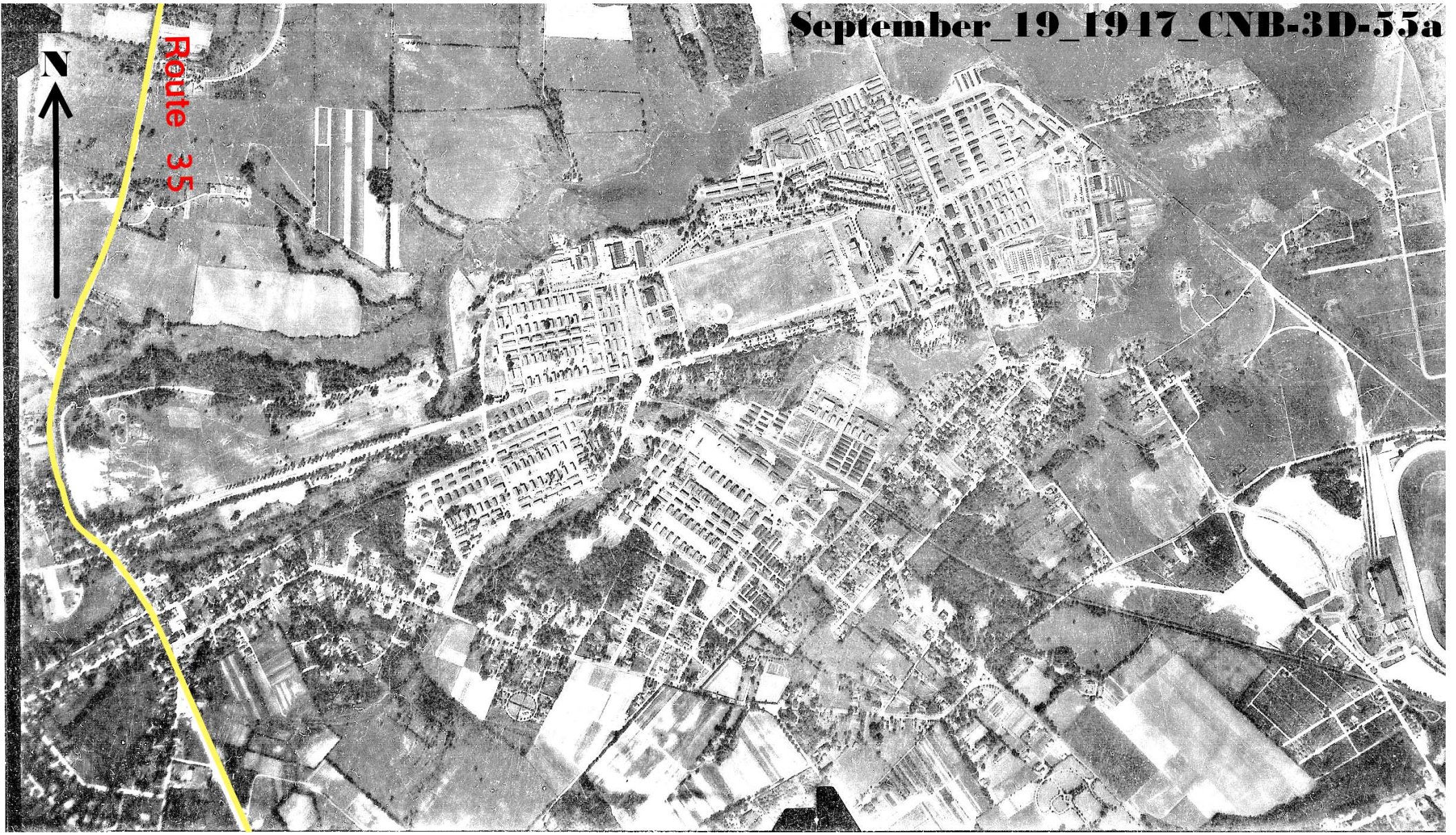
N
Route 35
Oceanport Avenue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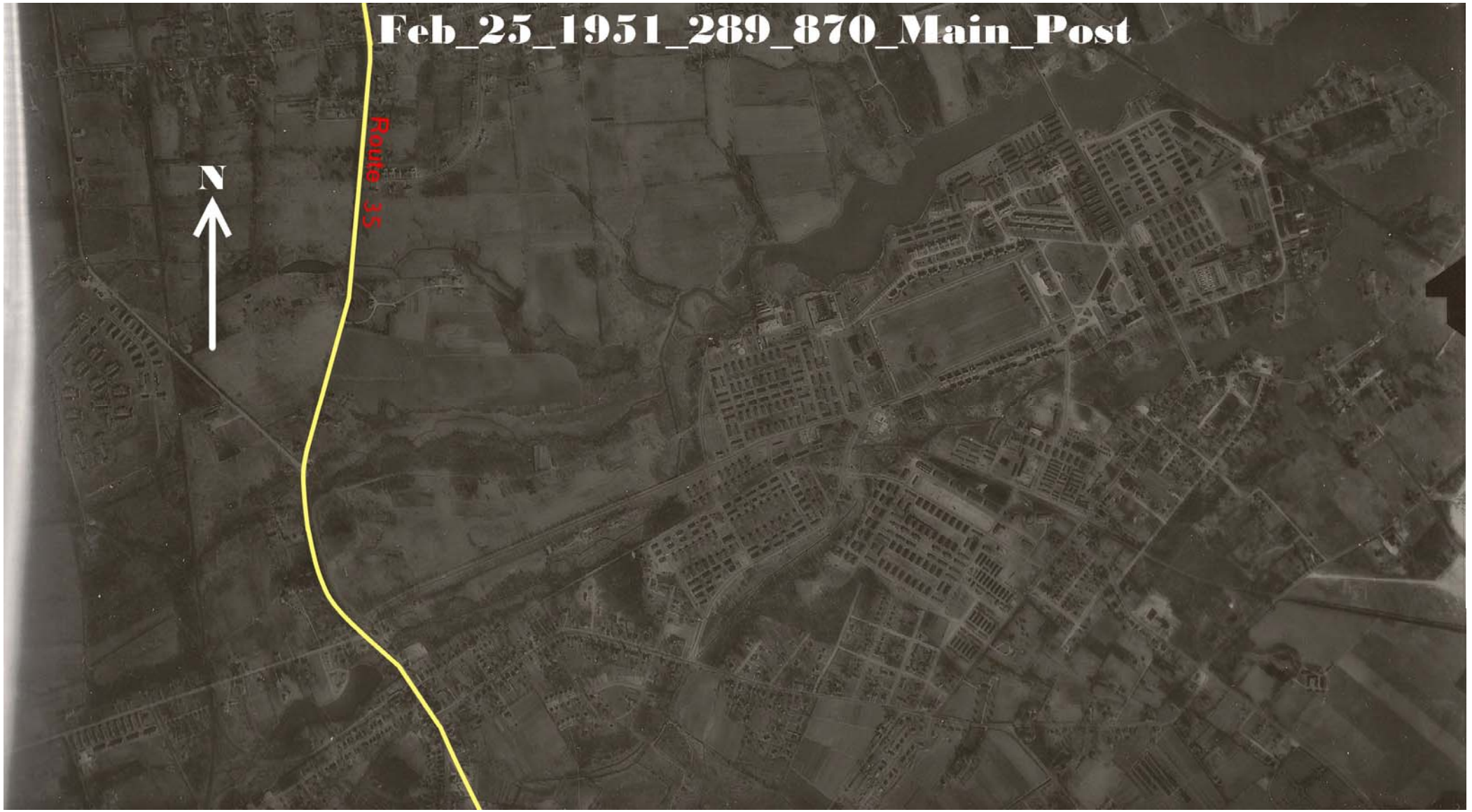
Route 35


Feb_25_1951_289_870_Main_Post
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Route 35

MP_April_9_1954_zoomed
N
Route 35

MP_May_2_1957_zoomed
N
Route 35

MP_May_4_1961
N
Route 35

Table A-1
Groundwater Sampling Results
Well M5MW10 (May97-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	1	2	3	4	5	6	7	8	9
WELL ID			M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10
Date Collected			5/8/1997	8/8/1997	10/29/1997	2/18/1998	5/6/1998	8/4/1998	10/27/1998	2/2/1999	4/13/1999
ANALYTE / Lab ID			2516.02	2885.04	3116.04	3348.01	3552.01	3784.03	4010.04	4237.03	4416.03
VOCs											
Acetone	700	µg/L	ND	ND	ND	ND	ND	5.08	9.43	ND	ND
Bromoform	4	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	4.1	ND	ND
Methylene chloride	2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	32	28	6	ND	ND	ND	ND	ND
SVOCs											
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	ND	ND	ND	ND	ND	5.57	ND
Di-*n* -butyl phthalate	900	µg/L	2.51	30.78	2.13	6.2 B	ND	ND	ND	ND	ND
TICs*	500	µg/L	186	51	35	38	ND	38	ND	ND	ND
Pesticides/PCBs											
gamma-Chlordane	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE	0.1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	0.2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals											
Antimony	20	µg/L	ND	ND	ND	ND	ND	3.01	5.96	ND	ND
Arsenic	8	µg/L	3	1	ND	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	67.49	ND	78	108	99	26.5	34.4	114	93.2
Beryllium	20	µg/L	0.19	0.24	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	100	µg/L	0.7	76	2.6	ND	ND	3.33	3.98	3.17	4.09
Copper	1000	µg/L	9	7	11	10	10	ND	6.27	5.29	22.1
Lead	10	µg/L	1.8	1	8	ND	ND	ND	2.45	ND	3.79
Mercury	2	µg/L	ND	ND	ND	ND	ND	0.19	ND	0.17	ND
Nickel	100	µg/L	ND	ND	1.3	2.3	2.2	ND	1.53	1.81	0.584
Selenium	50	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-1
Groundwater Sampling Results
Well M5MW10 (May97-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	10	11	12	13	14	15	16	17	18
WELL ID			M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10
Date Collected			4/27/1999	9/13/1999	11/18/1999	3/3/2000	5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001
ANALYTE / Lab ID			4444.03	4786.08	4955.04	5220.07	5445.04	5644.04	5903.04	778	16007.04
VOCs											
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	4	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs											
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	ND	ND	ND	ND	ND	NA	ND
Di-*n* -butyl phthalate	900	µg/L	ND	ND	ND	ND	ND	ND	ND	NA	ND
TICs*	500	µg/L	20	4	43	5	31	94	79	NA	ND
Pesticides/PCBs											
gamma-Chlordane	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	NA	ND
4,4'-DDE	0.1	µg/L	ND	ND	ND	ND	ND	ND	ND	NA	ND
Heptachlor epoxide	0.2	µg/L	ND	ND	ND	ND	ND	ND	ND	NA	ND
Metals											
Antimony	20	µg/L	ND	ND	4.19	ND	2.86	ND	ND	NA	ND
Arsenic	8	µg/L	ND	ND	ND	ND	ND	ND	ND	NA	ND
Barium	2000	µg/L	89.5	40.4	41.7	145.0	60.9	86.0	45.9	NA	189
Beryllium	20	µg/L	ND	ND	ND	ND	ND	ND	ND	NA	ND
Cadmium	4	µg/L	1.28	0.56	ND	3.12	ND	ND	ND	NA	2.5
Chromium	100	µg/L	3.51	5.11	4.68	6.39	8.43	ND	ND	NA	5.8
Copper	1000	µg/L	8.55	10.1	34.6	7.4	ND	7.39	ND	NA	11.0
Lead	10	µg/L	ND	ND	ND	**14.9**	8.36	3.56	ND	NA	ND
Mercury	2	µg/L	ND	ND	ND	ND	ND	ND	ND	NA	ND
Nickel	100	µg/L	1.16	ND	1.71	2.15	1.62	ND	ND	NA	ND
Selenium	50	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

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ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-1
Groundwater Sampling Results
Well M5MW10 (May97-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	19	20	21	22	23	24	24	25	26
WELL ID			M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	MW10 Duplicate	M5MW10	M5MW10
Date Collected			6/5/2001	9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002	8/21/2002	10/28/2002	1/22/2003
ANALYTE / Lab ID			16166.04	16407.04	16491.04	20029.04	20219.04	20594.04	20594.03	20760.04	30032.04
VOCs											
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	4	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs											
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	6.34	ND	ND	ND	ND	ND	ND
Di-*n* -butyl phthalate	900	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	25	14	10	ND	22	18	14	7
Pesticides/PCBs											
gamma-Chlordane	NLE	µg/L	ND	ND	0.003	ND	ND	ND	ND	ND	ND
4,4'-DDE	0.1	µg/L	ND	ND	0.003	ND	ND	ND	ND	ND	ND
Heptachlor epoxide	0.2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals											
Antimony	20	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	5.95 ER
Arsenic	8	µg/L	2.93	3.72	ND	2.47	ND	ND	ND	4.68	2.65 ER
Barium	2000	µg/L	97.5	28.5	553	181	152	25.5	26	66.7	183
Beryllium	20	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	1.95	ND	**9.14**	2.81	ND	ND	ND	ND	1.13
Chromium	100	µg/L	2.83	3.73	2.3	2.9	3.8	2.05	1.91	2.45	5.53 ER
Copper	1000	µg/L	16.7	17.1	10.4	5.11	10.1	14.9	11.8	10.8	6.26 ER
Lead	10	µg/L	4.5	ND	3.33	3.42	3.07	ND	ND	4.45	3.39 ER
Mercury	2	µg/L	ND	ND	0.2	0.1	ND	ND	ND	ND	ND
Nickel	100	µg/L	4.64	ND	9.96	ND	ND	2.21	1.5	ND	ND
Selenium	50	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

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Table A-1
Groundwater Sampling Results
Well M5MW10 (May97-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	27	28	29	30	31	31	32	33	34
WELL ID			M-5MW10	M-5MW10	M5MW10	M5MW10	M5MW10	MW10 Duplicate	M5MW10	M5MW10	M5MW10
Date Collected			4/21/2003	7/30/2003	10/8/2003	1/14/2004	5/13/2004	5/13/2004	8/20/2004	12/16/2004	3/15/2005
ANALYTE / Lab ID			30180.04	30439.04	30638.04	40029.04	40359.04	40359.03	40614.04	40846.03	50154.04
VOCs											
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	4	µg/L	ND	ND	ND	ND	ND	0.76 J	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	3	ND	ND	ND	ND	ND	ND	ND
SVOCs											
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	NA	NA	NA	NA	NA	NA	NA
Di-*n* -butyl phthalate	900	µg/L	ND	ND	NA	NA	NA	NA	NA	NA	NA
TICs*	500	µg/L	10	9	NA	NA	NA	NA	NA	NA	NA
Pesticides/PCBs											
gamma-Chlordane	NLE	µg/L	ND	ND	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.1	µg/L	ND	ND	NA	NA	NA	NA	NA	NA	NA
Heptachlor epoxide	0.2	µg/L	ND	ND	NA	NA	NA	NA	NA	NA	NA
Metals											
Antimony	20	µg/L	ND	ND	NA	NA	NA	NA	NA	NA	NA
Arsenic	8	µg/L	ND	ND	NA	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	172	55.9	NA	NA	NA	NA	NA	NA	NA
Beryllium	20	µg/L	ND	ND	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	1.49	0.545 ER	NA	NA	NA	NA	NA	NA	NA
Chromium	100	µg/L	1.46 ER	2.23 ER	NA	NA	NA	NA	NA	NA	NA
Copper	1000	µg/L	8.87 ER	3.78 ER	NA	NA	NA	NA	NA	NA	NA
Lead	10	µg/L	2.34 ER	ND	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	ND	ND	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	3.59 ER	ND	NA	NA	NA	NA	NA	NA	NA
Selenium	50	µg/L	ND	ND	NA	NA	NA	NA	NA	NA	NA

Notes:

*TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

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Table A-1
Groundwater Sampling Results
Well M5MW10 (May97-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	34	35	35	36	36
WELL ID			MW10 Duplicate	M5MW10	MW10 Duplicate	M5MW10	MW10 Duplicate
Date Collected			3/15/2005	6/3/2005	6/3/2005	9/16/2005	9/16/2005
ANALYTE / Lab ID			50154.03	50284.04	50284.03	50473.03	50473.13
VOCs							
Acetone	700	µg/L	ND	ND	ND	ND	ND
Bromoform	4	µg/L	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND
Methylene chloride	2	µg/L	ND	ND	ND	ND	ND
Toluene	1000	µg/L	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND
SVOCs							
Bis(2-ethylhexyl) phthalate	30	µg/L	NA	NA	NA	NA	NA
Di-*n* -butyl phthalate	900	µg/L	NA	NA	NA	NA	NA
TICs*	500	µg/L	NA	NA	NA	NA	NA
Pesticides/PCBs							
gamma-Chlordane	NLE	µg/L	NA	NA	NA	NA	NA
4,4'-DDE	0.1	µg/L	NA	NA	NA	NA	NA
Heptachlor epoxide	0.2	µg/L	NA	NA	NA	NA	NA
Metals							
Antimony	20	µg/L	NA	NA	NA	NA	NA
Arsenic	8	µg/L	NA	NA	NA	NA	NA
Barium	2000	µg/L	NA	NA	NA	NA	NA
Beryllium	20	µg/L	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA
Chromium	100	µg/L	NA	NA	NA	NA	NA
Copper	1000	µg/L	NA	NA	NA	NA	NA
Lead	10	µg/L	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA
Selenium	50	µg/L	NA	NA	NA	NA	NA

Notes:

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Table A-1
Groundwater Sampling Results
Well M5MW10 (Dec05-Jun07)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	37	37	38	38	39	39
WELL ID			M5MW10	MW10 Duplicate	M5MW10	MW10 Duplicate	M5MW10	MW10 Duplicate
Date Collected			12/21/2005	12/21/2005	3/1/2006	3/1/2006	5/5/2006	5/5/2006
ANALYTE / Lab ID			50655.04	50656.03	60094.04	60094.04	60209.04	60209.03
VOCs								
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND
Bromoform	4	µg/L	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND
Methylene chloride	3	µg/L	ND	ND	0.32 J	ND	ND	ND
Toluene	1000	µg/L	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	6	6	7	7	ND	ND
SVOCs								
Bis(2-ethylhexyl) phthalate	3	µg/L	NA	NA	NA	NA	NA	NA
Di-*n* -butyl phthalate	700	µg/L	NA	NA	NA	NA	NA	NA
TICs*	500	µg/L	NA	NA	NA	NA	NA	NA
Pesticides/PCBs								
gamma-Chlordane	NLE	µg/L	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.1	µg/L	NA	NA	NA	NA	NA	NA
Heptachlor epoxide	0.2	µg/L	NA	NA	NA	NA	NA	NA
Metals								
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (November 7, 2005)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

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NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-1
Groundwater Sampling Results
Well M5MW10 (Dec05-Jun07)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	40	40	41	42	42	43	43
WELL ID			M5MW10	MW10 Duplicate	M5MW10	M5MW10	MW10 Duplicate	M5MW10	MW10 Duplicate
Date Collected			9/13/2006	9/13/2006	11/17/2006	3/8/2007	3/8/2007	6/6/2007	6/6/2007
ANALYTE / Lab ID			60395.04	60395.03	60503.04	70088.04	70088.03	70204.04	70204.03
VOCs									
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND	ND
Bromoform	4	µg/L	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	3	µg/L	ND	ND	ND	ND	ND	ND	ND
Toluene	1000	µg/L	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	15	8
SVOCs									
Bis(2-ethylhexyl) phthalate	3	µg/L	NA	NA	NA	NA	NA	NA	NA
Di-*n* -butyl phthalate	700	µg/L	NA	NA	NA	NA	NA	NA	NA
TICs*	500	µg/L	NA	NA	NA	NA	NA	NA	NA
Pesticides/PCBs									
gamma-Chlordane	NLE	µg/L	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.1	µg/L	NA	NA	NA	NA	NA	NA	NA
Heptachlor epoxide	0.2	µg/L	NA	NA	NA	NA	NA	NA	NA
Metals									
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	NA	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA	NA

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (November 7, 200

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

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NLE - No limit established

Table A-1
Groundwater Sampling Results
Well M5MW10 (Aug07-Sept10)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	44	44	45	45	46	46	47	47	48	48
WELL ID			M5MW10	MW10 Duplicate	M5MW10	MW10 Duplicate	M5MW10	MW10 Duplicate	M5MW10	MW10 Duplicate	M5MW10	MW10 Duplicate
Date Collected			8/14/2007	8/14/2007	12/5/2007	12/5/2007	3/11/2008	3/11/2008	6/3/2008	6/3/2008	8/25/2008	8/25/2008
ANALYTE / Lab ID			70307.04	70307.03	70507.04	70507.03	80077.04	80077.03	80185.04	80185.03	80306.04	80306.03
VOCs												
Acetone	6000	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
Bromoform	4	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
Methylene chloride	3	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
Toluene	600	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND
SVOCs												
Bis(2-ethylhexyl) phthalate	3	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-*n* -butyl phthalate	700	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TICs*	500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides/PCBs												
gamma-Chlordane	NLE	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.1	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor epoxide	0.2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	6000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

NR - Not reported

Table A-1
Groundwater Sampling Results
Well M5MW10 (Aug07-Sept10)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	49	49	50	51	52	53	54	55	56
WELL ID			M5MW10	MW10 Duplicate	M5MW10	M5MW10	M5MW10	M5MW10	LF1(1)	LF2(1)	LF3(1)
Date Collected			11/10/2008	11/10/2008	2/26/2009	6/12/2009	9/18/2009	12/28/2009	3/31/2010	6/30/2010	9/26/2010
ANALYTE / Lab ID			80404.04	80404.03	90077.04	90235.04	90390.04	90490.04	10115.04	10298.08	10411.05
VOCs											
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	4	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	3	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	600	µg/L	ND	ND	ND	0.65 J	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs											
Bis(2-ethylhexyl) phthalate	3	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-*n* -butyl phthalate	700	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
TICs*	500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides/PCBs											
gamma-Chlordane	NLE	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.1	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor epoxide	0.2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals											
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	5.45 ER	ND	**7.59 ER**
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA	ND	ND	ND
Barium	6000	µg/L	NA	NA	NA	NA	NA	NA	24.6	24.0	36.2
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA	ND	ND	ND
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	ND	ND	ND
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA	ND	1.17 ER	1.15 ER
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	ND	3.14 ER	ND
Lead	5	µg/L	NA	NA	NA	NA	NA	NA	ND	ND	ND
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	ND	ND	ND
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	ND	ND	0.420 ER
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA	NR	NR	NR

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007

(1) Low flow sampling method used to collect sample

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

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ND - Not detected

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NR - Not reported

Table A-2
Groundwater Sampling Results
Well M5MW11 (May97-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	1	2	3	4	5	6	6	7	8	9
WELL ID			M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	MW11 Duplicate	M5MW11	M5MW11	M5MW11
Date Collected			5/8/1997	8/8/1997	10/29/1997	2/28/1998	5/6/1998	8/4/1998	8/4/1998	10/27/1998	2/2/1999	4/13/1999
ANALYTE / Lab ID			2516.01	2885.03	3116.03	3348.02	3552.02	3784.04	3784.05	4010.03	4237.04	4416.04
VOCs												
Acetone	700	µg/L	ND	ND	ND	ND	ND	9.43	14.18	2.91	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	2.92	4.53	ND	ND	ND
Carbon disulfide	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	10	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	600	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl *tert*- butyl ether	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**62.85**	**57.74**	**64.96**	**39.33**	**24.39**	**18.37**	**18.87**	**52.64**	**5.16**	**33.38**
Trichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	21	39	ND	ND	ND	ND	ND	ND	ND
SVOCs												
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	ND	ND	ND	ND	ND	5.28	ND	ND
Di-*n* -butyl phthalate	900	µg/L	3.25	13.68	4.75	10.05 B	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	**233**	62	61	44	ND	23	55	ND	ND	ND
Pesticides/PCBs												
gamma-Chlordane	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals												
Antimony	20	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	3	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	12.23	ND	13.4	12	10.4	18.7	16.1	9.02	19.1	9.95
Beryllium	20	µg/L	0.16	0.14	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	ND	ND	ND	ND	1	1.35	1.04	ND	ND	ND
Chromium	100	µg/L	0.5	73	5.4	ND	ND	16.5	14.3	ND	3.34	1.72
Copper	1000	µg/L	4	4	16	17	6.8	3.37	ND	7.86	ND	8.28
Lead	10	µg/L	ND	ND	8	ND	ND	2.38	ND	ND	ND	ND
Mercury	2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	0.18	ND
Nickel	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	50	µg/L	1	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-2
Groundwater Sampling Results
Well M5MW11 (May97-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	10	11	12	13	14	15	15	16	16	16A
WELL ID			M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	MW11 Duplicate	M5MW11	MW11 Duplicate	M5MW11
Date Collected			4/27/1999	9/13/1999	11/18/1999	3/3/2000	5/31/2000	8/21/2000	8/21/2000	12/11/2000	12/11/2000	2/13/2001
ANALYTE / Lab ID			4444.04	4786.07	4955.05	5220.06	5445.05	5644.05	5644.03	5903.05	5903.03	779
VOCs												
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	14.91	16.53	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	7.89	9.66	ND
Carbon disulfide	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	2.84	2.68	ND
cis -1,2-Dichloroethene	10	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	600	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl *tert*- butyl ether	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**12.84**	**49.25**	**74.12**	**30.62**	**13.38**	**18.79**	**19.64**	**18.86**	**17.98**	**12.42**
Trichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs												
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Di-*n* -butyl phthalate	900	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
TICs*	500	µg/L	14	ND	65	5	6	83	9	**251**	121	NA
Pesticides/PCBs												
gamma-Chlordane	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Metals												
Antimony	20	µg/L	ND	ND	ND	ND	ND	3.36	3.02	ND	ND	NA
Arsenic	8	µg/L	ND	ND	ND	ND	ND	ND	ND	3.14	3.18	NA
Barium	2000	µg/L	8.41	11.0	0.649	12.2	5.7	18.9	20	14.4	17.6	NA
Beryllium	20	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Cadmium	4	µg/L	1.74	0.556	ND	ND	ND	ND	0.572	ND	ND	NA
Chromium	100	µg/L	1.39	2.11	ND	ND	2.72	ND	ND	4.63	4.22	NA
Copper	1000	µg/L	5.55	4.28	8.54	ND	ND	108	37.2	ND	ND	NA
Lead	10	µg/L	ND	ND	ND	ND	ND	1.34	1.24	ND	ND	NA
Mercury	2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Nickel	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	50	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-2
Groundwater Sampling Results
Well M5MW11 (May97-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	17	18	19	20	21	22	23	24	25	26
WELL ID			M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11
Date Collected			3/19/2001	6/5/2001	9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002	10/28/2002	1/22/2003	4/21/2003
ANALYTE / Lab ID			1600705	16166.05	16407.05	16491.05	20029.05	20219.05	20594.05	20760.05	30032.05	30180.05
VOCs												
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	**370.61**	ND	ND	ND
Carbon disulfide	NLE	µg/L	ND	ND	ND	ND	ND	ND	9.0	ND	ND	ND
cis -1,2-Dichloroethene	10	µg/L	ND	ND	6.64	ND	ND	ND	7.39	ND	ND	ND
1,3-Dichlorobenzene	600	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl *tert*- butyl ether	NLE	µg/L	ND	ND	ND	ND	ND	ND	5.9	ND	ND	ND
Methylene chloride	2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**11.01**	**11.27**	**6.11**	**15.13**	**19.04**	**14.43**	**8.9**	**8.14**	**5.2**	**4.5**
Trichloroethene	1	µg/L	ND	ND	**1.28**	**1.05**	**1.4**	ND	ND	ND	**1.06 J**	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs												
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-*n* -butyl phthalate	900	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	4	7	ND	**381**	15	22	9
Pesticides/PCBs												
gamma-Chlordane	NLE	µg/L	ND	ND	ND	0.002	ND	ND	ND	ND	ND	ND
Metals												
Antimony	20	µg/L	ND	ND	ND	ND	ND	3.21	ND	2.23	ND	ND
Arsenic	8	µg/L	ND	5.06	**11.8**	7.87	4.1	4.89	**9.25**	3.04	2.6 ER	2.8 ER
Barium	2000	µg/L	13	14.2	6.55	10.2	11	9.09	5.82	15.4	5.68 ER	6.33 ER
Beryllium	20	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	0.7	1.2	1.52	**5.95**	**10.8**	ND	ND	ND	ND	0.51 ER
Chromium	100	µg/L	3.1	1.46	2.04	2.45	2.04	2.03	2.82	2.26	2.49 ER	1.75 ER
Copper	1000	µg/L	8	8.21	68.4	2.7	2.25	3.17	ND	ND	ND	1.15 ER
Lead	10	µg/L	ND	ND	6.36	ND	ND	ND	ND	1.84	ND	ND
Mercury	2	µg/L	ND	ND	0.2	0.1	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	50	µg/L	ND	8.39	ND	ND	7.05	6.39	7.88	5.26	ND	ND

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-2
Groundwater Sampling Results
Well M5MW11 (May97-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	27	28	29	30	31	32	33	33	34	35
WELL ID			M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	MW11 Duplicate	M5MW11	M5MW11
Date Collected			7/30/2003	10/8/2003	1/14/2004	5/13/2004	8/20/2004	12/15/2004	3/14/2005	3/14/2005	6/3/2005	9/16/2005
ANALYTE / Lab ID			30439.05	30638.05	40029.05	40359.05	40614.05	40845.04	50152.04	50152.03	50284.05	50473.04
VOCs												
Acetone	700	µg/L	ND	4.91	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	**448.97**	ND	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	10	µg/L	ND	5.39	1.56 J	ND	2.29	ND	0.61 J	0.59 J	ND	5.66
1,3-Dichlorobenzene	600	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl *tert*- butyl ether	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**5.74**	**1.08 J**	**2.01**	**3.1**	**2.05**	**3.05**	**2.3**	**2.38**	**2.86**	ND
Trichloroethene	1	µg/L	**1.42 J**	0.88 J	0.91 J	**1.2 J**	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	8	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs												
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-*n* -butyl phthalate	900	µg/L	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
TICs*	500	µg/L	9	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides/PCBs												
gamma-Chlordane	NLE	µg/L	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Antimony	20	µg/L	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	8	µg/L	4.12 ER	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	8.91	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	20	µg/L	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	0.759 ER	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	100	µg/L	3.03 ER	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1000	µg/L	1.54 ER	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	10	µg/L	0.804 ER	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	50	µg/L	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-2
Groundwater Sampling Results
Well M5MW11 (Dec05-Jun07)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	36	37	38	39	40	41	42
WELL ID			M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11
Date Collected			12/21/2005	3/1/2006	5/5/2006	9/13/2006	11/17/2006	3/8/2007	6/6/2007
ANALYTE / Lab ID			50655.05	60094.05	60209.05	60395.05	60503.05	70087.04	70204.05
VOCs									
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	700	µg/L	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	70	µg/L	0.41 J	0.61 J	ND	ND	0.36 J	ND	ND
1,3-Dichlorobenzene	600	µg/L	ND	ND	ND	ND	ND	ND	ND
Methyl *tert*- butyl ether	70	µg/L	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	3	µg/L	ND	0.21	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	0.72 J	**2.04**	ND	**7.4**	**4.57**	**1.5 J**	**3.83**
Trichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	6	7	ND	ND	ND	ND	ND
SVOCs									
Bis(2-ethylhexyl) phthalate	3	µg/L	NA	NA	NA	NA	NA	NA	NA
Di-*n* -butyl phthalate	700	µg/L	NA	NA	NA	NA	NA	NA	NA
TICs*	500	µg/L	NA	NA	NA	NA	NA	NA	NA
Pesticides/PCBs									
gamma-Chlordane	NLE	µg/L	NA	NA	NA	NA	NA	NA	NA
Metals									
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	NA	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA	NA

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (November 7, 2005)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-2
Groundwater Sampling Results
Well M5MW11 (Aug07-Sept10)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	43	44	45	46	47	48	49	49	50
WELL ID			M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	MW11 Duplicate	M5MW11
Date Collected			8/14/2007	12/5/2007	3/11/2008	6/3/2008	8/25/2008	11/10/2008	2/26/2009	2/26/2009	6/12/2009
ANALYTE / Lab ID			70307.05	70507.05	80077.05	80185.05	80306.05	80404.05	90077.05	90077.03	90235.05
VOCs											
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	70	µg/L	0.7 J	ND	0.4 J	0.53 J	8.4	6.93	1.55 J	1.28 J	2.60
1,3-Dichlorobenzene	600	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl *tert*- butyl ether	70	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	3	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**5.24**	ND	**2.02**	**2.93**	ND	**2.47**	0.94	**1.16 J**	**2.74**
Trichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs											
Bis(2-ethylhexyl) phthalate	3	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-*n* -butyl phthalate	700	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
TICs*	500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides/PCBs											
gamma-Chlordane	NLE	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals											
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	6000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

NR - Not reported

Table A-2
Groundwater Sampling Results
Well M5MW11 (Aug07-Sept10)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	51	52	53	53	54	55
WELL ID			M5MW11	M5MW11	LF1(1)	LF2(1)	LF2(1) Duplicate	LF3(1)
Date Collected			9/18/2009	12/28/2009	3/30/2010	6/30/2010	6/30/2010	9/26/2010
ANALYTE / Lab ID			90390.05	90490.05	10113.01	10298.04	10298.03	10411.11
VOCs								
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND
Carbon disulfide	700	µg/L	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	70	µg/L	11.56	1.62	ND	2.22	2.18	17.06
1,3-Dichlorobenzene	600	µg/L	ND	ND	ND	0.31 J	ND	ND
Methyl *tert*- butyl ether	70	µg/L	ND	ND	ND	ND	ND	ND
Methylene chloride	3	µg/L	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**1.00**	**1.73**	0.69	**2.51**	**2.61**	0.85
Trichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND
SVOCs								
Bis(2-ethylhexyl) phthalate	3	µg/L	NA	NA	NA	NA	NA	NA
Di-*n* -butyl phthalate	700	µg/L	NA	NA	NA	NA	NA	NA
TICs*	500	µg/L	NA	NA	NA	NA	NA	NA
Pesticides/PCBs								
gamma-Chlordane	NLE	µg/L	NA	NA	NA	NA	NA	NA
Metals								
Antimony	6	µg/L	NA	NA	ND	ND	**6.90 ER**	**9.99 ER**
Arsenic	3	µg/L	NA	NA	ND	1.04 ER	0.950 ER	1.07 ER
Barium	6000	µg/L	NA	NA	8.74	9.71	9.96	10.9
Beryllium	1	µg/L	NA	NA	ND	ND	ND	ND
Cadmium	4	µg/L	NA	NA	ND	0.555 ER	0.672 ER	1.71 ER
Chromium	70	µg/L	NA	NA	1.70 ER	ND	ND	1.27 ER
Copper	1300	µg/L	NA	NA	2.42 ER	3.72 ER	3.86 ER	2.17 ER
Lead	5	µg/L	NA	NA	ND	ND	2.77 ER	4.45 ER
Mercury	2	µg/L	NA	NA	0.120 ER	ND	ND	ND
Nickel	100	µg/L	NA	NA	1.47 ER	1.83 ER	2.05 ER	2.97 ER
Selenium	40	µg/L	NA	NA	NR	NR	NR	NR

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

NR - Not reported

Table A-3
Groundwater Sampling Results
Well M5MW12 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	1	2	3	4	5	6	7	8	9	10
WELL ID			M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12
Date Collected			4/13/1999	4/27/1999	9/13/1999	11/18/1999	3/6/2000	5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001
ANALYTE / Lab ID			4416.05	4444.05	4786.06	4955.06	5222.02	5445.06	5644.06	5903.06	780	16007.06
VOCs												
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs												
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	ND	ND	ND	ND	ND	1.87	NA	ND
4-Methylphenol	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND
TICs*	500	µg/L	21	25	4	10	12	15	162	177	NA	**160**
Metals												
Antimony	20	µg/L	ND	ND	ND	2.97	ND	ND	ND	ND	NA	ND
Arsenic	8	µg/L	ND	3.54	ND	ND	ND	ND	ND	ND	NA	ND
Barium	2000	ug/L	103	67.8	243	17.1	21.5	4.04	15.6	11.3	NA	21.1
Beryllium	20	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND
Cadmium	4	µg/L	0.954	3.97	0.788	ND	ND	ND	ND	ND	NA	1.4
Chromium	100	µg/L	14.8	31.6	13.3	6.06	17.1	15.9	ND	1.88	NA	8.2
Copper	1000	µg/L	11.1	11	ND	19.2	3.71	82.6	ND	ND	NA	6
Lead	10	µg/L	7.66	**16.2**	ND	ND	6.78	**19.3**	1.83	4.85	NA	ND
Mercury	2	µg/L	ND	ND	ND	0.1	0.2	ND	ND	ND	NA	ND
Selenium	50	µg/L	ND	ND	ND	ND	3.37	ND	ND	ND	NA	ND
Thallium	10	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-3
Groundwater Sampling Results
Well M5MW12 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	11	12	13	14	15	16	17	18	19	20
WELL ID			M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12
Date Collected			6/5/2001	9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002	10/28/2002	1/22/2003	4/21/2003	7/30/2003
ANALYTE / Lab ID			16166.06	16407.06	16491.06	20029.06	20219.06	20594.06	20760.06	30032.06	30180.06	30439.06
VOCs												
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs												
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	ND	ND	ND	ND	ND	1.3 J	ND	ND
4-Methylphenol	NLE	µg/L	ND	ND	ND	ND	ND	ND	1.3	ND	ND	ND
TICs*	500	µg/L	ND	74	14	28	4	9	15	21	16	12
Metals												
Antimony	20	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	ND	ND	ND	ND	2.7	3.05	ND	ND	ND	ND
Barium	2000	ug/L	17	39.8	92	31.4	34	24.8	11.6	24.6	29.3	56.8
Beryllium	20	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0923 ER
Cadmium	4	µg/L	0.782	0.651	**9.98**	0.71	ND	ND	ND	0.646 ER	1.07	1.01 ER
Chromium	100	µg/L	2.75	8.87	2.28	5.28	6.75	9.97	1.95	7.71 ER	6.11 ER	13.3
Copper	1000	µg/L	3.89	18	3.42	155	5.94	7.24	5.87	13.3	7.5 ER	3.01 ER
Lead	10	µg/L	ND	4.43	1.3	**16.8**	2.64	2.4	2.12	4.16 ER	1.72 ER	2.15 ER
Mercury	2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	50	µg/L	13.6	ND	ND	13.1	9.6	13.3	10.6	4.1 ER	ND	ND
Thallium	10	µg/L	ND	ND	ND	5.53	ND	ND	ND	ND	ND	ND

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-3
Groundwater Sampling Results
Well M5MW12 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	21	22	23	24	25	26	27	28
WELL ID			M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12
Date Collected			10/8/2003	1/14/2004	5/13/2004	8/20/2004	12/16/2004	3/15/2005	6/3/2005	9/16/2005
ANALYTE / Lab ID			30638.06	40029.06	40359.06	40614.06	40846.04	50154.05	50284.06	50473.05
VOCs										
Acetone	700	µg/L	ND	ND	ND	3	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	14	ND	ND	ND	ND
SVOCs										
Bis(2-ethylhexyl) phthalate	30	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NLE	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
TICs*	500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Metals										
Antimony	20	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	8	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2000	ug/L	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	20	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Lead	10	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	50	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	10	µg/L	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

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Table A-3
Groundwater Sampling Results
Well M5MW12 (Aug07-Sept10)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	29	30	31	32	33	34	35
WELL ID			M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12
Date Collected			12/21/2005	3/1/2006	5/5/2006	9/13/2006	11/17/2006	3/8/2007	6/6/2007
ANALYTE / Lab ID			50655.06	60094.06	60209.06	60395.06	60503.06	70088.05	70204.06
VOCs									
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	ND	ND	**2.75**	ND	ND	ND	ND
TICs*	500	µg/L	6	7	ND	ND	ND	ND	ND
SVOCs									
Bis(2-ethylhexyl) phthalate	3	µg/L	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NLE	µg/L	NA	NA	NA	NA	NA	NA	NA
TICs*	500	µg/L	NA	NA	NA	NA	NA	NA	NA
Metals									
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA	NA
Barium	2000	ug/L	NA	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA	NA
Thallium	2	µg/L	NA	NA	NA	NA	NA	NA	NA

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (November 7, 2005)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-3
Groundwater Sampling Results
Well M5MW12 (Aug07-Sept10)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	36	37	38	39	40	41	42	43	43
WELL ID			M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	MW12 Duplicate
Date Collected			8/14/2007	12/5/2007	3/11/2008	6/3/2008	8/25/2008	11/10/2008	2/26/2009	6/12/2009	6/12/2009
ANALYTE / Lab ID			70307.06	70507.06	80077.06	80185.06	80306.06	80404.06	90077.06	90235.06	90235.03
VOCs											
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs											
Bis(2-ethylhexyl) phthalate	3	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NLE	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
TICs*	500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals											
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	6000	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

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**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

NA - Not analyzed

ND - Not detected

NLE - No limit established

NR - Not reported

Table A-3
Groundwater Sampling Results
Well M5MW12 (Aug07-Sept10)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	44	45	46	47	48	48
WELL ID			M5MW12	M5MW12	LF1(1)	LF2(1)	LF3(1)	LF3(1) Duplicate
Date Collected			9/18/2009	12/28/2009	3/31/2010	6/30/2010	9/26/2010	9/26/2010
ANALYTE / Lab ID			90390.06	90490.06	10115.03	10298.07	10411.04	10411.03
VOCs								
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND
SVOCs								
Bis(2-ethylhexyl) phthalate	3	µg/L	NA	NA	NA	NA	NA	NA
4-Methylphenol	NLE	µg/L	NA	NA	NA	NA	NA	NA
TICs*	500	µg/L	NA	NA	NA	NA	NA	NA
Metals								
Antimony	6	µg/L	NA	NA	**7.31 ER**	5.26 ER	**27.5**	**24.1**
Arsenic	3	µg/L	NA	NA	ND	1.03 ER	**6.08**	**5.98**
Barium	6000	ug/L	NA	NA	64.3	21.5	214	203
Beryllium	1	µg/L	NA	NA	ND	ND	ND	ND
Cadmium	4	µg/L	NA	NA	ND	0.692 ER	1.57 ER	1.44 ER
Chromium	70	µg/L	NA	NA	ND	1.79 ER	ND	ND
Copper	1300	µg/L	NA	NA	ND	4.17 ER	2.50 ER	2.57 ER
Lead	5	µg/L	NA	NA	ND	ND	4.43 ER	4.66 ER
Mercury	2	µg/L	NA	NA	ND	ND	ND	ND
Selenium	40	µg/L	NA	NA	NR	NR	NR	NR
Thallium	2	µg/L	NA	NA	ND	ND	ND	ND

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

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ND - Not detected

NLE - No limit established

NR - Not reported

Table A-4
Groundwater Sampling Results
Well M5MW13 (Oct98-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	1	2	2	3	4	5	6	7	8	9
WELL ID			M5MW13	M5MW13	MW13 Duplicate	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13
Date Collected			10/7/1998	10/21/1998	10/21/1998	10/26/1998	2/2/1999	4/13/1999	4/27/1999	9/13/1999	11/18/1999	3/6/2000
ANALYTE / Lab ID			3967.03	3994.06	3994.07	4006.01	4237.05	4416.06	4444.06	4786.05	4955.07	5222.03
VOCs												
Acetone	700	µg/L	9	ND	ND	NA	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	13.66	ND	ND	NA	ND	ND	ND	ND	ND	ND
Methyl *tert*- butyl ether	NLE	µg/L	ND	ND	ND	NA	ND	ND	1.35	ND	ND	ND
TICs*	500	µg/L	29	19	19	NA	ND	ND	ND	ND	ND	ND
SVOCs												
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	NA	ND	23	ND	21	5	13	27
Pesticides/PCBs												
gamma-Chlordane	NLE	µg/L	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND
4,4'-DDE	0.1	µg/L	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND
Metals												
Antimony	20	µg/L	ND	ND	ND	NA	ND	ND	ND	2.61	ND	ND
Arsenic	8	µg/L	**10**	3.22	3.38	NA	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	224	157	111	NA	112	24.2	48.3	193	51.8	220
Beryllium	20	µg/L	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	ND	ND	ND	NA	1.37	ND	2.06	0.716	0.736	ND
Chromium	100	µg/L	28.5	5.87	6.49	NA	13.2	3.4	10.6	14.1	13.4	10.8
Copper	1000	µg/L	40	ND	ND	NA	ND	5	4.27	7.59	15.2	ND
Lead	10	µg/L	7	ND	ND	NA	5.45	2.37	3.6	ND	3.04	3.62
Mercury	2	µg/L	0.3	ND	ND	NA	0.16	ND	ND	ND	0.1	ND
Selenium	50	µg/L	ND	ND	ND	NA	ND	ND	ND	ND	3.52	ND

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-4
Groundwater Sampling Results
Well M5MW13 (Oct98-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	10	11	12	13	14	15	16	17	18	19
WELL ID			M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13
Date Collected			5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001	6/5/2001	9/5/2001	10/4/2001	1/14/2002	4/23/2002
ANALYTE / Lab ID			5445.07	5644.07	5903.07	781	1600707	16166.07	16407.07	16491.07	20029.07	20219.07
VOCs												
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl *tert*- butyl ether	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs												
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	87	64	391	NA	ND	ND	13	**217**	4	5
Pesticides/PCBs												
gamma-Chlordane	NLE	µg/L	ND	ND	ND	NA	ND	ND	ND	0.004	ND	ND
4,4'-DDE	0.1	µg/L	ND	ND	ND	NA	ND	ND	0.003	ND	ND	ND
Metals												
Antimony	20	µg/L	ND	3.33	ND	NA	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	ND	ND	ND	NA	ND	5.06	4.54	ND	ND	2.99
Barium	2000	µg/L	67.6	65.6	77.5	NA	154	70	71.9	236	216	150
Beryllium	20	µg/L	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	ND	ND	ND	NA	2.2	1.3	0.606	**7.55**	1.02	ND
Chromium	100	µg/L	7.31	ND	ND	NA	6.7	2.26	10.2	1.84	2.69	6.75
Copper	1000	µg/L	ND	ND	ND	NA	9	2.18	13.3	65.4	5.79	113
Lead	10	µg/L	ND	2.49	**11.7**	NA	ND	ND	5.36	**284**	1.81	**11.1**
Mercury	2	µg/L	ND	ND	ND	NA	ND	ND	0.1	ND	ND	ND
Selenium	50	µg/L	ND	ND	ND	NA	6.0	8.56	ND	ND	14.1	6.94

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-4
Groundwater Sampling Results
Well M5MW13 (Oct98-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	20	21	22	23	24	25	26	27	28	29
WELL ID			M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13
Date Collected			8/21/2002	10/28/2002	1/22/2003	4/21/2003	7/30/2003	10/8/2003	1/14/2004	5/13/2004	8/20/2004	12/16/2004
ANALYTE / Lab ID			20594.07	20760.07	30032.07	30180.07	30439.07	30638.07	40029.07	40359.07	40614.07	40846.05
VOCs												
Acetone	700	µg/L	ND	ND	2.3	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl *tert*- butyl ether	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs												
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	1.45	1.14 J	ND	ND	NA	NA	NA	NA	NA
TICs*	500	µg/L	18	15	122	10	14	NA	NA	NA	NA	NA
Pesticides/PCBs												
gamma-Chlordane	NLE	µg/L	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
4,4'-DDE	0.1	µg/L	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
Metals												
Antimony	20	µg/L	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
Arsenic	8	µg/L	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA
Barium	2000	µg/L	62.7	105	132	133	142	NA	NA	NA	NA	NA
Beryllium	20	µg/L	ND	ND	ND	ND	0.375 ER	NA	NA	NA	NA	NA
Cadmium	4	µg/L	ND	ND	1.64	1.54	0.99 ER	NA	NA	NA	NA	NA
Chromium	100	µg/L	4.33	1.94	3.56 ER	1.64 ER	2.55 ER	NA	NA	NA	NA	NA
Copper	1000	µg/L	19	ND	2.52 ER	ND	4.84 ER	NA	NA	NA	NA	NA
Lead	10	µg/L	ND	2.02	3.26 ER	ND	ND	NA	NA	NA	NA	NA
Mercury	2	µg/L	0.11	ND	ND	ND	ND	NA	NA	NA	NA	NA
Selenium	50	µg/L	7.38	7.1	ND	ND	ND	NA	NA	NA	NA	NA

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-4
Groundwater Sampling Results
Well M5MW13 (Oct98-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	30	31	32
WELL ID			M5MW13	M5MW13	M5MW13
Date Collected			3/15/2005	6/3/2005	9/16/2005
ANALYTE / Lab ID			50154.06	50284.07	50473.06
VOCs					
Acetone	700	µg/L	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND
Methyl *tert*- butyl ether	NLE	µg/L	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND
SVOCs					
Bis(2-ethylhexyl) phthalate	30	µg/L	NA	NA	NA
TICs*	500	µg/L	NA	NA	NA
Pesticides/PCBs					
gamma-Chlordane	NLE	µg/L	NA	NA	NA
4,4'-DDE	0.1	µg/L	NA	NA	NA
Metals					
Antimony	20	µg/L	NA	NA	NA
Arsenic	8	µg/L	NA	NA	NA
Barium	2000	µg/L	NA	NA	NA
Beryllium	20	µg/L	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA
Chromium	100	µg/L	NA	NA	NA
Copper	1000	µg/L	NA	NA	NA
Lead	10	µg/L	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA
Selenium	50	µg/L	NA	NA	NA

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-4
Groundwater Sampling Results
Well M5MW13 (Dec05-Jun07)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	33	34	35	36	37	38	39
WELL ID			M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13
Date Collected			12/21/2005	3/1/2006	5/5/2006	9/13/2006	11/17/2006	3/8/2007	6/6/2007
ANALYTE / Lab ID			50655.07	60094.07	60209.07	60395.07	60503.07	70088.06	70204.07
VOCs									
Acetone	6000	µg/L	ND	ND	ND	ND	ND	2.07	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND
Methyl *tert*- butyl ether	70	µg/L	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	7	6	ND	ND	ND	ND	14
SVOCs									
Bis(2-ethylhexyl) phthalate	3	µg/L	NA	NA	NA	NA	NA	NA	NA
TICs*	500	µg/L	NA	NA	NA	NA	NA	NA	NA
Pesticides/PCBs									
gamma-Chlordane	NLE	µg/L	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.1	µg/L	NA	NA	NA	NA	NA	NA	NA
Metals									
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	NA	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA	NA

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (November 7, 2005)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-4
Groundwater Sampling Results
Well M5MW13 (Aug07-Sept10)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	40	41	42	43	44	45	46	47
WELL ID			M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13
Date Collected			8/14/2007	12/5/2007	3/11/2008	6/3/2008	8/25/2008	11/10/2008	2/26/2009	6/12/2009
ANALYTE / Lab ID			70307.07	70507.07	80077.07	80185.07	80306.07	80404.07	90077.07	90235.07
VOCs										
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Methyl *tert*- butyl ether	70	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs										
Bis(2-ethylhexyl) phthalate	3	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
TICs*	500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides/PCBs										
gamma-Chlordane	NLE	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.1	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Metals										
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Barium	6000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

NA - Not analyzed

ND - Not detected

NLE - No limit established

NR - Not reported

Table A-4
Groundwater Sampling Results
Well M5MW13 (Aug07-Sept10)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	48	49	50	51	52
WELL ID			M5MW13	M5MW13	LF1[(1)]	LF2[(2)]	LF3[(2)]
Date Collected			9/18/2009	12/28/2009	3/31/2010	6/30/2010	9/26/2010
ANALYTE / Lab ID			90390.07	90490.07	10115.05	10298.09	10411.06
VOCs							
Acetone	6000	µg/L	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND
Methyl *tert*- butyl ether	70	µg/L	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND
SVOCs							
Bis(2-ethylhexyl) phthalate	3	µg/L	NA	NA	NA	NA	NA
TICs*	500	µg/L	NA	NA	NA	NA	NA
Pesticides/PCBs							
gamma-Chlordane	NLE	µg/L	NA	NA	NA	NA	NA
4,4'-DDE	0.1	µg/L	NA	NA	NA	NA	NA
Metals							
Antimony	6	µg/L	NA	NA	**6.28 ER**	**6.32 ER**	**30.1**
Arsenic	3	µg/L	NA	NA	ND	ND	**6.40**
Barium	6000	µg/L	NA	NA	114	91.7	359
Beryllium	1	µg/L	NA	NA	ND	ND	ND
Cadmium	4	µg/L	NA	NA	0.514 ER	ND	1.25 ER
Chromium	70	µg/L	NA	NA	ND	ND	ND
Copper	1300	µg/L	NA	NA	ND	3.12 ER	1.94 ER
Lead	5	µg/L	NA	NA	ND	ND	3.40 ER
Mercury	2	µg/L	NA	NA	ND	ND	ND
Selenium	40	µg/L	NA	NA	NR	NR	NR

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

NA - Not analyzed

ND - Not detected

NLE - No limit established

NR - Not reported

Table A-5
Groundwater Sampling Results
Well M5MW14 (Oct98-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	1	2	3	4	5	6	6	7	7
WELL ID			M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	MW14 Duplicate	M5MW14	MW14 Duplicate
Date Collected			10/7/1998	10/23/1998	2/2/1999	4/13/1999	4/27/1999	9/13/1999	9/13/1999	11/18/1999	11/18/1999
ANALYTE / Lab ID			3967.04	4001.03	4237.06	4416.07	4444.07	4786.04	4786.03	4955.08	4955.03
VOCs											
Acetone	700	µg/L	6.34	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	9.08	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	6	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs											
TICs*	500	µg/L	ND	ND	ND	ND	5	36	11	24	56
Metals											
Antimony	20	µg/L	ND	ND	ND	ND	ND	ND	3.46	ND	ND
Arsenic	8	µg/L	4	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	160	196	108	81.8	33.9	22.4	22.4	22.1	21.6
Beryllium	20	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	0.7	ND	0.886	0.67	1.15	0.655	ND	0.779	ND
Chromium	100	µg/L	12.1	5.25	5.8	9.65	3.37	3.31	3.47	2.92	3.02
Copper	1000	µg/L	5	ND	5.72	7.48	ND	10.5	27.2	9.21	13.9
Lead	10	µg/L	ND	ND	**17.6**	6.77	ND	ND	ND	ND	ND
Mercury	2	µg/L	ND	ND	0.17	ND	ND	ND	ND	ND	0.2
Selenium	50	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-5
Groundwater Sampling Results
Well M5MW14 (Oct98-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	8	9	10	11	12	13	14	15	16
WELL ID			M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14
Date Collected			3/6/2000	5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001	6/5/2001	9/5/2001	10/4/2001
ANALYTE / Lab ID			5222.04	5445.08	5644.08	5903.08	782	1600708	16166.08	16407.08	16491.08
VOCs											
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs											
TICs*	500	µg/L	19	36	108	**165**	NA	ND	ND	6	18
Metals											
Antimony	20	µg/L	ND	ND	4.79	2.23	NA	ND	ND	ND	ND
Arsenic	8	µg/L	ND	ND	ND	ND	NA	ND	ND	ND	ND
Barium	2000	µg/L	93.1	133	34.3	104	NA	33.4	32.6	34.4	38.3
Beryllium	20	µg/L	ND	ND	ND	ND	NA	ND	ND	ND	ND
Cadmium	4	µg/L	ND	ND	ND	ND	NA	ND	ND	ND	**7.32**
Chromium	100	µg/L	5.06	4.45	ND	1.53	NA	2.6	0.986	1.04	1.16
Copper	1000	µg/L	ND	ND	34.6	ND	NA	8	ND	8.84	10.5
Lead	10	µg/L	ND	ND	**12**	ND	NA	ND	ND	ND	ND
Mercury	2	µg/L	ND	ND	ND	0.44	NA	ND	0.19	0.1	0.1
Selenium	50	µg/L	ND	ND	ND	ND	NA	ND	10.6	ND	ND

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-5
Groundwater Sampling Results
Well M5MW14 (Oct98-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	17	18	19	20	21	22	23	24	25
WELL ID			M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14
Date Collected			1/14/2002	4/23/2002	8/21/2002	10/28/2002	1/22/2003	4/21/2003	7/30/2003	10/8/2003	1/14/2004
ANALYTE / Lab ID			20029.08	20219.08	20594.08	20760.08	30032.08	30180.08	30439.08	30638.08	40029.08
VOCs											
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs											
TICs*	500	µg/L	15	12	15	19	20	17	22	NA	NA
Metals											
Antimony	20	µg/L	ND	3.18	ND	ND	ND	ND	ND	NA	NA
Arsenic	8	µg/L	ND	2.56	ND	ND	ND	ND	ND	NA	NA
Barium	2000	µg/L	67.8	87.6	28.2	50.4	217	210	75.5	NA	NA
Beryllium	20	µg/L	ND	ND	ND	ND	ND	ND	ND	NA	NA
Cadmium	4	µg/L	ND	ND	ND	ND	0.602 ER	1.15	ND	NA	NA
Chromium	100	µg/L	1.99	2.4	ND	1.97	2.35 ER	3.81 ER	ND	NA	NA
Copper	1000	µg/L	2.82	3.52	11.8	ND	2.96 ER	ND	1.22 ER	NA	NA
Lead	10	µg/L	ND	ND	1.81	ND	ND	ND	ND	NA	NA
Mercury	2	µg/L	ND	ND	ND	ND	ND	ND	ND	NA	NA
Selenium	50	µg/L	7.41	4.94	4.95	8.11	ND	ND	7.05 ER	NA	NA

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-5
Groundwater Sampling Results
Well M5MW14 (Oct98-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	26	27	28	29	30	31
WELL ID			M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14
Date Collected			5/13/2004	8/20/2004	12/16/2004	3/15/2005	6/3/2005	9/16/2005
ANALYTE / Lab ID			40359.08	40614.08	40846.06	50154.07	50284.08	50473.07
VOCs								
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND
SVOCs								
TICs*	500	µg/L	NA	NA	NA	NA	NA	NA
Metals								
Antimony	20	µg/L	NA	NA	NA	NA	NA	NA
Arsenic	8	µg/L	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	NA	NA	NA	NA	NA	NA
Beryllium	20	µg/L	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA
Chromium	100	µg/L	NA	NA	NA	NA	NA	NA
Copper	1000	µg/L	NA	NA	NA	NA	NA	NA
Lead	10	µg/L	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA
Selenium	50	µg/L	NA	NA	NA	NA	NA	NA

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-5
Groundwater Sampling Results
Well M5MW14 (Dec05-Jan07)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	32	33	34	35	36	37	38
WELL ID			M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14
Date Collected			12/21/2005	3/1/2006	5/5/2006	9/13/2006	11/17/2006	3/8/2007	6/6/2007
ANALYTE / Lab ID			50655.08	60094.08	60209.08	60395.08	60503.08	70088.07	70204.08
VOCs									
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	5	6	ND	ND	ND	ND	ND
SVOCs									
TICs*	500	µg/L	NA	NA	NA	NA	NA	NA	NA
Metals									
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	NA	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA	NA

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (November 7, 2005)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-5
Groundwater Sampling Results
Well M5MW14 (Aug07-Sept10)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	39	40	41	42	43	44	45	46
WELL ID			M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14
Date Collected			8/14/2007	12/5/2007	3/11/2008	6/3/2008	8/25/2008	11/10/2008	2/26/2009	6/12/2009
ANALYTE / Lab ID			70307.08	70507.08	80077.08	80185.08	80306.08	80404.08	90077.08	90235.08
VOCs										
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs										
TICs*	500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Metals										
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Barium	6000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

NA - Not analyzed

ND - Not detected

NLE - No limit established

NR - Not reported

Table A-5
Groundwater Sampling Results
Well M5MW14 (Aug07-Sept10)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	47	47	48	49	50	51
WELL ID			M5MW14	MW14 Duplicate	M5MW14	LF1(1)	LF2(1)	LF3(1)
Date Collected			9/18/2009	9/18/2009	12/28/2009	3/31/2010	6/30/2010	9/26/2010
ANALYTE / Lab ID			90390.08	90390.03	90490.08	10115.06	10298.10	10411.07
VOCs								
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND
SVOCs								
TICs*	500	µg/L	NA	NA	NA	NA	NA	NA
Metals								
Antimony	6	µg/L	NA	NA	NA	**10.4**	**6.04 ER**	**15.4**
Arsenic	3	µg/L	NA	NA	NA	ND	1.24 ER	ND
Barium	6000	µg/L	NA	NA	NA	26.9	25.6	30.7
Beryllium	1	µg/L	NA	NA	NA	ND	ND	ND
Cadmium	4	µg/L	NA	NA	NA	ND	ND	ND
Chromium	70	µg/L	NA	NA	NA	ND	ND	ND
Copper	1300	µg/L	NA	NA	NA	ND	2.22 ER	1.02 ER
Lead	5	µg/L	NA	NA	NA	ND	ND	ND
Mercury	2	µg/L	NA	NA	NA	ND	ND	ND
Selenium	40	µg/L	NA	NA	NA	NR	NR	NR

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

NA - Not analyzed

ND - Not detected

NLE - No limit established

NR - Not reported

Table A-6
Groundwater Sampling Results
Well M5MW15 (Feb99-Jul03)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	1	1	2	3	3	3A	4	5	6
WELL ID			M5MW15	MW15 Duplicate	M5MW15	M5MW15	MW15 Duplicate	M5MW15 (1)	M5MW15	M5MW15	M5MW15
Date Collected			10/7/1998	10/7/1998	10/23/1998	2/2/1999	2/2/1999	2/4/1999	4/14/1999	4/28/1999	9/14/1999
ANALYTE / Lab ID			3967.05	3697.06	4001.04	4237.07	4237.08	4246.01	4419.04	4447.06	4788.05
VOCs											
Bromoform	4	µg/L	3.54	ND	**4.87**	ND	ND	NA	ND	ND	ND
2-Butanone	300	µg/L	2.97	2.99	3.18	ND	ND	NA	ND	ND	ND
Tetrachloroethene	1	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	**2.15**
TICs*	500	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND
SVOCs											
TICs*	500	µg/L	ND	ND	ND	26	44	NA	15	16	5
Pesticides/PCBs											
alpha-BHC	0.02	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
delta-BHC	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDT	0.1	µg/L	ND	0.03	ND	ND	ND	ND	ND	ND	ND
Metals											
Antimony	20	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND
Arsenic	8	µg/L	ND	3	ND	ND	ND	NA	ND	ND	ND
Barium	2000	µg/L	33.4	36.7	23.5	31.2	26.1	NA	184	180	153
Beryllium	20	µg/L	ND	ND	ND	ND	ND	NA	0.734	0.788	1.37
Cadmium	4	µg/L	0.7	2.8	ND	ND	ND	NA	ND	1.98	1.13
Chromium	100	µg/L	10.8	18	1.16	5.25	4.37	NA	2.98	1.97	5.3
Copper	1000	µg/L	ND	ND	ND	8.6	ND	NA	ND	ND	5.18
Lead	10	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND
Mercury	2	µg/L	0.2	0.2	ND	0.22	0.27	NA	ND	0.27	ND
Nickel	100	µg/L	2.2	2.9	ND	1.96	0.562	NA	15.2	15.2	13.4
Selenium	50	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND
Thallium	10	µg/L	5	5	ND	ND	ND	NA	ND	5.17	ND

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-6
Groundwater Sampling Results
Well M5MW15 (Feb99-Jul03)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	7	8	9	10	11	12	13	14	15
WELL ID			M5MW15	M5MW15	M5MW15	M5MW15	M5MW15	M5MW15	M5MW15	M5MW15	M5MW15
Date Collected			11/18/1999	3/3/2000	5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001	6/5/2001	9/5/2001
ANALYTE / Lab ID			4955.09	5220.1	5445.09	5644.09	5903.09	783	16007.09	16166.09	16407.09
VOCs											
Bromoform	4	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	4
SVOCs											
TICs*	500	µg/L	11	5	15	92	**163**	NA	ND	ND	ND
Pesticides/PCBs											
alpha-BHC	0.02	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND
delta-BHC	NLE	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND
4,4'-DDT	0.1	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND
Metals											
Antimony	20	µg/L	ND	ND	2.33	3.7	ND	NA	ND	ND	ND
Arsenic	8	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND
Barium	2000	µg/L	164	152	124	149	129	NA	122	222	218
Beryllium	20	µg/L	1.1	0.862	1.03	1.35	1.16	NA	1.3	2.26	2.24
Cadmium	4	µg/L	ND	0.717	ND	ND	ND	NA	0.6	0.528	ND
Chromium	100	µg/L	2.72	ND	3.88	ND	ND	NA	2.9	2.27	6.92
Copper	1000	µg/L	7.64	6.47	ND	ND	ND	NA	20	ND	9.43
Lead	10	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	1.64
Mercury	2	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND
Nickel	100	µg/L	14.2	19.1	18.5	16.7	12.4	NA	25	36	23.9
Selenium	50	µg/L	ND	ND	ND	ND	ND	NA	ND	13	ND
Thallium	10	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND

Notes:

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**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

NA - Not analyzed

ND - Not detected

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Table A-6
Groundwater Sampling Results
Well M5MW15 (Feb99-Jul03)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	16	17	18	19	20	21	22	23
WELL ID			M5MW15	M5MW15	M5MW15	M5MW15	M5MW15	M5MW15	M5MW15	M5MW15
Date Collected			10/4/2001	1/14/2002	4/23/2002	8/21/2002	10/28/2002	1/22/2003	4/21/2003	7/30/2003
ANALYTE / Lab ID			16491.09	20029.09	20219.09	20594.09	20760.09	30032.09	30180.09	30439.09
VOCs										
Bromoform	4	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs										
TICs*	500	µg/L	ND	6	4	22	16	24	11	35
Pesticides/PCBs										
alpha-BHC	0.02	µg/L	0.006	ND	ND	ND	ND	ND	ND	ND
delta-BHC	NLE	µg/L	0.008	ND	ND	ND	ND	ND	ND	ND
4,4'-DDT	0.1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Metals										
Antimony	20	µg/L	ND	ND	3.09	ND	ND	ND	ND	ND
Arsenic	8	µg/L	ND	ND	ND	2.87	ND	ND	ND	ND
Barium	2000	µg/L	212	217	113	118	115	72.1	163	121
Beryllium	20	µg/L	2.1	1.29	1.22	1.41	1.4	1.14	2.22	2.28
Cadmium	4	µg/L	**6.02**	0.803	ND	ND	ND	ND	1.28	0.553 ER
Chromium	100	µg/L	3.6	2.04	1.78	0.633	1.25	1.01 ER	1.81 ER	2.09 ER
Copper	1000	µg/L	8.15	2.55	2.33	3.58	ND	ND	ND	0.563 ER
Lead	10	µg/L	3.22	ND	ND	ND	1.32	ND	ND	ND
Mercury	2	µg/L	ND	ND	ND	0.11	ND	ND	ND	ND
Nickel	100	µg/L	21.5	21.3	19.4	16.2	13.2	16.9	33.9	23.9
Selenium	50	µg/L	ND	11.1	8.84	8.69	3.44	ND	ND	5.03 ER
Thallium	10	µg/L	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-7
Groundwater Sampling Results
Well M5MW16 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	1	2	3	3	4	5	6	7	8
WELL ID			M5MW16	M5MW16	M5MW16	MW16 Duplicate	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16
Date Collected			4/14/1999	4/28/1999	9/14/1999	9/14/1999	11/18/1999	3/3/2000	5/31/2000	8/21/2000	12/11/2000
ANALYTE / Lab ID			4419.05	4447.07	4788.04	4788.03	4955.1	5220.09	5445.1	5644.10	5903.10
VOCs											
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	10	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**96.37**	**8.35**	**639.74**	**745.75**	**54.42**	**37.76**	**27.79**	**20.36**	**23.2**
Trichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs											
4-Methylphenol	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	10	4	8	5	16	5	6	97	86
Metals											
Antimony	20	µg/L	ND	ND	ND	4.16	ND	**61.9**	ND	ND	ND
Arsenic	8	µg/L	ND	4.11	ND	ND	3.28	**8.13**	ND	ND	3.61
Barium	2000	µg/L	101	156	149	153	209	656	190	143	216
Beryllium	20	µg/L	ND	ND	0.597	0.639	ND	ND	ND	ND	ND
Cadmium	4	µg/L	ND	2.62	**7.58**	1.16	0.615	1.74	ND	ND	ND
Chromium	100	µg/L	8.33	8.43	37.4	39.3	1.72	**3830**	1.99	ND	ND
Copper	1000	µg/L	ND	ND	12.5	25.1	4.87	ND	ND	ND	ND
Lead	10	µg/L	ND	ND	ND	2.72	ND	ND	ND	ND	ND
Mercury	2	µg/L	ND	ND	ND	ND	0.2	ND	ND	ND	ND
Nickel	100	µg/L	6.65	5.88	10.8	13.3	6.73	**24700**	8.11	6.59	1.43
Selenium	50	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	ND	5.17	ND	ND	ND	ND	ND	ND	ND

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-7
Groundwater Sampling Results
Well M5MW16 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	9	10	11	12	13	14	15	16	17
WELL ID			M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16
Date Collected			2/13/2001	3/19/2001	6/5/2001	9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002	10/28/2002
ANALYTE / Lab ID			784	16007.10	16166.10	16407.10	16491.10	20029.10	20219.10	20594.10	20760.10
VOCs											
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	13.45	ND	ND	ND	ND	ND	2.59
cis -1,2-Dichloroethene	10	µg/L	ND	ND	ND	ND	ND	1.93	**69.44**	3.38	**103.82**
Tetrachloroethene	1	µg/L	**14.84**	**17.88**	**24.47**	**205.77**	**620.81**	**839.5**	**213.53**	**416.79**	**42.41**
Trichloroethene	1	µg/L	ND	ND	ND	ND	ND	**1.93**	**35.84**	ND	**2.23**
Vinyl chloride	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs											
4-Methylphenol	NLE	µg/L	NA	ND	ND	ND	ND	ND	ND	ND	7.99
TICs*	500	µg/L	NA	ND	ND	5	ND	ND	5	33	20
Metals											
Antimony	20	µg/L	NA	ND	ND	7.58	ND	ND	ND	ND	ND
Arsenic	8	µg/L	NA	3	7.04	7.34	7.68	3.16	ND	4.02	**27.3**
Barium	2000	µg/L	NA	195	188	287	309	356	257	549	233
Beryllium	20	µg/L	NA	ND	ND	ND	ND	0.743	ND	1.26	ND
Cadmium	4	µg/L	NA	1.3	1.67	ND	**6.04**	1.53	ND	0.606	0.986
Chromium	100	µg/L	NA	15.1	0.982	1.9	15.6	2.73	5.39	5.66	7.1
Copper	1000	µg/L	NA	42	15.2	12.8	4.52	3.12	8.5	2.85	ND
Lead	10	µg/L	NA	4	ND	1.48	1.67	ND	1.23	ND	1.6
Mercury	2	µg/L	NA	ND	ND	0.1	0.1	ND	ND	ND	ND
Nickel	100	µg/L	NA	22	10.5	14.8	16.1	20.3	15.1	32.6	15.3
Selenium	50	µg/L	NA	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	NA	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-7
Groundwater Sampling Results
Well M5MW16 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	18	19	20	21	21	22	22	23	24
WELL ID			M5MW16	M5MW16	M5MW16	M5MW16	MW16 Duplicate	M5MW16	MW16 Duplicate	M5MW16	M5MW16
Date Collected			1/22/2003	4/21/2003	7/30/2003	10/8/2003	10/8/2003	1/14/2004	1/14/2004	5/13/2004	8/20/2004
ANALYTE / Lab ID			30032.10	30180.10	30439.10	30638.09	30638.03	40029.09	40029.03	40359.09	40614.09
VOCs											
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	2.06	ND
2-Butanone	300	µg/L	ND	ND	ND	2.49	3.23	ND	ND	ND	ND
cis -1,2-Dichloroethene	10	µg/L	**22.02**	**16.12**	**20.3**	**68.16**	**82.37**	**83.66**	**80.96**	**22.47**	**66.66**
Tetrachloroethene	1	µg/L	**31.09**	**8.5**	**18.57**	**23.44**	**18.88**	**34.59**	**31.41**	**38.41**	**7.63**
Trichloroethene	1	µg/L	**1.36 J**	**2.16**	**5.61**	**15.5**	**19.23**	**13.1**	**13.14**	**14.68**	**9.48**
Vinyl chloride	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs											
4-Methylphenol	NLE	µg/L	ND	ND	ND	NA	NA	NA	NA	NA	NA
TICs*	500	µg/L	17	10	26	NA	NA	NA	NA	NA	NA
Metals											
Antimony	20	µg/L	ND	ND	ND	NA	NA	NA	NA	NA	NA
Arsenic	8	µg/L	**12.6**	**13.6**	4.38 ER	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	135	154	258	NA	NA	NA	NA	NA	NA
Beryllium	20	µg/L	ND	ND	0.166 ER	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	0.872 ER	1.12	1.47 ER	NA	NA	NA	NA	NA	NA
Chromium	100	µg/L	1.92 ER	1.15 ER	1.4 ER	NA	NA	NA	NA	NA	NA
Copper	1000	µg/L	ND	ND	ND	NA	NA	NA	NA	NA	NA
Lead	10	µg/L	ND	ND	ND	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	ND	ND	ND	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	7.06	7.31	9.46	NA	NA	NA	NA	NA	NA
Selenium	50	µg/L	ND	ND	ND	NA	NA	NA	NA	NA	NA
Thallium	10	µg/L	ND	ND	ND	NA	NA	NA	NA	NA	NA

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

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J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-7
Groundwater Sampling Results
Well M5MW16 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	24	25	26	27	28
WELL ID			MW16 Duplicate	M5MW16	M5MW16	M5MW16	M5MW16
Date Collected			8/20/2004	12/15/2004	3/14/2005	6/3/2005	9/16/2005
ANALYTE / Lab ID			40614.03	40845.05	50152.05	50284.09	50473.08
VOCs							
Acetone	700	µg/L	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	10	µg/L	**186**	**47.94**	**32.37**	**33.24**	**283.79**
Tetrachloroethene	1	µg/L	**63.95**	**59.14**	**6.22**	**90.59**	**9.51**
Trichloroethene	1	µg/L	**46.72**	**19.57**	**2.8**	**34.2**	**34.1**
Vinyl chloride	5	µg/L	ND	1.21	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND
SVOCs							
4-Methylphenol	NLE	µg/L	NA	NA	NA	NA	NA
TICs*	500	µg/L	NA	NA	NA	NA	NA
Metals							
Antimony	20	µg/L	NA	NA	NA	NA	NA
Arsenic	8	µg/L	NA	NA	NA	NA	NA
Barium	2000	µg/L	NA	NA	NA	NA	NA
Beryllium	20	µg/L	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA
Chromium	100	µg/L	NA	NA	NA	NA	NA
Copper	1000	µg/L	NA	NA	NA	NA	NA
Lead	10	µg/L	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA
Selenium	50	µg/L	NA	NA	NA	NA	NA
Thallium	10	µg/L	NA	NA	NA	NA	NA

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-7
Groundwater Sampling Results
Well M5MW16 (Dec05-Jun07)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	29	30	31	32	33	34	35
WELL ID			M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16
Date Collected			12/21/2005	3/1/2006	5/5/2006	9/13/2006	11/17/2006	3/8/2007	6/6/2007
ANALYTE / Lab ID			50655.09	60094.09	60209.09	60395.09	60500.04	70087.05	70207.09
VOCs									
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	70	µg/L	36.52	38.04	37.55	**77.14**	27.74	9.25	5.5
Tetrachloroethene	1	µg/L	**8.41**	**30.42**	**75.67**	**334.54**	**86.18**	**32.4**	**25.31**
Trichloroethene	1	µg/L	**5.79**	**11.65**	**64.99**	**88.75**	**37.11**	**19.98**	**6.53**
Vinyl chloride	1	µg/L	ND	**1.6 J**	**3.47**	**10.11**	**4.95**	**2.41**	**1.17 J**
TICs*	500	µg/L	11	6	ND	ND	ND	ND	ND
SVOCs									
4-Methylphenol	NLE	µg/L	NA	NA	NA	NA	NA	NA	NA
TICs*	500	µg/L	NA	NA	NA	NA	NA	NA	NA
Metals									
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	NA	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA	NA
Thallium	2	µg/L	NA	NA	NA	NA	NA	NA	NA

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (November 7, 2005)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-7
Groundwater Sampling Results
Well M5MW16 (Aug07-Sept10)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	36	37	38	39	40	41	42	43
WELL ID			M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16
Date Collected			8/14/2007	12/5/2007	3/11/2008	6/3/2008	8/25/2008	11/10/2008	2/26/2009	6/12/2009
ANALYTE / Lab ID			70307.09	70507.09	80077.09	80185.09	80306.09	80404.09	90077.09	90235.09
VOCs										
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	70	µg/L	29.47	12.22	8.48	3.23	13.2	4.23	14.93	5.14
Tetrachloroethene	1	µg/L	**53.02**	**11.97**	**6.93**	**4.42**	**5.92**	**4.43**	**1.75 J**	**2.99**
Trichloroethene	1	µg/L	**25.4**	**5.2**	0.74 J	0.75 J	**1.99 J**	**1.36 J**	**1.58 J**	0.50 J
Vinyl chloride	1	µg/L	**7.33**	**2.85**	ND	ND	**1.2 J**	ND	**1.28 J**	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs										
4-Methylphenol	NLE	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
TICs*	500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Metals										
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Barium	6000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

NR - Not reported

Table A-7
Groundwater Sampling Results
Well M5MW16 (Aug07-Sept10)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	44	45	46	47	48	48
WELL ID			M5MW16	M5MW16	LF1(1)	LF2(1)	LF3(1)	LF3(1) Duplicate
Date Collected			9/18/2009	12/28/2009	3/30/2010	6/30/2010	9/27/2010	9/27/2010
ANALYTE / Lab ID			90390.09	90490.09	10113.03	10298.05	10412.04	10412.03
VOCs								
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	70	µg/L	1.87	2.52	10.26	10.27	1.71	1.84
Tetrachloroethene	1	µg/L	**1.95**	**4.90**	**1.36**	**1.56**	**3.39**	**3.86**
Trichloroethene	1	µg/L	ND	ND	**1.84**	**1.13**	0.73	0.81
Vinyl chloride	1	µg/L	ND	ND	ND	**1.15**	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND
SVOCs								
4-Methylphenol	NLE	µg/L	NA	NA	NA	NA	NA	NA
TICs*	500	µg/L	NA	NA	NA	NA	NA	NA
Metals								
Antimony	6	µg/L	NA	NA	**6.25 ER**	ND	ND	ND
Arsenic	3	µg/L	NA	NA	1.26 ER	**4.51 ER**	**4.68 ER**	**4.52 ER**
Barium	6000	µg/L	NA	NA	66.7	128	91.2	91.7
Beryllium	1	µg/L	NA	NA	0.079 ER	0.124 ER	0.171	0.213 ER
Cadmium	4	µg/L	NA	NA	0.667 ER	0.785 ER	ND	ND
Chromium	70	µg/L	NA	NA	ND	ND	ND	ND
Copper	1300	µg/L	NA	NA	ND	3.15 ER	1.09 ER	1.05 ER
Lead	5	µg/L	NA	NA	ND	ND	ND	ND
Mercury	2	µg/L	NA	NA	0.120 ER	ND	ND	ND
Nickel	100	µg/L	NA	NA	2.27 ER	5.05	3.12 ER	3.07 ER
Selenium	40	µg/L	NA	NA	NR	NR	NR	NR
Thallium	2	µg/L	NA	NA	ND	ND	ND	ND

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

NR - Not reported

Table A-8
Groundwater Sampling Results
Well M5MW18 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	1	2	3	4	5	6	7	8	9	10
WELL ID			M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18
Date Collected			4/13/1999	4/27/1999	9/14/1999	11/18/1999	3/3/2000	5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001
ANALYTE / Lab ID			4416.10	4444.10	4788.06	4955.15	5220.11	5445.11	5644.11	5903.11	785	1600711
VOCs												
Tetrachloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs												
TICs*	500	µg/L	14	7	7	9	6	8	84	**120**	NA	**150**
Pesticides/PCBs												
gamma-Chlordane	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND
Metals												
Antimony	20	µg/L	ND	ND	ND	ND	ND	ND	2.54	ND	NA	ND
Arsenic	8	µg/L	ND	ND	ND	ND	ND	ND	ND	**14.2**	NA	ND
Barium	2000	µg/L	41.8	47	104	52.2	115	132	83.3	**3030**	NA	182
Beryllium	20	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND
Cadmium	4	µg/L	0.621	1.99	1.3	0.64	0.724	ND	ND	**5.52**	NA	1.7
Chromium	100	µg/L	1.97	1.02	4.06	0.573	ND	1.46	ND	4.74	NA	5.3
Copper	1000	µg/L	5.04	ND	4.58	14.9	ND	ND	ND	ND	NA	12
Lead	10	µg/L	**11.8**	ND	ND	ND	ND	ND	1.89	ND	NA	ND
Mercury	2	µg/L	0.12	ND	ND	ND	ND	ND	ND	ND	NA	ND
Nickel	100	µg/L	2.63	1.86	7.64	1.73	3.39	2.84	ND	ND	NA	3
Selenium	50	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-8
Groundwater Sampling Results
Well M5MW18 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	11	12	13	14	15	16	17	18	19	20
WELL ID			M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18
Date Collected			6/5/2001	9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002	10/28/2002	1/22/2003	4/21/2003	7/30/2003
ANALYTE / Lab ID			16166.11	16407.11	16491.11	20029.11	20219.11	20594.11	20760.11	30032.11	30180.11	30439.11
VOCs												
Tetrachloroethene	1	µg/L	ND	ND	**2.95**	**1.34**	ND	ND	ND	ND	ND	ND
Trichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs												
TICs*	500	µg/L	ND	6	4	6	4	22	15	15	12	49
Pesticides/PCBs												
gamma-Chlordane	NLE	µg/L	ND	ND	0.018	ND	ND	ND	ND	ND	ND	ND
Metals												
Antimony	20	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	**11**	2.68	ND	3.84	**16.8**	6.7	6.73	**8.4**	**20.8**	ND
Barium	2000	µg/L	1690	177	142	201	752	119	78.9	561	**4490**	202
Beryllium	20	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	0.62	ND
Cadmium	4	µg/L	**10.4**	ND	**7.35**	1.32	1.53	ND	ND	3.6	**11.4**	1.11 ER
Chromium	100	µg/L	ND	1.74	1.68	1.64	3.2	ND	1.27	1.19 ER	2.05 ER	ND
Copper	1000	µg/L	8.52	5.99	ND	2.82	2.92	4.49	ND	40.1	ND	ND
Lead	10	µg/L	3.08	1.14	ND	ND	1.35	ND	ND	4.38 ER	5.65	ND
Mercury	2	µg/L	ND	ND	ND	0.1	0.15	ND	ND	ND	ND	ND
Nickel	100	µg/L	3.13	2.48	1.73	16.5	ND	1.25	ND	2.87 ER	ND	1.06 ER
Selenium	50	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-8
Groundwater Sampling Results
Well M5MW18 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	21	22	23	24	25	26	27	28
WELL ID			M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18
Date Collected			10/8/2003	1/14/2004	5/13/2004	8/20/2004	12/13/2004	3/14/2005	6/3/2005	9/16/2005
ANALYTE / Lab ID			30638.10	40029.10	40359.10	40614.10	40833.03	50152.06	50284.10	50473.09
VOCs										
Tetrachloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs										
TICs*	500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides/PCBs										
gamma-Chlordane	NLE	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Metals										
Antimony	20	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	8	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	20	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Lead	10	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	50	µg/L	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-8
Groundwater Sampling Results
Well M5MW18 (Dec05-Jun07)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	29	30	31	32	33	33	34	35
WELL ID			M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	MW18 Duplicate	M5MW18	M5MW18
Date Collected			12/21/2005	3/1/2006	5/5/2006	9/13/2006	11/17/2006	11/17/2006	3/8/2007	6/6/2007
ANALYTE / Lab ID			50655.10	60094.10	60209.10	60395.10	60500.05	60500.03	70087.06	70204.10
VOCs										
Tetrachloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	11	7	ND	4	ND	ND	ND	ND
SVOCs										
TICs*	500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides/PCBs										
gamma-Chlordane	NLE	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Metals										
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (November 7, 2005)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-8
Groundwater Sampling Results
Well M5MW18 (Aug07-Sept10)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	36	37	38	39	40	41	42	43
WELL ID			M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18
Date Collected			8/14/2007	12/5/2007	3/11/2008	6/3/2008	8/25/2008	11/10/2008	2/26/2009	6/12/2009
ANALYTE / Lab ID			70307.10	70507.10	80077.10	80185.10	80306.10	80404.10	90077.10	90235.10
VOCs										
Tetrachloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs										
TICs*	500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides/PCBs										
gamma-Chlordane	NLE	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Metals										
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Barium	6000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

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**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

NA - Not analyzed

ND - Not detected

NLE - No limit established

NR - Not reported

Table A-8
Groundwater Sampling Results
Well M5MW18 (Aug07-Sept10)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	44	45	45	46	47	48
WELL ID			M5MW18	M5MW18	MW18 Duplicate	LF1(1)	LF2(1)	LF3(1)
Date Collected			9/18/2009	12/28/2009	12/28/2009	3/31/2010	6/29/2010	9/26/2010
ANALYTE / Lab ID			90390.10	90490.10	90490.03	10115.02	10294.01	10411.08
VOCs								
Tetrachloroethene	1	µg/L	ND	ND	ND	ND	ND	ND
Trichloroethene	1	µg/L	ND	ND	ND	0.28 J	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND
SVOCs								
TICs*	500	µg/L	NA	NA	NA	NA	NA	NA
Pesticides/PCBs								
gamma-Chlordane	NLE	µg/L	NA	NA	NA	NA	NA	NA
Metals								
Antimony	6	µg/L	NA	NA	NA	ND	ND	**9.81 ER**
Arsenic	3	µg/L	NA	NA	NA	**3.77 ER**	**3.26 ER**	1.38 ER
Barium	6000	µg/L	NA	NA	NA	131	112	259
Beryllium	1	µg/L	NA	NA	NA	ND	ND	ND
Cadmium	4	µg/L	NA	NA	NA	1.23 ER	1.07 ER	0.661 ER
Chromium	70	µg/L	NA	NA	NA	ND	ND	ND
Copper	1300	µg/L	NA	NA	NA	ND	4.85 ER	ND
Lead	5	µg/L	NA	NA	NA	ND	2.99 ER	ND
Mercury	2	µg/L	NA	NA	NA	ND	ND	ND
Nickel	100	µg/L	NA	NA	NA	ND	0.446 ER	1.10 ER
Selenium	40	µg/L	NA	NA	NA	NR	NR	NR

Notes:

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**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

NA - Not analyzed

ND - Not detected

NLE - No limit established

NR - Not reported

Table A-8
Groundwater Sampling Results
Well M5MW19 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	1	2	3	4	5	6	7	8	9	10
WELL ID			M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19
Date Collected			4/13/1999	4/27/1999	9/14/1999	11/18/1999	3/6/2000	5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001
ANALYTE / Lab ID			4416.09	4444.09	4788.07	4955.14	5222.01	5445.12	5644.12	5903.12	786	1600712
VOCs												
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	10	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	6	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**11.53**	**3.72**	**10.24**	**69.22**	**5.44**	ND	**4.77**	**3.8**	ND	**2.43**
Trichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs												
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND
4-Methylphenol	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND
TICs*	500	µg/L	ND	20	4	6	6	6	75	30	NA	ND
Metals												
Antimony	20	µg/L	ND	ND	3.01	2.85	ND	ND	3.46	ND	NA	ND
Arsenic	8	ug/L	ND	ND	ND	ND	ND	ND	ND	2.99	NA	5
Barium	2000	ug/L	39.7	67.2	61.3	79.3	104	80.9	78.9	345	NA	63.6
Beryllium	20	ug/1	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND
Cadmium	4	µg/L	ND	3.22	2.74	0.75	ND	ND	ND	ND	NA	1.3
Chromium	100	µg/L	10.6	12.1	32.8	1.65	ND	1.69	ND	ND	NA	4.7
Copper	1000	µg/L	6.31	ND	5.35	33	ND	ND	ND	ND	NA	18
Lead	10	µg/L	4.92	ND	ND	ND	ND	ND	1.14	ND	NA	ND
Mercury	2	µg/L	0.11	ND	ND	ND	ND	ND	0.4	ND	NA	ND
Nickel	100	µg/L	3.22	1.8	14	2.38	4.19	2.3	ND	ND	NA	3
Selenium	50	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND

Notes:

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**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-8
Groundwater Sampling Results
Well M5MW19 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	11	12	13	14	15	16	17	17	18	18
WELL ID			M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	MW19 Duplicate	M5MW19	MW19 Duplicate
Date Collected			6/5/2001	9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002	10/28/2002	10/28/2002	1/22/2003	1/22/2003
ANALYTE / Lab ID			16166.12	16407.12	16491.12	20029.12	20219.12	20594.12	20760.12	20760.03	30032.12	30032.03
VOCs												
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	3.93	4.06	1.18 J	1.59 J
cis -1,2-Dichloroethene	10	µg/L	ND	3.87	1.84	**16.64**	5.93	**51.33**	2.28	2.37	ND	ND
Chloroform	6	µg/L	**6.59**	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**6.89**	**34.94**	**13.62**	**284.64**	**18.2**	**34.31**	**5.1**	**4.89**	**1.54 J**	**1.35 J**
Trichloroethene	1	µg/L	ND	**1.66**	ND	**17.44**	**2.8**	**6.44**	1.00	**1.06**	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs												
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	7.95	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol	NLE	µg/L	ND	7.57	10.1	ND	ND	ND	3.13	2.08	ND	ND
TICs*	500	µg/L	ND	140	50	43	4	31	111	182	28	18
Metals												
Antimony	20	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	ug/L	**11.7**	5.7	**8.1**	**13.7**	**16.9**	**9.08**	**8.1**	**5.72**	ND	ND
Barium	2000	ug/L	55	59.8	47.4	40.8	81.9	36.7	69.1	55.9	48	49
Beryllium	20	ug/1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	2.35	0.769	2.96	1.13	ND	ND	ND	ND	0.735 ER	ND
Chromium	100	µg/L	1.34	ND	ND	0.874	6.2	0.845	2.42	0.585	0.711 ER	0.597 ER
Copper	1000	µg/L	ND	20.8	ND	ND	9.43	ND	ND	ND	2.57 ER	ND
Lead	10	µg/L	ND	2.1	ND	ND	ND	ND	1.39	ND	ND	ND
Mercury	2	µg/L	0.12	ND	ND	ND	0.17	ND	ND	ND	ND	ND
Nickel	100	µg/L	2.36	ND	ND	1.73	ND	ND	ND	ND	ND	ND
Selenium	50	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

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**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

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J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

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Table A-8
Groundwater Sampling Results
Well M5MW19 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	19	20	21	22	23	24	25	26	27	28
WELL ID			M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19
Date Collected			4/21/2003	7/30/2003	10/8/2003	1/14/2004	5/13/2004	8/20/2004	12/13/2004	3/14/2005	6/3/2005	9/16/2005
ANALYTE / Lab ID			30180.12	30439.12	30638.11	40029.11	40359.11	40614.11	40833.02	50152.07	50284.11	50473.10
VOCs												
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	10	µg/L	ND	ND	3.04	0.49 J	ND	0.81 J	ND	ND	ND	1.58 J
Chloroform	6	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**1.73 J**	**1.01 J**	**5.42**	**1.89 J**	ND	0.84 J	ND	ND	ND	**5.73**
Trichloroethene	1	µg/L	ND	ND	**1.92 J**	**1.04 J**	**1.41 J**	ND	**1.33 J**	0.91 J	ND	**3.12**
TICs*	500	µg/L	ND	ND	ND	ND	ND	5	ND	ND	ND	ND
SVOCs												
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NLE	µg/L	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
TICs*	500	µg/L	15	27	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Antimony	20	µg/L	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	8	ug/L	ND	2.37 ER	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2000	ug/L	52.5	65.8	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	20	ug/1	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	0.724 ER	0.689 ER	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	100	µg/L	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1000	µg/L	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Lead	10	µg/L	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	50	µg/L	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

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Table A-8
Groundwater Sampling Results
Well M5MW19 (Dec05-Jun07)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	29	30	31	32	33	34	35
WELL ID			M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19
Date Collected			12/21/2005	3/1/2006	5/5/2006	9/13/2006	11/17/2006	3/8/2007	6/6/2007
ANALYTE / Lab ID			50655.11	60094.11	60209.11	60395.11	60500.06	70087.06	70204.11
VOCs									
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	70	µg/L	0.67 J	0.97 J	0.89 J	2.82	1.55 J	1.19 J	ND
Chloroform	70	µg/L	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	ND	**1.17 J**	ND	**6.58**	0.97 J	0.91 J	ND
Trichloroethene	1	µg/L	ND	0.82 J	ND	**4.8**	**1.17 J**	**1.01 J**	ND
TICs*	500	µg/L	10	6	ND	ND	ND	ND	6
SVOCs									
Bis(2-ethylhexyl) phthalate	3	µg/L	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NLE	µg/L	NA	NA	NA	NA	NA	NA	NA
TICs*	500	µg/L	NA	NA	NA	NA	NA	NA	NA
Metals									
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA
Arsenic	3	ug/L	NA	NA	NA	NA	NA	NA	NA
Barium	2000	ug/L	NA	NA	NA	NA	NA	NA	NA
Beryllium	1	ug/L	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA	NA

Notes:

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**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (November 7, 2005)

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NA - Not analyzed

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NLE - No limit established

Table A-8
Groundwater Sampling Results
Well M5MW19 (Aug07-Sept10)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	36	37	38	39	40	41	42	43
WELL ID			M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19
Date Collected			8/14/2007	12/5/2007	3/11/2008	6/3/2008	8/25/2008	11/10/2008	2/26/2009	6/12/2009
ANALYTE / Lab ID			70307.11	70507.11	80077.11	80185.11	80306.11	80404.11	90077.11	90235.11
VOCs										
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	70	µg/L	0.91 J	9.3	1.25 J	1.11 J	0.57 J	8.5	2.96	5.05
Chloroform	70	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	0.82 J	**2.36**	0.58 J	ND	0.75 J	**2.01**	**3.03**	**3.17**
Trichloroethene	1	µg/L	ND	**5.01**	**1.34 J**	ND	0.33 J	**3.68**	**2.9**	0.51 J
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs										
Bis(2-ethylhexyl) phthalate	3	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NLE	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
TICs*	500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Metals										
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	3	ug/L	NA	NA	NA	NA	NA	NA	NA	NA
Barium	6000	ug/L	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	1	ug/L	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

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Table A-8
Groundwater Sampling Results
Well M5MW19 (Aug07-Sept10)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	44	45	46	47	48
WELL ID			M5MW19	M5MW19	LF1(1)	LF2(1)	LF3(1)
Date Collected			9/18/2009	12/28/2009	3/31/2010	6/30/2010	9/27/2010
ANALYTE / Lab ID			90390.11	90490.11	10115.01	10298.06	10412.05
VOCs							
2-Butanone	300	µg/L	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	70	µg/L	1.75	1.40	0.48 J	3.35	2.12
Chloroform	70	µg/L	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	ND	0.44 J	0.66	ND	ND
Trichloroethene	1	µg/L	ND	0.88	0.86	0.53	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND
SVOCs							
Bis(2-ethylhexyl) phthalate	3	µg/L	NA	NA	NA	NA	NA
4-Methylphenol	NLE	µg/L	NA	NA	NA	NA	NA
TICs*	500	µg/L	NA	NA	NA	NA	NA
Metals							
Antimony	6	µg/L	NA	NA	**6.48 ER**	ND	ND
Arsenic	3	ug/L	NA	NA	1.98 ER	2.01 ER	**4.00 ER**
Barium	6000	ug/L	NA	NA	45.2	48.5	29.7
Beryllium	1	ug/L	NA	NA	ND	ND	ND
Cadmium	4	µg/L	NA	NA	0.724 ER	0.754 ER	ND
Chromium	70	µg/L	NA	NA	ND	ND	ND
Copper	1300	µg/L	NA	NA	ND	2.75 ER	ND
Lead	5	µg/L	NA	NA	ND	ND	ND
Mercury	2	µg/L	NA	NA	ND	ND	ND
Nickel	100	µg/L	NA	NA	ND	ND	ND
Selenium	40	µg/L	NA	NA	NR	NR	NR

Notes:

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**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

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NR - Not reported

Table A-8
Groundwater Sampling Results
Well M5MW20 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	1	1	2	2	3	4	5	6	7
WELL ID			M5MW20	MW20 Duplicate	M5MW20	MW20 Duplicate	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20
Date Collected			4/13/1999	4/13/1999	4/27/1999	4/27/1999	9/13/1999	11/18/1999	3/3/2000	5/31/2000	8/21/2000
ANALYTE / Lab ID			4416.08	4416.11	4444.08	4444.11	4447.09	4955.11	5220.05	5445.13	5644.13
VOCs											
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	6	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	10	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans -1,2-Dichloroethene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**142.59**	**143**	**169.54**	**54.41**	**156.58**	**143.93**	**90.03**	**43.44**	**23.85**
Trichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs											
TICs*	500	µg/L	17	10	13	37	ND	16	5	ND	90
Pesticides/PCBs											
gamma-Chlordane	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals											
Antimony	20	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	2.87
Arsenic	8	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	45.2	40.9	36.3	32.4	38.7	30.7	25.8	3.7	15.8
Beryllium	20	ug/1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	ND	0.996	3.16	1.76	2.45	ND	ND	ND	ND
Chromium	100	µg/L	30.7	37.2	24.9	6.6	2.8	3.37	4.34	4.37	3.94
Copper	1000	µg/L	4.46	ND	6.08	ND	6.05	4.14	ND	ND	ND
Lead	10	µg/L	9.54	5.97	2.5	ND	ND	ND	ND	ND	1.66
Mercury	2	µg/L	0.12	0.13	ND	ND	ND	ND	ND	ND	0.3
Nickel	100	µg/L	6.43	6.81	5.41	4.02	6.13	5.65	4.92	2.77	ND
Selenium	50	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

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**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

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Table A-8
Groundwater Sampling Results
Well M5MW20 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	8	9	10	10	11	12	13	13	14
WELL ID			M5MW20	M5MW20	M5MW20	MW20 Duplicate	M5MW20	M5MW20	M5MW20	MW20 Duplicate	M5MW20
Date Collected			12/11/2000	2/13/2001	3/19/2001	3/19/2001	6/5/2001	9/5/2001	10/4/2001	10/4/2001	1/14/2002
ANALYTE / Lab ID			5903.13	787	1600713	1600703	16166.13	16407.13	16491.13	16491.03	20029.13
VOCs											
Acetone	700	µg/L	8.2	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	6	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	10	µg/L	ND	ND	ND	ND	ND	1.22	3.38	3.41	3.09
trans -1,2-Dichloroethene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**110.95**	**48.11**	**65.73**	**65.5**	**45.3**	**111.58**	**83.81**	**82.54**	**85.31**
Trichloroethene	1	µg/L	ND	ND	ND	ND	ND	**1.18**	**3.56**	**3.66**	**4.27**
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs											
TICs*	500	µg/L	10	NA	ND	ND	ND	ND	6	ND	7
Pesticides/PCBs											
gamma-Chlordane	NLE	µg/L	ND	ND	ND	ND	ND	ND	0.005	0.004	ND
Metals											
Antimony	20	µg/L	ND	NA	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	ND	NA	ND	ND	ND	ND	2.58	ND	ND
Barium	2000	µg/L	16	NA	24.3	23.9	19.1	24.4	20.1	30.6	22.1
Beryllium	20	ug/1	ND	NA	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	ND	NA	0.6	ND	ND	ND	**10.2**	**4.43**	ND
Chromium	100	µg/L	ND	NA	3.6	3.4	1.03	4.96	3	3.61	5.43
Copper	1000	µg/L	ND	NA	16	5	ND	11.3	3.03	2.52	ND
Lead	10	µg/L	ND	NA	ND	ND	ND	ND	ND	1.65	ND
Mercury	2	µg/L	ND	NA	ND	ND	0.12	ND	ND	1.2	ND
Nickel	100	µg/L	ND	NA	9	3	3.59	4.84	3.35	3.95	5
Selenium	50	µg/L	ND	NA	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	ND	NA	ND	ND	ND	ND	ND	ND	ND

Notes:

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**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

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ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-8
Groundwater Sampling Results
Well M5MW20 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	15	16	17	18	19	20	21	22	23
WELL ID			M5MW20	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20
Date Collected			4/23/2002	8/21/2002	10/28/2002	1/22/2003	4/21/2003	7/30/2003	10/8/2003	1/14/2004	5/13/2004
ANALYTE / Lab ID			20219.13	20594.13	20760.13	30032.13	30180.13	30439.13	30638.12	40029.12	40359.12
VOCs											
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	6	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	10	µg/L	ND	ND	ND	ND	ND	1.1 J	5.33	0.96 J	ND
trans -1,2-Dichloroethene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**76.89**	**79.41**	**12.99**	**27.87**	**27.99**	**15.26**	**43.96**	**21.69**	**13.74**
Trichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	**4.83**	**1.9 J**	0.92 J
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs											
TICs*	500	µg/L	6	28	13	18	10	29	NA	NA	NA
Pesticides/PCBs											
gamma-Chlordane	NLE	µg/L	ND	ND	ND	ND	ND	ND	NA	NA	NA
Metals											
Antimony	20	µg/L	3.53	ND	ND	ND	ND	ND	NA	NA	NA
Arsenic	8	µg/L	ND	3.46	5.22	ND	ND	ND	NA	NA	NA
Barium	2000	µg/L	24.3	30.1	22.1	9.36 ER	30.7	11.3	NA	NA	NA
Beryllium	20	ug/1	ND	ND	ND	ND	ND	0.0825 ER	NA	NA	NA
Cadmium	4	µg/L	ND	ND	ND	ND	ND	ND	NA	NA	NA
Chromium	100	µg/L	2.64	12.6	40.3	1.4 ER	3.3 ER	6.62	NA	NA	NA
Copper	1000	µg/L	13.1	2.97	4.93	ND	ND	1.33 ER	NA	NA	NA
Lead	10	µg/L	1.29	ND	4.41	ND	ND	ND	NA	NA	NA
Mercury	2	µg/L	0.16	0.11	ND	ND	ND	ND	NA	NA	NA
Nickel	100	µg/L	4.33	5.24	3.36	1.53 ER	3.21 ER	2.08 ER	NA	NA	NA
Selenium	50	µg/L	ND	ND	ND	ND	ND	ND	NA	NA	NA
Thallium	10	µg/L	ND	ND	ND	ND	ND	ND	NA	NA	NA

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

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Table A-8
Groundwater Sampling Results
Well M5MW20 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	24	25	26	27	28
WELL ID			M5MW20	M5MW20	M5MW20	M5MW20	M5MW20
Date Collected			8/20/2004	12/13/2004	3/14/2005	6/3/2005	9/16/2005
ANALYTE / Lab ID			40614.12	40833.01	50152.08	50284.12	50473.11
VOCs							
Acetone	700	µg/L	ND	ND	ND	ND	ND
Chloroform	6	µg/L	ND	ND	ND	ND	0.60 J
1,1-Dichloroethene	2	µg/L	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	10	µg/L	4.12	2.77	1.87 J	**13.2**	4.21
trans -1,2-Dichloroethene	100	µg/L	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**7.51**	**3.96**	**4.93**	**13.75**	**8.74**
Trichloroethene	1	µg/L	**2.05**	ND	**1.11 J**	**8.35**	**2.67**
TICs*	500	µg/L	ND	ND	ND	ND	ND
SVOCs							
TICs*	500	µg/L	NA	NA	NA	NA	NA
Pesticides/PCBs							
gamma-Chlordane	NLE	µg/L	NA	NA	NA	NA	NA
Metals							
Antimony	20	µg/L	NA	NA	NA	NA	NA
Arsenic	8	µg/L	NA	NA	NA	NA	NA
Barium	2000	µg/L	NA	NA	NA	NA	NA
Beryllium	20	ug/1	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA
Chromium	100	µg/L	NA	NA	NA	NA	NA
Copper	1000	µg/L	NA	NA	NA	NA	NA
Lead	10	µg/L	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA
Selenium	50	µg/L	NA	NA	NA	NA	NA
Thallium	10	µg/L	NA	NA	NA	NA	NA

Notes:

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**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

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Table A-8
Groundwater Sampling Results
Well M5MW20 (Dec05-Jun07)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	29	30	31	32	33	33	34	34	35
WELL ID			M5MW20	M5MW20	M5MW20	M5MW20	M5MW20	MW20 Duplicate	M5MW20	MW20 Duplicate	M5MW20
Date Collected			12/21/2005	3/1/2006	5/5/2006	9/13/2006	11/17/2006	11/17/2006	3/8/2007	3/8/2007	6/6/2007
ANALYTE / Lab ID			50655.12	60094.12	60209.12	60395.12	60503.09	60503.03	70087.08	70087.03	70204.12
VOCs											
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	70	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	70	µg/L	1.56 J	3.73	3.55	1.57 J	3.48	3.38	4.63	4.45	ND
trans -1,2-Dichloroethene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	0.87 J	**7.21**	**7.69**	**4.01**	**1.72 J**	**1.66 J**	**1.83 J**	**1.98 J**	ND
Trichloroethene	1	µg/L	1.00 J	**2.76**	**2.45**	ND	0.53 J	0.48 J	**1.41 J**	**1.21 J**	ND
TICs*	500	µg/L	5	5	ND	ND	ND	ND	ND	ND	8
SVOCs											
TICs*	500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides/PCBs											
gamma-Chlordane	NLE	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals											
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

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**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (November 7, 2005)

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Table A-8
Groundwater Sampling Results
Well M5MW20 (Aug07-Sept10)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	36	37	38	39	40	41	42	43
WELL ID			M5MW20	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20
Date Collected			8/14/2007	12/5/2007	3/11/2008	6/3/2008	8/25/2008	11/10/2008	2/26/2009	6/12/2009
ANALYTE / Lab ID			70307.12	70507.12	80077.12	80185.12	80306.12	80404.12	90077.12	90235.12
VOCs										
Acetone	6000	µg/L	ND	ND	2.15	ND	ND	ND	ND	ND
Chloroform	70	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	70	µg/L	3.47	7.17	ND	3.71	21.55	6.61	20.33	2.91
trans -1,2-Dichloroethene	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**2.26**	ND	0.95 J	**1.28 J**	**2.41**	**2.19**	**2.13**	**1.86 J**
Trichloroethene	1	µg/L	0.59 J	0.72 J	ND	0.55 J	**1.65 J**	0.70 J	**3.59**	0.70 J
TICs*	500	µg/L	ND	ND	4	ND	ND	ND	ND	ND
SVOCs										
TICs*	500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides/PCBs										
gamma-Chlordane	NLE	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Metals										
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Barium	6000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

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**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

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Table A-8
Groundwater Sampling Results
Well M5MW20 (Aug07-Sept10)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	44	45	46	47	48
WELL ID			M5MW20	M5MW20	LF1(1)	LF2(1)	LF3(1)
Date Collected			9/18/2009	12/28/2009	3/30/2010	6/29/2010	9/26/2010
ANALYTE / Lab ID			90390.12	90490.12	10113.04	10294.03	10411.10
VOCs							
Acetone	6000	µg/L	ND	ND	ND	ND	ND
Chloroform	70	µg/L	ND	ND	ND	ND	ND
1,1-Dichloroethene	1	µg/L	ND	ND	ND	0.36 J	ND
cis -1,2-Dichloroethene	70	µg/L	13.16	1.44	2.40	**111.95**	35.50
trans -1,2-Dichloroethene	100	µg/L	ND	ND	ND	0.29 J	ND
Tetrachloroethene	1	µg/L	**1.73**	0.96	**6.79**	**11.13**	**2.21**
Trichloroethene	1	µg/L	**1.70**	0.30 J	**2.47**	**51.25**	**6.57**
TICs*	500	µg/L	ND	ND	ND	ND	7
SVOCs							
TICs*	500	µg/L	NA	NA	NA	NA	NA
Pesticides/PCBs							
gamma-Chlordane	NLE	µg/L	NA	NA	NA	NA	NA
Metals							
Antimony	6	µg/L	NA	NA	**14.1**	5.07 ER	**6.68 ER**
Arsenic	3	µg/L	NA	NA	ND	0.780 ER	0.650 ER
Barium	6000	µg/L	NA	NA	13.7	28.7	13.7
Beryllium	1	µg/L	NA	NA	ND	0.108 ER	0.068 ER
Cadmium	4	µg/L	NA	NA	ND	0.719 ER	ND
Chromium	70	µg/L	NA	NA	3.22 ER	1.46 ER	3.19 ER
Copper	1300	µg/L	NA	NA	ND	3.83 ER	1.73 ER
Lead	5	µg/L	NA	NA	ND	ND	2.52 ER
Mercury	2	µg/L	NA	NA	0.120 ER	ND	ND
Nickel	100	µg/L	NA	NA	2.12 ER	8.27	4.09 ER
Selenium	40	µg/L	NA	NA	NR	NR	NR
Thallium	2	µg/L	NA	NA	ND	1.30 ER	ND

Notes:

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(1) Low flow sampling method used to collect sample

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Table A-8
Groundwater Sampling Results
Well M5MW23 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	1	2	3	4	5	6	7	8
WELL ID			M5MW23	M5MW23	M5MW23	M5MW23	M5MW23	M5MW23	M5MW23	M5MW23
Date Collected			4/13/1999	4/27/1999	9/13/1999	11/18/1999	3/3/2000	5/31/2000	8/21/2000	12/11/2000
ANALYTE / Lab ID			4419.08	4447.08	4447.03	4955.12	5220.04	5445.14	5644.14	5903.14
VOCs										
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	4.92
Carbon disulfide	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	1.4
Chloroform	6	µg/L	ND	ND	ND	**9.01**	1.18	ND	ND	ND
cis -1,2-Dichloroethene	10	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**84.93**	**44.43**	**29.53**	**59.02**	**11.53**	**23.13**	**4.22**	**14.27**
Trichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs										
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	1.37
TICs*	500	µg/L	5	5	4	26	6	24	104	82
Metals										
Antimony	20	µg/L	ND	ND	ND	ND	ND	ND	2.39	ND
Arsenic	8	µg/L	ND	ND	ND	ND	2.8	2.02	4	4.52
Barium	2000	µg/L	12.7	28	21.5	16.9	52	131	110	57.7
Beryllium	20	ug/1	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	1.17	2.89	0.786	ND	ND	ND	ND	ND
Chromium	100	µg/L	13.4	8.97	22.6	3.29	1.52	1.71	ND	ND
Copper	1000	µg/L	ND	ND	6.92	ND	ND	ND	ND	ND
Lead	10	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	ND	ND	ND	ND	ND	ND	0.2	ND
Nickel	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	50	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	ND	6.7	ND	ND	ND	ND	ND	ND

Notes:

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Table A-8
Groundwater Sampling Results
Well M5MW23 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	9	10	11	11	12	13	14	14
WELL ID			M5MW23	M5MW23	M5MW23	MW23 Duplicate	M5MW23	M5MW23	M5MW23	MW23 Duplicate
Date Collected			2/13/2001	3/19/2001	6/5/2001	6/5/2001	9/5/2001	10/4/2001	1/14/2002	1/14/2002
ANALYTE / Lab ID			788	1600714	16166.14	16166.03	16407.14	16491.14	20029.14	20029.03
VOCs										
Acetone	700	µg/L	6.79	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	6	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	10	µg/L	ND	ND	ND	ND	1.48	1.77	1.77	2.04
Tetrachloroethene	1	µg/L	ND	**6.39**	**33.84**	**33.54**	**3.41**	**3.85**	**8.26**	**9.93**
Trichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	**1.07**
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs										
Bis(2-ethylhexyl) phthalate	30	µg/L	NA	ND	ND	ND	ND	1.4	ND	ND
4-Methylphenol	NLE	µg/L	NA	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	NA	20	ND	ND	11	26	11	9
Metals										
Antimony	20	µg/L	NA	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	NA	ND	4.15	ND	6.46	5.77	6.81	5.25
Barium	2000	µg/L	NA	53.2	15.3	18	46.1	33.5	111	106
Beryllium	20	ug/1	NA	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	NA	1	ND	1.01	0.992	3.41	1.32	1.59
Chromium	100	µg/L	NA	13.6	1.12	1.92	17.5	15.6	16	14.6
Copper	1000	µg/L	NA	8	ND	16.2	8.27	3.4	3.29	2.79
Lead	10	µg/L	NA	ND	ND	1.3	2.41	2	4.02	2.42
Mercury	2	µg/L	NA	ND	ND	ND	0.3	0.1	0.1	ND
Nickel	100	µg/L	NA	ND	ND	ND	ND	ND	ND	ND
Selenium	50	µg/L	NA	ND	7.08	7.15	ND	ND	10.3	7.63
Thallium	10	µg/L	NA	ND	ND	ND	ND	ND	ND	ND

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-8
Groundwater Sampling Results
Well M5MW23 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	15	16	17	18	19	19	20	21
WELL ID			M5MW23	M5MW23	M5MW23	M5MW23	M5MW23	MW23 Duplicate	M5MW23	M5MW23
Date Collected			4/23/2002	8/21/2002	10/28/2002	1/22/2003	4/21/2003	4/21/2003	7/30/2003	10/8/2003
ANALYTE / Lab ID			20219.14	20594.14	20760.14	30032.14	30180.14	30180.03	30439.14	30638.13
VOCs										
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	14.45	ND	ND	ND	ND	2.75	ND
Carbon disulfide	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	6	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	10	µg/L	3.31	ND	ND	ND	1.37 J	1.07 J	4.6	ND
Tetrachloroethene	1	µg/L	**8.97**	**15.68**	ND	**79.46**	**17.35**	**20.0**	**20.45**	**1.6 J**
Trichloroethene	1	µg/L	ND	ND	ND	**3.97**	**3.15**	**2.89**	**2.51**	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	3
SVOCs										
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	ND	ND	ND	ND	ND	NA
4-Methylphenol	NLE	µg/L	ND	3.66	ND	ND	ND	ND	ND	NA
TICs*	500	µg/L	5	36	12	21	10	10	37	NA
Metals										
Antimony	20	µg/L	ND	ND	ND	ND	ND	ND	ND	NA
Arsenic	8	µg/L	**11.5**	**8.7**	**16.5**	**86.7**	**13.2**	**10.5**	**13.3**	NA
Barium	2000	µg/L	303	21.7	5.5	39.1	15.7	14	119	NA
Beryllium	20	ug/1	ND	ND	ND	0.57	ND	ND	0.0632 ER	NA
Cadmium	4	µg/L	1.35	ND	ND	**8.11**	1.93	1.58	1.45 ER	NA
Chromium	100	µg/L	53.6	11.9	2.4	72.5	12.9	12.5	3.55 ER	NA
Copper	1000	µg/L	4.89	ND	ND	ND	ND	ND	ND	NA
Lead	10	µg/L	4.22	ND	1.29	8.02	ND	ND	ND	NA
Mercury	2	µg/L	0.18	0.11	ND	ND	ND	ND	ND	NA
Nickel	100	µg/L	ND	ND	ND	ND	ND	ND	ND	NA
Selenium	50	µg/L	ND	ND	ND	ND	ND	ND	ND	NA
Thallium	10	µg/L	ND	ND	ND	ND	ND	ND	ND	NA

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-8
Groundwater Sampling Results
Well M5MW23 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	22	23	24	25	25	26	27	28
WELL ID			M5MW23	M5MW23	M5MW23	M5MW23	MW23 Duplicate	M5MW23	M5MW23	M5MW23
Date Collected			1/14/2004	5/13/2004	8/20/2004	12/15/2004	12/15/2004	3/14/2005	6/3/2005	9/16/2005
ANALYTE / Lab ID			40029.13	40359.13	40614.13	40845.06	40845.03	50152.09	50284.13	50473.12
VOCs										
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	6	µg/L	ND	ND	ND	ND	ND	0.57 J	ND	ND
cis -1,2-Dichloroethene	10	µg/L	0.69 J	0.59 J	ND	ND	ND	ND	ND	1.42 J
Tetrachloroethene	1	µg/L	**4.35**	**13.33**	ND	**2.15**	**1.76 J**	**13.75**	**23.07**	**7.24**
Trichloroethene	1	µg/L	**1.02 J**	**2.07**	ND	ND	ND	ND	ND	0.89 J
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs										
Bis(2-ethylhexyl) phthalate	30	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NLE	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
TICs*	500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Metals										
Antimony	20	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	8	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	20	ug/1	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Lead	10	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	50	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	10	µg/L	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-8
Groundwater Sampling Results
Well M5MW23 (Dec05-Jun07)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	29	30	31	32	33	34	35
WELL ID			M5MW23	M5MW23	M5MW23	M5MW23	M5MW23	M5MW23	M5MW23
Date Collected			12/21/2005	3/1/2006	5/5/2006	9/13/2006	11/17/2006	3/8/2007	6/6/2007
ANALYTE / Lab ID			50655.13	60094.13	60209.13	60395.13	60503.10	70087.09	70204.13
VOCs									
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	700	µg/L	ND	ND	ND	ND	ND	ND	ND
Chloroform	70	µg/L	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	70	µg/L	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**2.79**	**26.49**	**10.71**	**3.61**	**1.61 J**	**1.54 J**	**16**
Trichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	8	6	ND	ND	ND	ND	ND
SVOCs									
Bis(2-ethylhexyl) phthalate	3	µg/L	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NLE	µg/L	NA	NA	NA	NA	NA	NA	NA
TICs*	500	µg/L	NA	NA	NA	NA	NA	NA	NA
Metals									
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	NA	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA	NA
Thallium	2	µg/L	NA	NA	NA	NA	NA	NA	NA

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (November 7, 2005)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table A-8
Groundwater Sampling Results
Well M5MW23 (Aug07-Sept10)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	36	37	38	39	40	41	42	43
WELL ID			M5MW23	M5MW23	M5MW23	M5MW23	M5MW23	M5MW23	M5MW23	M5MW23
Date Collected			8/14/2007	12/5/2007	3/11/2008	6/3/2008	8/25/2008	11/10/2008	2/26/2009	6/12/2009
ANALYTE / Lab ID			70307.13	70507.13	80077.13	80185.13	80306.13	80404.13	90077.13	90235.13
VOCs										
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	70	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	70	µg/L	ND	ND	ND	ND	0.29 J	ND	ND	ND
Tetrachloroethene	1	µg/L	**3.91**	ND	**1.86 J**	**4.5**	**2.74**	**3.34**	**29.15**	**8.26**
Trichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs										
Bis(2-ethylhexyl) phthalate	3	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NLE	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
TICs*	500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Metals										
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Barium	6000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

NR - Not reported

Table A-8
Groundwater Sampling Results
Well M5MW23 (Aug07-Sept10)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	44	45	46	47	48
WELL ID			M5MW23	M5MW23	LF1(1)	LF2(1)	LF3(1)
Date Collected			9/18/2009	12/28/2009	3/30/2010	6/29/2010	9/26/2010
ANALYTE / Lab ID			90390.13	90490.13	10113.02	10294.02	10411.09
VOCs							
Acetone	6000	µg/L	ND	ND	ND	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND
Carbon disulfide	700	µg/L	ND	ND	ND	ND	ND
Chloroform	70	µg/L	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	70	µg/L	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**3.94**	**1.76**	**36.30**	**39.94**	**46.64**
Trichloroethene	1	µg/L	ND	ND	**1.77**	**2.15**	**2.62**
TICs*	500	µg/L	ND	ND	ND	ND	ND
SVOCs							
Bis(2-ethylhexyl) phthalate	3	µg/L	NA	NA	NA	NA	NA
4-Methylphenol	NLE	µg/L	NA	NA	NA	NA	NA
TICs*	500	µg/L	NA	NA	NA	NA	NA
Metals							
Antimony	6	µg/L	NA	NA	**7.41 ER**	ND	**11.5**
Arsenic	3	µg/L	NA	NA	2.46 ER	**3.76 ER**	2.85 ER
Barium	6000	µg/L	NA	NA	15.1	19.1	37.4
Beryllium	1	µg/L	NA	NA	ND	ND	ND
Cadmium	4	µg/L	NA	NA	ND	0.764 ER	0.766 ER
Chromium	70	µg/L	NA	NA	1.97 ER	ND	ND
Copper	1300	µg/L	NA	NA	ND	4.45 ER	1.47 ER
Lead	5	µg/L	NA	NA	ND	ND	3.10 ER
Mercury	2	µg/L	NA	NA	0.130 ER	ND	ND
Nickel	100	µg/L	NA	NA	0.514 ER	ND	ND
Selenium	40	µg/L	NA	NA	NR	NR	NR
Thallium	2	µg/L	NA	NA	ND	ND	ND

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (July 27, 2007)

(1) Low flow sampling method used to collect sample

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

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NA - Not analyzed

ND - Not detected

NLE - No limit established

NR - Not reported

Table A-8
Groundwater Sampling Results
Well M5MW25 (Apr99-Jul03)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	1	2	3	4	5	6	6	7	8
WELL ID			M5MW25	M5MW25	M5MW25	M5MW25	M5MW25	M5MW25	MW25 Duplicate	M5MW25	M5MW25
Date Collected			4/14/1999	4/28/1999	9/14/1999	11/18/1999	3/3/2000	5/31/2000	5/31/2000	8/21/2000	12/11/2000
ANALYTE / Lab ID			4419.06	4447.04	4788.08	4955.13	5220.08	5445.15	5445.03	5644.15	5903.15
VOCs											
Chloroform	6	µg/L	1.47	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs											
Diethyl phthalate	5000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	7	ND	15	62	5	4	13	46	71
Pesticides/PCBs											
alpha-BHC	0.02	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
gamma-BHC	0.2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals											
Antimony	20	µg/L	ND	ND	2.66	ND	ND	ND	ND	3.92	ND
Arsenic	8	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	47.5	37.2	50.1	62.6	57.4	42.6	28.1	59.5	46.5
Beryllium	20	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	1.05	3.63	0.895	1.54	0.934	ND	ND	0.619	ND
Chromium	100	µg/L	56.3	40.5	2.32	53.4	4.77	2.72	4.64	ND	ND
Copper	1000	µg/L	ND	14.3	ND	3.45	ND	ND	ND	35.4	ND
Lead	10	µg/L	4.75	6.35	ND	ND	ND	ND	ND	1.91	ND
Mercury	2	µg/L	ND	0.16	ND	0.1	ND	ND	ND	0.9	ND
Nickel	100	µg/L	8.13	7.43	ND	14.8	10.7	4.92	7.93	10.7	2.38
Selenium	50	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	ND	3.58	ND	ND	ND	ND	ND	ND	ND
Zinc	5000	µg/L	78.4	94.1	22.1	117	205	172	148	283	140

Notes:

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**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

Table A-8
Groundwater Sampling Results
Well M5MW25 (Apr99-Jul03)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	9	9	10	11	12	12	13	14	15
WELL ID			M5MW25	MW25 Duplicate	M5MW25	M5MW25	M5MW25	MW25 Duplicate	M5MW25	M5MW25	M5MW25
Date Collected			2/13/2001	2/13/2001	3/19/2001	6/5/2001	9/5/2001	9/5/2001	10/4/2001	1/14/2002	4/23/2002
ANALYTE / Lab ID			789	777	16007.15	16166.15	16407.15	16407.03	16491.15	20029.15	20219.15
VOCs											
Chloroform	6	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs											
Diethyl phthalate	5000	µg/L	NA	NA	ND	ND	ND	1.69 B	ND	ND	ND
TICs*	500	µg/L	NA	NA	5	ND	5	11	4	12	5
Pesticides/PCBs											
alpha-BHC	0.02	µg/L	NA	NA	ND	ND	ND	ND	0.011	ND	ND
gamma-BHC	0.2	µg/L	ND	ND	ND	ND	ND	ND	0.015	ND	ND
Metals											
Antimony	20	µg/L	NA	NA	ND	ND	ND	ND	ND	ND	4.97
Arsenic	8	µg/L	NA	NA	3	3.55	ND	ND	4.89	ND	2.9
Barium	2000	µg/L	NA	NA	50.7	99.3	141	146	114	93.5	77.5
Beryllium	20	µg/L	NA	NA	ND	ND	ND	ND	1.08	ND	ND
Cadmium	4	µg/L	NA	NA	1.2	ND	ND	ND	**5.98**	0.942	ND
Chromium	100	µg/L	NA	NA	6.4	2.5	8.32	2.93	99	6.34	1.88
Copper	1000	µg/L	NA	NA	5	ND	12.1	14.2	6.99	99.1	4.87
Lead	10	µg/L	NA	NA	ND	ND	1.42	ND	6.17	**11**	1.59
Mercury	2	µg/L	NA	NA	ND	ND	ND	ND	ND	ND	0.15
Nickel	100	µg/L	NA	NA	7	17	21.8	22	21.4	21.3	10.7
Selenium	50	µg/L	NA	NA	ND	7.38	ND	ND	ND	10.6	5.15
Thallium	10	µg/L	NA	NA	ND	ND	5.55	ND	4.98	ND	ND
Zinc	5000	µg/L	NA	NA	6	181	116	120	142	170	245

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

Table A-8
Groundwater Sampling Results
Well M5MW25 (Apr99-Jul03)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	15	16	17	18	19	20	20
WELL ID			MW25 Duplicate	M5MW25	M5MW25	M5MW25	M5MW25	M5MW25	MW25 Duplicate
Date Collected			4/23/2002	8/21/2002	10/28/2002	1/22/2003	4/21/2003	7/30/2003	7/30/2003
ANALYTE / Lab ID			20219.03	20594.15	20760.15	30032.15	30180.15	30439.15	30439.03
VOCs									
Chloroform	6	µg/L	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND
SVOCs									
Diethyl phthalate	5000	µg/L	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	13	26	10	19	9	30	9
Pesticides/PCBs									
alpha-BHC	0.02	µg/L	ND	ND	ND	ND	ND	ND	ND
gamma-BHC	0.2	µg/L	ND	ND	ND	ND	ND	ND	ND
Metals									
Antimony	20	µg/L	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	3.74	2.42	7.5	2.72 ER	ND	ND	ND
Barium	2000	µg/L	75.2	78.4	57.9	50.5	47.5	147	146
Beryllium	20	µg/L	ND	ND	ND	ND	ND	0.373 ER	0.377 ER
Cadmium	4	µg/L	ND	ND	1.25	1.53	0.84 ER	1.02 ER	0.966 ER
Chromium	100	µg/L	2.09	2.82	5.8	7.09 ER	9.55 ER	1.99 ER	2.9 ER
Copper	1000	µg/L	3.18	ND	ND	30.8	25.9	4.77 ER	6.4
Lead	10	µg/L	ND	ND	ND	ND	ND	ND	1.02 ER
Mercury	2	µg/L	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	11.4	14.5	13	13.1	9.36	17.3	17.2
Selenium	50	µg/L	6.46	5.78	3.38	ND	ND	6.21 ER	8.92 ER
Thallium	10	µg/L	ND	ND	ND	ND	ND	ND	ND
Zinc	5000	µg/L	273	86.9	522	380 ER	305 ER	180	210 ER

Notes:

* TICs - Tentatively Identified Compounds, cannot exceed 500 µg/L for VOCs and SVOCs. No individual compound can exceed 100 µg/L.

**NJDEP Ground Water Quality Criteria as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Criteria are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

TABLE OF CONTENTS

Section			*Page*
EXECUTIVE SUMMARY			**ES-1**
1.0	**INTRODUCTION**		**1-1**
	1.1	PURPOSE AND OBJECTIVES	1-2
	1.2	REPORT ORGANIZATION	1-2
2.0	**FORT MONMOUTH BACKGROUND AND GENERAL ENVIRONMENTAL SETTING**		**2-1**
	2.1	LOCATION AND DESCRIPTION	2-1
		2.1.1 MAIN POST	2-1
		2.1.2 CHARLES WOOD AREA	2-1
	2.2	HISTORICAL LAND USE	2-1
		2.2.1 MAIN POST	2-2
		2.2.2 CHARLES WOOD AREA	2-2
	2.3	FACILITY HISTORY	2-2
	2.4	ENVIRONMENTAL SETTING	2-3
		2.4.1 CLIMATE	2-3
		2.4.2 TOPOGRAPHY	2-3
		2.4.3 SURFACE WATER DRAINAGE AND WETLANDS	2-3
		2.4.4 REGIONAL AND LOCAL GEOLOGY	2-5
		2.4.5 SOILS	2-6
		2.4.6 HYDROGEOLOGY	2-7
		2.4.7 NATURAL BACKGROUND CONSTITUENTS	2-7
		2.4.8 ECOLOGY	2-7
		2.4.9 SURROUNDING LAND USE	2-9
		2.4.9.1 Adjacent Properties	2-9
		2.4.9.2 Standard Environmental Record Sources	2-12
	2.5	SITE DESCRIPTION AND ENVIRONMENTAL SETTING	2-14
		2.5.1 MAIN POST	2-15
		2.5.1.1 Landfill 2 (FTMM-2)	2-15
		2.5.1.2 Landfill 3 (FTMM-3)	2-17
		2.5.1.3 Landfill 4 (FTMM-4)	2-18
		2.5.1.4 Landfill 5 (FTMM-5)	2-18
		2.5.1.5 Landfill 8 (FTMM-8)	2-19
		2.5.1.6 Landfill 12 (FTMM-12)	2-21
		2.5.1.7 Landfill 14 (FTMM-14)	2-22
		2.5.1.8 Water Tank (FTMM-15)	2-23
		2.5.1.9 Pesticide Storage, Building 498 (FTMM-16)	2-24
		2.5.1.10 Former Training Area/Landfill (FTMM-18)	2-24
		2.5.1.11 Pre-1941 Former Sanitary Sewage Treatment Plant (FTMM-20)	2-26
		2.5.1.12 Building 1122, Unknown Discharge (FTMM-59)	2-26
		2.5.1.13 Building 283, Leaking UST, Gasoline (FTMM-61)	2-28
		2.5.1.14 Building 1150 (Parcel 39)	2-29
		2.5.1.15 Buildings 283, 288, 291, 292, 293, 295 (ECP Parcel 49)	2-30
		2.5.1.16 Building 1075 (ECP Parcel 61)	2-32
		2.5.1.17 Building 900 (ECP Parcel 69)	2-34
		2.5.2 CHARLES WOOD AREA	2-35
		2.5.2.1 Landfill, Site CW-3A (FTMM-25)	2-35
		2.5.2.2 Former Pesticide Storage Area, Site CW-6 (FTMM-28)	2-37
		2.5.2.3 Building 2700 (ECP Parcel 15)	2-38
		2.5.2.4 Buildings 2507 and 2704 (ECP Parcel 27)	2-40
		2.5.2.5 Building 2525 (Parcel 28)	2-41

3.0 DATA EVALUATION 3-1

3.1 REVIEW OF AVAILABLE SITE DATA 3-1
3.2 BEE SITE INVESTIGATION METHODOLOGIES 3-2
3.2.1 SURFACE SOIL SAMPLING 3-2
3.2.2 SURFACE WATER SAMPLING 3-3
3.2.3 SEDIMENT SAMPLING 3-4
3.2.4 DECONTAMINATION PROCEDURES 3-4
3.2.5 INVESTIGATION-DERIVED WASTE 3-5
3.2.6 QUALITY CONTROL 3-5
3.2.6.1 Completeness 3-5
3.2.6.2 Representativeness and Documentation Quality Review 3-6
3.2.6.3 Review of QC Samples 3-6
3.2.6.4 Work Plan Variances 3-7
3.2.6.5 Review of Tentatively Identified Compounds 3-7
3.2.6.6 Method Detection Limits 3-7
3.3 IDENTIFICATION OF STANDARDS AND BENCHMARKS 3-8
3.3.1 IDENTIFICATION OF STANDARDS AND BENCHMARKS FOR SEDIMENT 3-8
3.3.2 IDENTIFICATION OF STANDARDS AND BENCHMARKS FOR SURFACE WATER 3-9
3.3.3 IDENTIFICATION OF STANDARDS AND BENCHMARKS FOR SOIL 3-9
3.4 IDENTIFICATION OF COPECS 3-10
3.4.1 CONSTITUENTS IN BACKGROUND MEDIA 3-12
3.4.1.1 Main Post Background 3-13
3.4.1.1.1 Main Post Surface Water Background 3-13
3.4.1.1.2 Main Post Sediment Background 3-13
3.4.1.2 Charles Wood Area Background 3-14
3.4.1.2.1 Charles Wood Area Surface Water Background 3-14
3.4.1.2.2 Charles Wood Area Sediment Background 3-15
3.4.1.3 Charles Wood Area Downgradient Surface Water 3-15
3.4.1.4 Charles Wood Area Downgradient Sediment 3-16
3.4.2 MAIN POST 3-17
3.4.2.1 Landfill 2 (FTMM-2) 3-17
3.4.2.1.1 COPECs for Soil at Landfill 2 (FTMM-2) 3-17
3.4.2.1.2 COPECs for Groundwater at Landfill 2 3-17
3.4.2.1.3 COPECs for Surface Water at Landfill 2 (FTMM-2) 3-18
3.4.2.1.4 COPECs for Sediment at Landfill 2 (FTMM-2) 3-19
3.4.2.1.5 Summary of COPECs for Landfill 2 (FTMM-2) 3-19
3.4.2.2 Landfill 3 (FTMM-3) 3-20
3.4.2.2.1 COPECs for Soil at Landfill 3 (FTMM-3) 3-20
3.4.2.2.2 COPECs for Groundwater at Landfill 3 (FTMM-3) 3-21
3.4.2.2.3 COPECs for Surface Water at Landfill 3 (FTMM-3) 3-21
3.4.2.2.4 COPECs for Sediment at Landfill 3 (FTMM-3) 3-22
3.4.2.2.5 Summary of COPECs for Landfill 3 (FTMM-3) 3-22
3.4.2.3 Landfill 4 (FTMM-4) 3-23
3.4.2.3.1 COPECs for Soil at Landfill 4 (FTMM-4) 3-23
3.4.2.3.2 COPECs for Groundwater at Landfill 4 (FTMM-4) 3-24
3.4.2.3.3 COPECs for Surface Water at Landfill 4 (FTMM-4) 3-24
3.4.2.3.4 COPECs for Sediment at Landfill 4 (FTMM-4) 3-25
3.4.2.3.5 Summary of COPECs for Landfill 4 (FTMM-4) 3-25
3.4.2.4 Landfill 5 (FTMM-5) 3-26
3.4.2.4.1 COPECs for Soil at Landfill 5 (FTMM-5) 3-26
3.4.2.4.2 COPECs for Groundwater at Landfill 5 (FTMM-5) 3-27
3.4.2.4.3 COPECs for Surface Water at Landfill 5 (FTMM-5) 3-27
3.4.2.4.4 COPECs for Sediment at Landfill 5 (FTMM-5) 3-28
3.4.2.4.5 Summary of COPECs for Landfill 5 (FTMM-5) 3-28
3.4.2.5 Landfill 8 (FTMM-8) 3-29

3.4.2.5.1 COPECs for Soil at Landfill 8 (FTMM-8) 3-30
3.4.2.5.2 COPECs for Groundwater at Landfill 8 (FTMM-8) 3-30
3.4.2.5.3 COPECs for Surface Water at Landfill 8 (FTMM-8) 3-31
3.4.2.5.4 COPECs for Sediment at Landfill 8 (FTMM-8) 3-31
3.4.2.5.5 Summary of COPECs for Landfill 8 (FTMM-8) 3-32
3.4.2.6 Landfill 12 (FTMM-12) 3-33
3.4.2.6.1 COPECs for Soil at Landfill 12 (FTMM-12) 3-33
3.4.2.6.2 COPECs for Groundwater at Landfill 12 (FTMM-12) 3-34
3.4.2.6.3 COPECs for Surface Water at Landfill 12 (FTMM-12) 3-34
3.4.2.6.4 COPECs for Sediment at Landfill 12 (FTMM-12) 3-34
3.4.2.6.5 Summary of COPECs for Landfill 12 (FTMM-12) 3-34
3.4.2.7 Landfill 14 (FTMM-14) 3-35
3.4.2.7.1 COPECs for Soil at Landfill 14 (FTMM-14) 3-35
3.4.2.7.2 COPECs for Groundwater at Landfill 14 (FTMM-14) 3-36
3.4.2.7.3 COPECs for Surface Water at Landfill 14 (FTMM-14) 3-36
3.4.2.7.4 COPECs for Sediment at Landfill 14 (FTMM-14) 3-37
3.4.2.7.5 Summary of COPECs for Landfill 14 (FTMM-14) 3-37
3.4.2.8 Water Tank (FTMM-15) 3-38
3.4.2.8.1 COPECs for Surface Water at Site FTMM-15 3-38
3.4.2.8.2 COPECs for Sediment at Site FTMM-15 3-39
3.4.2.8.3 Summary of COPECs for Site FTMM-15 3-39
3.4.2.9 Pesticide Storage, Building 498 (FTMM-16) 3-40
3.4.2.9.1 COPECs for Surface Water at Site FTMM-16 3-40
3.4.2.9.2 COPECs for Sediment at Site FTMM-16 3-40
3.4.2.9.3 Summary of COPECs for Site M-16 3-41
3.4.2.10 Former Training Area/Landfill (FTMM-18) 3-41
3.4.2.10.1 COPECs for Soil at Site FTMM-18 3-41
3.4.2.10.2 COPECs for Groundwater at Site FTMM-18 3-42
3.4.2.10.3 COPECs for Surface Water at Site FTMM-18 3-42
3.4.2.10.4 COPECs for Sediment at Site FTMM-18 3-43
3.4.2.10.5 Summary of COPECs for Site FTMM-18 3-43
3.4.2.11 Pre-1941 Former Sanitary Sewage Treatment Plant, FTMM-20 3-44
3.4.2.11.1 COPECs for Surface Water at the Pre-1941 Former Sanitary STP FTMM-20 3-44
3.4.2.11.2 COPECs for Sediment at the Pre-1941 Former Sanitary STP FTMM-20 3-44
3.4.2.11.3 Summary of COPECs for Site FTMM-20 3-45
3.4.2.12 Building 1122, FTMM-59 (ECP Parcel 43) 3-46
3.4.2.12.1 COPECs for Groundwater at Building 1122, FTMM-59 (ECP Parcel 43) 3-46
3.4.2.12.2 COPECs for Surface Water at Building 1122, FTMM-59 (ECP Parcel 43) 3-46
3.4.2.12.3 COPECs for Sediment at Building 1122, FTMM-59 (ECP Parcel 43) 3-47
3.4.2.12.4 Summary of COPECs for Building 1122, FTMM-59 and Parcel 43 3-47
3.4.2.13 Building 1150 (Parcel 39) 3-48
3.4.2.13.1 COPECs for Soil at Building 1150 (ECP Parcel 39) 3-48
3.4.2.13.2 COPECs for Surface Water at Building 1150 (ECP Parcel 39) 3-49
3.4.2.13.3 COPECs for Sediment at Building 1150 (ECP Parcel 39). 3-49
3.4.2.13.4 Summary of COPECs for Building 1150 3-50
3.4.2.14 Buildings 283, 288, 291, 293, 295 (FTMM-61 and ECP Parcel 49) 3-51
3.4.2.14.1 COPECs for Surface Soil at FTMM-61 and Parcel 49 3-51
3.4.2.14.2 COPECs for Groundwater at FTMM-61 and Parcel 49 3-51
3.4.2.14.3 COPECs for Surface Water at FTMM-61 and Parcel 49 ... 3-52

3.4.2.14.4 COPECs for Sediment at FTMM-61 and Parcel 49 3-52
3.4.2.14.5 Summary of COPECs for FTMM-61 and Parcel 49 3-53
3.4.2.15 Building 1075 (ECP Parcel 61) 3-53
3.4.2.15.1 COPECs for Surface Soil at Parcel 61 3-54
3.4.2.15.2 COPECs for Surface Water at Parcel 61 3-54
3.4.2.15.3 COPECs for Sediment at Parcel 61 3-54
3.4.2.15.4 Summary of COPECs for Parcel 61 3-55
3.4.2.16 Building 900 (ECP Parcel 69) 3-55
3.4.2.16.1 COPECs for Soil at Parcel 69 3-56
3.4.2.16.2 COPECs for Groundwater at Parcel 69 3-56
3.4.2.16.3 COPECs for Surface Water at Parcel 69 3-56
3.4.2.16.4 COPECs for Sediment at Parcel 69 3-56
3.4.2.16.5 Summary of COPECs for Parcel 69 3-57
3.4.3 CHARLES WOOD AREA 3-58
3.4.3.1 Landfill, Site CW-3A, FTMM-25 3-58
3.4.3.1.1 COPECs for Soil at Landfill CW-3A 3-58
3.4.3.1.2 COPECs for Groundwater at Landfill CW-3A (FTMM-25) . 3-59
3.4.3.1.3 COPECs for Surface Water at Landfill CW-3A (FTMM-25) 3-59
3.4.3.1.4 COPECs for Sediment at Landfill CW-3A (FTMM-25) 3-60
3.4.3.1.5 Summary of COPECs for Landfill CW-3A (FTMM-25) 3-60
3.4.3.2 Former Pesticide Storage Area, Site CW-6 (FTMM-28) 3-61
3.4.3.2.1 COPECs for Soil at Former Pesticide Storage Area, Site CW-6 (FTMM-28) 3-61
3.4.3.2.2 COPECs for Groundwater at Former Pesticide Storage Area, Site CW-6 (FTMM-28) 3-62
3.4.3.2.3 COPECs for Surface Water at Former Pesticide Storage Area, Site CW-6 (FTMM-28) 3-62
3.4.3.2.4 COPECs for Sediment at Former Pesticide Storage Area, Site CW-6 (FTMM-28) 3-63
3.4.3.2.5 Summary of COPECs for Site CW-6 (FTMM-28) 3-63
3.4.3.3 Building 2700 (ECP Parcel 15) 3-64
3.4.3.3.1 COPECs for Groundwater at Building 2700 (Parcel 15) ... 3-64
3.4.3.3.2 COPECs for Surface Water at Building 2700 (ECP Parcel 15) 3-65
3.4.3.3.3 COPECs for Sediment at Building 2700 (ECP Parcel 15). 3-65
3.4.3.3.4 Summary of COPECs for Parcel 15 3-65
3.4.3.4 Buildings 2507 and 2704 (ECP Parcel 27) 3-66
3.4.3.4.1 COPECs for Surface Soil at Buildings 2507 and 2704 (ECP Parcel 27) 3-66
3.4.3.4.2 COPECs for Surface Water at Buildings 2507 and 2704 (ECP Parcel 27) 3-66
3.4.3.4.3 COPECs for Sediment at Buildings 2507 and 2704 (ECP Parcel 27) 3-67
3.4.3.4.4 Summary of COPECs for Parcel 27 3-67
3.4.3.5 Building 2525 (ECP Parcel 28) 3-68
3.4.3.5.1 COPECs for Surface Soil at Building 2525 (ECP Parcel 28) 3-68
3.4.3.5.2 COPECs for Groundwater at Building 2525 (ECP Parcel 28) 3-68
3.4.3.5.3 COPECs for Surface Water at Building 2525 (ECP Parcel 28) 3-68
3.4.3.5.4 COPECs for Sediment at Building 2525 (ECP Parcel 28). 3-69
3.4.3.5.5 Summary of COPECs for Parcel 28 3-69

4.0 ECOLOGICAL EVALUATION 4-1

4.1 WILDLIFE EXPOSURE MODELS 4-1

4.2 MAIN POST 4-4
4.2.1 LANDFILL 2 (FTMM-2) 4-4
4.2.2 LANDFILL 3 (FTMM-3) 4-5
4.2.3 LANDFILL 4 (FTMM-4) 4-6
4.2.4 LANDFILL 5 (FTMM-5) 4-7
4.2.5 LANDFILL 8 (FTMM-8) 4-8
4.2.6 LANDFILL 12 (FTMM-12) 4-10
4.2.7 LANDFILL 14 (FTMM-14) 4-11
4.2.8 WATER TANK (FTMM-15) 4-13
4.2.9 PESTICIDE STORAGE, BUILDING 498 (FTMM-16) 4-13
4.2.10 FORMER TRAINING AREA/LANDFILL (FTMM-18) 4-14
4.2.11 PRE-1941 FORMER SANITARY SEWAGE TREATMENT PLANT (FTMM-20) 4-16
4.2.12 BUILDING 1122, FTMM-59 (ECP PARCEL 43) 4-16
4.2.13 BUILDING 1150 (ECP PARCEL 39) 4-17
4.2.14 BUILDINGS 283, 288, 291, 293, 295 (FTMM-61 AND ECP PARCEL 49) 4-18
4.2.15 BUILDING 1075 (ECP PARCEL 61) 4-20
4.2.16 BUILDING 900 (ECP PARCEL 69) 4-21
4.3 CHARLES WOOD AREA 4-22
4.3.1 LANDFILL, SITE CW-3A (FTMM-25) 4-22
4.3.2 FORMER PESTICIDE STORAGE AREA, SITE CW-6 (FTMM-28) 4-23
4.3.3 BUILDING 2700 (ECP PARCEL 15) 4-25
4.3.4 BUILDINGS 2507 AND 2704 (ECP PARCEL 27) 4-26
4.3.5 BUILDING 2525 (ECP PARCEL 28) 4-26
5.0 SUMMARY AND CONCLUSIONS 5-1
6.0 REFERENCES 6-1

LIST OF FIGURES

Figure

1-1 Site Location Map
1-2 Main Post Map
1-3 Charles Wood Area Map
2-1 High Tide Salinity Results
2-2 Adjacent Land Use Map
3-1 BEE Sampling Locations at Main Post
3-2 BEE Sampling Locations at Charles Wood Area
4-1 Main Post Forested Wetlands
4-2 Main Post Emergent Wetlands
4-3 Main Post Potential bald eagle Foraging Habitat
4-4 Charles Wood Area Forested Wetlands
4-5 Charles Wood Area Emergent Wetlands
5-1 Chromium Results in Sediment – Main Post
5-2 Copper Results in Sediment – Main Post
5-3 Lead Results in Sediment – Main Post
5-4 Mercury Results in Sediment – Main Post
5-5 Silver Results in Sediment – Main Post
5-6 Zinc Results in Sediment – Main Post
5-7 Chromium Results in Sediment – Charles Wood Area
5-8 Copper Results in Sediment – Charles Wood Area
5-9 Silver Results in Sediment – Charles Wood Area
5-10 Zinc Results in Sediment – Charles Wood Area

LIST OF TABLES

Table	
ES-1	Fort Monmouth Main Post and Charles Wood Area Baseline Ecological Evaluation Summary
2-1	Summary of High Tide Salinity Data
2-2	Ambient Levels of Selected Metals and Other Analytes in Soil
2-3	Properties Observed During Main Post Property Survey
2-4	Properties Observed During Charles Wood Area 2007 ECP Property Survey
2-5	Main Post Standard Environmental Record Results
2-6	Charles Wood Area Standard Environmental Record Results
2-7	Charles Wood Area, ECP Parcel and IRP Site Summary
2-8	Main Post, ECP Parcel and IRP Site Summary
2-9	Fort Monmouth Main Post/Charles Wood Area BEE Sites
3-1	Sample and Analytical Summary Main Post
3-2	Sample and Analytical Summary Charles Wood Area
3-3	Summary of Analytes Detected in Main Post Background Surface Water Samples
3-4	Summary of Analytes Detected in Main Post Background Sediment Samples
3-5	Summary of Analytes Detected in Charles Wood Area Background Surface Water Samples
3-6	Summary of Analytes Detected in Charles Wood Area Background Sediment Samples
3-7	Summary of Analytes Detected in Charles Wood Area Downgradient Surface Water Samples
3-8	Summary of Analytes Detected in Charles Wood Area Downgradient Sediment Samples
4-1	Foodchain Model Target Species Life History Parameters
4-2	Soil-to-Invertebrate Bioaccumulation Factors
4-3	Sediment-to-Aquatic Plant Bioaccumulation Factors
4-4	Sediment-to-Invertebrate/Fish Bioaccumulation Factors
4-5	Avian Toxicity Reference Values
4-6	Summary of Surface Water COPECs and Background Concentrations at Landfill 2 (FTMM-2)
4-7	Summary of Sediment COPECs and Background Concentrations at Landfill 2 (FTMM-2)
4-8	Summary of Wildlife Hazard Quotients for Sediment COPECs at Landfill 2 (FTMM-2)
4-9	Summary of Surface Water COPECs and Background Concentrations at Landfill 3 (FTMM-3)
4-10	Summary of Sediment COPECs and Background Concentrations at Landfill 3 (FTMM-3)
4-11	Summary of Wildlife Hazard Quotients for Sediment COPECs at Landfill 3 (FTMM-3)
4-12	Summary of Surface Water COPECs and Background Concentrations at Landfill 4 (FTMM-4)
4-13	Summary of Sediment COPECs and Background Concentrations at Landfill 4 (FTMM-4)
4-14	Summary of Wildlife Hazard Quotients for Sediment COPECs at Landfill 4 (FTMM-4)
4-15	Summary of Surface Water COPECs and Background Concentrations at Landfill 5 (FTMM-5)
4-16	Summary of Sediment COPECs and Background Concentrations at Landfill 5 (FTMM-5)

4-17 Summary of Wildlife Hazard Quotients for Sediment COPECs at Landfill 5 (FTMM-5)

4-18 Summary of Surface Water COPECs and Background Concentrations at Landfill 8 (FTMM-8)

4-19 Summary of Sediment COPECs and Background Concentrations at Landfill 8 (FTMM-8)

4-20 Summary of Wildlife Hazard Quotients for Sediment COPECs at Landfill 8 (FTMM-8)

4-21 Summary of Surface Water COPECs and Background Concentrations at Landfill 12 (FTMM-12)

4-22 Summary of Sediment COPECs and Background Concentrations at Landfill 12 (FTMM-12)

4-23 Summary of Wildlife Hazard Quotients for Sediment COPECs at Landfills 12 and 14 (FTMM-12 and FTMM-14)

4-24 Summary of Surface Water COPECs and Background Concentrations at Landfill 14 (FTMM-14)

4-25 Summary of Sediment COPECs and Background Concentrations at Landfill 14 (FTMM-14)

4-26 Summary of Sediment COPECs and Background Concentrations at Site FTMM-15

4-27 Summary of Surface Water COPECs and Background Concentrations at Site FTMM-16

4-28 Summary of Sediment COPECs and Background Concentrations at Site FTMM-16

4-29 Summary of Wildlife Hazard Quotients for Sediment COPECs at Site FTMM-16

4-30 Summary of Surface Water COPECs and Background Concentrations at Site FTMM-18

4-31 Summary of Sediment COPECs and Background Concentrations at Site FTMM-18

4-32 Summary of Wildlife Hazard Quotients for Sediment COPECs at Site FTMM-18

4-33 Summary of Surface Water COPECs and Background Concentrations at Site FTMM-20

4-34 Summary of Sediment COPECs and Background Concentrations at Site FTMM-20

4-35 Summary of Surface Water COPECs and Background Concentrations at Building 1122, Site FTMM-59, Parcel 43

4-36 Summary of Sediment COPECs and Background Concentrations at Building 1122, Site FTMM-59, Parcel 43

4-37 Summary of Wildlife Hazard Quotients for Surface Water and Sediment COPECs at Building 1122, Site FTMM-59, Parcel 43

4-38 Summary of Surface Water COPECs and Background Concentrations at Building 1150, Parcel 39

4-39 Summary of Sediment COPECs and Background Concentrations at Building 1150, Parcel 39

4-40 Summary of Wildlife Hazard Quotients for Sediment COPECs at Building 1150, Parcel 39

4-41 Summary of Surface Water COPECs and Background Concentrations at Buildings 283 (FTMM-61), 288, 291, 293, 295, Parcel 49

4-42 Summary of Sediment COPECs and Background Concentrations at Buildings 283 (FTMM-61), 288, 291, 293, 295, Parcel 49

4-43 Summary of Wildlife Hazard Quotients for Sediment COPECs at Buildings 283 (FTMM-61), 288, 291, 293, 295, Parcel

4-44 Summary of Surface Water COPECs and Background Concentrations at Building 1075, Parcel 61

4-45 Summary of Sediment COPECs and Background Concentrations at Building 1075, Parcel 61

4-46 Summary of Wildlife Hazard Quotients for Sediment COPECs at Building 1075, Parcel 61

4-47 Summary of Surface Water COPECs and Background Concentrations at Building 900, Parcel 69

4-48 Summary of Sediment COPECs and Background Concentrations at Building 900, Parcel 69

4-49 Summary of Wildlife Hazard Quotients for Sediment COPECs at Building 900, Parcel 69

4-50 Summary of Surface Water COPECs and Background Concentrations at Landfill CW-3A (FTMM-25)

4-51 Summary of Sediment COPECs and Background Concentrations at Landfill CW-3A (FTMM-25)

4-52 Summary of Wildlife Hazard Quotients for Surface Water and Sediment COPECs at Landfill CW-3A (FTMM-25)

4-53 Summary of Surface Water COPECs and Background Concentrations at Site CW-6 (FTMM-28)

4-54 Summary of Sediment COPECs and Background Concentrations at Site CW-6 (FTMM-28)

4-55 Summary of Wildlife Hazard Quotients for Soils and Wetland Sediment COPECs at Site CW-6 (FTMM-28)

4-56 Summary of Surface Water COPECs and Background Concentrations at Building 2700, Parcel 15

4-57 Summary of Sediment COPECs and Background Concentrations at Building 2700, Parcel 15

4-58 Summary of Surface Water COPECs and Background Concentrations at Buildings 2507 and 2704, Parcel 27

4-59 Summary of Sediment COPECs and Background Concentrations at Buildings 2507 and 2704, Parcel 27

4-60 Summary of Wildlife Hazard Quotients for Surface Water and Sediment COPECs at Buildings 2507 and 2704, Parcel 27

4-61 Summary of Surface Water COPECs and Background Concentrations at Building 2525, Parcel 28

4-62 Summary of Sediment COPECs and Background Concentrations at Building 2525, Parcel 28

5-1 Summary of Sites with COPECs Above Background in Sediment or Surface Water

5-2 Summary of Screening Level Hazard Quotients for COPECs Above Background in Sediment or Surface Water

5-3 Summary of Average Concentration-Based Screening Level Hazard Quotients for COPECs Above Background in Sediment or Surface Water

LIST OF APPENDICES

Appendix	
A	Remedial Investigation Data Evaluated in the BEE
B	Site Investigation Data Evaluated in the BEE
C	Groundwater Monitoring Data Evaluated in the BEE
D	BEE Investigation Data Evaluated in the BEE
E	New Jersey Department of Environmental Protection Ecological Screening Criteria
F	Laboratory Data Packages *(Included on DVD)*
G	Field Documentation, Field Measured Parameters, NOAA Tide Tables, and Sediment Sample Descriptions
H	Fort Monmouth Maximum Background Concentrations from the 1995 SI Report
I	NJDEP Correspondence
J	Fort Monmouth Surface Water Salinity Data for Main Post (2004-2009)
K	Fort Monmouth Utility Maps
L	Sediment Quality Investigation Data

LIST OF ACRONYMS AND ABBREVIATIONS

°F	degrees Fahrenheit
µg/L	micrograms per liter
µmhos	micromhos
ACM	Asbestos-Containing Materials
ADD	Average Daily Dose
AST	Above-ground Storage Tank
AUF	Area Use Factor
BAF	Bioaccumulation Factor
BCF	Bioconcentration Factor
BEE	Baseline Ecological Evaluation
bgs	below ground surface
BRAC	Base Realignment and Closure Act of 1990
CEA	Classification Exception Area
CECOM	U.S. Army Communications and Electronics Command
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
COC	Chain-of-Custody
COPEC	Contaminant of Potential Ecological Concern
CORRACTS	Corrective Action Activity Site
CWA	Charles Wood Area
DDD	Dichlorodiphenyldichloroethane
DDE	Dichlorodiphenyldichloroethylene
DDT	Dichlorodiphenyltrichloroethane
DER	Declaration of Environmental Restriction
DPW	Directorate of Public Works
DQO	Data Quality Objective
Eco-SSL	Ecological Soil Screening Level
ECP	Environmental Condition of Property
EDR	Environmental Data Resources, Inc.
EMI	Electromagnetic Induction
ER-L	Effects Range-Low
ER-M	Effects Range-Medium
ESC	Ecological Screening Criteria
FSPM	Field Sampling Procedures Manual
ft msl	feet above mean sea level
FTMM	Fort Monmouth

gamma-BHC	gamma-Hexachlorocyclohexane
GC/MS	Gas Chromatography/Mass Spectrometry
GIS	Geographic Information System
GPS	Global Positioning System
GWQC	Groundwater Quality Criteria
HA	Hectare
HQ	Hazard Quotient
IA	Installation Assessment
IDW	Investigation-Derived Waste
IR	Ingestion Rate
IRP	Installation Restoration Program
LEL	Lowest Effect Level
LOAEL	Lowest Observable Adverse Effect Level
LUST	Leaking Underground Storage Tank
MDL	Method Detection Limit
mg/kg	milligrams per kilogram
MP	Main Post
MTBE	Methyl *tert*-Butyl Ether
N.J.A.C.	New Jersey Administrative Code
NAD	North American Datum
ND	Non-Detect
NFA	No Further Action
NFRA	No Further Remedial Action
NFRAP	No Further Remedial Action Planned
NJDEP	New Jersey Department of Environmental Protection
NJPDES	New Jersey Pollutant Discharge Elimination System
NOAA	National Oceanic and Atmospheric Administration
NOAEL	No Observable Adverse Effect Level
NPL	National Priorities List
ORNL	Oak Ridge National Laboratory
PA	Preliminary Assessment
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PCE	Tetrachloroethene
PID	Photoionization Detector
PPE	Personal Protective Equipment
ppt	parts per thousand
PRG	Preliminary Remediation Goal
QC	Quality Control

R&D	Research and Development
RA	Remedial Action
RAM	Radioactive Materials
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
RPD	Relative Percent Difference
SEL	Severe Effect Level
Shaw	Shaw Environmental, Inc.
SHWS	State Hazardous Waste Site
SI	Site Investigation
SOP	Standard Operating Procedure
SQG	Small Quantity Generator
SRP	Site Remediation Program
STP	Sewage Treatment Plant
SVOC	Semivolatile Organic Compound
SWQC	Surface Water Quality Criteria
TAL	Target Analyte List
TBA	*tert*-Butyl Alcohol
TCE	Trichloroethene
TCL	Target Compound List
TIC	Tentatively Identified Compound
TPH	Total Petroleum Hydrocarbons
TRSR	Technical Requirements for Site Remediation
TRV	Toxicity Reference Value
TSDF	Transport, Storage, and Disposal Facility
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	Underground Storage Tank
UTM	Universal Transverse Mercator
VCP	Voluntary Cleanup Program
VOC	Volatile Organic Compound
VSI	Visual Site Inspection
Weston	Roy F. Weston, Inc.
WP	Work Plan

EXECUTIVE SUMMARY

The U.S. Army Corps of Engineers (USACE), Baltimore District, tasked Shaw Environmental, Inc. (Shaw) to perform a Baseline Ecological Evaluation (BEE) at Fort Monmouth (FTMM) to fulfill requirements as set forth in New Jersey Department of Environmental Protection (NJDEP) Technical Requirements for Site Remediation (TRSR) [New Jersey Administrative Code (N.J.A.C.) 7:26E-3.11]. This BEE Report has been prepared under the Baltimore Architectural and Engineering Services Contract Number W912DR-05-D-0026 (Task Order 40) and is based on the Scope of Work dated June 3, 2008; information obtained through consultation with FTMM, U.S. Army Environmental Command, USACE, and NJDEP personnel; and the final Work Plan (WP) dated January 2010. A draft final WP, dated July 2009, was submitted to the NJDEP for review. NJDEP comments (dated September 1, 2009) were addressed and a conference call was held on November 13, 2009 to finalize the WP. The final WP was submitted to the NJDEP for review and approval prior to implementation of the work and an approval letter was obtained from the NJDEP on April 28, 2010 (**Appendix I**).

FTMM is an Army installation occupying approximately 1,126 acres in Monmouth County in central New Jersey, approximately 40 miles east of Trenton. FTMM is comprised of two operational areas known as the Main Post (MP) and the Charles Wood Area (CWA). The MP encompasses a 673-acre area and the CWA encompasses a 489-acre area.

The primary mission of FTMM was to provide command, administrative, and logistical support for Headquarters, U.S. Army Communications and Electronics Command. The support provided by the Garrison was used by tenants in the performance of research, development, procurement, and production of prototype communications and electronics equipment for use by the U.S. Armed Forces. The MP provides supporting administrative, training, and housing functions, as well as many of the community and industrial facilities for FTMM. These facilities are distributed across the property, with no distinct clustering of functions. The CWA was used primarily for research and development, testing, housing, and recreation. The CWA research, development, and testing facilities occupy the southwest corner of CWA. The northwest corner formerly consisted of residential units but is currently undeveloped. Residential units currently occupy the southeastern boundary, and the golf course occupies the northeast corner. In 2005, FTMM was identified as a facility to be closed as part of the Defense Base Realignment and Closure Act of 1990 (BRAC), Public Law 101-510, as amended. As part of this process, it is necessary for the Army to identify and document the environmental liabilities associated with installations where the BRAC action will involve the disposal of property. The environmental condition of property (ECP) process is the mechanism to provide a summary of the current environmental condition of a property.

A Phase I ECP Assessment was conducted in 2006 and 2007. The final Phase I ECP Report for FTMM was completed on January 29, 2007 (Shaw, 2007). The Phase I ECP evaluated the existing environmental conditions, and characterized the property into parcels according to their environmental condition based on Department of Defense guidelines. Using the results of the Phase I ECP Report, site investigation (SI) sampling recommendations were developed for 21 specific parcels and two areas of concern where no existing data or insufficient data were present to fully evaluate the environmental condition of the property. The ECP SI was conducted in 2007 and 2008 and the final SI Report for FTMM was completed on July 21, 2008 (Shaw, 2008). Eight parcels identified through the FTMM SI were deemed to require additional evaluation through the BEE process to fully evaluate the environmental condition of the property. NJDEP concurred with the determination that a BEE is required for these eight ECP sites in correspondence dated October 28, 2008.

Within the FTMM MP and CWA are 27 active/open Installation Restoration Program (IRP) Sites. The NJDEP indicated to the Army that, pursuant to N.J.A.C. 7:26E-3.11, BEEs are required at open/active IRP sites prior to considering No Further Action (NFA) determinations. Of these 27 IRP Sites, in consultation with NJDEP, 14 have been determined to require additional evaluation through the BEE process as having the potential for contamination migration and impacts to ecological receptors. In addition to these IRP Sites, it was determined that a BEE should also be conducted related to FTMM-20, which had been listed as Response Complete in the 2007 Installation Action Plan for FTMM (Fort Monmouth, 2007).

The NJDEP describes the purpose of conducting a BEE as follows (NJDEP, 2009a):

A critical part of every site investigation is the baseline ecological evaluation required in N.J.A.C 7:26E-3.11. The Technical Requirements for Site Remediation require each person conducting the remediation of a contaminated site or area of concern to conduct a baseline ecological evaluation as part of the process to ensure that the resulting remedy is protective of the environment. The Department uses the information that the person is already required to collect in the baseline ecological evaluation as the first step in determining whether or not natural resource injuries potentially exist as a result of a discharge at a site. In the baseline ecological evaluation, the person responsible for conducting the remediation must determine whether or not any natural resources may have been injured by a discharge.

The BEE is Tier I of the ecological evaluation and ecological risk assessment process as developed by the Site Remediation Program (SRP), and is defined in the TRSR and Site Remediation News (NJDEP, 1997). The BEE was developed to be an efficient and cost-effective screening process. As such, the results of a BEE will determine whether potential ecological impacts are negligible or whether more site-specific ecological evaluation is warranted.

The objective of the BEE at FTMM is to examine each of the 23 identified sites (8 ECP parcels and 15 IRP sites) and the sample results from sediment, surface water, soil, and groundwater at these sites for the co-occurrence of 1) contaminants of potential ecological concern (COPECs), 2) environmentally sensitive natural resources, and 3) a chemical migration pathway to these sensitive natural resources. In order to reach this objective, a data and literature review were conducted, a field investigation, including field sampling as applicable, was performed, and data analysis and ecological hazard characterization were completed within the BEE report. An additional objective of the field sampling was to provide information regarding the general background characteristics of surface water and sediment in the FTMM area through the collection of several upgradient samples to assist risk managers in the decision-making process.

The occurrence of COPECs is typically determined through a comparison of existing site data with ecological screening levels. Additional data needs were identified prior to the BEE and environmental samples were collected in 2010 as part of the BEE. The occurrence of environmentally sensitive natural resources and of potential chemical migration pathways was determined from existing literature for the site, a qualitative site visit, and other available information such as the NJDEP Natural Heritage database. Reviews of NJDEP tidal and freshwater wetland maps, U.S. Geological Survey (USGS) topographic maps, and U.S. Department of Agriculture (USDA) Soil Conservation Service soil survey maps were performed to provide an overview of the habitat expected to occur at or in the vicinity of the site. The qualitative site visit was conducted for the purpose of verifying information gathered and to identify existing ecology communities and species, environmentally sensitive natural resources, and potential contaminant pathways.

In order to evaluate the nature of contaminants detected at the FTMM sites and to identify the COPECs, several steps were followed. The first step was to review the analytical data collected from the environmental media with regards to the sites and selection of the data appropriate for use in the BEE. Site data addressed in this BEE is comprised of data previously collected for Remedial Investigations (e.g., near surface soil data for former landfills), ECP SIs, and routine environmental monitoring (e.g., groundwater data) and data collected specifically to fill data gaps for the BEE. The second step was the identification of the most appropriate and applicable criteria or benchmarks for comparison to data. The third step was the identification of the COPECs at the sites and an evaluation of these COPECs in terms of potential ecological impact.

COPECs are defined for the purposes of this BEE as those constituents that were detected above the appropriate screening benchmarks in any of the samples from a given medium from a site. These ecological screening concentrations (ESC) are intentionally conservative values and exceedances of these concentrations are not meant to imply ecological risks. A qualitative determination of the potential for adverse effects from site constituents was made based on the COPECs, the presence of environmentally sensitive areas, and the potential migration pathways of site constituents, as well as site history, natural geology, and other potential sources.

The character of the land use surrounding the FTMM properties typifies mixed use, small town development in New Jersey. Commercial services and shopping centers populate main roads interspersed with residential structures, apartments and office buildings. Business and light industrial parks are found along highways, streams and railroad tracks. Surrounding properties include National Priorities List (NPL) sites, State Hazardous Waste Sites, Leaking Underground Storage Tank Sites, and Voluntary Cleanup Program sites. These, as well as general small urban development activities lend to an increase in general anthropogenic inputs in the area.

Elevated concentrations of many metals, relative to the conservatively low ESC, are naturally found within the urban coastal plain region in which FTMM is located. In particular, glauconitic soils which are prevalent at FTMM and have been reported in the creek sediments are naturally high in arsenic, beryllium, chromium, nickel and vanadium as well as other metals.

COPECs identified in soils generally represent limited potential for direct ecological exposure as they are either from subsurface (e.g., landfill near surface samples) or are not within ecological habitats (e.g., near buildings, roads, and parking areas). COPECs identified in groundwater are not representative of direct ecological exposures. COPECs in both soil and groundwater, however, may migrate to nearby surface water or sediment where ecological exposures may occur.

Many organic COPECs identified in soil or groundwater were not identified as COPECs in surface water or sediment, suggesting limited organic contaminant migration to sensitive ecological receptors. Most of these were detected infrequently in soil or groundwater or at low concentrations in relation to the ESC.

Many organic COPECs identified in surface water or sediment were not identified as COPECs in soil or groundwater, suggesting the sources are unrelated to the sites under investigation, or were at low concentrations in relation to the ESC, which are intentionally conservative values. Polycyclic aromatic hydrocarbons (PAHs), in particular, though identified as COPECs, were found in sediments and surface water at concentrations similar to background sample concentrations or at locations indicative of other sources (e.g., at the upstream extent of the site and downstream of active roads or parking areas).

In surface water, lead was most often identified as a COPEC; however, it was found at similar concentrations at most of the sites and in the background samples. Most of the sediment metals identified as COPECs were at concentrations similar to background. Some metals (chromium, copper, lead, mercury, silver, and zinc) were found at a few locations above background levels measured during the BEE investigation, but many of these are similar to those reported for ambient soil in the region (BEM Systems, Inc., 1998) or, in particular, glauconitic soils (Dooley, 2001). Though there may be a potential for some ecological risk due to elevated metals in these limited areas, it is likely that these metals are related to natural geology or other anthropogenic sources.

Conservative screening level food chain models indicated estimated exposures to wildlife exceeded toxicity values. Based on the overly conservative nature of the food chain models (exposure to locations of maximum concentration, conservative model parameters, assumptions and toxicity values) and the biased sampling approach used in the BEE sediment investigations, it is unlikely that current site conditions present any risk to wildlife.

Though metals may be present above the background concentrations measured in limited areas during the 2010 BEE, many of these concentrations may still be related to natural or general anthropogenic sources and the differences in site concentrations from the measured background concentrations can be a function of the greater number of site samples collected compared to background samples. Regardless, these figures show that the area of metal concentrations greater than the measured background concentrations is limited in extent, with no definitive spatial distribution that would suggest the source of metals are related to sites evaluated in the BEE. Though these may represent a potential ecological risk in limited areas, it is concluded that constituents at FTMM are unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments at FTMM are not warranted or recommended. **Table ES-1** presents a summary of the results of this BEE.

Table ES-1
Fort Monmouth Main Post and Charles Wood Area
Baseline Ecological Evaluation Summary

ECP Parcel / IRP Site Designation	Associated Building / Feature	Acreage	Proximal Ecological Feature Evaluated	COPECs Identified Based on BEE results	Potential for Ecological Effects from COPECs	Recommendation
Main Post						
IRP Site FTMM-2	Landfill 2	8.10	Mill Creek	Near Surface Soil: SVOCs, Pesticides, PCBs, Metals Groundwater: VOCs, Pesticides, Metals Surface Water: SVOCs, Lead Sediment: SVOCs, PCBs, Metals	low	No Additional Ecological Assessment
IRP Site FTMM-3	Landfill 3	8.00	Lafetra Creek	Near Surface Soil: SVOCs, Pesticides, PCBs, Metals Groundwater: None Surface Water: None Sediment: SVOCs, Pesticides, Metals	low	No Additional Ecological Assessment
IRP Site FTMM-4	Landfill 4	1.40	Mill Creek	Near Surface Soil: SVOCs, Pesticides, Metals Groundwater: Metals Surface Water: None Sediment: SVOCs, PCBs, Metals	low	No Additional Ecological Assessment
IRP Site FTMM-5	Landfill 5	3.20	Mill Creek	Near Surface Soil: SVOCs, Pesticides, PCBs, Metals Groundwater: None Surface Water: None Sediment: SVOCs, Pesticides, Metals	low	No Additional Ecological Assessment
IRP Site FTMM-8	Landfill 8	7.20	Parkers Creek	Near Surface Soil: SVOCs, Pesticides, PCBs, Metals Groundwater: Pesticides Surface Water: None Sediment: Pesticides, PCBs, Metals	low	No Additional Ecological Assessment
IRP Site FTMM-12	Landfill 12	7.10	Husky Brook	Near Surface Soil: SVOCs, Pesticides, Metals Groundwater: Metals Surface Water: None Sediment: SVOCs, Pesticides, PCBs, Metals	low	No Additional Ecological Assessment
IRP Site FTMM-14	Landfill 14	6.90	Husky Brook	Near Surface Soil: SVOCs, Pesticides, Metals Groundwater: Metals Surface Water: None Sediment: SVOCs, Pesticides, PCBs, Metals	low	No Additional Ecological Assessment
IRP Site FTMM-15	Water Tank	0.30	Parkers Creek	Surface Soil: Not Applicable/Not Evaluated Groundwater: Not Applicable/Not Evaluated Surface Water: None Sediment: Pesticides, Metals	low	No Additional Ecological Assessment
IRP Site FTMM-16	Building 498, Pesticide Storage	0.12	Oceanport Creek	Surface Soil: Not Applicable/Not Evaluated Groundwater: Not Applicable/Not Evaluated Surface Water: None Sediment: SVOCs, Metals	low	No Additional Ecological Assessment
IRP Site FTMM-18	Former Training Area	4.85	Parkers Creek	Surface Soil: SVOCs, Pesticides, Metals Groundwater: Metals Surface Water: None Sediment: Metals	low	No Additional Ecological Assessment
IRP Site FTMM-20 Pre-1941 STP	Pre-1941 Former Sanitary Sewage Treatment Plant	0.77	Parkers Creek	Surface Soil: Not Applicable/Not Evaluated Groundwater: Not Applicable/Not Evaluated Surface Water: None Sediment: Metals	low	No Additional Ecological Assessment
IRP Site FTMM-59 Building 1122	Building 1122, Unknown Discharge	0.34	Mill Creek	Surface Soil: Not Applicable/Not Evaluated Groundwater: None Surface Water: SVOCs, Lead Sediment: SVOCs,Metals	low	No Additional Ecological Assessment
ECP Parcel 43	Building 1122, "Do-it-Youself" Vehicle Repair Shop	1.54				

Table ES-1
Fort Monmouth Main Post and Charles Wood Area
Baseline Ecological Evaluation Summary

ECP Parcel / IRP Site Designation	Associated Building / Feature	Acreage	Proximal Ecological Feature Evaluated	COPECs Identified Based on BEE results	Potential for Ecological Effects from COPECs	Recommendation
Main Post						
IRP Site FTMM-61 Building 283	Building 283, Leaking UST, Gasoline	0.20		Surface Soil: SVOCs, PCBs, Metals		
ECP Parcel 49	Buildings 283, 288, 291, 292, 293, 295, Former Squier Laboratory Complex	9.09	Parkers Creek	Groundwater: Zinc Surface Water: None Sediment: Metals	low	No Additional Ecological Assessment
ECP Parcel 39	Building 1150, Former Photoprocessing Activities	0.50	Mill Creek	Surface Soil: Metals Groundwater: Not Applicable/Not Evaluated Surface Water: SVOCs, Lead Sediment: SVOCs, PCBs, Metals	low	No Additional Ecological Assessment
ECP Parcel 61	Building 1075, Patterson Army Health Clinic	14.66	Husky Brook	Surface Soil: SVOCs, Metals Groundwater: Not Applicable/Not Evaluated Surface Water: None Sediment: SVOCs, Metals	low	No Additional Ecological Assessment
ECP Parcel 69	Building 900, Former Tactical Motor Pool	0.31	Oceanport Creek	Surface Soil: Metals Groundwater: None Surface Water: None Sediment: SVOCs, Metals	low	No Additional Ecological Assessment
Charles Wood Area						
IRP Site CW-6 FTMM-28	Former Pesticide Storage - Building 2044	0.67	Un-named Wetland, Wampum Brook	Surface Soil: Pesticides, SVOCs, Metals Groundwater: Metals Surface Water: PCBs, Metals Wetland Sediment: Pesticides, PCBs, SVOCs, Metals	low	No Additional Ecological Assessment
ECP Parcel 15	Building 2700, Meyers Center Laboratory	37.99	Shrewsbury Creek	Surface Soil: Not Applicable/Not Evaluated Groundwater: Metals Surface Water: Lead Sediment: Chromium	low	No Additional Ecological Assessment
IRP Site CW-3A FTMM-25	Suspected Former Landfill, CW-3A	2.08	Shrewsbury Creek	Near Surface Soil: Pesticides, PCBs, SVOCs, Metals Groundwater: Metals Surface Water: SVOCs, Cadmium, Zinc Sediment: Pesticides, SVOCs, Metals	low	No Additional Ecological Assessment
ECP Parcel 27	Southwest portion of CWA that includes the former Pulse Power Center, Machine Shop, Paint and Fabrication facility, Former Motor Pool, and portions of the former Watson Laboratories	29.83	Shrewsbury Creek	Surface Soil: Metals Groundwater: Not Applicable/ Not Evaluated Surface Water: Metals Sediment: Metals	low	No Additional Ecological Assessment
ECP Parcel 28	Former Eatontown Laboratory, Battery Test Facility, Safety Calibration Laboratory Office, Former Motor Pool	37.78	Shrewsbury Creek	Surface Soil: None Groundwater: Cadmium Surface Water: Lead Sediment: Chromium	low	No Additional Ecological Assessment

BEE - Baseline Ecological Evaluation
COPEC - Constituent of
CWA - Charles Wood
ECP - Environmental
IRP - Installation
PAH - Polycyclic
PCB - Polychlorinated
SVOC - Semivolatile
UST - Underground
VOC - Volatile Organic Compound

1.0 INTRODUCTION

The U.S. Army Corps of Engineers (USACE), Baltimore District, tasked Shaw Environmental, Inc. (Shaw) to perform a Baseline Ecological Evaluation (BEE) at Fort Monmouth (FTMM) to fulfill requirements as set forth in New Jersey Department of Environmental Protection (NJDEP) Technical Requirements for Site Remediation (TRSR) [New Jersey Administrative Code (N.J.A.C.) 7:26E-3.11]. This BEE report has been prepared under the Baltimore Architectural and Engineering Services Contract Number W912DR-05-D-0026 (Task Order 40) and is based on the Scope of Work dated June 3, 2008, the Work Plan (WP) dated January 2010, and information obtained through consultation with FTMM, U.S. Army Environmental Command, USACE, and NJDEP personnel. A draft final WP, dated July 2009, was submitted to the NJDEP for review. NJDEP comments (dated September 1, 2009) were addressed and a conference call was held on November 13, 2009, to finalize the WP. The final WP was submitted to the NJDEP for review and approval prior to implementation of the work and an approval letter was obtained from the NJDEP on April 28, 2010 (**Appendix I**).

FTMM is located in the central-eastern portion of New Jersey in Monmouth County (**Figure 1-1**). The installation includes Main Post (MP), Charles Wood Area (CWA), and the Evans Area. This WP only addresses the MP (**Figure 1-2**) and the CWA (**Figure 1-3**). The MP encompasses an area of approximately 637 acres and the CWA encompasses an area of approximately 489 acres and is located 1 mile west of the MP. The MP and CWA were selected in 2005 for closure under the Defense Base Realignment and Closure Act of 1990 (BRAC), Public Law 101-510, as amended.

The primary mission of FTMM is to provide command, administrative, and logistical support for Headquarters, U.S. Army Communications and Electronics Command. The support provided by the Garrison is used by tenants in the performance of research, development, procurement, and production of prototype communications and electronics equipment for use by the U.S. Armed Forces. The MP provides supporting administrative, training, and housing functions, as well as many of the community and industrial facilities for FTMM. These facilities are distributed across the property, with no distinct clustering of functions. The CWA is used primarily for research and development (R&D), testing, housing, and recreation. The CWA research, development, and testing facilities occupy the southwest corner of CWA. The northwest corner formerly consisted of residential units but is currently undeveloped. Residential units currently occupy the southeastern boundary, and the golf course occupies the northeast corner. FTMM was identified as a facility to be closed as part of BRAC 2005. As part of this process, it is necessary for the Army to identify and document the environmental liabilities associated with installations where the BRAC action will involve the disposal of property. The environmental condition of property (ECP) process is the mechanism to provide a summary of the current environmental condition of a property.

A Phase I ECP Assessment was conducted in 2006 and 2007. The final Phase I ECP Report for FTMM was completed on January 29, 2007 (Shaw, 2007). The Phase I ECP evaluated the existing environmental conditions, and characterized the property into parcels according to their environmental condition based on Department of Defense guidelines. Using the results of the Phase I ECP Report, site investigation (SI) sampling recommendations were developed for 21 specific parcels and two areas of concern where no existing data or insufficient data were present to fully evaluate the environmental condition of the property. The SI was conducted in 2007 and 2008 and the final SI Report for FTMM was completed on July 21, 2008 (Shaw, 2008). Eight parcels identified through the FTMM SI were deemed to require additional evaluation through the BEE process to fully evaluate the environmental condition of the property. NJDEP concurred with the determination that a BEE is required for these eight ECP sites in correspondence dated October 28, 2008.

Within the FTMM MP and CWA are 27 active/open Installation Restoration Program (IRP) Sites. The NJDEP indicated to the Army that, pursuant to the TRSR (N.J.A.C. 7:26E-3.11; NJDEP, 2009b), BEEs are required at open/active IRP sites prior to considering No Further Action (NFA) determinations. The NJDEP determination was documented in correspondence pertaining to IRP Sites M-12 and M-14 Landfills (dated July 25, 2007), IRP Site M-18 Landfill (dated August 14, 2007), and Building 283 (dated October 24, 2007). Of the 27 IRP Sites, 14 (FTMM-2, 3, 4, 5, 8, 12, 14, 15, 16, 18, 25, 28, 59, and 61) have been determined to require additional evaluation through the BEE process. In addition to these IRP

Sites, it was determined that a BEE should also be conducted related to FTMM-20, which had been listed as Response Complete in the 2007 Installation Action Plan for FTMM (Fort Monmouth, 2007). **Section 3.0** of this WP describes each of the IRP and ECP sites that were selected for inclusion in the BEE process, summarizes the previous findings, and describes the rationale for inclusion.

1.1 PURPOSE AND OBJECTIVES

The BEE is Tier I of the ecological evaluation and ecological risk assessment process as developed by the Site Remediation Program (SRP), and is defined in the TRSR and Site Remediation News (NJDEP, 1997). The BEE was developed to be an efficient and cost-effective screening process. As such, the results of the BEE will determine whether potential ecological impacts are negligible or whether more site-specific ecological evaluation is warranted.

The objective of the BEE at FTMM is to assess whether the presence of constituents of concern in sediments, surface water, soil, and groundwater on MP and CWA have the potential for adverse effects to biological receptors. This assessment is made through the examination of information on each of the 23 identified sites (8 ECP parcels and 15 IRP sites) and the sample results from sediment, surface water, soil, and groundwater at the sites for the co-occurrence of 1) contaminants of potential ecological concern (COPECs), 2) environmentally sensitive natural resources, and 3) a chemical migration pathway to these sensitive natural resources. This objective was accomplished based on the results of a data and literature review, a qualitative site visit, field sampling, data analysis and ecological hazard characterization, and an evaluation of the general background characteristics of surface water and sediment in the FTMM area.

The occurrence of COPECs is determined through a comparison of existing site data with ecological screening levels. The occurrence of environmentally sensitive natural resources and of potential chemical migration pathways is determined from existing literature for the site, a qualitative site visit, and other available information such as the NJDEP Natural Heritage database. NJDEP tidal and freshwater wetland maps, U.S. Geological Survey (USGS) topographic maps, and U.S. Department of Agriculture (USDA) Soil Conservation Service soil survey maps.

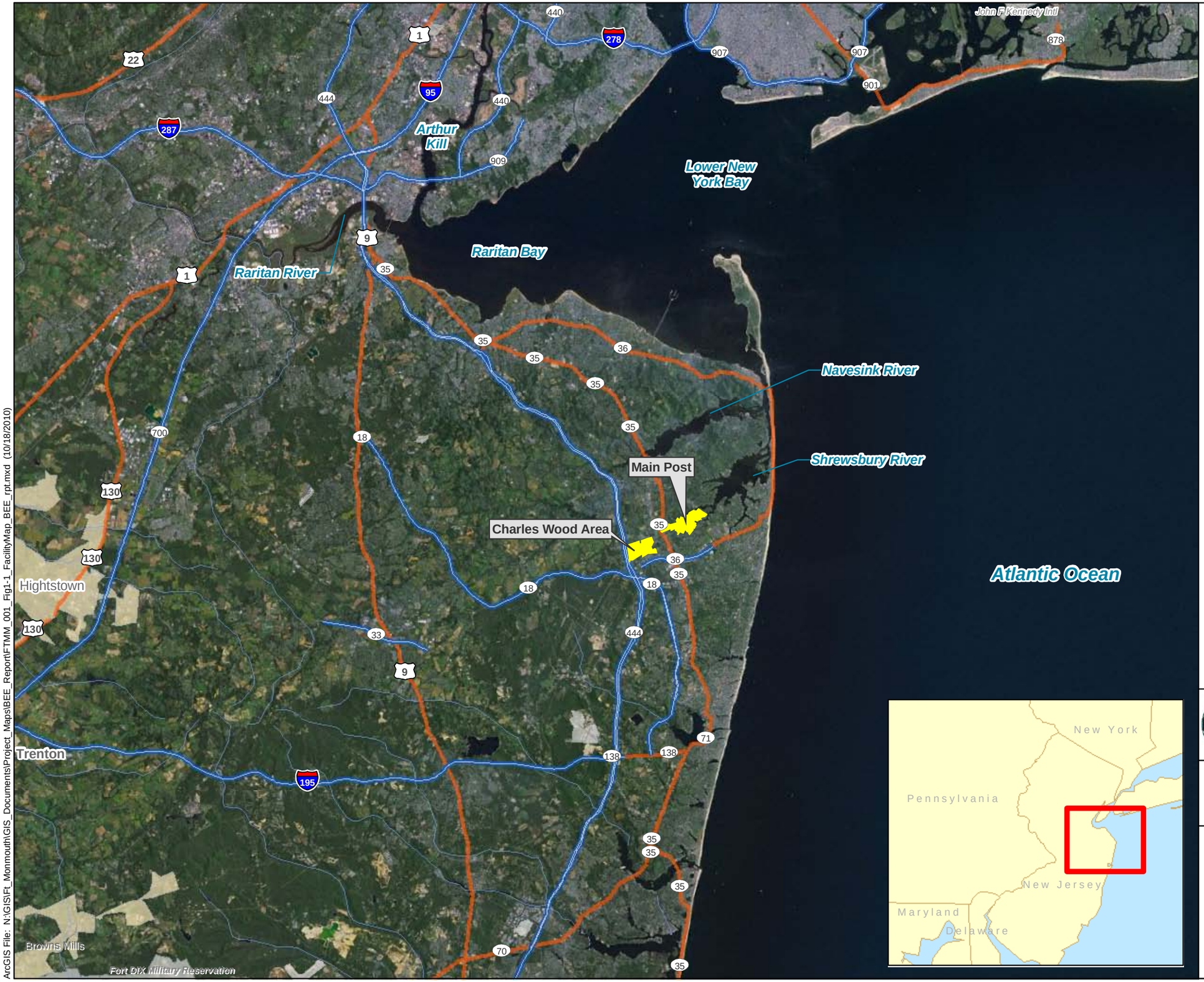
If it is determined through the BEE process that there are COPECs present, that there are environmentally sensitive natural resources at or near the sites, and that there are potential pathways from the contamination to the environmentally sensitive natural resources, then COPECs are compared to background and ambient levels and screening level food web models are evaluated to determine if further ecological investigation or risk assessments may be required. The nature of these investigations or Tier II and Tier III assessments are determined based on the findings of the BEE and they would be conducted in accordance with U.S. Environmental Protection Agency (USEPA, 1989a) and other applicable guidance.

This investigation will be used by the Army to determine if any future needs or actions are necessary in order to obtain a NFA Letter from NJDEP. The NJDEP SRP, as well as the Office of Natural Resources Restoration, will determine whether ecological injuries may have occurred and whether further investigations are required.

1.2 REPORT ORGANIZATION

Section 2.0 describes the location of the sites, provides site background information, and summarizes the environmental setting at FTMM. This section also identifies and describes the individual sites that are addressed in the BEE, including general history and previous investigation results, presence of ecologically sensitive areas, and potential contaminant migration pathways. **Section 3.0** presents the data evaluation performed to identify the COPECs at each site. **Section 4.0** presents a qualitative evaluation of potential for adverse effects at each site, including the use of conservative wildlife exposure models. **Section 5.0** presents a summary and conclusions. **Section 6.0** provides a list of references used in developing the WP. **Appendix A** through **Appendix D** contain the data evaluated in this BEE. **Appendix E** contains the applicable NJDEP Ecological Screening Criteria (ESC). **Appendix F** contains the analytical data packages for environmental samples collected as part of the BEE. **Appendix G** contains field documentation and field measured parameters. **Appendix H** contains Fort Monmouth Maximum Background Concentrations from the 1995 SI Report. **Appendix I** contains the NJDEP letter of approval, dated April 28, 2010, of the final WP. **Appendix J** contains Fort Monmouth salinity data for

several locations within the Main Post for the period 2004 through 2009. **Appendix K** contains utility maps for locations addressed in this BEE. **Appendix L** contains previously collected PCB analytical data for sediments samples during the landfill site Remedial Investigations.



LEGEND

Ft Monmouth Installation Area

Note: Aerial photography (1-meter resolution) was obtained from ESRIArcOnline World Imagery Map Services.

N

Scale:

0 2 4 8 Miles

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw® Shaw Environmental, Inc.

FIGURE 1-1

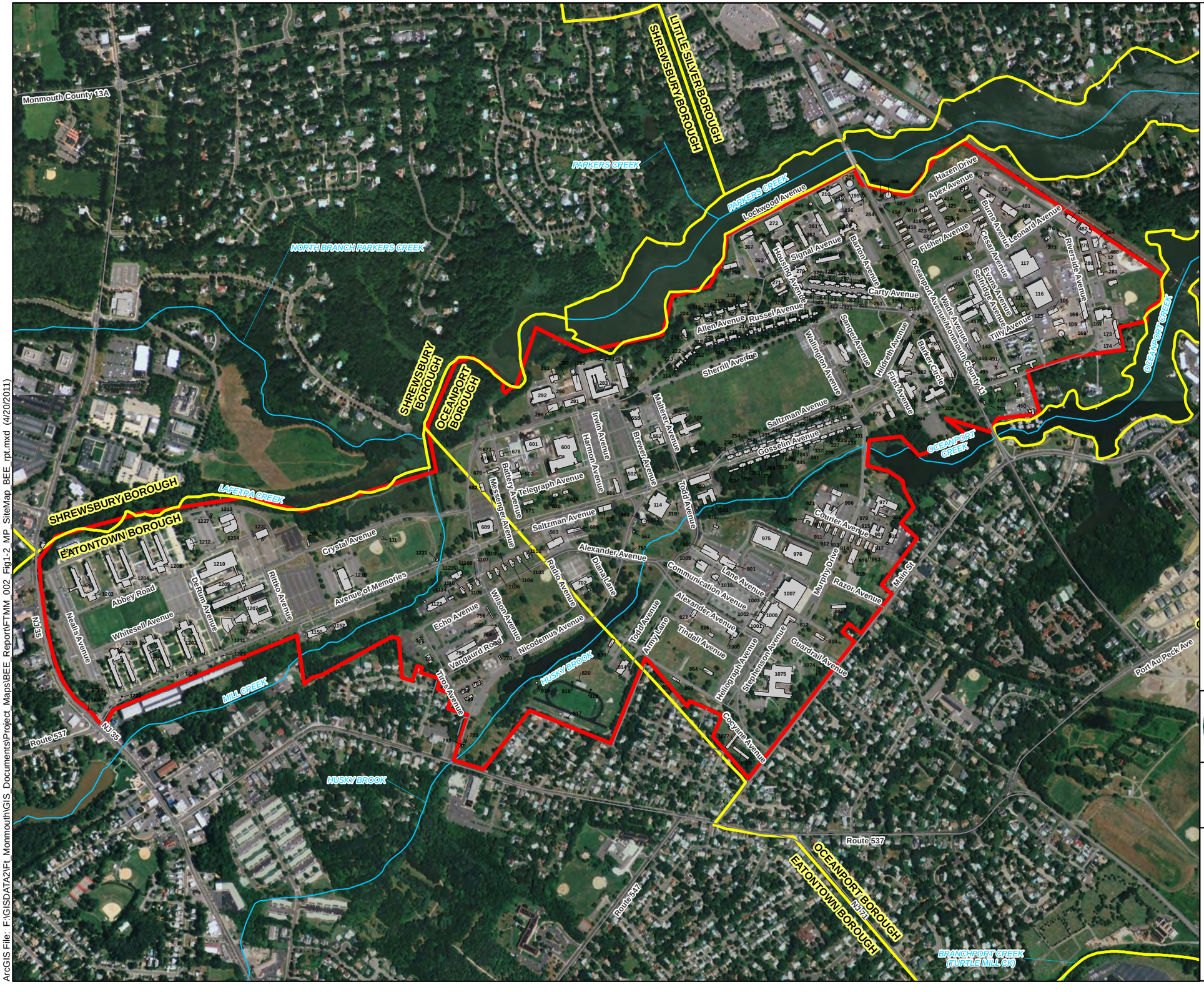
FORT MONMOUTH
BASELINE ECOLOGICAL
EVALUATION REPORT

FACILITY LOCATION MAP

FORT MONMOUTH
NEW JERSEY

ArcGIS File: N:\GIS\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_001_Fig1-1_FacilityMap_BEE_rpt.mxd (10/18/2010)

ArcGIS File: F:\GIS\DATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_002_Fig1-2_MP_SiteMap_BEE_rpt.mxd (4/20/2011)



LEGEND

- Water Feature
- Road Centerline
- Building
- Municipal Boundary
- Installation Boundary

Note: Aerial photography (0.5-meter resolution) was obtained from ESRI ArcOnline USA Imagery Map Services.

N

Scale:

0 450 900 1,800 Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

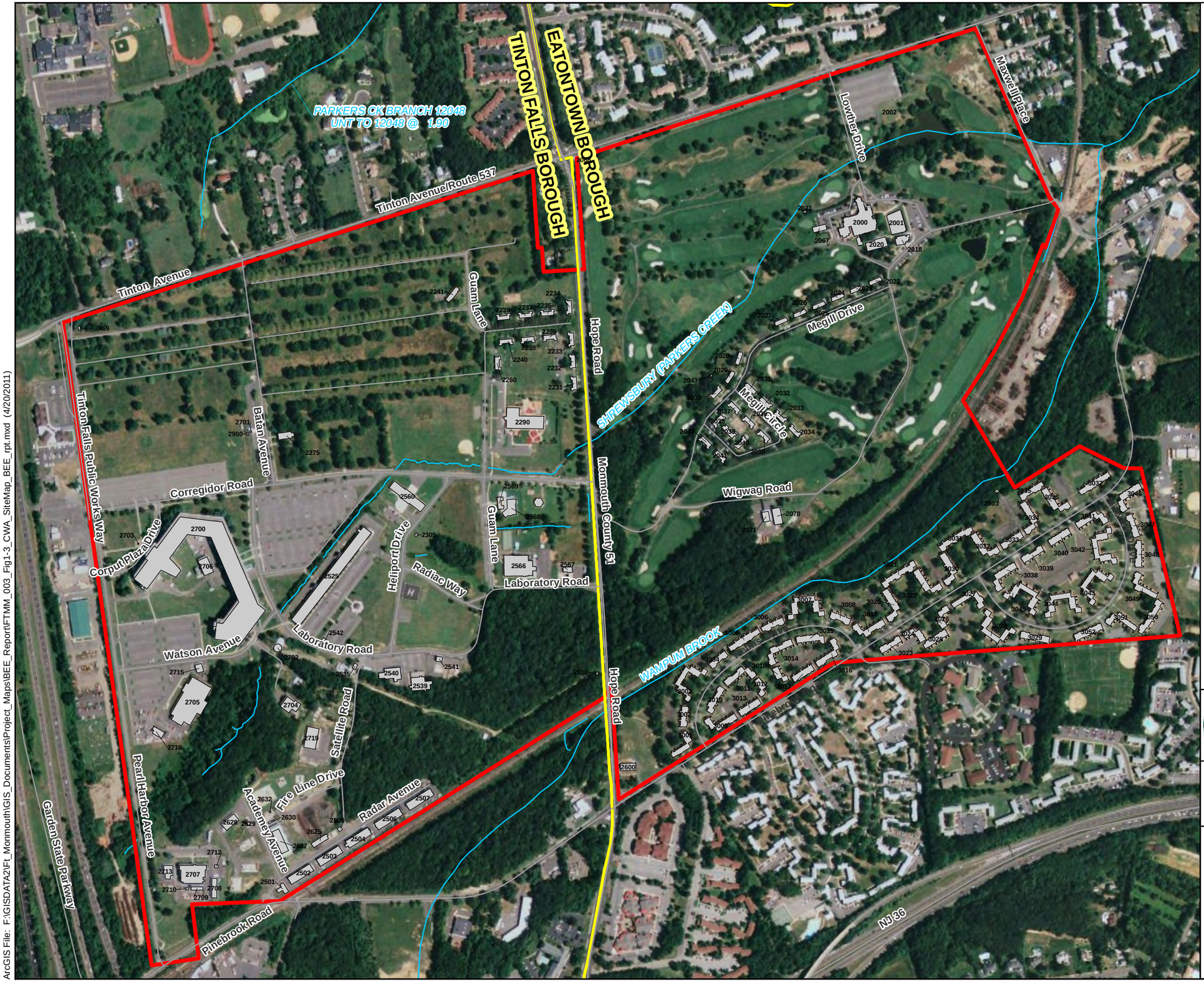
Shaw® Shaw Environmental, Inc.

FIGURE 1-2

FORT MONMOUTH BASELINE ECOLOGICAL EVALUATION REPORT

MAIN POST SITE MAP

FORT MONMOUTH
NEW JERSEY



LEGEND

- Road Centerline
- Water Feature
- Building
- Municipal Boundary
- Installation Boundary

Note: Aerial photography (0.5-meter resolution) was obtained from ESRI ArcOnline USA Imagery Map Services.

N

Scale:

0 290 580 1,160 Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw® Shaw Environmental, Inc.

FIGURE 1-3

FORT MONMOUTH BASELINE ECOLOGICAL EVALUATION REPORT

CHARLES WOOD AREA SITE MAP

FORT MONMOUTH
NEW JERSEY

ArcGIS File: F:\GISDATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_003_Fig1-3_CWA_SiteMap_BEE_rpt.mxd (4/20/2011)

2.0 FORT MONMOUTH BACKGROUND AND GENERAL ENVIRONMENTAL SETTING

The following sections summarize the site background and environmental setting of the geographical area surrounding the FTMM MP and CWA. Included is a description of the site location, site background and current conditions, and environmental setting, including regional and local geology, hydrogeology, topography, surface drainage, ecology, and land use.

2.1 LOCATION AND DESCRIPTION

FTMM is located in the central-eastern portion of New Jersey in Monmouth County, approximately 45 miles south of New York City, 70 miles northeast of Philadelphia, and 40 miles north of Trenton. The Atlantic Ocean is approximately 3 miles to the east. FTMM falls within the boroughs of Eatontown, Oceanport, and Tinton Falls. The areas surrounding FTMM are characterized by a mixture of residential, commercial, and light industrial uses (**Section 2.4.8**). A review of the land use plans for the surrounding municipalities shows that land uses are compatible with those along the inside perimeter of FTMM. FTMM occupies approximately 1,126 acres and is currently comprised of two operational areas: the MP and the CWA. The two areas are located about 2 miles from one another.

The primary mission of FTMM is to provide command, administrative, and logistical support for the U.S. Army Communications and Electronics Command (CECOM) Headquarters. The Installation performs research, development, procurement, and production of prototype communications and electronics equipment for use by the U.S. Armed Forces.

2.1.1 MAIN POST

The MP provides supporting administrative, training, and housing functions, as well as many of the community and industrial facilities for FTMM. These facilities are distributed across the property, with no distinct clustering of functions. The MP encompasses approximately 637 acres and contains a total of 397 buildings and structures. The MP is bounded by State Highway 35 to the west, Parkers Creek to the north, the New Jersey Transit Railroad to the east, and Main Street and State Highway 71 to the south. Universal Transverse Mercator (UTM) coordinate locations [North American Datum (NAD) 83, Zone 18 (meters)] for the MP include:

- Northeast Corner: 582178.33995, 4463977.92694
- Southeast Corner: 582755.27789, 4463525.90188
- Northwest Corner: 579532.14255, 4462789.29460
- Southwest Corner: 579689.14842, 4462269.63793

2.1.2 CHARLES WOOD AREA

The CWA is used primarily for R&D, testing, housing, and recreation. The CWA R&D and testing facilities occupy the southwest corner of the subpost. Residential areas are located along the southeastern boundary and were formerly located in the northwest corner; the golf course occupies the northeast corner. The CWA, located 2 miles west of the MP, is composed of approximately 489 acres and contains a total of 241 buildings and structures. The CWA is bounded by the Garden State Parkway to the west, Tinton Avenue to the north, Maxwell Place and the New Jersey Transit Railroad to the east, and Pinebrook Road to the south. UTM coordinate locations for the CWA [NAD83, Zone 18 (meters)] include:

- Northeast Corner: 578997.83200, 4462033.09195
- Southeast Corner: 579386.98486, 4460899.58327
- Northwest Corner: 577293.44846, 4461472.84017
- Southwest Corner: 577466.30241, 4460271.56946

2.2 HISTORICAL LAND USE

Historical Army uses of the FTMM MP and CWA property are well documented in *A Concise History of the U.S. Army Communications-Electronics Life Cycle Management Command and Fort Monmouth, New Jersey* (U.S. Army Communications-Electronics Life Cycle Management Command,

2005) and *Fort Monmouth: Landmarks and Place Names* (Kozlowski, 2004). The following sections provide a brief summary of the historical uses of the sites.

2.2.1 MAIN POST

The original FTMM Army camp, established for signal troop training in 1917, was located at Little Silver, New Jersey. Historical land use of the area included a 1-mile horse racing track, Monmouth Park, which had been established in 1870 and operated for 20 years. The track was located in the vicinity of Patterson Army Health Clinic near the intersection of Broad Street and Park Avenue. A larger Monmouth Park was reconstructed and opened on July 4, 1890. The oval track was centered on present day Greeley Field. The entire facility encompassed 640 acres (almost all of the MP area). Grandstands and a luxury hotel along Parkers Creek were part of the associated land uses. The Monmouth Park Race Track closed in 1893. Vacated buildings and structures fell into ruin and the hotel burned to the ground in 1915. The land was owned by Redacted - Privacy Act when it was evaluated for use by Camp Little Silver. The Army leased 468 acres from Redacted - Privacy Act on May 16, 1917. Prior to the Army's lease, the land had been farmed, producing a potato crop for approximately 4 years. The leased area was bounded on the north by the Shrewsbury River (currently referred to as Parkers' Creek), on the west and south by a stone road from Eatontown, and on the east by Oceanport-Little Silver Road. The condition of the land was reported as overgrown and overrun with poison ivy. The land was purchased by the government in 1919.

2.2.2 CHARLES WOOD AREA

The CWA was acquired by the Army in 1941. The CWA tract included the former Monmouth County Country Club (originally Sun Eagles Country Club), Olmstead Gardens, and areas currently occupied by the golf course and Myer Center. FTMM personnel indicated an orchard was located in the golf course area prior to Army acquisition. The Sun Eagles Country Club was constructed in the 1920s and included a clubhouse (currently Gibbs Hall), an 18-hole golf course, a polo field, and an airfield. A 7,000-troop cantonment area was immediately built on the land, including barracks, mess halls, a school building, an office building, a recreation hall, a Post Exchange, an infirmary, and a chapel.

2.3 FACILITY HISTORY

The MP of FTMM was established on June 17, 1917, as Camp Little Silver. The name of the Camp was changed after 3 months to Camp Alfred Vail. The initial mission of the Camp was to train Signal Corps operators for service in World War I. In the first 19 months of the Camp's existence, 129 semi-permanent structures were built, a tent camp established on the site of a former swamp, and a parade ground established on the site of a former marsh. A radio laboratory and an airfield were constructed in 1918. After the war, Camp Vail was designated as the site of the Signal Corps School, the only training area for Signal Corpsmen in the country. All but four World War I structures were demolished by 1924.

In 1925, the facility became a permanent post, and its name was changed to Fort Monmouth. The primary mission of FTMM continued to be Signal Corps training and electronics research. In 1934, laboratory operations were consolidated in a new facility, Squier Laboratory (Building 283). Research on radios and radar continued here until the early 1950s. During World War II, the pace of training increased tremendously at FTMM. The expanded laboratory effort was accomplished by starting new laboratories at other post facilities. Squier Laboratory continued to be the principal laboratory on the MP until 1954. In 1955 and 1956, 72 World War II wooden structures were demolished to make room for permanent structures. These new buildings were used for residential, administrative, commercial, and recreational purposes. A small number of additional administrative buildings were completed during the 1970s, 1980s, and 1990s.

Camp Charles Wood was purchased in 1941 and opened in 1942. The eastern half of the property was formerly a golf course, and the western half was residential property and farmland. During World War II, the Camp was used for training Signal Corpsmen. Antenna shelters were constructed on 26.5 acres of land and used by the Signal Corps Laboratory for R&D purposes.

A new R&D facility, the Myer Center (Building 2700), was completed in 1954. R&D activities that had formerly been conducted at Squier Laboratory and some activities from the Evans Area were

transferred to the Myer Center. To this day, laboratories within the Myer Center facility continue to develop state-of-the-art electronic and communications equipment for use by the U.S. Armed Forces. FTMM has a long history of R&D activity. The majority of this activity has been related to communications and electronic equipment. For the completion of these research activities, FTMM has operated and continues to operate a variety of laboratories. Additionally, FTMM has a significant history of training and housing troops. In support of these activities, FTMM has had a full complement of support activities including vehicle maintenance, warehousing, medical and dental services, photo processing, printing, historic solid waste handling methods (e.g., landfills), and facility infrastructure [e.g., underground storage tanks (USTs)]. Many of the former activities have resulted in environmental releases that are being addressed within the IRP and BRAC ECP processes.

2.4 ENVIRONMENTAL SETTING

The following is a description of the geological and hydrogeological setting of the area as well as the surrounding land use characteristics. The information in the following sections was taken from previous environmental reports produced by Roy F. Weston, Inc. (Weston, 1995) and Shaw (2007; 2008).

2.4.1 CLIMATE

The climate, temperature, and humidity of Monmouth County, New Jersey, are characteristic of the temperate zone of the Mid-Atlantic states. The mean annual temperature for Monmouth County is about 52 degrees Fahrenheit (°F); the summers are generally warm, with an average temperature around 70 °F and average minimum and maximum temperatures exceed 60 and 80 °F, respectively. Winters are moderate, with an average temperature around 30 °F.

Precipitation in Monmouth County averages between 40 and 50 inches per year; slightly more than half the total annual precipitation falls between April and September. Thunderstorms generally occur during the summer months, and hurricanes or tropical storms move northward along the Mid-Atlantic coast.

2.4.2 TOPOGRAPHY

The land surface at the MP is relatively flat and ranges in elevation from 4 feet above mean sea level (ft msl) in the east at Oceanport Creek to 32 ft msl at the western end of the post, near Highway 35. The eastern half of the post is generally 10 ft msl in elevation. The greatest elevation is at the M-8 Landfill, located on Parkers Creek, and along Lafetra Creek, Mill Creek, and Husky Brook.

At CWA, the land surface slopes from 72 ft msl in the southwest to 20 ft msl at the eastern end of the golf course. In general, the southwestern corner of CWA is gently rolling and has the greatest relief.

2.4.3 SURFACE WATER DRAINAGE AND WETLANDS

Within the western part of the MP, surface water runoff flows either north into Lafetra Creek or south into Mill Creek, both of which originate off site to the west of the MP. Mill Creek flows along the southern boundary of MP until it turns north and joins Lafetra Creek to form Parkers Creek. Parkers Creek flows eastward along the northern boundary and joins Oceanport Creek east of MP. Most of Parkers, Lafetra, and Mill Creeks in the vicinity of the MP are tidally influenced.

Surface water runoff from the southern half of the MP flows into Husky Brook and Husky Brook Lake through a series of drainage ditches and outfalls. Husky Brook originates off site to the west of the MP and flows into Husky Brook Lake on site. Husky Brook exits Husky Brook Lake and flows into Oceanport Creek, which forms the southern boundary of the eastern area. Oceanport Creek and Husky Brook below Husky Brook Lake are tidally influenced.

Parkers and Oceanport Creeks, as well as the tributaries to these creeks, on the Main Post are classified by the NJDEP, for the purposes of determining surface water quality criteria, as fresh nontrout water/saline water (FW2-NT/SE1). This classification indicates that the waterbody may exhibit a saltwater/freshwater interface; the point of demarcation between freshwater and saltwater is determined through salinity measurements. These waterbodies are characterized as freshwater FW2-NT where the mean salinity at high tide is 3.5 parts per thousand (ppt) or less and as saline SE1 where the mean salinity at high tide is greater than 3.5 ppt (N.J.A.C. 7:9B *et seq*.).

Salinity measurements were collected during surface water and sediment sample collection in June 2010 for the BEE investigation. These data are provided in **Appendix G**. Though these data represent conditions at the time of sample collection and not necessarily high tide conditions, several salinity measurements were recorded at or near high tide, based on National Oceanic and Atmospheric Administration (NOAA) tidal charts for Gooseneck Point which is located east of the MP (NOAA, 2010). These data are indicated as such in **Appendix G**. Quarterly salinity data collected by Fort Monmouth between 2004 and 2009 are provided in **Appendix J**. Data known to be collected during high tide are indicated as such in **Appendix J**. A summary of the average high tide salinity for waterbodies in the MP based on the documented high tide data are summarized below in **Table 2-1** and presented in **Figure 2-1**.

Table 2-1. Summary of High Tide Salinity Data

Creek	FTMM Site	FTMM Station	Average High Tide Salinity (ppt) n=3	BEE Station	Average High Tide Salinity (ppt) n=1	Overall Site Average High Tide Salinity (ppt)
Parkers Creek						
	Downgradient of Main Post	21	21.3			21.3
	Site M-18			P49-SW3	20.36	17.5
				P49-SW2	20.13	
		27	15.7			
	Site M-8			M8-SD5	16.3	15.5
		28	14.3			
				M8-SD6	17.37	
				M8-SD7	16.54	
Lafetra Creek						
	Site M-3	5	9.7			9.7
		26	7.0			7.0
		3	4.0			4.0
	Upgradient End of Main Post	14	0.0			0.0
Mill Creek						
	Site M-4	5	9.7			9.7
	Site M-2	24	6.7			3.4
				M2-SD08	0.27	
				M2-SD09	0.27	
				M2-SD10	0.27	
				M2-SD11	0.27	
				M2-SD12	0.27	
				M2-SD13	0.27	
		15	5.3			
	Upgradient End of Main Post	13	0.0			0.0
Oceanport Creek						
	Downgradient of Main Post	22	21.0			21.0
	Site M-16			M16-SD4	21.04	21.0
	Sites M-12/M-14	9	18.3			11.2
				P61-SW1	10.45	
		19	4.3			
	Husky Brook Pond	12	0.0	M14-SW14	0.13	0.0
	Upgradient End of Main Post	11	0.0			0.0

Based on the high tide salinity measurements, the freshwater/saltwater demarcation line lies between Landfill M-3 and the upgradient end of the Main Post on Lafetra Creek, between Landfill M-4 and Landfill M-2 on Mill Creek, and between Landfills M-12 and M-14 and Husky Brook Pond on Husky Brook. Therefore, all of Parkers and Lafetra Creeks, in the vicinity of the sites addressed in this BEE as well as all of Mill Creek on the Main Post west of Landfill M-4 and Oceanport Creek and Husky Brook below Husky Brook Pond are classified as SE1 waters. Areas of these creeks upgradient of the MP are classified as FW2-NT. These freshwater and saltwater designations are consistent with those presented in the Weston SI report (Weston, 1995), which designated all their surface water and sediment sampling locations at the MP to be saltwater with the exception of Landfill M-2, based on field-observations of tidal influence.

The U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory indicates the presence of wetlands at the MP. Parkers and Oceanport Creeks are classified as estuarine and marine deepwater with estuarine and marine wetland areas. Husky Brook and Lafetra Creek are classified predominantly as freshwater riverine, emergent wetland, and forested/shrub wetland. Husky Brook Lake is classified as a freshwater pond.

Surface water runoff at the CWA is drained by Wampum Brook and Shrewsbury Creek. Shrewsbury Creek flows eastward through the center of the CWA and Wampum Brook flows along the southern boundary. These join east of the CWA before becoming Wampum Lake. Wampum Lake discharges into Mill Creek, which flows through the MP. All surface water streams at the CWA are classified as FW2-NT by the NJDEP for the purposes of determining surface water quality criteria, indicating they are non-trout freshwaters.

Several CWA wetland areas are identified on the USFWS National Wetland Inventory. Most of Shrewsbury Creek and Wampum Brook are classified as freshwater forested/shrub wetland, and the open water in the golf course in the eastern portion of the CWA is classified as a freshwater pond.

2.4.4 REGIONAL AND LOCAL GEOLOGY

Monmouth County lies within the New Jersey Section of the Atlantic Coastal Plain physiographic province. The MP, as well as the CWA and the Evans Area, are located in what may be referred to as the Outer Coastal Plain subprovince or the Outer Lowlands.

In general, New Jersey Coastal Plain formations consist of a seaward-dipping wedge of unconsolidated deposits of clay, silt, and gravel. These formations, which typically strike northeast-southwest with a dip ranging from 10 to 60 feet per mile, were deposited on Precambrian and lower Paleozoic rocks. The sediments, predominantly derived from deltaic, shallow marine, and continental shelf environments, date from the Cretaceous through the Quaternary Periods. The mineralogy ranges from quartz to glauconite.

The formations record several major transgressive/regressive cycles and contain units that are generally thicker to the southeast and reflect a deeper water environment. More than 20 regional geologic units are present within the sediments of the Coastal Plain. Regressive, upward coarsening deposits are usually aquifers (e.g., the Englishtown and Kirkwood Formations, and the Cohansey Sand), while the transgressive deposits are typically confining units (e.g., the Merchantville, Marshalltown and Navesink formations). The individual thicknesses for these units vary greatly (that is, from several feet to several hundred feet).

Based on the regional geologic map, the Cretaceous Age Red Bank and Tinton Sands outcrop at the MP. The Red Bank sand conformably overlies the Navesink Formation and dips to the southeast at a slope of 35 feet per mile. The upper member of the Red Bank Sand (Shrewsbury) is a yellowish-gray to reddish-brown clayey, medium- to coarse-grained sand that contains abundant rock fragments, minor mica, and glauconite. The lower member (Sandy Hook) is a dark gray to black, medium- to fine-grained sand with abundant clay, mica, and glauconite.

The Tinton Sand conformably overlies the Red Bank sand and ranges from a clayey medium- to very coarse-grained feldspathic quartz, and glauconite sand to a glauconitic coarse sand. The color varies from dark yellowish-orange or light brown to moderate brown, and from light olive to grayish-olive.

Glauconite may constitute 60 to 80 percent of the sand fraction in the upper part of the unit. The upper part of the Tinton Sand is often highly oxidized and iron-oxide encrusted.

Both the Tinton Sand and the Hornerstown Sand (or marl) crop out at the CWA. The Hornerstown unconformably overlies the Tinton Sand and is a dusky-green to grayish-olive or grayish-olive-green clayey glauconitic sand that may oxidize to moderate reddish-brown and dusky red. The percentage of quartz sand ranges from a few percent to 30 percent. Approximately half of this formation is composed of silt and clay.

The Kirkwood Formation (part of the Kirkwood-Cohansey system) crops out southeast of the MP and dips to the southeast at a slope of 20 feet per mile. The Kirkwood Formation consists of alternating layers of sand and clay. The upper unit is a light gray to yellowish-brown fine-grained quartz sand with quartz nodules and small pebbles. The lower unit is a brown silt in Monmouth County.

2.4.5 SOILS

According to the Monmouth County Soil Survey (USDA, 2008), much of the MP is covered by urban land (developed land with disturbed soils). The majority of the area is of the Udorthents-Urban land complex with 0 to 8 percent slopes (UDauB). The following soil series and classification units are mapped in the MP Area:

AptAV – Appoquinimink-Transquaking-Mispillion complex, 0-1% slope, very frequently flooded

DoeB – Downser sandy loam, 2-5% slopes

FrkB – Freehold sandy loam, 2-5% slopes

FrrC – Freehold-Urban land complex, 0-10% slopes

HumAt – Humaquepts, 0-3% slopes, frequently flooded

KrhB – Kresson loam, 2-5% slopes

ShrA – Shrewsbury sandy loam, 0-2% slopes

ThgB – Tinton loamy sand, 0-5% slopes

ThhB – Tinton-Urban land complex, 0-5% slopes

UdaB – Udorthents, 0-8% slopes

UdauB – Urban land complex, 0-8% slopes

The CWA is covered by less urban land complexes than the MP. The Shrewsbury sandy loam, Freehold sandy loam, and Freehold-Urban land complex are the dominant soil types. The following soil series and classification units are mapped in the CWA:

AtsA – Atsion sand, 0-2% slopes

EveB – Evesboro sand, 0-5% slopes

FrkB – Freehold sandy loam, 2-5% slopes

FrkC – Freehold sandy loam, 5-10% slopes

FrrC – Freehold-Urban land complex, 0-10% slopes

HocA – Holmdel sandy loam, 0-2% slopes

HofB – Holmdel-Urban land complex, 0-5% slopes

PHG – Pits, sand and gravel

ShrA – Shrewsbury sandy loam, 0-2% slopes

UdauB – Udorthents-Urban land complex, 0-8% slopes

2.4.6 HYDROGEOLOGY

FTMM lies in the Atlantic and Eastern Gulf Coastal Plain groundwater region. This groundwater region is underlain by undeformed unconsolidated to semi-consolidated sedimentary deposits. Water chemistry near the surface is variable with low dissolved solids and high iron concentrations. In the areas underlain by glauconitic sediments such as the Red Bank and Tinton sands, the water chemistry is dominated by calcium, magnesium, and iron. The sediments in the area of the site were deposited in fluvial-deltaic to nearshore environments.

The water table aquifer is identified as part of the composite confining units or minor aquifers, which include the Navesink Formation, the Red Bank Sand, Tinton Sand, Hornerstown Sand, Vincentown Formation, the Manasquan Formation, Shark River Formation, Piney Point Formation, and the basal clay of the Kirkwood Formation. The Hornerstown Sand probably serves as an aquitard or aquiclude rather than as an aquifer due to its high silt and clay content.

2.4.7 NATURAL BACKGROUND CONSTITUENTS

The local geology and soil types determine the levels of naturally-occurring constituents present in soil. For instance, glauconitic soils, such as those present in the Cretaceous Age Red Bank and Tinton Sands of the FTMM area, can exhibit high concentrations of naturally-occurring arsenic and beryllium (Dooley, 2001), and the upper part of the Tinton Sand is often highly iron-oxide encrusted. The ambient levels of metals in soils of the urban coastal plain region are reported by Sanders (2003) based on an extensive characterization study conducted by BEM Systems, Inc. (1998). These natural background levels are meant to be inclusive of naturally-occurring levels in soil as well as those from regional deposition but not those from point source contamination. **Table 2-2** presents a summary of these ambient levels.

Naturally-occurring metals present in soil also affect the concentrations of these constituents measured in groundwater. Elevated concentrations of arsenic and lead in groundwater at FTMM have been found within the glauconitic-rich soil layers and are most likely attributed to these natural conditions (FTMM, 2011). The presence of glauconitic soils were noted in sediment samples collected during the BEE investigation, particularly in Parkers, Lafetra, and Mill Creeks in the MP (**Appendix H**). Dooley (2001) reported higher than ambient concentrations in glauconitic soils for several metals. In particular, the 90th percentile concentrations of aluminum [49,130 milligrams per kilogram (mg/kg)], arsenic (77 mg/kg), barium (340 mg/kg), beryllium (9.6 mg/kg), chromium (769 mg/kg), cobalt (11 mg/kg), nickel (24 mg/kg), vanadium (213 mg/kg), and zinc (196 mg/kg) were greater than those reported as ambient soil levels for the urban coastal region (BEM Systems, Inc).

2.4.8 ECOLOGY

The MP and CWA are within the Atlantic Coastal Plain, in the Outer Coastal Plain physiographic region of New Jersey, and contain both upland and wetland ecological habitats. Coastal plains are typically of low relief and consequently suitable for the formation of wetlands. Areas of wetlands are present on both the MP and CWA, with estuarine and fresh water wetlands present on the MP. Much of the upland areas of the MP and CWA consist of extensive areas of regularly mowed lawns and landscaped areas. However, upland ecological habitats are present, and include forested areas and old field herbaceous habitat. Except for occasional transient species, no federally listed or proposed threatened or endangered flora or fauna are known to exist on the site. There was one observance in 1992 of a New Jersey listed endangered species, the clustered sedge. In addition, no federal or state listed species were observed during the BEE site visit conducted on the MP and CWA on September 15, 2009. This section includes descriptions of the important ecological habitats present at the MP and CWA. As indicated in **Section 2.4.3**, the USFWS National Wetland Inventory maps have designated wetland areas at the MP and CWA. Areas along Oceanport Creek and Parkers Creek are designated estuarine and marine wetlands or open waters; areas along Mill Creek, Husky Brook, Lafetra and Shrewsbury Creeks are freshwater emergent or forested/shrub wetlands.

Estuarine Wetlands. Estuarine wetlands on the MP are associated with the tidal brackish waters of Parkers and Oceanport Creeks. They include both mesohaline areas of moderate salinity (5-18 ppt) and oligohaline areas of low salinity (0.5-5 ppt). Emergent wetlands in mesohaline tidal areas of New Jersey are often characterized by smooth cordgrass (*Spartina alterniflora*) and common reed (*Phragmites*

australis). Other species present often include marsh elder (*Iva frutescens*), eastern baccharis (*Baccharis halimifolia*), spike grass (*Distichlis spicata*), salt hay (*Spartina patens*), seaside goldenrod (*Solidago sempervirens*), and salt marsh asters (*Aster subulatus* and *A. tenuifolius*). Where present on the MP, estuarine wetlands are dominated by common reed. Common reed tends to create a monoculture and, although they can provide valuable habitat, are generally not considered to be high quality wetlands. Common reed wetlands provide nesting habitat for many avian species, including Pied-billed Grebe (*Podilymbus podiceps*), Black-crowned and Yellow-crowned Night Heron (*Nycticorax nycticorax* and *Nyctanassa violacea*), American and Least Bittern (*Botaurus lentiginosus* and *Ixobrychus exilis*), Green Heron (*Butorides virescens*), Coot (*Fulica americana),* Common Moorhen (*Gallinula chloropus*), King and Virginia Rail (*Rallus elegans* and *Rallus limicola*), grackles (*Quiscalus* sp.), Red-winged Blackbird (*Agelaius phoeniceus*), Swamp Sparrow (*Melospiza georgiana*), Marsh Wren (*Cistothorus palustris*), and several waterfowl species. White-tailed deer (*Odocoileus virginianus*), northern raccoon (*Procyon lotor*), and other mammalian species use common reed wetlands for refuge cover. In many areas of the MP steep banks along the creeks limit the extent of the riparian zone and thereby prevent the formation of extensive wetlands. These areas have a narrow riparian zone dominated by marsh elder, also known as high-tide bush. Avian wildlife species observed utilizing estuarine wetlands at the MP during the BEE site visit included Double-crested Cormorant (*Phalacrocorax auritus*), Common Egret (*Ardea alba*), Great Blue Heron (*Ardea herodias*), Little Blue Heron (*Egretta caerulea*), Wilson's Plover (*Charadrius wilsonia*), and numerous small sandpipers (*Calidris sp.*).

Freshwater Wetlands. Freshwater wetlands occur on both the MP and CWA. The most extensive of these are forested wetlands, with areas of emergent wetlands associated with the fresh water portions of the several creeks that traverse the MP and CWA. Forested wetlands in the area are typically dominated by red maple (*Acer rubrum*) and other hardwoods, including sweetgum (*Liquidambar styraciflua*), and black gum (*Nyssa sylvatica*). Shrubs/vines include arrowwood (*Viburnum dentatum*), coastal sweet pepperbush (*Clethra alnifolia*), and greenbrier (*Smilax rotundifolia*). Herbaceous species found in these forested wetlands include smartweed (*Polygonum sp.*), jewelweed (*Impatiens capensis*), violets (*Viola sp.*), asters, sedges and ferns. Forested wetlands at the MP and CWA may be utilized by mammalian species including white-tailed deer, eastern gray squirrel (*Sciurus carolinensis*), northern raccoon, Virginia opossum (*Didelphis virginiana*), and striped skunk (*Mephitis mephitis*). Numerous avian species are known to utilize forested wetlands habitat for nesting and foraging including: Barred Owl (*Strix varia*), Veery (*Catharus fuscescens*), Wild Turkey (*Meleagris gallopavo*), American Woodcock (*Scolopax minor*), and several species of woodpeckers and warblers. Although several streams are present at the MP and CWA, fresh water emergent wetlands are limited in some areas due to stream bank stabilization. Fresh water emergent vegetation includes cattail (*Typha latifolia*), water smartweed (*Polygonum amphibium*), arrowhead (*Sagittaria sp.*), pondweed (*Potamogeton sp.*), sedges, and rushes. Although limited in extent, emergent wetlands at the MP and CWA may provide habitat for muskrat (*Ondatra zibethicus*), Mallard (*Anas platyrhynchos*) and other species of water fowl, and for herptiles including northern water snake (*Nerodia sipedon*) and several frog species. Avian species observed utilizing freshwater wetlands or adjacent open waters at the MP during the BEE site visit included Mallard and Belted Kingfisher (*Megaceryle alcyon*).

Forested Uplands. Although most upland areas of the MP and CWA are developed, patches of upland forest are present in several areas. Dominant tree species include red oak (*Quercus rubra*), chestnut oak (*Quercus prinus*), tuliptree (*Liriodendron tulipifera*), and sweetgum (*Liquidambar styraciflua*). Understory species include sassafras (*Sassafras albidum*), flowering dogwood (*Cornus florida*), and black cherry (*Prunus serotina*). Mammals utilizing forested uplands include white-tailed deer, eastern gray squirrel, northern raccoon, Virginia opossum, striped skunk, eastern chipmunk (*Tamias striatus*), red fox (*Vulpes vulpes*), and white-footed mouse (*Peromyscus leucopus*). Avian species inhabiting forested uplands at the MP and CWA and utilizing these areas for foraging and nesting habitat are likely to include Red-tailed Hawk (*Buteo jamaicensis*), Cooper's Hawk (*Accipiter cooperii*), Blue Jay (*Cyanocitta cristata*), Tufted Titmouse (*Baeolophus bicolor*), Carolina Chickadee (*Parus carolinensis*), Red-eyed Vireo (*Vireo olivaceus*), Wood Thrush (*Hylocichla mustelina*), and several species of wood warblers. Avian species observed or heard in forested upland habitat during the BEE site visit included Catbird (*Dumetella carolinensis*), Carolina Chickadee, and American Robin (*Turdus migratorius*).

Old Field Habitat. Old field habitats include formerly mowed areas where the vegetation includes grasses and forbes and often immature trees. Old field habitat at the MP includes grasses, many forbes including Queen Ann's lace (*Daucus carota*), pokeweed (*Phytolacca americana*), goldenrod (*Solidago sp.*), milkweed (*Asclepias syriaca*), and sparse saplings of tree species including eastern red cedar (*Juniperus virginiana*) and winged sumac (*Rhus copallinum*). Mammals utilizing this habitat at the MP and CWA are likely to include include white-tailed deer, groundhog (*Marmota monax*), eastern cottontail (*Sylvilagus floridanus*), and meadow vole (*Microtus pennsylvanicus*). Deer and groundhog burrows were observed in this habitat at MP in the vicinity of IRP Site M-14. Avian species that prefer open old field habitat and are likely to be present at the MP and CWA include Northern Mockingbird (*Mimus polyglottos*), Eastern Bluebird (*Sialia sialis*), American Goldfinch (*Spinus tristis*), Rufus-sided Towhee (*Pipilo erythrophthalmus*), Common Yellowthroat (*Geothlypis trichas*), and other warblers, and several sparrow species. Birds observed or heard in or in the vicinity of old-field habitat during the BEE site visit included Mourning Dove (*Zenaida macroura*), House Finch (*Carpodacus mexicanus*), Carolina Wren (*Thryothorus ludovicianus*), Fish Crow (*Corvus ossifragus*), and Northern Mockingbird.

2.4.9 SURROUNDING LAND USE

In addition to ambient levels of background constituents, contaminants can also be present in the environment within the region of FTMM due to proximal off-site sources. This section describes the surrounding general land use, properties observed during surveys, and a review of regulatory databases. This information is adapted from that contained in the Environmental Condition of Property Report (Shaw, 2007) and recent searches of the NJDEP web-based application (http://www.nj.gov/dep/gis/deptutorial.htm#), performed to update information obtained during the 2007 effort.

2.4.9.1 ADJACENT PROPERTIES

The character of land use surrounding the FTMM properties typifies mixed use, small town development in New Jersey. Commercial services and shopping centers populate main roads, periodically interspersed with a residential structure, apartments, or an office building. Boundaries between towns are typically unnoticeable, although each town still tries to maintain a downtown "Main Street" shopping district. Tracts of housing subdivisions offer privacy from commonly traveled roads. Residential development is characteristically along grid-style side roads which are becoming encroached with small business and commercial service endeavors. Business and light industrial parks are tucked away along highways, streams, and RR tracks. **Figure 2-2** presents a schematic representation of general land use categories surrounding FTMM.

Main Post. The MP is surrounded by four towns. Little Silver lies to the northeast, Oceanport to the southeast, Eatontown to the southwest, and Shrewsbury to the northwest. The northeast boundary of MP is bordered by the Shrewsbury River, from the northeast corner to the area north of Battery Avenue, where the water narrows and becomes known as Parkers Creek. The downtown commercial and business district of Little Silver runs along Oceanport Avenue. Light industrial businesses are located east of Oceanport Avenue. Commercial businesses, including an animal hospital are located along the west side of Oceanport Avenue. An apartment complex is also located along the west side of Oceanport Avenue. Gas stations, the railroad station, and various stores surround the intersection of Oceanport Avenue and Sycamore Avenue. Further to the east, development is primarily residential. The eastern boundary of the MP is the railroad tracks with residential development along Horseneck Point Road.

The southeast boundary of the MP is bordered by Oceanport Creek, from the southeast corner to Wallington Avenue, where the water narrows. The area south of Oceanport Creek and east of the railroad tracks is developed with residential structures. Monmouth Park Racetrack is just west of the railroad and south of Bridgewaters Drive. Main Street in Oceanport borders the MP to the south, west of Oceanport Avenue. Residential houses, a church, and houses converted to small service businesses are located along Main Street to the south. The land immediately adjacent to the MP, north along Main Street, is residential development and a fire station. Another small area of residences borders the south boundary of MP north of the intersection of Main and Broad Streets. The Eatontown Sewage Authority, a church, residences, apartments, and the Eatontown municipal building are adjacent to the south of the MP along Throckmorton Avenue.

The intersection of Broad and Main Streets, Eatontown is located to the southwest of the MP. Small commercial stores, restaurants, and gas stations line Main Street in this area. A park surrounds Wampum Lake north of West Street. Storage USA is immediately adjacent along the southwest boundary of the MP, developed with an office and six self-service storage buildings. Two gas stations are located at the intersection of Main Street and Tinton Avenue. North along Main Street, the area is developed with banks, hotels, office buildings, and shopping centers. The Revmont Park Office Building is immediately adjacent to the MP on the northwest corner of the property, followed by Register Plaza Office Park, and a shopping center. As Main Street heads north towards Sycamore Avenue, development trends towards older residential structures. North of MP, Lafetra Creek runs along the property line. North of the creek are wooded areas with new subdivision housing developments. The entire area north of MP to Sycamore Avenue is primarily residential development.

Table 2-3 highlights specific properties observed during the adjacent property survey and the regulatory database review as presented in the Environmental Condition of Property Report (Shaw, 2007). The properties highlighted were documented with releases of contaminants or were observed with potentially hazardous substances on their premises.

Table 2-3. Properties Observed During Main Post Property Survey

Location	Property	Concern	Potential Impact
Oceanport Avenue & Main Street	Abandoned Shell Gas Station	Observed monitoring wells. State Hazardous Waste Site (SHWS) – Closed with restrictions 3/2005 (1).	Low due to hydraulic separation by Oceanport Creek.
61/63 Main Street	Residence	Observed above-ground storage tank (AST) along MP fence line.	High if there is a release.
9 Monmouth Park Place	Hi Tech Turf	Observed 55-gallon drum and AST. SHWS – Active 4/2004 (2).	High due to status and upgradient location.
25 Lake Avenue		SHWS – Active 10/2005 (3).	High due to status and upgradient location.
330 Broad Street		SHWS – Active 04/1997 (4).	Moderate due to date and upgradient location.
25 Cloverdale Avenue		SHWS – Active 09/2005 (5).	High due to status and upgradient location.
29 Rose Court	Residence	New Jersey Spills & Voluntary Cleanup Program (VCP) – 11/1999 (6).	Moderate due to date and upgradient location.
Broad & Rose	Getty Gas Station	Observed monitoring wells. SHWS – Active 08/2004 (7).	High due to status and upgradient location.
Route 35 & Tinton Avenue	Lukoil Gas Station – previous location of Mobil Station	SHWS – Active 04/1997 (8).	Moderate due to date and upgradient location.
Route 35 & Tinton Avenue	Exxon Gas Station	Historic Leaking Underground Storage Tank (historic LUST) 1991 (9).	Moderate due to date and upgradient location.
160 Main Street (Route 35)	Abandoned Amoco Gas Station	Observed monitoring wells. SHWS – Active 01/2001 (10).	High due to status and upgradient location.
37 Tinton Avenue	Residence	SHWS – Active 10/2000 (11).	High due to status and upgradient location.

Charles Wood Area. The CWA is surrounded by two towns. Eatontown lies to the east and south and Tinton Falls lies to the west and north. Tinton Avenue runs along the entire northern boundary of the CWA. North of the Golf Course, across Tinton Avenue, the land is developed with apartment complexes and the Ranney School. The northern branch of Parkers Creek also bisects this area. The area north of Tinton Avenue and west of Hope Road is developed with apartments, residential structures

and the Monmouth Regional High School. Further west on Tinton Avenue, across the Garden State Parkway, a nursery business occupies a large tract of land.

Tinton Falls Borough Department of Public Works facilities are located along the entire western property line of the CWA. Construction of new buildings is underway closest to Tinton Avenue. South of the new construction are the police department buildings. Further south are Department of Public Works storage warehouses for equipment, sand, and mulch, parking, a fueling station, and the equipment/truck storage yard. The Department of Public Works also operates a recycling collection center in this area. The southwest adjacent land appears to be cultivated with rows of bushes or trees. West of the Department of Public Works facilities is the Garden State Parkway and the Monmouth County Highway Department Site 3&6. Materials, equipment, sand, and mulch are stored outside in this area.

The southern boundary of the CWA is Pinebrook Road. A light industrial park is located along Park Road, from the southwest corner of the CWA to Hope Road. Businesses in this area include Standard Co., Hatteras Press, the Residence Inn, Garden State Delivery, IROC, DRS Technologies, Comcast, Ranger Industries, the Marriott, and Applebee's. Several commercial establishments are located along Pinebrook Road, south of the CWA, including an air conditioning and heating contractor, a construction contractor, and a 7-Eleven convenience store.

East of Hope Road, along Pinebrook Road to the south, the area is developed with office buildings and apartment complexes. Further south is Route 36. Apartment complexes and the Vetter School are located adjacent to the southeast corner of the CWA. The Eatontown Department of Public Works is located east of the CWA along Pinebrook Road. The facility has storage buildings, outside storage of materials and equipment, and a fueling station. A railroad switch storage yard and the Indian Head Enterprises (utility, pipe, and sewer company) are also located in this area along Pinebrook Road. Another railroad materials and equipment storage yard boarders the CWA property to the east off of Maxwell Road. The Borough of Eatontown also operates a recycling collection center along Lewis Street to the east of the CWA.

Maxwell Road runs along the eastern border of the CWA golf course. Fiore Paving facilities are located along Maxwell Road next to the railroad tracks. Further north along Maxwell the area is developed with residential structures. Several residences were observed to have ASTs.

Table 2-4 highlights specific properties observed during the adjacent property survey and the regulatory database review conducted in 2007. The properties highlighted were documented with releases of contaminants in the Environmental Data Resources, Inc. (EDR) report or were observed with potentially hazardous substances on their premises.

Table 2-4. Properties Observed During CWA 2007 ECP Property Survey

Location	Property	Concern	Potential Impact
539 Tinton Avenue	Concession Supply Company	Observed AST & Cylinders. SHWS – Active 05/2002. Inst Control – 08/2005 (1).	High due to status and upgradient location.
535 & 556 Tinton Avenue	Tinton Falls Borough	Observed AST and outside equipment /materials storage. SHWS – Active 10/1999 (2).	High due to status and upgradient location.
600 Tinton Avenue	CECOM (7)	SHWS – Active 12/2005 (3).	High due to status and upgradient location.
Pinebrook Road & GSP	Monmouth County Highway Dist 3&6	Observed outside storage of equipment/materials. SHWS – Active 11/1995. Class. Exempt area (4).	High due to status and upgradient location.
100 Park Road	Standard Company	Observed outside storage of equipment/materials. Historic LUST/New Jersey Release.	Low due to NFA 09/1994.

Table 2-4. Properties Observed During CWA 2007 ECP Property Survey

Location	Property	Concern	Potential Impact
45 Park Road	Hecon Corporation	Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) – No Further Remedial Action (NFRA) Transport, Storage, and Disposal Facility (TSDF)	Low due to NFA 11/1998.
14 Park Road	Mazel Company	CERCLA-NFRA	Low due to NFA 04/1984.
1 Coldstream Way	Metallurgical Industries	Area observed to be vacant field. Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) – Remedial Action (RA) 06/1997. SHWS – Active 03/1995. Industrial Site Recovery Act – 03/1995 (5).	High due to status and upgradient location.
Pinebrook & Hope Roads	Fitzpatrick & Associates	Observed outside equipment/materials storage.	High if there is a release.
250 Pinebrook Road	Eatontown Borough	Observed AST and outside equipment /materials storage. SHWS – Closed with Restrictions - 08/1995. Inst Control - (6)	Moderate due to continued fueling operations and closure status with restrictions.
37 Maxwell Road	Fiore Paving	Observed outside equipment/materials storage. New Jersey manifest.	High if there is a release.
Maxwell & Mill	Residence	Observed AST.	High if there is a release.

Numerous adjacent properties have the potential to impact the surface water quality in the vicinity of FTMM. Historically, there was concern that FTMM sewage plants were degrading surface water quality. In response to NJDEP concerns that sewage discharges were causing deleterious effects on Parkers Creek, an evaluation of the effluent and the receiving streams was performed in 1971. The evaluation concluded that the effluent met all written requirements of federal, state and local water pollution agencies. There was no visual evidence of contamination, no noticeable sewage odor and the color and turbidity of the effluent were less than that of the receiving stream (First U.S. Army Medical Laboratory, 1971). Another evaluation of the impact of wastewater discharges on the environment concluded that the impact was minimal (USAEHA, 1977). It was noted that the condition of the streams entering the installation were of similar or poorer quality due to a variety of upstream industrial operations such as Styrofoam cup manufacturing, metal plating and photo processing as well as domestic discharges. Water samples collected from Wampum Brook upstream of the CWA Sewage Treatment Plant (STP) outfall indicated no evidence of life in the brook (USAEHA, 1976).

2.4.9.2 STANDARD ENVIRONMENTAL RECORD SOURCES

A comprehensive search of state and federal environmental databases was undertaken for the facility as part of the ECP Report (Shaw, 2007) and any listed sites within standard search distances were identified. Two EDR area studies were performed: one for the MP and one for the CWA. The findings of this search, as it pertains to the FTMM surrounding land use and this BEE, are summarized below and the complete search results are provided in Appendix K of the ECP Report (Shaw, 2007).

Main Post Off-Site Facilities Summary. **Table 2-5** summarizes the results of the EDR search for the MP area. Within each database type, the location relative to MP (i.e., upgradient or downgradient)

has been provided. The location of these facilities relative to MP was based on topographic gradient, as identified on the USGS topographic quadrangle maps provided in the EDR report.

One Resource Conservation and Recovery Act (RCRA) Corrective Action Activity Site (CORRACTS) facility is reported within the 1-mile radius of the MP. The Lowe's Home Improvement Center, 118 Highway 35 South, Eatontown, is approximately ¾-mile south and upgradient from the MP. Twenty RCRA Small Quantity Generators (SQGs) facilities are reported within the ¼-mile radius of the MP. A total of 73 SHWS facilities are reported within the 1-mile radius of the MP. Eight leaking underground storage tank (LUST) facilities are reported within a ½-mile radius of the MP, an additional 22 are on the historical LUST database (this database has been inactive since 2002), and 19 facilities are also listed as registered UST sites. A total of 126 participants are listed in the VCP within a ½-mile radius of the MP.

The facilities identified in the EDR search include several service stations with USTs and other light industrial facilities. Though many are hydraulically separate from MP to prevent the migration of shallow groundwater to the MP, migration of contaminants towards Parkers Creek, Oceanport Creek, and their tributaries is feasible.

Table 2-5. MP Standard Environmental Record Results

Record(s) Source for FTMM MP	Number of Sites	Minimum Search Distance (miles)
Federal RCRA CORRACTS Facilities	1	1.0
Federal RCRA Small Quantity Generators	21	0.25
New Jersey State Hazardous Waste Sites	73	1.0
New Jersey State Landfill, Historic Landfill, and Approved Class B Recycling Facilities	3	0.5
New Jersey Active LUST Facilities	8	0.5
New Jersey Historical LUST Facilities	22	0.5
New Jersey Engineering Controls	1	0.5
New Jersey Institutional Controls	4	0.5
New Jersey VCP Facilities	126	0.5
New Jersey Registered UST Facilities	19	0.25

Charles Wood Area Off-Site Facilities Summary. **Table 2-6** summarizes the results of the EDR search for the CWA. Within each database type, the location relative to CWA (i.e., upgradient or downgradient) has been provided. The location of these facilities relative to CWA was based on topographic gradient, as identified on the USGS topographic quadrangle maps provided in the EDR report.

One National Priorities List (NPL) facility, the Naval Weapons Station Earl, is approximately ¾-mile southwest of the CWA in Colts Neck Township. Two RCRA CORRACTS facilities are reported within the ½-mile radius of the CWA: the Lowe's Home Improvement Center and the Naval Weapons Station Earl. One CERCLIS facility is reported within the ½-mile radius of the CWA; the Metallurgical Industries site participates in a state-lead cleanup program. Two additional CERCLIS facilities are listed as No Further Remedial Action Planned (NFRAP): Mazel Chemical Company and Hecon Corporation. Hecon Corporation is listed as a RCRA TSDF. There is one facility within a ¼-mile radius listed as a RCRA Large Quantity Generator (The Standard Group) and nine listed as RCRA SQGs, including public works facilities and cleaners. A total of 53 SHWS facilities are reported within the ½-mile radius of the CWA. Two facilities are listed in the Historic Solid Waste Facility Directory (Tinton Falls Borough Compost and All County Recycling) and are located upgradient of the CWA. Four LUST facilities are reported within a ½-mile radius of the CWA, an additional 20 are on the historical LUST database (this database has been inactive since 2002), and 16 facilities are also listed as registered UST sites. A total of 16 participants are listed in the VCP within a ½-mile radius of the CWA.

The facilities identified in the EDR search include several service stations with USTs and other light industrial facilities. Some of these sites are located upgradient and contaminant migration in shallow groundwater from these sites could impact groundwater at the CWA. Many, though, are hydraulically separate from CWA preventing the migration of shallow groundwater to the CWA; migration of contaminants towards Shrewsbury Creek and Wampum Brook is feasible.

Table 2-6. CWA Standard Environmental Record Results

Record(s) Source for FTMM Charles Wood Area	Number of Sites	Minimum Search Distance (miles)
Federal NPL Facilities	1	1.0
Federal RCRA CORRACTS Facilities	2	1.0
Federal CERCLIS Facilities	1	0.5
Federal CERCLIS-NFRAP Facilities	2	0.5
Federal RCRA TSD Facilities	1	0.5
Federal RCRA Large Quantity Generators	1	0.25
Federal RCRA Small Quantity Generators	9	0.25
New Jersey State Hazardous Waste Sites	53	1.0
New Jersey State Landfill, Historic Landfill, and Approved Class B Recycling Facilities	3	0.5
New Jersey Active LUST Facilities	4	0.5
New Jersey Historical LUST Facilities	20	0.5
New Jersey Institutional Controls	3	0.5
New Jersey VCP Facilities	16	0.5
New Jersey Registered UST Facilities	16	0.25

2.5 SITE DESCRIPTION AND ENVIRONMENTAL SETTING

The Phase I ECP Assessment conducted in 2006 and 2007 evaluated the existing environmental conditions of FTMM MP and CWA (including IRP sites) and the entirety of MP and CWA were characterized into 95 parcels according to their environmental condition (Shaw, 2007). **Tables 2-7 and 2-8** list all ECP parcels and IRP sites at CWA and MP, respectively. **Tables 2-7 and 2-8** are organized by ECP parcel, with all IRP sites listed with the parcel in which they are included. Within the FTMM MP and CWA are 21 parcels that were evaluated through the FTMM SI under the BRAC 2005 ECP process and 27 active/open IRP Sites. Within the 27 active/open IRP Sites, 14, as well as 1 IRP site listed as Response Complete (Fort Monmouth, 2007), have been determined to require additional evaluation through the BEE process. **Tables 2-7 and 2-8** provide the rationale for inclusion, or non-inclusion, of all parcels in the BEE based on the potential for contaminant migration and impacts to ecological receptors.

In addition, eight of the 21 ECP parcels included in the FTMM SI under the BRAC 2005 ECP process are deemed to require a BEE based on NJDEP correspondence. In total, 23 sites/parcels were evaluated as part of this BEE. The IRP sites and ECP parcels evaluated as part of the BEE are summarized in **Table 2-9**.

This section provides brief site descriptions and summaries of the previous investigations or remedial actions at the IRP and ECP sites that are addressed in the BEE. Though detected concentrations were often compared to criteria within these previous reports, the criteria are not necessarily ecologically based. The comparisons discussed in this section are simply summarized and do not imply ecological risks.

Table 2-9. Fort Monmouth Main Post/Charles Wood Area BEE Sites

Site No.	Associated Building/Feature	AEDB-R No.	Proximal Ecological Feature to be Evaluated
Main Post			
IRP Site M-2	Landfill 2	FTMM-02	Mill Creek
IRP Site M-3	Landfill 3	FTMM-03	Lafetra Creek
IRP Site M-4	Landfill 4	FTMM-04	Mill Creek
IRP Site M-5	Landfill 5	FTMM-05	Mill Creek
IRP Site M-8	Landfill 8	FTMM-08	Parkers Creek
IRP Site M-12	Landfill 12	FTMM-12	Husky Brook
IRP Site M-14	Landfill 14	FTMM-14	Husky Brook
IRP Site M-15	Water Tank	FTMM-15	Parkers Creek
IRP Site M-16	Building 498, Pesticide Storage	FTMM-16	Oceanport Creek
IRP Site M-18	Former Training Area	FTMM-18	Parkers Creek
IRP Site Pre-1941 STP	Pre-1941 Former Sanitary STP	FTMM-20	Parkers Creek
IRP Site Building 1122	Building 1122, Unknown Discharge	FTMM-59	Mill Creek
IRP Site Building 283	Building 283, LUST, Gasoline	FTMM-61	Parkers Creek
ECP Parcel 39	Building 1150, Former Photoprocessing Activities	N.A.	Mill Creek
ECP Parcel 43	Building 1122, “Do-It-Yourself” Vehicle Repair Shop	N.A.	Mill Creek
ECP Parcel 49	Buildings 283, 288, 291, 292, 293, 295, Former Squier Laboratory Complex	N.A.	Parkers Creek
ECP Parcel 61	Building 1075, Patterson Army Health Clinic	N.A.	Husky Brook
ECP Parcel 69	Building 900, Former Tactical Motor Pool	N.A.	Oceanport Creek
Charles Wood Area			
IRP Site CW-3A	Landfill, CW-3A	FTMM-25	Shrewsbury Creek
IRP Site CW-6	Former Pest. Storage	FTMM-28	Un-named Wetland
ECP Parcel 15	Building 2700, Meyers Center laboratory	N.A.	Shrewsbury Creek
ECP Parcel 27	Buildings 2507 and 2704	N.A.	Shrewsbury Creek
ECP Parcel 28	Building 2525	N.A.	Shrewsbury Creek

2.5.1 MAIN POST

2.5.1.1 LANDFILL 2 (FTMM-2)

The FTMM-2 Landfill is located in the southwestern corner of the MP, on the south bank of Mill Creek. The 8.1-acre landfill operated from 1964 until 1968. The types of materials disposed in the landfill have been reported to include construction debris, scrap metal, asbestos-containing materials (ACM), vegetative waste, unwashed containers that previously held hazardous materials/wastes, outdated photographic chemicals, small quantities of outdated drugs, sludge from the STP, soot and boiler scale, incinerator ash, oil spill debris, oil filters, batteries, fluorescent tubes, and electronic components. Metal, concrete, and other types of landfill debris had previously been observed protruding from the stream bank along Mill Creek. The bank has since undergone stabilization and debris is no longer protruding from the stream bank.

Under the IRP SI phase, three monitoring wells were installed to evaluate groundwater quality. In addition, surface water samples were collected from Mill Creek. All samples were analyzed for target compound list (TCL)+30, target analyte list (TAL) metals, and cyanide. The results are as follows:

- Chlorobenzene, arsenic, and lead were detected in downgradient monitoring wells at concentrations exceeding NJDEP Ground Water Quality Criteria (GWQC).
- Trichloroethene (TCE) and tetrachloroethene (PCE) were detected in surface water at concentrations exceeding the NJDEP Surface Water Quality Criteria (SWQC).

Under an enhanced SI phase, seven additional monitoring wells were installed to further evaluate groundwater quality. Subsequently, consecutive quarterly rounds of groundwater samples were collected for analysis. The results are as follows:

- Benzene, chlorobenzene, cadmium, and lead have been detected in six of the seven downgradient monitoring wells at concentrations exceeding the NJDEP GWQC.

A remedial investigation (RI) to delineate contaminants of concern within groundwater and soil has been completed. A second RI that evaluated the potential for environmental contaminants being present within the existing landfill cover material has also been completed. The results are as follows:

- Polychlorinated biphenyls (PCBs) were identified in site soils at two separate areas within the boundary of the landfill.

The IRP recommended a NFA for near surface soil (Versar, Inc., 2001). For PCB contamination in subsurface soils, the Directorate of Public Works (DPW) incorporated a document equivalent to a Declaration of Environmental Restriction (DER) into the FTMM Installation Master Plan. For groundwater, the DPW established a Classification Exception Area (CEA). Subsequently, it was determined that the FTMM-2 Landfill required additional evaluation through the BEE process.

As part of the BEE, 12 sediment samples and two surface water samples were collected from Mill Creek adjacent to Landfill 2 (FTMM-2), one surface water and one sediment sample were collected upstream of Landfill 2 (FTMM-2), and two surface water samples were collected downstream of Landfill 2 (FTMM-2). These are discussed further in **Section 3.4.2.1**.

Mill Creek borders Landfill 2 (FTMM-2) along its north side and a small drainage tributary to Mill Creek borders it along its west side. The bank of Mill Creek along Landfill 2 (FTMM-2) has undergone stabilization and a service road lies adjacent to Mill Creek. The site slopes gently to the north and surface runoff is discharged to Mill Creek. Groundwater underlying Landfill 2 (FTMM-2) flows to the north-northwest to Mill Creek. Conductivity and salinity monitoring conducted in 1995 in Mill Creek indicate the presence of freshwater with conductivity readings less than 240 micromhos (µmhos) and salinity readings less than 0.2 ppt with a maximum tidal fluctuation of 1.2 feet (Weston, 1995).

As indicated on the FTMM utility maps in **Appendix K**, several storm water outfalls discharge into Mill Creek in the vicinity of Landfill 2 (FTMM-2) from the vicinity of Building 1150 and Building 1152 located in Parcel 39 (**Section 2.5.1.14**) located north of Mill Creek from Landfill 2. A gas utility line and a storm water line located in the southeastern corner of Landfill 2 may provide additional migration pathways for contaminants from Landfill 2; migration along these pathways would not be in the direction of Mill Creek.

The vegetative cover of Landfill 2 (FTMM-2) is mostly cut field with isolated areas of wood-shrub habitat. Silver maple (*Acer saccharinum*), viburnum (*Viburnum* sp.), smartweed (*Polygonum* sp.), and blackgum (*Nyssa sylvatica*) are present along Mill Creek. The upland portions contain black walnut (*juglans nigra*), silver maple, boxwood (*Buxus* sp.), catalpa (*Catalpa speciosa*), and black locust (*Robinia pseudoacacia*).

Geographic Information System (GIS) digital data available through the NJDEP indicate the presence of deciduous wetlands along Mill Creek and to the east and west of Landfill 2 (FTMM-2) as well as herbaceous wetlands across the site. A site visit on September 9, 2009, confirmed the presence of deciduous wetlands bordering Mill Creek and Landfill 2 (FTMM-2); however, the site was typical of upland habitat and not herbaceous wetlands.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species.

2.5.1.2 LANDFILL 3 (FTMM-3)

The M-3 Landfill is located between North Drive and Lafetra Creek in the west-central part of the MP and it is bordered by Mill Creek to the east. The 8.0-acre landfill operated from 1959 until 1964. The types of materials disposed of in the landfill have been reported to include construction debris, scrap metal, ACM, vegetative waste, unwashed containers that previously held hazardous materials/wastes, outdated photographic chemicals, small quantities of outdated drugs, sludge from the STP, soot and boiler scale, incinerator ash, oil spill debris, oil filters, batteries, fluorescent tubes, and electronic components. The stream bank has undergone stabilization along Lafetra Creek.

Under the IRP SI, three monitoring wells were installed to evaluate groundwater quality. In addition, surface water samples were collected from Lafetra Creek. All samples were analyzed for TCL+30, TAL metals, and cyanide. The results are as follows:

- Chlorobenzene and lead were detected in downgradient monitoring wells at concentrations exceeding the NJDEP GWQC.
- No contaminants of concern were detected in surface water samples collected during the SI phase.
- Surface water samples collected under a New Jersey Pollutant Discharge Elimination System (NJPDES) permit identified PCE at concentrations exceeding the NJDEP SWQC.

Under an enhanced SI, five additional monitoring wells were installed to further evaluate groundwater quality. Subsequently, consecutive quarterly rounds of groundwater samples have been collected for analysis. The results are as follows:

- Benzene, chlorobenzene, cadmium, and lead were detected in all five downgradient monitoring wells at concentrations exceeding the NJDEP GWQC.

The IRP recommended NFA for near surface soil (Versar, Inc. 2004a), and a CEA was prepared for groundwater. Subsequently, the M-3 Landfill was considered to require additional evaluation through the BEE process.

As part of the BEE, 11 sediment samples and two surface water samples were collected from Lafetra Creek and five sediment samples and one surface water sample were collected from Mill Creek adjacent to Landfill 3 (FTMM-3), and one surface water and one sediment sample were collected upstream of Landfill 3 (FTMM-3) on Mill Creek. These are discussed further in **Section 3.4.2.2**.

Lafetra Creek borders Landfill 3 (FTMM-3) along its north side and Mill Creek borders it along its east side. The banks of Mill Creek and Lafetra Creek along Landfill 3 (FTMM-3) have undergone stabilization and a service road lies adjacent to Mill Creek and Lafetra Creek. The site slopes gently to the north and east and surface runoff is discharged to Mill Creek or Lafetra Creek. Groundwater underlying Landfill 3 (FTMM-3) flows predominantly to the north to Lafetra Creek.

As indicated on the FTMM utility maps in **Appendix K**, there are no outfalls or discharges from FTMM into Lafetra Creek or Mill Creek in the vicinity of Landfill 3 (FTMM-3) that may serve as potential contaminant migration pathways nor utility lines through Landfill 3 that may provide additional contaminant migration pathways from Landfill 3.

The vegetative cover of Landfill 3 (FTMM-3) is mostly cut field with isolated areas of wood-shrub habitat. Silver maple is present along the bank growing through the stabilizing riprap and poison ivy (*Toxicodendron radicans*) can be found on many of the trees. Opposite the landfill, emergent wetlands are dominated by cattail (*Typha* sp.) with patches of common reed (*Phragmites australis*). In the upland areas are black gum, American beech (*Fagus grandifolia*), pin oak (*Quercus palustris*), and silver maple as wells as mixed grasses and forbes including foxtail (*Alopercurus* sp.) and catalpa as well as Japanese knotweed (*Polygonum cuspidatum*) and wild grape (*Vitis* sp.).

GIS digital data available through the NJDEP indicate the presence of freshwater tidal wetlands along the Lafetra Creek opposite Landfill 3 (FTMM-3) as well as deciduous wetlands further to the north and to the west of Landfill 3 (FTMM-3).

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species. Lafetra Creek, as well as the adjacent wetlands, is Conservation Rank 4 as potential bald eagle foraging habitat, indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. However, the presence of bald eagles has not been documented for this site.

2.5.1.3 LANDFILL 4 (FTMM-4)

The M-4 Landfill is located on MP in the area bounded by Avenue of Memories to the south, North Drive to the north, Mill Creek to the west, and Wilson Avenue to the east. The 1.4-acre landfill operated from 1955 until 1956. The types of materials disposed of in the landfill have been reported to include construction debris, scrap metal, ACM, vegetative waste, unwashed containers that previously held hazardous materials/wastes, outdated photographic chemicals, small quantities of outdated drugs, sludge from the STP, soot and boiler scale, incinerator ash, oil spill debris, oil filters, batteries, fluorescent tubes, and electronic components. A stream bank stabilization project was completed for this site.

Under the IRP SI, three monitoring wells were installed to evaluate groundwater quality. All samples were analyzed for TCL+30 parameters, TAL metals, and cyanide. The results are as follows:

- A single pesticide [4,4′-dichlorodiphenyltrichloroethane (4,4′-DDT)] was detected in an upgradient monitoring well at concentrations exceeding the NJDEP GWQC. As of 2002, 15 consecutive quarterly rounds of groundwater samples had been collected for subsequent analysis. Lead was initially detected in site monitoring wells at concentrations exceeding the NJDEP GWQC.

The IRP recommended NFA for the site (Versar, Inc., 2004b, 2005a). Subsequently, it was determined that the FTMM-4 Landfill required additional evaluation through the BEE process.

As part of the BEE, six sediment samples and one surface water sample were collected from Mill Creek adjacent to Landfill 4 (FTMM-4). These are discussed further in **Section 3.4.2.3**.

Mill Creek borders Landfill 4 (FTMM-4) along its west side. Both banks of Mill Creek along Landfill 4 (FTMM-4) have undergone stabilization. The site slopes gently to the west and surface runoff is discharged to Mill Creek. Groundwater underlying Landfill 4 (FTMM-4) flows to the west in the direction of Mill Creek.

As indicated on the FTMM utility maps in **Appendix K**, storm water outfalls discharge into Mill Creek in the vicinity of Landfill 4 (FTMM-4) near the northern and southern end of Landfill 4 (FTMM-4) which direct discharges from the surrounding area including the vicinity of Buildings 689, 1123, and 1221. The storm water line discharging into the northern end of Landfill 4 crosses Landfill 4 in a northwesterly direction and may act as a preferentially migration pathway for contaminants from Landfill 4 towards Mill Creek.

Landfill 4 (FTMM-4) is mostly mowed lawn with scattered large trees with grasses and forbes and small trees along Mill Creek. Along the creek are grasses and forbes with small trees; dominant vegetation is poison ivy, black cherry (*Prunus serotina*), catalpa, and goldenrod (*Solidago* sp.). To the south along the creek are Virginia creeper and wild rose, as well as pin oak and black willow (*salix nigra*). Black locust (*Robinia pseudoacacia*) and black oak (*Quercus velutina*) are present in the mowed area as well as Norway maple (*Acer platanoides*) and American bittersweet (*Celastrus scandens*) bordering the road.

No significant habitats in the vicinity of Landfill 4 (FTMM-4) are identified within GIS digital data available through the NJDEP.

2.5.1.4 LANDFILL 5 (FTMM-5)

The FTMM-5 Landfill is located just north of the FTMM-4 Landfill in the area bounded by North Drive to the south, an unpaved road south of Building 198 to the north, Wilson Avenue to the east, and Mill Creek and Parkers Creek to the west. The 3.2-acre landfill operated from 1952 until 1959. The types of materials disposed of in the landfill have been reported to include construction debris, scrap metal, ACM, vegetative waste, unwashed containers that previously held hazardous materials/wastes, outdated

photographic chemicals, small quantities of outdated drugs, sludge from the STP, soot and boiler scale, incinerator ash, oil spill debris, oil filters, batteries, fluorescent tubes, and electronic components. A stream bank stabilization project was completed for this site.

Under the IRP SI, two monitoring wells were installed to evaluate groundwater quality. All samples were analyzed for TCL+30, TAL metals, and cyanide. The results are as follows:

- PCE was detected in one monitoring well at concentrations exceeding the NJDEP GWQC. Subsequently, consecutive quarterly rounds of groundwater samples have been collected for analysis.
- Surface water samples collected under an NJPDES permit identified PCE at concentrations exceeding the NJDEP SWQC.

Under the RI, approximately 260 groundwater and soil samples were collected by means of a Geoprobe® sampling device. Following the Geoprobe® investigation, 13 additional monitoring wells were installed to further evaluate groundwater quality. At present, the extent of the PCE plume has been delineated both vertically and horizontally.

The IRP recommended NFA for near surface soil (Versar, Inc., 2004c), and a CEA was prepared for groundwater. Subsequently, it was determined that the M-5 Landfill required additional evaluation through the BEE process.

As part of the BEE, six sediment samples and one surface water sample were collected from Mill Creek adjacent to Landfill 5 (FTMM-5). These are discussed further in **Section 3.4.2.4**.

Mill Creek borders Landfill 5 (FTMM-5) along its west side. Landfill 3 (FTMM-3) lies across Mill Creek to the west, Landfill 8 (FTMM-8) is to the north, and Landfill 4 (FTMM-4) is to the south. The bank of Mill Creek along Landfill 5 (FTMM-5) has undergone stabilization. The site slopes gently to the west and surface runoff is discharged to Mill Creek. Groundwater at the Landfill 5 (FTMM-5) flows to the west to Mill Creek.

As indicated on the FTMM utility maps in **Appendix K**, there are no outfalls or discharges from FTMM into Mill Creek adjacent Landfill 5 (FTMM-5) that may serve as potential contaminant migration pathways, though there are storm water utility discharges located immediate upstream of Landfill 5 (FTMM-5) that serve to drain the surrounding roads and building areas. There are, however, storm water lines within Landfill 5 that may act as additional contaminant migration pathways for transport from Landfill 5, particularly toward Landfill 8 (FTMM-8) located to the north (**Section 2.5.1.5**).

Landfill 5 (FTMM-5) is mostly mowed lawn with scattered large trees: white oak (*Quercus alba*), red mulberry (*Morus rubra*), black gum, and red maple. Along the creek are mixed forbs and shrubs: black locust, horseweed (*Conyza* sp.), Queen Anne's lace (*Daucus carota*), black-eyed Susan (*Rudbeckia hirta*), and cone flowers (*Echinacea* sp.).

Though the GIS digital data available through the NJDEP do not indicate the presence of critical habitats at Landfill 5 (FTMM-5), the forested area to the north is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species, and is listed as Conservation Rank 4 as potential bald eagle foraging habitat, indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. However, the presence of bald eagles has not been documented for this site.

2.5.1.5 LANDFILL 8 (FTMM-8)

The FTMM-8 Landfill is located north of Buildings 692 and 697 along a bend of Parkers Creek. The 7.2-acre landfill operated from 1962 until 1981. Following closure of the FTMM-8 Landfill, all solid wastes generated at FTMM were directed off-Post to the Monmouth County Landfill. The types of materials disposed of in the landfill have been reported to include construction debris, scrap metal, ACM, vegetative waste, unwashed containers that previously held hazardous materials/wastes, outdated photographic chemicals, small quantities of outdated drugs, sludge from the STP, soot and boiler scale, incinerator ash, oil spill debris, oil filters, batteries, fluorescent tubes, and electronic components. A stream bank stabilization project was completed for this site.

Under the SI, four monitoring wells were installed to evaluate groundwater quality. All samples were analyzed for TCL+30, TAL metals, and cyanide. The results are as follows:

- Benzene and chlorobenzene were detected in downgradient monitoring wells at concentrations exceeding the NJDEP GWQC.

Under an enhanced SI phase, seven additional monitoring wells were installed to further evaluate groundwater quality. The results are as follows:

- Benzene and chlorobenzene were detected in four downgradient monitoring wells at concentrations exceeding the NJDEP GWQC.

Contaminant concentrations are consistent with those identified during the IRP SI phase and subsequent quarterly long-term monitoring results for surface water and groundwater at the FTMM-8 Landfill.

PCB soil contamination was identified at one location within the FTMM-8 Landfill. A second RI was also completed that evaluated the potential for environmental contaminants being present within the existing landfill cover material.

The IRP recommended NFA for near surface soil (Versar, Inc., 2004d). For subsurface soils, the DPW incorporated a document equivalent to a DER into the FTMM Installation Master Plan for PCB soil contamination. A CEA was prepared for groundwater. Subsequently, it was determined that the FTMM-8 Landfill required additional evaluation through the BEE process.

As part of the BEE, 10 sediment samples and two surface water samples were collected from Parkers Creek adjacent to Landfill 8 (FTMM-8), and one surface water and one sediment sample were collected upstream of Landfill 8 (FTMM-8) on the North Branch Parkers Creek. These are discussed further in **Section 3.4.2.5**.

Parkers Creek borders Landfill 8 (FTMM-8) along its west, north, and east sides. The bank of Parkers Creek along Landfill 8 (FTMM-8) has undergone stabilization and a service road lies adjacent to Parkers Creek. The site slopes sharply toward Parkers Creek and surface runoff is discharged to Parkers Creek. Groundwater underlying Landfill 8 (FTMM-8) flows to the north-northwest to Parkers Creek.

As indicated on the FTMM utility maps in **Appendix K**, storm water outfalls discharge into Parkers Creek at the western end of Landfill 8 (FTMM-8), as well as to the east of Landfill 8, which may direct discharges from the surrounding area, including Landfill 5 (**Section 2.5.1.4**), to Parkers Creek. Storm water utility lines in the south and eastern end of Landfill 8 may provide additional contaminant migration pathways from Landfill 8 including towards Parkers Creek to the west.

Common reed dominates the emergent wetlands opposite Parkers Creek from Landfill 8 (FTMM-8). The upland area is heavily wooded. Dominant species are cedar (*Chamaecyparis* sp.), sweet gum (*Liquidambar styraciflua*), black locust, Japanese knotweed, staghorn sumac (*Rhus typhina*), foxtail grass, Asiatic dayflower (*Commelina communis*), pin oak, common mullein (*Verbascum thapsus*), boxwood (*Buxus* sp.), black willow, poison ivy, silver maple, yellow birch (*Betula alleghaniensis*), Norway maple, red oak, and tree of heaven (*Ailanthus altissima*).

GIS digital data available through the NJDEP indicate the presence of Phragmites dominated wetlands along Parkers Creek opposite Landfill 8 (FTMM-8), with deciduous shrub/scrub wetlands and deciduous wetlands present further from the landfill. Landfill 8 (FTMM-8) is identified as coastal forest habitat.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland areas across Parkers Creek and the forested areas on Landfill 8 (FTMM-8) are habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species. Parkers Creek and the wetlands and forested areas are listed as Conservation Rank 4 as potential bald eagle foraging habitat, indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. However, the presence of bald eagles has not been documented for this site.

2.5.1.6 LANDFILL 12 (FTMM-12)

The M-12 Landfill is located on the MP, on the south side of Husky Brook, west of Murphy Drive. Dates of operation for the 7.1-acre landfill are unknown. The types of materials disposed in the landfill have been reported to include construction debris, scrap metal, ACM, vegetative waste, unwashed containers that previously held hazardous materials/wastes, outdated photographic chemicals, small quantities of outdated drugs, sludge from the STP, soot and boiler scale, incinerator ash, oil spill debris, oil filters, batteries, fluorescent tubes, and electronic components. Metal, concrete, and other types of landfill debris had previously been observed protruding from the stream bank along Husky Brook. The bank has since undergone stabilization, and debris no longer protrudes from the stream bank..

Under the IRP SI, three monitoring wells were installed to evaluate groundwater quality. All samples were analyzed for TCL+30, TAL metals, and cyanide. The results are as follows:

- Arsenic, cadmium, mercury, and lead were detected in site monitoring wells at concentrations less than the NJDEP GWQC.

An RI of site groundwater has been completed and eight additional monitoring wells have been installed at the site. The results are as follows:

- Arsenic was consistently detected in two monitoring wells at concentrations exceeding the NJDEP GWQC.

An RI that evaluated the potential for environmental contaminants being present within the existing landfill cover material was completed.

The IRP recommended NFA for near surface soil (Versar, Inc., 2003), and a CEA was submitted for groundwater. Subsequently, it was determined that the FTMM-12 Landfill required additional evaluation through the BEE process.

As part of the BEE, nine sediment samples and two surface water samples were collected from Husky Brook adjacent to Landfill 12 (FTMM-12), one surface water sample and one sediment sample were collected downstream of Landfill 12 (FTMM-12) on Oceanport Creek, one surface water and two sediment samples were collected immediately upstream of Landfill 12 (FTMM-12), and one surface water sample and one sediment sample were collected further upstream. These are discussed further in **Section 3.4.2.6**.

Husky Brook borders Landfill 12 (FTMM-12) along its north side and a small tributary to Husky Brook divides Landfill 12 (FTMM-12) into an east and a west section. The bank of Husky Brook along Landfill 12 (FTMM-12) has undergone stabilization. The site is generally flat and groundwater underlying Landfill 12 (FTMM-12) flows to the north to Husky Brook.

As indicated on the FTMM utility maps in **Appendix K**, several storm water outfalls discharge into Husky Brook, as well as the small tributary to Husky Brook, in the vicinity of Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14) from the surrounding areas. Several of the storm water utility lines cross through Landfill 12 and may act as preferential contaminant migration pathways for transport from Landfill 12 towards Husky Brook.

The riparian zone on both banks of Husky Brook is characterized as hardwoods and shrubs and contains groundsel bush, locust trees, black cherry, common wormwood (*Artemisia vulgaris*), bayberry, black oak, milkweed, horseweed, goldenrod, eastern cottonweed, staghorn sumac, Queen Anne's lace, red cedar, marsh elder, silver maple, and pin oak. Some common reed is present nearest Wallington Avenue-Murphy Drive. The upland area south of Husky Brook is old field habitat and includes common reed and tall grasses, mugwort, goldenrod, Queen Anne's lace, vetch, as well as black locust, marsh elder, groundsel bush, wild grape, staghorn sumac, bayberry, silver maple, crab apple, and gray birch.

GIS digital data available through the NJDEP indicate the presence of deciduous wooded wetlands along both banks of Husky Brook in the western half of Landfill 12 (FTMM-12) as well as along the small tributary that divides Landfill 12 (FTMM-12). Based on on-site observations, these wetlands are less extensive than indicated through the NJDEP data.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland areas along Husky Brook and the small tributary are habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species. To the east of Landfill 12 (FTMM-12), on the opposite side of Wallington Avenue-Murphy Drive, the emergent wetland areas are habitat Rank 4 for the Least Tern; this rank indicates at least one or more occurrences of a state endangered species. Husky Brook, as well as the wetlands and the forested areas of Landfill 12 (FTMM-12), is listed as Conservation Rank 4 as potential bald eagle foraging habitat, indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. However, the presence of bald eagles has not been documented for this site.

2.5.1.7 LANDFILL 14 (FTMM-14)

The M-14 Landfill is located on the MP, on the north side of Husky Brook, west of Murphy Drive. The 6.9-acre landfill operated from 1965 until 1966. The types of materials disposed of in the landfill have been reported to include construction debris, scrap metal, ACM, vegetative waste, unwashed containers that previously held hazardous materials/wastes, outdated photographic chemicals, small quantities of outdated drugs, sludge from the STP, soot and boiler scale, incinerator ash, oil spill debris, oil filters, batteries, fluorescent tubes, and electronic components. Metal, concrete, and other types of landfill debris were previously observed protruding from the stream bank along Husky Brook. The bank has since undergone stabilization and debris no longer protrudes from the stream bank.

Under the IRP SI, three monitoring wells were installed to evaluate groundwater quality. In addition, surface water samples were collected from Husky Brook. All samples were analyzed for TCL+30, TAL metals, and cyanide. The results are as follows:

- Lead was detected in one downgradient monitoring well above NJDEP GWQC.

As of 2002, 11 consecutive quarterly rounds of groundwater samples had been collected for subsequent analysis. The results are as follows:

- Arsenic was detected in one site monitoring well at concentrations exceeding the NJDEP GWQC.
- Lead and *cis*-1,2-dichloroethene were detected in surface water samples less than the NJDEP SWQC.

The IRP recommended NFA for the site (Versar, Inc., 2004e). Subsequently, it was determined that the FTMM-14 Landfill required additional evaluation through the BEE process.

As part of the BEE, 10 sediment samples and two surface water samples were collected from Husky Brook adjacent to Landfill 14 (FTMM-14), one surface water sample and one sediment sample were collected downstream of Landfill 14 (FTMM-14) on Oceanport Creek, one surface water and two sediment samples were collected immediately upstream of Landfill 14 (FTMM-14), and one surface water sample and one sediment sample were collected further upstream. These are discussed further in **Section 3.4.2.7**.

Husky Brook borders Landfill 14 (FTMM-14) along its south side. An access road/walking trail lies adjacent to Husky Brook for most of the length of Landfill 14 (FTMM-14) before crossing over Husky Brook. The bank of Husky Brook along Landfill 14 (FTMM-14) has undergone stabilization. The site is generally flat and groundwater underlying Landfill 14 (FTMM-14) flows to the south to Husky Brook.

As indicated on the FTMM utility maps in **Appendix K**, several storm water outfalls discharge into Husky Brook, as well as the small tributary to Husky Brook, in the vicinity of Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14) from the surrounding areas. Though several of the storm water utility lines cross through Landfill 12 and may act as preferential contaminant migration pathways for transport from Landfill 12 towards Husky Brook, the storm water and gas lines located in the northern section of Landfill 14 may act as contaminant migration pathways from Landfill 14 to the east, west, and north, away from Husky Brook.

The riparian zone on both banks of Husky Brook is characterized as hardwoods and shrubs and contains groundsel bush, locust trees, black cherry, common wormwood, bayberry, black oak, milkweed,

horseweed, goldenrod, eastern cottonweed, staghorn sumac, Queen Anne's lace, red cedar, marsh elder, silver maple, and pin oak. Some common reed is present nearest Wallington Avenue-Murphy Drive. The area to the east and north of the trail is mostly mixed tall grasses. To the west of the field area is a heavily wooded section; this area contains boxwood, sweetgum, pin oak, black locust, goldenrod, milkweed, pokeweed, wild rose, black cherry, poison ivy, Asiatic bittersweet, sassafras, and black oak. An emergent wetland area is present bordering Husky Brook and is characterized by cattail, smartweed, and vibernum. The far western section is maintained lawn with isolated trees.

GIS digital data available through the NJDEP indicate the presence of deciduous wooded wetlands along both banks of Husky Brook in the western half of Landfill 14 (FTMM-14) as well as along the small tributary that divides Landfill 12 (FTMM-12). Based on on-site observations, these wetlands are less extensive than indicated through the NJDEP data.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland areas along Husky Brook and the small tributary are habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species. To the east of Landfill 14 (FTMM-14), on the opposite side of Wallington Avenue-Murphy Drive, the emergent wetland areas are habitat Rank 4 for the Least Tern; this rank indicates at least one or more occurrences of a state endangered species. Husky Brook, as well as the wetlands and the forested areas of Landfill 14 (FTMM-14), is listed as Conservation Rank 4 as potential bald eagle foraging habitat, indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. However, the presence of bald eagles has not been documented for this site.

2.5.1.8 WATER TANK (FTMM-15)

The 1980 Installation Assessment (IA) report (USATHAMA, 1980) identified the 0.3-acre FTMM-15 site as a potential Area of Concern. A 500,000-gallon AST is located at the FTMM-15 site. The tank, built in 1941, is of steel construction and was always used for the storage of potable water. The tank is located in the northeast section of the MP next to Parkers Creek, a tributary of the Shrewsbury River.

Under the IRP SI, environmental contaminants in the form of pesticides and heavy metals were identified in site soil. The results are as follows:

- Two pesticides, 4,4′-dichlorodiphenyldichloroethylene (4,4′-DDE) and 4,4′-DDT, were identified at concentrations exceeding the NJDEP Residential Direct Contact Soil Cleanup Criteria. It was determined that the pesticide contamination was the result of past over spraying practices.
- Three heavy metals—cadmium, lead, and zinc—were also identified at concentrations exceeding the NJDEP Residential Direct Contact Soil Cleanup Criteria.

Under the IRP RI, environmental sampling confirmed that the contaminants of concern had migrated horizontally towards Parkers Creek. A corrective action was implemented at the FTMM-15 site involving the removal of the contaminated soil from the site, thereby eliminating the contaminants of concern. Final remedial activities were completed in November of 1999. An RA report will be submitted to NJDEP with a NFA recommendation from the Army.

The IRP recommended NFA for the site. Subsequently, it was determined that FTMM-15 required additional evaluation through the BEE process.

As part of the BEE, four sediment samples and three surface water samples were collected from Parkers Creek adjacent to FTMM-15, of which one surface water sample and one sediment sample were collected immediately downstream of FTMM-15 and one surface water sample and one sediment sample were collected immediately upstream of FTMM-15. These are discussed further in **Section 3.4.2.8**.

Parkers Creek borders FTMM-15 along its north side. Parkers Creek is a wide, open water tidal water body in this area. The banks along Parkers Creek are steep and groundwater underlying FTMM-15 flows to the north to Parkers Creek.

The area of FTMM-15 immediately surrounding the water tank is maintained lawn. The banks along Parkers Creek are steep and vegetated. Vegetation includes poison ivy, pin oak, alder, Japanese knotweed, black willow, staghorn sumac, black locust, rose, and Norway maple.

No significant habitats in the vicinity of FTMM-15 are identified within GIS digital data available through the NJDEP.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that Parkers Creek is listed as Conservation Rank 4 as potential bald eagle foraging habitat, indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. However, the presence of bald eagles has not been documented for this site.

2.5.1.9 PESTICIDE STORAGE, BUILDING 498 (FTMM-16)

A former pesticide storage and mixing area was located at the 0.12-acre FTMM-16 site on the MP. The facility (Building 498) is a brick structure and was constructed in 1939. Pesticide management was conducted at the site until the late 1950s. Following this, the operation was moved to Building 65.

Under the IRP SI, a total of 10 pesticide compounds were detected greater than laboratory quantitative limits in site soil. Five pesticide compounds were found at concentrations exceeding the NJDEP Residential Direct Contact Soil Cleanup Criteria.

Environmental sampling confirmed that the contaminants were migrating horizontally in the direction of Oceanport Creek. The creek is located approximately 250 feet downgradient of the FTMM-16 site. A corrective action was implemented to remove the contaminated soil from the site, and final remedial activities were completed in February of 1999.

The IRP recommended a NFA for the site. Subsequently, it was determined that FTMM-16 required additional evaluation through the BEE process.

As part of the BEE, four sediment samples and three surface water samples were collected from Oceanport Creek near FTMM-16, of which one surface water sample and one sediment sample were collected downstream of FTMM-16, and one surface water sample and one sediment sample were collected upstream of FTMM-16. These are discussed further in **Section 3.4.2.9**.

Site FTMM-16 is approximately 100 yards north of Oceanport Creek which is a wide, open water tidal water body in this area. Immediately south of Site FTMM-16 is a marina and the banks of Oceanport Creek are contained by bulkheads. West of the marina and east of Oceanport Avenue the bank slopes gently to Oceanport Creek. Groundwater underlying FTMM-16 flows to the south to Oceanport Creek.

The area immediately surrounding the FTMM-16 site is maintained lawn. Along Oceanport Creek are buildings, structures, and pavement associated with the marina. West of the marina is an emergent wetland area of sedges and rushes dominated by cattails and common reeds.

GIS digital data available through the NJDEP indicate the presence of low marsh saline wetlands west of the marina and east of Oceanport Avenue.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area along Oceanport Creek is habitat Rank 4 for the Least Tern; this rank indicates at least one or more occurrences of a state endangered species. Oceanport Creek, as well as the wetlands, is listed as Conservation Rank 4 as potential bald eagle foraging habitat, indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. However, the presence of bald eagles has not been documented for this site.

2.5.1.10 FORMER TRAINING AREA/LANDFILL (FTMM-18)

The FTMM-18 site is a former training area utilized by the Army Signal School and other Army units. The FTMM-18 site is located on the MP, between Parkers Creek to the north and Buildings 283, 289, 293, and 294 to the south. The 4.85-acre site is partially paved and the remaining portion is an open sandy area. A tidal marsh adjoins the site. The 1980 IA report (USATHAMA, 1980) identifies diesel and gasoline generators and military vehicles being used at this site. The report states that several fuel spills occurred as a result of these activities. A stream bank stabilization project was completed for this site.

Under the IRP SI, nine soil borings in a grid pattern were drilled at the site. Two soil samples were collected from each boring, either 6 to 12 inches or 12 to 18 inches below the bottom of the asphalt (to avoid bias) and either from intervals with visible staining or from just above the water table. Soil samples were analyzed for volatile organic compounds (VOCs) and total petroleum hydrocarbons (TPH). The results are as follows:

- No compounds of concern were detected at concentrations exceeding the NJDEP Direct Residential Contact Soil Cleanup Criteria.

Two soil boring locations were converted to monitoring wells in order to evaluate groundwater quality. One existing monitoring well was also used to evaluate groundwater quality. Groundwater samples were analyzed for TCL+30, TAL metals, and TPH. The results are as follows:

- Arsenic, lead, and 4,4′-dichlorodiphenyldichloroethane (4,4′-DDD) were detected in downgradient monitoring wells at concentrations exceeding the NJDEP GWQC.

Under an enhanced SI under the IRP, three additional monitoring wells were installed to further evaluate groundwater quality. Subsequently, consecutive quarterly rounds of groundwater samples have been collected for analysis. The results are as follows:

- Benzene and lead were detected in four of the six site monitoring wells at concentrations exceeding the NJDEP GWQC.

A geophysical survey was also conducted under the SI to determine whether the M-18 site was a former landfill. The data gathered from geophysical survey identified waste materials buried at the site. Subsequent trenching work confirmed the presence of construction debris.

An RI that evaluated the potential for environmental contaminants being present within the existing landfill cover material was completed. This resulted in a NFA determination regarding the landfill cover material.

The IRP recommended NFA for near surface soil (Versar, Inc., 2004f), and a CEA was submitted for groundwater. Subsequently, it was determined that FTMM-18 required additional evaluation through the BEE process.

As part of the BEE, four sediment samples and one surface water sample were collected from Parkers Creek adjacent to Site FTMM-18, and one surface water sample and one sediment sample were collected immediately upstream of Site FTMM-18. These are discussed further in **Section 3.4.2.10**.

Parkers Creek borders Site FTMM-18 along all but its southern boundary. At the western end, Parkers Creek is narrow (approximately 10 yards) but then opens to a wide (approximately 100 yard) open water tidal area at the eastern end. The bank of Parkers Creek on the western side of Site FTMM-18 has undergone stabilization. The central portion of the site is generally flat with greater slopes to the north and east and groundwater underlying Site FTMM-18 flows toward Parkers Creek.

As indicated on the FTMM utility maps in **Appendix K**, several storm water utility lines may discharge into Parkers Creek in the vicinity of Site FTMM-18. These storm water lines drain areas south and east of Site FTMM-18 including Buildings 291 to 296 and Building 283 (FTMM-61) in Parcel 49 (**Sections 2.5.1.13 and 2.5.1.15**). Several of the storm water utility lines cross through Site FTMM-18 in a northerly direction and may act as preferential contaminant migration pathways for transport from Site FTMM-18 towards Parkers Creek.

The western and central portion of Site FTMM-18 is maintained lawn with some hardwoods and small pockets of emergent wetland dominated by common reed. The western border, adjacent to Parkers Creek, contains shrubs and small hardwoods. Some pines are planted in this area and an active Osprey platform is present. Bordering Parkers Creek to the north and east are extensive emergent wetlands dominated by common reed in the high marsh and sedge-reed wetlands in the low marsh. The northeastern and eastern portions also contain forested wetlands sloping sharply to the emergent wetlands and Parkers Creek. Common vegetation at Landfill 18 (FTMM-18) includes black locust, black cherry, northern boxwood, Asian bittersweet, wild grape, marsh elder, goldenrod, red cedar, poison ivy, tree of heaven, red mulberry, and bayberry.

GIS digital data available through the NJDEP indicate the presence of Phragmites dominated coastal wetlands and high marsh saline wetlands adjacent to Parkers Creek. Based on observations, there is also an area of deciduous wetlands between the maintained lawns and the emergent wetlands, and a small emergent wetlands within the area of maintained lawn.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland areas along Parker Creek are habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species. Parkers Creek, as well as the associated wetlands, is listed as Conservation Rank 4 as potential bald eagle foraging habitat, indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. However, the presence of bald eagles has not been documented for this site.

2.5.1.11 PRE-1941 FORMER SANITARY SEWAGE TREATMENT PLANT (FTMM-20)

Site FTMM-20 is the location of the former Sanitary STP adjacent to Parkers Creek in an area north of Allen Avenue in approximately the same location as current Building 259. Though the date of construction and period of operation are unknown, it is believed that this STP operated until the second MP STP came on line in 1941.

As part of the IRP SI (Weston, 1995), one sediment sample was collected from Parkers Creek at the former wastewater discharge point. The results from this sample are as follows:

- Arsenic, cadmium, chromium, and zinc were detected at concentrations exceeding NJDEP sediment criteria and background levels.

Additional sediment samples were collected during the IRP RI to delineate the extent of the metal contamination at the site (Versar, Inc., 2004g). Sediment samples at three depths at seven locations in the vicinity of the former wastewater discharge point, as well as three locations northwest and away from the influence of the STP discharge were collected. The RI results are as follows:

- Heavy metal concentrations at the site were consistent with background metal concentrations from nearby, undisturbed locations.

The RI Report was submitted to the NJDEP in 2004 requesting a NFA determination. Subsequently, it was determined that the FTMM-20 Landfill required additional evaluation through the BEE process.

As part of the BEE, two sediment samples and two surface water samples were collected from Parkers Creek adjacent to Site FTMM-20. These are discussed further in **Section 3.4.2.11**.

The majority of the area of Site FTMM-20 is pavement and maintained lawns sloping towards Parkers Creek to the northwest. Adjacent to Parkers Creek the banks are steep and dominated by hardwoods and shrubs. Emergent wetlands exist at the bottom of the slope dominated by common reed. Groundwater in the vicinity of Site FTMM-20 is to the northwest and toward Parkers Creek.

No significant habitats in the vicinity of Site FTMM-20 are identified within GIS digital data available through the NJDEP.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that Parkers Creek is listed as Conservation Rank 4 as potential bald eagle foraging habitat, indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. However, the presence of bald eagles has not been documented for this site.

2.5.1.12 BUILDING 1122, UNKNOWN DISCHARGE (FTMM-59)

Site FTMM-59 is located on Alexander Avenue, adjacent to Mill Creek on the MP. The 0.34-acre Site FTMM-59 contains Building 1122, which is also identified as part of the 1.54-acre Parcel 43. Site FTMM-59 and ECP Parcel 43 are addressed in this BEE as one site – FTMM-59.

Building 1122 is located on the MP and houses a modern “do-it-yourself” vehicle repair shop. Building 1122 is a single story slab building approximately 11,600 square feet in size. Furniture paint stripping was reported in the Woodworking Craft Shop section of Building 1122 in 1973. Currently, all vehicle repairs are done by FTMM personnel and are performed inside the building. Degreasing solvents

are used, which generates hazardous waste. Pneumatic lifts are present. The 2006 Stormwater Pollution Prevention Plan states, "Floor drains located near the pneumatic lifts, have been closed off." Used oil is collected in a 55-gallon drum stored inside the shop. When filled, the contents are pumped into a 995-gallon, double-walled AST located between the repair shop and the car wash (Building 1124). The floors drains, previously connected to the car wash facility in Building 1124, were sealed in June 2007. The enclosed car wash facility is located east of the repair shop. All wash water is recycled and reused and an active oil/water separator is in place. A 1993 renovation plan, which details the replacement of the floor drains, shows that the drains were connected to the sanitary sewer system. A former oil/water separator was associated with this building.

In 2007, as part of the ECP SI (Shaw, 2008), sediment, soil gas, and indoor air samples were collected to assess environmental conditions on Parcel 43. Six sediment samples were collected from three sample borings located along the south bank of Mill Creek at potential discharge locations adjacent to Building 1122. Mill Creek is a tidally influenced water body in this portion of the facility. At each sample location, two samples were collected: one from the 0- to 6-inch below ground surface (bgs) interval and the other from the 12- to 18-inch bgs interval. No visual or olfactory evidence of impacted sediment was noted. All samples collected were analyzed for TCL+30 (without pesticides) and TAL metals. The results are as follows:

A total of 11 semivolatile organic compounds (SVOCs), 2 VOCs, and 18 metals were detected in sediment samples.

- Eight SVOCs [anthracene, benzo(*a*)anthracene, benzo(*a*)pyrene, benzo(*k*)fluoranthene, chrysene, fluoranthene, phenanthrene, and pyrene] were detected at concentrations that exceeded the salt water sediment criteria in two samples.
- The two VOCs were detected at concentrations less than the salt water sediment criteria .
- Eight of 18 metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc) were detected at concentrations that exceeded the salt water sediment criteria in all six samples.

Five soil gas samples (including one duplicate) and an indoor air sample were collected in and around Building 1122 to evaluate vapor intrusion. Samples were analyzed for VOCs. The results are as follows:

Twenty-one VOCs were detected in all five soil gas samples. A total of 25 VOCs were detected in the indoor air sample.

- Of the 21 VOCs detected in soil, 2 (PCE and TCE) exceeded the NJDEP generic vapor intrusion non-residential indoor air screening levels.
- Of the 25 VOCs detected in indoor air, 2 (benzene and dichloromethane) exceeded the NJDEP generic vapor intrusion screening levels.

The DPW removed one UST located next to Building 1122 (a self-help vehicle repair shop) in June 1994. The UST was a single wall steel tank used for storing No. 2 fuel oil. During tank closure activities, a petroleum discharge to site soil and groundwater was identified. Upon further investigation, the DPW determined that a second UST was removed from the same area during the late 1980s. Discussions with site personnel indicated that the tank was removed because of inventory control problems. It is assumed that the site was not fully remediated during the first UST closure.

In accordance with NJDEP UST Site Assessment activity requirements, all petroleum contaminated soils have been removed and disposed. In addition, the DPW has installed two monitoring wells to determine any adverse impact to groundwater. The results are as follows:

- TCE was initially detected at concentrations exceeding the NJDEP GWQC.

Subsequently, consecutive quarterly rounds of groundwater samples have been collected for analysis. The results are as follows:

- TCE continues to be quantified in one of the two site monitoring wells at concentrations exceeding the NJDEP GWQC.

Surface water sampling points (Mill Creek) downstream from the site and are currently being monitored.

The IRP recommended a CEA for groundwater, and a BEE was recommended for Parcel 43 in the ECP SI.

As part of the BEE, two surface water samples were collected from Mill Creek adjacent to Building 1122, FTMM-59 and Parcel 43. These are discussed further in **Section 3.4.2.12**.

Mill Creek borders Building 1122, FTMM-59, and Parcel 43 along its north side. The bank of Mill Creek along this area has not undergone stabilization. FTMM-59 and Parcel 43 is mostly paved with small patches of mowed and maintained lawns. The site slopes gently to the north and the banks immediately adjacent to Mill Creek are steep. Surface runoff is discharged to Mill Creek. Groundwater underlying FTMM-59 and Parcel 43 flows to the north-northwest to Mill Creek.

As indicated on the FTMM utility maps in **Appendix K**, a storm water outfall may discharge into Mill Creek to the east of Building 1122. This storm water line may drain the area of Building 1122 and Parcel 43 as well as buildings to the east. Storm water and gas lines located around Building 1122 may also act as contaminant migration pathways from Parcel 43 away from Mill Creek.

The vegetative cover along Mill Creek adjacent to FTMM-59 and Parcel 43 is mostly hardwoods with a thick understory. Common vegetation includes black jack oak, black cherry, black locust, pin oak, poison ivy, sassafras, jewelweed, greenbrier, Japanese knotweed, crab apple, and wild rose.

GIS digital data available through the NJDEP indicate the presence of deciduous wetlands along Mill Creek in the area of Building 1122, FTMM-59, and Parcel 43.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species.

2.5.1.13 BUILDING 283, LEAKING UST, GASOLINE (FTMM-61)

Site FTMM-61 is located off of Sherrill Avenue in the northern section of the MP and encompasses an area of less than 0.2 acre. Because FTMM-61 is within Parcel 49, the two areas are addressed in this BEE as one site: FTMM-61. On August 28, 1997, a 3,000-gallon steel UST (No. 0081533-229) used to store gasoline was removed. The UST was located within the courtyard of Building 283. Following its removal, the UST was inspected and numerous holes were noted. Soils within the tank excavation that corresponded with the locations of the holes in the tank were dark in color and appeared to be contaminated. Based on site assessment activities, it was concluded that a discharge to the environment had occurred. The NJDEP hotline was notified and the site was assigned Case # 97-8-28-1330-33. Approximately 400 cubic yards of contaminated soil was removed and disposed off-site in accordance with NJDEP requirements. Groundwater was encountered at 12.0 feet below grade and a sheen was observed on the groundwater. In response to this observation, one groundwater sample was collected. The sample was analyzed for VOCs to include a calibration for xylenes plus 15 tentatively identified compounds (TICs). The results are as follows:

- Benzene, ethylbenzene, toluene, and lead were detected at concentrations exceeding the NJDEP GWQC.

Subsequently, consecutive quarterly rounds of groundwater samples have been collected for analysis. The results are as follows:

- Benzene was detected at a concentration at concentrations exceeding the GWQC.
- Ethyl benzene was detected at a concentration at concentrations exceeding the GWQC.
- Toluene was detected at a concentration at concentrations exceeding the GWQC.
- Lead was detected at a concentration at concentrations exceeding the GWQC.

The IRP recommended that a CEA for groundwater be submitted. Subsequently, the site was considered to require additional evaluation through the BEE process.

As part of the BEE, two surface water samples were collected from Parkers Creek adjacent to Parcel 49 and Building 283. These are discussed further in **Section 3.4.2.13**.

Parkers Creek borders FTMM-61 and Parcel 49 along its north side. The bank of Parkers Creek adjacent to FTMM-61 and Parcel 49 has not undergone stabilization and is steep and well-vegetated. Parcel 49 is mostly buildings and pavement with small portions of mowed and maintained lawns. The site slopes gently to the north and surface runoff is discharged to Parkers Creek. Groundwater underlying Parcel 49 flows to the north toward Parkers Creek.

As indicated on the FTMM utility maps in **Appendix K**, several storm water utility lines may discharge into Parkers Creek in the vicinity of Building 283 and Parcel 49 (**Section 2.5.1.15**). These storm water lines drain the areas around Building 283 and Parcel 49. Several of the storm water utility lines cross through Site FTMM-18 in a northerly direction and may act as preferential contaminant migration pathways for transport from Parcel 49 to Site FTMM-18 and Parkers Creek. Two storm water utility lines discharge northeast of Building 283 directly into Parkers Creek. Storm water, gas, and water lines located around Building 283 and Parcel 49 may also act as contaminant migration pathways from Parcel 49 and not directly to Parkers Creek.

The vegetative cover of the wooded area along Parkers Creek adjacent to FTMM-61 and Parcel 49 contains red oak, white oak, black locust, and black gum.

GIS digital data available through the NJDEP indicate the presence of mixed high marsh saline wetlands and Phragmites dominated coastal wetlands along Parkers Creek on the western portion of FTMM-61 and Parcel 49.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species. In addition, Parkers Creek is listed as Conservation Rank 4 as potential bald eagle foraging habitat, indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. However, the presence of bald eagles has not been documented for this site.

2.5.1.14 BUILDING 1150 (PARCEL 39)

Parcel 39 is located in the southwestern portion of the MP and encompasses the area between Building 1150 (Vail Hall) and Mill Creek, approximately 0.5 acre. Building 1150 is utilized for administrative purposes. Within the basement is a large Uninterruptible Power Supply Room, emergency generator, floor drains, and a sump pump strictly for high water table events (discharges to basin behind the building and ultimately to Mill Creek). Film developing activities formerly occurred in the basement of the building.

In 2007, as part of an ECP SI (Shaw, 2008), sediment and surface soil were collected to assess environmental conditions on Parcel 39.

A total of four sediment samples were collected from two sample borings located along the north bank of Mill Creek adjacent to Building 1150. Samples were collected from deposition locations immediately downgradient of the drainage basin located directly behind Building 1150. At each sample location, two samples were collected: one from the 0- to 6-inch bgs interval and the other from the 18- to 24-inch bgs interval. No visual or olfactory evidence of impacted sediment was noted. All samples collected were analyzed for TCL+30 (without pesticides) and TAL metals. The results are as follows:

A total of 9 SVOCs and 18 metals were detected in Parcel 39 sediment samples.

- Six [benzo(*a*)anthracene, benzo(*a*)pyrene, chrysene, fluoranthene, phenanthrene, and pyrene] of the nine SVOCs were detected at concentrations that exceeded the freshwater comparison criteria in two samples.
- Arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc were detected at concentrations that exceeded the freshwater comparison criteria in all four samples.

Based upon the resulting data, the ECP SI recommended NFA for soil within Parcel 39.

One surface soil sample was collected from one boring located below an outfall on the north bank of Mill Creek adjacent to Building 1150. The outfall is the end of an underground terracotta pipe that leads from the direction of Building 1150. A sample was collected in order to determine if any contamination exists from potential historical discharges from Building 1150. The surface soil sample for non-VOC analysis was collected from the 0- to 6-inch interval bgs, and the soil sample for VOC analysis was collected from the 18- to 24-inch bgs interval. No visual or olfactory evidence of soil contamination was noted. All samples collected were analyzed for TCL+30 (without pesticides) and TAL metals. The results are as follows:

- A total of 4 SVOCs and 18 metals were detected at concentrations less than the non-residential and impact to groundwater comparison criteria in the Parcel 39 surface soil sample.

Based upon the resulting data, the ECP SI recommended that a BEE be conducted for surface water and sediment at Parcel 39.

As part of the BEE, three sediment samples and one surface water sample were collected from Mill Creek adjacent to Parcel 39. Parcel 39 is on the opposite bank of Mill Creek from Landfill 2 (FTMM-2) and these samples were also collected as part of the Landfill 2 investigation. These are discussed further in **Section 3.4.2.14**.

Mill Creek borders Parcel 39 along its south side. The bank of Mill Creek along Parcel 39 has not undergone stabilization, though the opposite bank along Landfill 2 has been stabilized. Parcel 39 consists mostly of buildings and pavement with some mowed and maintained lawns. The site slopes gently to the south and the banks to Mill Creek are steep; surface runoff is discharged to Mill Creek. Groundwater underlying Parcel 39 flows to the south towards Mill Creek.

As indicated on the FTMM utility maps in **Appendix K**, several storm water outfalls discharge into Mill Creek from the vicinity of Building 1150 and Building 1152 located in Parcel 39 located north of Mill Creek from Landfill 2 (**Section 2.5.1.1**), and these storm water utility lines may act as preferential contaminant migration pathways towards Mill Creek.

Within the lawn areas are tulip trees and black gum. Near Mill Creek, the vegetative cover includes Norway maple, silver maple, black cherry, Asiatic bittersweet, Japanese knotweed, poison ivy, pignut hickory (*Carya glabra*), black willow, black gum, Asiatic dayflower, and burning bush (*Euonymus alata*).

GIS digital data available through the NJDEP indicate the presence of deciduous wetlands and herbaceous wetlands along Mill Creek.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the forested wetland area along Mill Creek adjacent to Parcel 39 is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species.

2.5.1.15 BUILDINGS 283, 288, 291, 292, 293, 295 (ECP PARCEL 49)

Parcel 49 encompasses the buildings associated with the former Squier Laboratory and other facilities with similar operational histories in the north-central portion of the MP and incorporates an area of approximately 4 acres. The Squier Laboratory Complex included existing Buildings 283, 285, 288, 292, 293, and 298, and former Buildings S-5, S-6, S-6 Annex, S-9, S-10, S-11, S-12, and S-15. Buildings 291, 294, and 295, and former Buildings 289, 290, L-3, T-45, X-9, and X-7 have a similar operational history and are included in Parcel 49 along with the Squier Laboratory buildings. Environmental concerns associated with Squier Laboratory operations include the use of chemicals, solvents, radioisotopes, and metals when waste handling procedures may not have been sufficiently protective to preclude a release to the environment.

A corollary investigation of the historical use of radioactive materials (RAM) was conducted by Cabrera during the Phase I ECP. A Special Investigation Report issued in 1951 for the Squier Signal Laboratory Director discussed a wipe test performed on samples of aluminum covered with polonium

lacquer (approximately 230 microcuries) to ensure that no hazard was present at Building 283. Building 292 serves as storage space for the communications-electronics museum. This storage space contains or contained a Chinese radio and a vacuum tube where radiological commodities were identified with radiological readings above background levels, and radium-contaminated components were found in a posted radioactive storage locker. This storage space once contained 65 items containing RAM, but numerous non-radioactive items have since been removed.

In 2007, as part of the ECP SI (Shaw, 2008), sediment, soil, and groundwater samples were collected to assess environmental conditions on Parcel 49.

Seven (including one duplicate) sediment samples were collected from three sample borings located along the south bank of Parkers Creek. Parkers Creek is a tidally influenced water body in this portion of the facility. Samples were collected in order to determine if previous discharges from former septic and sump systems associated with the Squier Complex have impacted sediment within Parkers Creek. At each sample location, two samples were collected; one from the 0- to 6-inch bgs interval, and the other from the 18- to 24-inch bgs interval. No visual or olfactory evidence of impacted sediment was noted. All samples collected were analyzed for TCL+30 (without pesticides), TAL metals, and cyanide. The results are as follows:

A total of 10 SVOCs, 1 VOC, and 20 metals were detected in Parcel 49 sediment samples.

- All 10 SVOCs and the 1 VOC (acetone) were detected at concentrations less than the saltwater sediment criteria.
- Of the 20 metals, 9 (arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc) were detected at concentrations that exceeded the saltwater sediment criteria in all seven sediment samples.

Six surface soil samples and seven subsurface soil samples (including one duplicate sample) were collected from six distinct Geoprobe® borings located throughout Parcel 49. An additional seven surface soil samples were collected via hand-auger throughout Parcel 49. Surface soil samples for non-VOC analysis were collected from the 0- to 6-inch interval bgs. For borings located in paved areas, non-VOC surface soil samples were collected from the 0- to 6-inch interval directly below the pavement sub-base. Surface soil samples for VOC analysis were collected from the 18- to 24-inch interval bgs. Subsurface soil samples were collected from the 6-inch interval directly above the water table. No visual or olfactory evidence of contaminated soil was noted. All soil samples were analyzed for TCL+30 (without pesticides), TAL metals, and cyanide. The results are as follows:

A total of 22 SVOCs, 5 VOCs, 20 metals, and 1 Aroclor were detected in Parcel 49 soil samples.

- Of the 22 SVOCs, 7 [benzo(*a*)anthracene, benzo(*a*)pyrene, benzo(*b*)fluoranthene, benzo(*k*)fluoranthene, chrysene, dibenzo(*a,h*)anthracene, and indeno(1,2,3-*cd*)pyrene] were detected at concentrations that exceeded the non-residential comparison criteria in five surface soil samples.
- The five VOCs were detected at concentrations less than the applicable criteria.
- Of the 20 metals, 1 (arsenic) was detected at concentrations that exceeded regulatory criteria.
- Aroclor 1260 was detected in one surface soil sample at a concentration that exceeded regulatory criteria.
- Cyanide was not detected in soil.

Two groundwater samples were collected from two temporary wells that were installed using the Geoprobe®. Temporary wells P49GW-1 and P49GW-1 were installed north of Building 293 and east of former Building 289, respectively. The samples were analyzed for TCL+30 (without pesticides/PCBs) and *tert*-butyl alcohol (TBA). Five groundwater samples (including one duplicate sample) were collected from four existing FTMM monitoring wells located along the northern perimeter of the former Squier Complex area to evaluate groundwater on a parcel-wide basis. These samples were analyzed for TCL+30 (without pesticides), TBA, TAL metals, and cyanide. The results are as follows:

A total of 4 SVOCs, 9 VOCs, and 18 metals were detected in groundwater samples collected in Parcel 49.

- Of the four SVOCs, one [bis(2-ethylhexyl) phthalate] was detected at concentrations that exceeded the NJDEP GWQC in three groundwater samples. The contamination was likely the result of the polyethylene sampling tube that is commonly used for sampling wells. Therefore, it is not considered to be a contaminant of concern in groundwater at Parcel 49.
- Of the nine VOCs, two (benzene and bromodichloromethane) were detected at concentrations that exceed the NJDEP GWQC in two groundwater samples.
- Of the 18 metals, 6 (aluminum, arsenic, beryllium, iron, manganese, and sodium) were detected at concentrations that exceeded the NJDEP GWQC.

Based upon the resulting data, the SI recommended additional evaluation of soils, further evaluation of groundwater under the M-18 groundwater CEA, and that Parcel 49 be included as part of the BEE.

As part of the BEE, two surface water samples were collected from Parkers Creek adjacent to Parcel 49 and Building 283. These are discussed further in **Section 3.4.2.15**.

Parkers Creek borders Parcel 49 along its north side. The bank of Parkers Creek adjacent to Parcel 49 has not undergone stabilization and is steep and well-vegetated. Parcel 49 is mostly buildings and pavement with small portions of mowed and maintained lawns. The site slopes gently to the north and surface runoff is discharged to Parkers Creek. Groundwater underlying Parcel 49 flows to the north toward Parkers Creek.

As indicated on the FTMM utility maps in **Appendix K**, several storm water utility lines may discharge into Parkers Creek in the vicinity of Building 283 (**Section 2.5.1.13**) and Parcel 49. These storm water lines drain the areas around Building 283 and Parcel 49. Several of the storm water utility lines cross through Site FTMM-18 in a northerly direction and may act as preferential contaminant migration pathways for transport from Parcel 49 to Site FTMM-18 and Parkers Creek. Two storm water utility lines discharge northeast of Building 283 directly into Parkers Creek. Storm water, gas, and water lines located around Building 283 and Parcel 49 may also act as contaminant migration pathways from Parcel 49 and not directly to Parkers Creek.

The vegetative cover of the wooded area along Parkers Creek adjacent to Parcel 49 contains red oak, white oak, black locust, and black gum.

GIS digital data available through the NJDEP indicate the presence of mixed high marsh saline wetlands and Phragmites dominated coastal wetlands along Parkers Creek on the western portion of Parcel 49.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species. In addition, Parkers Creek is listed as Conservation Rank 4 as potential bald eagle foraging habitat, indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. However, the presence of bald eagles has not been documented for this site.

2.5.1.16 BUILDING 1075 (ECP PARCEL 61)

Parcel 61, located in the south-central portion of the MP, encompasses Patterson Army Health Clinic (Building 1075) and the surrounding land (approximately 15 acres). Constructed in 1961 to house Patterson Army Hospital, Building 1075 has been used continuously since that time, although it was downgraded to a health clinic in 1995. Operations in the 1960s, 1970s, and 1980s included X-ray processing and laboratory operations. Operations in the building extensively used mercury-containing equipment, developing chemicals, and other chemicals and waste associated with medical operations.

In 2007, as part of the ECP SI (Shaw, 2008), sediment and surface soil samples were collected to assess environmental conditions on Parcel 61.

Four sediment samples were collected from two borings to investigate potential historical discharges to stormwater from Building 1075. One sample was collected at the stormwater outfall, MP17, located along the southeast bank of Oceanport Creek directly north of Building 975. The other sample was collected downstream on the southeast bank of the tributary to Oceanport Creek. Oceanport Creek is a tidally influenced water body in this portion of the facility. At each sample location, two samples were collected, one from the 0- to 6-inch bgs interval, and the other from the 18- to 24-inch bgs interval. No visual or olfactory evidence of impacted sediment was noted. All samples were analyzed for TCL+30 (without pesticides) and TAL metals. The results are as follows:

A total of 16 SVOCs, 1 VOC, and 18 metals were detected in Parcel 61 sediment samples.

- Of the 16 SVOCs, 11 [acenaphthene, anthracene, benzo(*a*)anthracene, benzo(*a*)pyrene, benzo(*k*)fluoranthene, chrysene, fluoranthene, fluorene, naphthalene, phenanthrene, and pyrene] were detected at concentrations that exceeded the freshwater sediment criteria in all four sediment samples.
- The VOC toluene was detected at concentrations below the freshwater sediment criteria in one sample.
- Of the 18 metals, 4 (arsenic, chromium, copper, and lead) were detected at concentrations that exceeded the freshwater sediment criteria.

Four surface soil samples were collected from one hand auger location (P61SS-1) and three Geoprobe® boring locations (P61SS-2, 3, and 4). Samples were located along the southeast and northeast corners of Building 1075. Sample P61SS-1 was collected in a grass-covered area near a door at the southeastern corner of Building 1075. Samples P61SS-2 and P61SS-3 were collected near the loading docks of Building 1075. Sample P61SS-4 was collected near the basement door at the northeast corner of Building 1075. Surface soil samples for non-VOC analysis were collected from the 0- to 6-inch interval bgs. For surface soil samples located in paved areas, non-VOC surface soil samples were collected from the 0- to 6-inch interval directly below the pavement sub-base. Surface soil samples collected for VOC analysis were collected from the 18- to 24-inch interval bgs. All samples were analyzed for TCL+30 (without pesticides), TAL metals, and cyanide. No visual or olfactory evidence of soil contamination was noted. The results are as follows:

A total of 19 SVOCs and 18 metals were detected in Parcel 61 soil samples.

- Of the 19 SVOCs, 3 [benzo(*a*)anthracene, benzo(*b*)fluoranthene, and benzo(*a*)pyrene] were detected at concentrations exceeding the non-residential comparison criteria in one surface soil sample.
- All 18 metals identified in soil were detected below the Non-Residential Direct Contact Soil Cleanup Criteria.
- Cyanide was not detected in soil at Parcel 61.

Based upon the resulting data, the SI recommended soil for additional evaluation and inclusion of Parcel 61 in a BEE.

As part of the BEE, one surface water sample from the tributary to Oceanport Creek. This is discussed further in **Section 3.4.2.16**.

Parcel 61 is mostly buildings and pavement with small portions of mowed and maintained lawns. Though no significant habitats are present in the immediate vicinity of Parcel 49, stormwater discharges to a small tributary to Husky Brook.

As indicated on the FTMM utility maps in **Appendix K**, several storm water utility lines drain the area around Building 1075 and Parcel 61. These direct discharges to a small tributary to Husky Brook in the vicinity of Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14) (**Sections 2.5.1.6 and 2.5.1.7**). The numerous storm water, gas, and water lines located in and around Parcel 61 may also act as contaminant migration pathways from Parcel 61 to or away from Husky Brook or its tributary.

The vegetative cover along the small tributary to Husky Brook includes boxwood, sweetgum, pin oak, black locust, goldenrod, milkweed, pokeweed, wild rose, black cherry, poison ivy, Asiatic bittersweet, sassafras, and black oak.

GIS digital data available through the NJDEP indicate the presence of deciduous shrub/scrub wetlands along the tributary to Husky Brook.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species. In addition, Husky Brook and the adjacent wetlands are listed as Conservation Rank 4 as potential bald eagle foraging habitat, indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. However, the presence of bald eagles has not been documented for this site.

2.5.1.17 BUILDING 900 (ECP PARCEL 69)

Building 900 is a former tactical motor pool located in the southeastern portion of the MP, which has been utilized for general storage for approximately the last 10 years. It encompasses approximately 0.3 acre. A waste oil tank immediately outside the building was connected by a fill pipe originating from inside the building (since removed). A storm sewer inlet was observed in the parking lot in close proximity to the building during the 2006 Visual Site Inspections (VSIs). A boiler was formerly located outside the building. A 1993 U.S. Army Environmental Hygiene Agency report cites a TCE parts cleaner and 500-gallon waste oil AST being present at the building during the 1993 site visit. The tank has been removed from the building. All TCE parts cleaners were eliminated from use (MP and CWA) in February 1994 under Environmental Program Requirements Project FM0094F088.

Solvents were previously used for cleaning vehicle parts at various locations throughout FTMM. Both the military and the contractors operated solvent parts cleaners. These solvent parts cleaners consisted of a tank and sink with nozzle. The military used Super Agitene for its parts cleaners while the contractor used Siloo Tyme II. Each parts cleaner held about 30 gallons of fluid, which was reused until it needed changing. Fluid changes occurred every 4 months to every 3 years, depending on location and usage.

In 2007, as part of the ECP SI (Shaw, 2008), sediment, soil, and groundwater samples were collected to assess environmental conditions on Parcel 69.

Five sediment samples (including one duplicate sample) were collected from two borings located along the south bank of Oceanport Creek. Oceanport Creek is a tidally influenced water body in this portion of the facility. Sediment samples were collected in order to investigate any potential historical discharges to stormwater from Building 900. One sample was collected directly at a stormwater outfall within Oceanport Creek upstream of Murphy Drive, and the other sample was collected at a stormwater outfall discharging to Oceanport Creek downstream of Murphy Drive. At each sample location, two samples were collected; one from the 0- to 6-inch bgs interval, and the other from the 18- to 24-inch bgs interval. No visual or olfactory evidence of impacted sediment was noted.

All samples collected were analyzed for TCL+30 (without pesticides) and TAL metals.

The results are as follows:

A total of 8 SVOCs, 4 VOCs, and 20 metals were detected in Parcel 69 sediment samples.

- Of the eight SVOCs, seven [acenaphthene, anthracene, benzo(*a*)anthracene, chrysene, fluoranthene, phenanthrene, and pyrene] were detected at concentrations that exceeded the saltwater sediment criteria.
- All four VOCs were detected at concentrations below the saltwater sediment criteria.
- Of the 20 metals, 9 (arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc) were detected at concentrations that exceeded the saltwater sediment criteria.

Four surface soil samples and five subsurface soil samples (including one duplicate sample) were collected from four distinct Geoprobe® borings. Three borings, P69SB1, P69SB2, and P69SB3, were

located in the vicinity of the former waste oil AST. The other boring, P69SB-4, was located north of Building 900 to evaluate the absence or presence of contamination downgradient of the building. Surface soil samples for non-VOC analysis were collected from the 0- to 6-inch bgs interval. At borings located in paved areas, non-VOC surface soil samples were collected from the 0- to 6-inch interval directly below the pavement sub-base. Surface soil samples collected for VOC analysis were collected from the 18- to 24-inch bgs interval. Subsurface soil samples were collected from the 6-inch interval directly above the water table. No visual or olfactory evidence of soil contamination was noted. All samples collected were analyzed for TCL+30 (without pesticides), TAL metals, and cyanide. The results are as follows:

- A total of 5 SVOCs, 17 metals, and 2 VOCs were detected in concentrations less than the Non-Residential Direct Contact Soil Cleanup Criteria in Parcel 69 surface soil.

Three groundwater samples (including one duplicate sample) were collected from two distinct temporary wells that were installed with the Geoprobe® rig. One temporary well, P69GW-1, was installed in an area of the former waste oil AST east of Building 900, and the other well, P69GW-4, was installed downgradient (north) of Building 900. Samples were analyzed for TCL+30 (without pesticides/PCBs). The results are as follows:

A total of one SVOC and three VOCs were detected in Parcel 69 groundwater.

- The SVOC bis(2-ethylhexyl) phthalate was detected at concentrations exceeding the NJDEP GWQC in two samples. The contamination was likely the result of the polyethylene sampling tube that is commonly used for sampling wells. Therefore, it is not considered to be a contaminant of concern in groundwater at Parcel 69.
- Of the three VOCs detected, one (PCE) was detected at a concentration that exceeds the NJDEP GWQC in one sample.

Based upon the resulting data, the SI recommended NFA for soil, but additional evaluation for groundwater. In accordance with N.J.A.C 7:26E-3.11 (NJDEP, 2009b), Parcel 69 will be addressed as part of this facility-wide BEE.

As part of the BEE, one surface water sample was collected from Oceanport Creek. This is discussed further in **Section 3.4.2.17**.

Parcel 69 is mostly buildings and pavement with small portions of mowed and maintained lawns. Though no significant habitats are present in the immediate vicinity of Parcel 69, stormwater discharges to Oceanport Creek.

The vegetation at Oceanport Creek near stormwater discharge from Parcel 69 is dominated by common reed.

GIS digital data available through the NJDEP indicate the presence of Phragmites dominated coastal wetlands.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the emergent wetland area along Oceanport Creek is habitat Rank 4, which is assigned to patches with one or more occurrences of a state endangered species, in this case the Least Tern. Oceanport Creek and the adjacent wetlands are also listed as Conservation Rank 4 as potential bald eagle foraging habitat, indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. However, the presence of bald eagles has not been documented for this site.

2.5.2 CHARLES WOOD AREA

2.5.2.1 LANDFILL, SITE CW-3A (FTMM-25)

The CW-3A site (3.1 acres) was identified as a suspected landfill area during the Preliminary Assessment (PA) phase study under the IRP as IRP Site FTMM-25. Interviews with long-term DPW employees suggested that a former landfill might be present at the site in question. The suspected landfill is located north of the Pulse Power facility (Building 2707), which is also located in the southwestern part of the CWA.

On September 25, 1997, several test pits were excavated at the CW-3A site (FTMM-25) to ascertain whether the site was previously utilized as a landfill. Upon excavating the test pits, waste materials, mostly in the form of construction debris, were observed within the test pits. The debris itself consisted of concrete, asphalt, brick, wood, glass, and assorted scrap metals. Coal ash was also observed within each of the test pits. To evaluate the potential impact the landfill may have had on site soils and groundwater, four shallow monitoring wells were installed on-site. During monitoring well construction, continuous split-spoon soil samples were collected in 4-foot increments. Based upon field observations and measurements, soil samples were collected at the following depth intervals bgs: 0 to 6 inches, 18 to 24 inches, and immediately above the water table. Samples collected at the 18- to 24-inch interval were collected solely for VOCs to include a gas chromatography/mass spectrometry (GC/MS) library search. Samples collected at the 0- to 6-inch interval were analyzed for TCL+30 minus the VOC parameters, TAL metals, and cyanide. Samples collected just above the water table were analyzed for TCL+30 parameters, TAL metals, and cyanide. The results are as follows:

- Benzo(a)anthracene, benzo(*a*)pyrene, and cadmium were detected at concentrations exceeding NJDEP Residential Direct Contact Soil Cleanup Criteria.

A coal ash sample was also collected on December 17, 1997, and was analyzed for TCL+30, TAL metals, and cyanide.

During the week of January 12, 1998, groundwater samples were collected from each of the four monitoring wells. A second round of groundwater samples was collected during the week of January 26, 1998. All groundwater samples were analyzed for TCL+30, TAL metals, and cyanide. The results are as follows:

- Benzene and lead were detected in three downgradient monitoring wells at concentrations exceeding the NJDEP GWQC.
- Arsenic, chromium, and lead were detected in one upgradient monitoring well at concentrations exceeding the NJDEP GWQC.

As of 2002, eight consecutive quarterly rounds of groundwater samples had been collected for chemical analysis. A second RI that evaluated the potential for the presence of environmental contaminants within the existing landfill cover material also was completed.

The IRP recommended NFA for the site (Versar, Inc., 2004h, 2005b). Subsequently, it was determined that the CW-3A Landfill (FTMM-25) required additional evaluation through the BEE process.

As part of the BEE, two surface water samples and six sediment samples were collected from Shrewsbury Creek in the area of Landfill CW-3A (FTMM-25), and one surface water and one sediment sample were collected from Shrewsbury Creek immediately upstream of Landfill CW-3A (FTMM-25). These are discussed further in **Section 3.4.3.1**.

Shrewsbury Creek borders Landfill CW-3A (FTMM-25) along its northern boundary. In this area, Shrewsbury Creek is narrow (less than 5 feet) and is non-tidal freshwater. The banks of Shrewsbury Creek are fairly steep and have not undergone stabilization. The southern portion of the site is generally flat with greater slopes to the north and east and groundwater underlying Landfill CW-3A (FTMM-25) flows toward Shrewsbury Creek.

As indicated on the FTMM utility maps in **Appendix K**, several storm water utility lines drain the area of Parcel 27 around Buildings 2707 and 2713 which discharges to Shrewsbury Creek at the western end of Landfill CW-3A (FTMM-25). The storm water and water lines that cross through the southern end of Landfill CW-3A (FTMM-25) may also act as contaminant migration pathways from Landfill CW-3A.

The southwestern portion of Landfill CW-3A (FTMM-25) is mowed and maintained lawn surrounded by trees including black locust, black walnut, red cedar, Virginia creeper, and Asiatic bittersweet; the largest portion of Landfill CW-3A, though, is heavily wooded. Along Shrewsbury Creek the vegetation includes wild grape, honeysuckle, wild rose, goldenrod, coastal sweet pepperbush (*Clethra alnifolia*), arrowwood, greenbrier, jewelweed, smartweed, Asiatic dayflower, and poison ivy. The upland areas are forested with a closed canopy and sparse vegetation on the forest floor; dominant species include beech, chestnut oak, sassafras, American holly, black oak, and red maple.

GIS digital data available through the NJDEP indicate the presence of deciduous wooded wetlands along Shrewsbury Creek.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species.

2.5.2.2 FORMER PESTICIDE STORAGE AREA, SITE CW-6 (FTMM-28)

Building 2044 was part of a small complex of buildings located in the southwest section of the CWA golf course. The complex also included Building 2070, a large metal shed, and two smaller metal igloos. Currently, Buildings 2070, 2071, and 2046 are located in the area as confirmed by the VSI. Building 2070 is used to store golf course maintenance and landscaping equipment, such as mowers and tractors. Building 2071 is used as the equipment repair facility. Building 2046 is used as a golf cart and equipment wash area (closed loop) and was also used for pesticide mixing until 2001. The golf course maintenance complex may predate the purchase of the golf course by the Army. Pesticides and herbicides may have been stored and mixed in this area prior to Army ownership of the property. The 1980 IA report (USATHAMA, 1980) contains a 1979 inventory of pesticides and herbicides that were used on the golf course and stored in Building 2044. Pesticides that were present in significant quantities include malathion, sevin, resmethrin, Borocel IV, chlordane, and Dibrom. The IA also discusses a pest control program that was in effect in 1979. The compounds that were used in large quantities include carbaryl (sevin), malathion, chlordane, and diazinon. Some of the herbicides identified in the IA include 2,4-dichlorophenoxyacetic acid, Dacthal, 2,4,5-trichlorophenoxyacetic, and sodium arsenite (USATHAMA, 1980).

The course groundskeeper, who had been part of the grounds crew for 33 years (1960 to 1993), was interviewed during the PA phase. The groundskeeper stated that pesticides and herbicides also were stored inside the two metal igloos and that former mixing activities generally took place directly outside the two igloos. Pesticides and herbicides are not currently stored or mixed on site. The facility has hired an outside contractor to apply pesticides and herbicides.

Under the IRP SI, soil borings were completed at two locations where pesticide mixing was documented to occur within the 0.6-acre site. Two soil samples were collected from each boring, one surface sample and the other sample from the interval just above the water table. In addition, each boring was converted to a monitoring well in order to evaluate groundwater quality. Both soil and groundwater samples were analyzed for TCL+30. The results are as follows:

- Dieldrin was identified in one soil sample at concentrations exceeding the NJDEP Residential Direct Contact Soil Cleanup Criteria.
- Benzene was detected in one groundwater sample at concentrations exceeding the NJDEP GWQC.

Two additional monitoring wells were installed during the IRP RI phase. As of 2002, 15 consecutive quarterly rounds of groundwater samples had been collected for subsequent analysis. The results are as follows:

- Heptachlor epoxide and arsenic were initially detected in two of the four site monitoring wells at concentrations exceeding the NJDEP GWQC. Alpha-chlordane, gamma-chlordane, and 4,4′-DDD also were detected in the two monitoring wells; however, these contaminants were identified at concentrations less than the NJDEP GWQC.

The IRP recommended NFA for the site (Versar, Inc., 2005c). Subsequently, Site CW-6 (FTMM-28) was considered to require additional evaluation through the BEE process.

As part of the BEE, four soil samples were collected from the forested area to the west of the building complex and four sediment samples were collected from the wetlands south-southwest of the building complex in the vicinity of Wampum Brook. These are discussed further in **Section 3.4.3.2**.

Though the building complex is primarily paved areas and buildings, the area immediately west is forested wetland with Wampum Brook to the south of the site. Groundwater underlying Site CW-6 (FTMM-28) flows toward Wampum Brook.

As indicated on the FTMM utility maps in **Appendix K**, storm water, gas, and water utility lines in the area of FTMM-28 may act as additional contaminant migration pathways from Landfill CW-3A away from the direction of Wampum Brook.

The forested areas are dominated by black gum with some red oak and sweet gum. Milkweed is present along the roads. Ferns are present on the forest floor and there are few forbs and grasses. Coastal sweetpepperbush and poison ivy present and skunk cabbage (*Symplocarpus foetidus*) is prevalent in the wetter areas to the southwest.

GIS digital data available through the NJDEP indicate that the area west and south of Site CW-6 is deciduous wooded wetlands.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 2, which is assigned to patches containing one or more occurrences of a species of special concern, in this case the Wood Thrush.

2.5.2.3 BUILDING 2700 (ECP PARCEL 15)

The Myer Center facility (Building 2700) is located in the CWA of FTMM at the intersection of Pearl Harbor Avenue and Corregidor Road. Parcel 15 encompasses an area of approximately 70 acres of which the Building 2700 footprint is 171,000 square feet. It was built in 1954 and has an extensive history of laboratory operations, photoprocessing, and paint spraying booths. Operations included electrochemical research, growing and shaping of crystals, various plating operations, mixing of magnetic powders, machining, welding, spray painting, use of solvents for equipment cleaning, and other miscellaneous laboratory operations utilizing standard laboratory chemicals. By 1959, additional operations included shock and vibration testing of certain components; glass blowing; a plastics laboratory that made plastic castings, laminates, and forms sprayed with polyester resins; and a ceramics laboratory. A satellite dispensary and dental clinic was present in 1972 that serviced 2,610 employees. During the 2006 VSI performed as part of the Phase I ECP, the Dental Clinic was no longer operational at Building 2700. According to FTMM personnel, no chemical wastes have been discharged to the sanitary sewer since the mid-1980s. Activities at Building 2700 have since been converted primarily to administrative functions. Current waste management practices prohibit the discharge of any materials, other than water and biodegradable soaps, into the sanitary sewer system.

In 2007, as part of the ECP SI (Shaw, 2008), sediment, soil, groundwater, soil gas, and indoor air samples were collected to assess environmental conditions on Parcel 15. Geophysical surveys were conducted to determine if USTs remained on site.

Seven sediment samples (including one duplicate sample) were collected from three sample borings located adjacent to three stormwater outfalls within Shrewsbury Creek. These sample locations were south of the walking bridge, near the southwest portion of Building 2525 on the western side of Shrewsbury Creek. Samples were collected to investigate any potential historical discharges from Building 2700 into Shrewsbury Creek. Shrewsbury Creek is a non-tidal water body in this portion of the facility located southeast of Building 2700 in the CWA.

At each sample location, two samples were collected: one from the 0- to 6-inch bgs interval and the other from the 18- to 24-inch bgs interval. No visual or olfactory evidence of impacted sediment was noted. Samples collected were analyzed for TCL+30 (without pesticides) and TAL metals. The results are as follows:

A total of 12 SVOCs and 18 metals were detected in Parcel 15 sediment samples.

- Of the 12 SVOCs, 2 (acenaphthene and fluorene) were detected at concentrations that exceeded the freshwater sediment criteria in one sample.
- Of the 18 metals, 2 (chromium and copper) were detected at concentrations that exceeded the freshwater sediment criteria in three samples.

Fifty-three surface soil samples and 59 subsurface soil samples (including 6 duplicate samples) were collected from 53 distinct Geoprobe® borings in order to investigate any potential releases associated with former barracks located north of Building 2700. Surface soil samples for non-VOC analysis were collected from the 0- to 6-inch interval bgs. For borings located in paved areas, non-VOC surface soil samples were collected from the 0- to 6-inch interval directly below the pavement sub-base. Surface soil samples collected for VOC analysis were collected from the 18- to 24-inch bgs interval. Subsurface soil samples were collected from the 6-inch interval directly above the water table from each boring. Samples were analyzed for TPH and VOC+10. The results are as follows:

- TPH was detected in 7 of the 53 surface soil samples and in 2 of the 59 subsurface soil samples. None of the TPH results exceeded regulatory standards; therefore, VOCs were not analyzed.

Seven groundwater samples (including one duplicate sample) were collected from six distinct temporary wells that were installed. Temporary wells were installed along the downgradient boundary of the parcel (along Shrewsbury Creek). Groundwater samples were collected to investigate any potential release from possible former heating oil USTs associated with former barracks, as well as other potential discharges from historical activities at Building 2700. Samples were analyzed for TCL+30 (without pesticides or PCBs) and TAL metals. The results are as follows:

A total of 1 SVOC, 1 VOC, and 19 metals were detected in Parcel 15 groundwater samples.

- One SVOC, bis(2-ethylhexyl) phthalate, was detected at concentrations that exceeded the NJDEP GWQC. The contamination was most likely the result of the polyethylene sampling tube that is commonly used for sampling wells. Therefore, it is not considered to be a concern in groundwater at Parcel 15.
- One VOC, toluene, was detected at a concentration less than the NJDEP GWQC.
- Of the 19 metals detected, 6 (aluminum, arsenic, iron, lead, manganese, and sodium) were detected at concentrations exceeding the NJDEP GWQC.

A total of 15 soil gas and 15 indoor air samples were collected in and around Building 2700. A total of 32 VOCs were detected in Parcel 15 soil gas samples and a total of 22 VOCs were detected in Parcel 15 indoor air samples. The results are as follows:

- Of the 32 VOCs detected, 4 (benzene, PCE, TCE, and vinyl chloride) were detected at concentrations that exceeded the NJDEP generic vapor intrusion non-residential soil gas screening levels in 14 soil gas samples.
- Twenty-two VOCs were detected at concentrations less than the NJDEP generic vapor intrusion non-residential indoor air screening levels in indoor air samples.

As part of the geophysical survey, an electromagnetic induction (EMI) survey was conducted throughout the area of the parcel where former barracks were identified to determine if USTs are present. Follow-up ground-penetrating radar surveys were conducted where anomalies were identified during the EMI surveys. No suspected USTs were identified as a result of the geophysical survey.

Based upon the resulting data, the SI recommended that NFA be taken for soil and groundwater within Parcel 15 and surface water and sediment be further evaluated within a BEE.

As part of the BEE, two surface water samples were collected from Shrewsbury Creek in the vicinity of the stormwater outfalls. These are discussed further in **Section 3.4.3.3**.

Shrewsbury Creek is east of Building 2700. In this area, Shrewsbury Creek is narrow and is non-tidal freshwater. Both banks of Shrewsbury Creek are steep and have not undergone stabilization. Though the banks are heavily vegetated, the surrounding area is predominantly pavement and buildings.

As indicated on the FTMM utility maps in **Appendix K**, several storm water lines drain the area of Parcel 15 around Building 2700, as well as the area of Parcel 27 around Building 2525, which discharges to Shrewsbury Creek. Numerous storm water, gas, and water utility lines in the area of Parcel 15 may act

as additional contaminant migration pathways from Parcel 15 with direction dependent on the utility gradients.

Vegetation along the banks of Shrewsbury Creek is thick and includes common reed, black walnut, pin oak, wild grape, wild morning glory, pokeweed, Asiatic bittersweet, poison ivy, wild rose, sweet gum, milkweed, goldenrod, Virginia creeper, red cedar, Norway maple, white mulberry, black cherry, sassafras, and winged sumac.

GIS digital data available through the NJDEP indicate the presence of deciduous scrub/shrub wetlands along the narrow corridor of Shrewsbury Creek.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species.

2.5.2.4 BUILDINGS 2507 AND 2704 (ECP PARCEL 27)

Parcel 27 is located in the southwest portion of CWA and includes the Environmental Test Facility (Building 2704), former Pulse Power Center (Building 2707), Sheet Metal Shop (Building 2502), Machine Shop (2503), Paint and Fabrication Facility (2506), and a Former Motor Pool (2501). Parcel 27 encompasses an area of approximately 30 acres.

Building 2704 has been used as an environmental test chamber since 1965. Chemical use in this building is limited to hydraulic fluid and standard shop chemicals (i.e., petroleum-based solvents, oils, and greases). While current waste handling practices are modern, historical waste handling practices are unknown. The building has multiple floor drains which, according to engineering drawings, are connected to the storm sewer.

Building 2507 is the Tactical Vehicle Repair Shop where petroleum and solvent use would be common during vehicle maintenance operations.

In 2007, as part of the ECP SI (Shaw, 2008), sediment and surface soil were collected to assess environmental conditions on Parcel 27. Geophysical surveys were conducted to determine if a former debris burial area remained on site.

Four sediment samples were collected from two sample borings located within Shrewsbury Creek. One sample was located adjacent to a stormwater outfall and the other was located downstream. At each sample location, two samples were collected; one from the 0- to 6-inch interval bgs, and the other from the 12- to 18-inch interval bgs. No visual or olfactory evidence of sediment contamination was noted. All samples were analyzed for TCL+30 (without pesticides) and TAL metals. The results are as follows:

A total of 8 SVOCs and 20 metals were detected in Parcel 27 sediment samples.

- Of the eight SVOCs, none were detected that exceeded the freshwater sediment criteria.
- Of the 20 metals, 8 (arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc) were detected at concentrations that exceeded the freshwater sediment criteria in all four samples.

Two surface soil samples were collected from two sample borings located in the wooded area to the northeast of Building 2507. At each location, the sample was collected from the 0- to 6-inch bgs interval, and a sample for VOC analysis was collected from the 18- to 24-inch bgs interval. No visual or olfactory evidence of soil contamination was noted. All samples collected were analyzed for TCL+30 (without pesticides) and TAL metals. The results are as follows:

- A total of 8 SVOCs and 18 metals were detected in Parcel 27 surface soil samples below the Non-Residential Direct Contact Soil Cleanup Criteria.

An EMI survey was conducted over the area identified as a possible debris burial area.

- No anomalies indicative of debris burial areas were identified.

Based upon the resulting data, the SI recommended that NFA be taken for soil within Parcel 27 and surface water and sediment be further evaluated within a BEE.

As part of the BEE, two surface water samples were collected from Shrewsbury Creek in the vicinity of the stormwater outfalls. These are discussed further in **Section 3.4.3.4**.

Shrewsbury Creek is north of Building 2704. In this area, Shrewsbury Creek is narrow and is non-tidal freshwater.

Along Shrewsbury Creek the vegetation includes wild grape, honeysuckle, wild rose, goldenrod, coastal sweet pepperbush, arrowwood, greenbrier, jewelweed, smartweed, Asiatic dayflower, and poison ivy.

GIS digital data available through the NJDEP indicate the presence of deciduous wooded wetlands along Shrewsbury Creek.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species.

2.5.2.5 BUILDING 2525 (PARCEL 28)

Parcel 28, with an area of approximately 30 acres, is located in the CWA and encompasses Building 2525 – the former Eatontown Laboratory complex. Building 2525 was constructed between 1941 and 1942. The Eatontown Signal Laboratory was renamed Watson Laboratories in 1945 and subsequently moved to Rome, New York, in 1951.

Three separate septic tanks and leach fields and one underground transformer vault are within the Building 2525 area. The main sanitary sewer line from the building is shown to discharge to a septic tank and leach field east of the building. A review of the DPW map and engineering drawings repository indicated a 2-inch “acid proof drain” leading from Bay 1 to a dry well southeast of the building. Floor drains were shown to discharge to the brook northwest of the building. Building revitalization plans show all floor drains were later connected to the sanitary sewer system. Building 2525 was included in the Watson Laboratory complex in the mid-1940s. Crystal growing and processing operations were conducted in the Watson Laboratory building located in the southwest portion of the CWA in the early 1950s. Operations included cleaning of crystals, quartz etching, soldering, and gold (and other metal) plating, which was conducted in Building 2532. These operations involved chemicals such as carbon tetrachloride, ammonium bifluoride, cadmium sulfate, and sulfuric acid. Crystal etching using ammonium bifluoride was also noted in Building 2538. Other processes associated with the Watson Laboratories included machining of metals and remelting lead in Building 2533, growing of crystals and physical chemistry in Building 2534, and machining of crystals in Building 2538.

Following the 1951 Watson Laboratories move, the Aviation Research and Development Command Laboratory was moved from the Myer Center to Building 2525. This laboratory operation occupied the building until 1978. A 1978 industrial hygiene survey reported ozalid reproduction in Room 5101 of Building 2525. Building revitalization plans show all floor drains connected to the sanitary sewer system. No sumps or floor drains were noted during the 2006 VSI. The use of the building has been strictly administrative since the late 1990s, as confirmed during the VSI.

Parcel 28 also contains the CECOM laboratory and radiological testing facility housed in Building 2540. This building contains a gamma irradiator, Radiac calibrators, a storage room for low-level RAM with multiple radioactive sources from the demilitarization of commodities, a nuclear counting laboratory, and several health physics laboratories. A survey of the interior of Building 2540 will be performed as part of the radiological scoping surveys.

According to the 1993 Environmental Research, Inc., Aerial Photographic Site Analysis, there are a fenced open storage area and possible tank pads in the northern portion of Parcel 28, to the northeast of Building 2525.

In 2007, as part of the ECP SI (Shaw, 2008), sediment, soil, and groundwater samples were collected to assess environmental conditions on Parcel 28. Geophysical surveys were conducted to

determine the absence or presence of formerly utilized septic tanks, associated leaching fields, and USTs.

A total of four sediment samples were collected from two sample borings located along the southeast bank of Shrewsbury Creek adjacent to Building 2525. Samples were located directly downgradient of potential former discharge pipes observed on the southeast bank of the creek. Samples were collected to investigate any potential historical discharges from former floor drains to outfalls that were associated with Building 2525 into Shrewsbury Creek. Shrewsbury Creek is a non-tidal water body in this portion of the facility located southeast of Building 2700 in the CWA. At each sample location, two samples were collected: one from the 0- to 6-inch bgs interval and the other from the 12- to 18-inch bgs interval. No visual or olfactory evidence of impacted sediment was noted. All samples were analyzed for TCL+30 (without pesticides) and TAL metals. The results are as follows:

A total of 5 SVOCs, 1 VOC, and 17 metals were detected in Parcel 28 sediment samples.

- All SVOCs and the one VOC (acetone) were detected at concentrations less than the freshwater sediment criteria.
- Of the 17 metals, 1 (chromium) was detected at a concentration that exceeded the freshwater sediment criteria in all for samples.

A total of three surface soil samples and three subsurface soil samples were collected from three distinct Geoprobe® borings in order to investigate potential septic system discharges and former storage pads that were identified through aerial analysis. An additional two surface soil samples were collected from hand-augered borings. Surface soil samples for non-VOC analysis were collected from the 0- to 6-inch bgs interval. Surface soil samples collected for VOC analysis were collected from the 18- to 24-inch bgs interval. Subsurface soil samples were collected from the 6-inch interval directly above the water table from each boring. No visual or olfactory evidence of soil contamination was noted during field operations. Samples were analyzed for TCL+30 (without pesticides) and TAL metals. The results are as follows:

A total of 12 SVOCs, 1 VOC, and 17 metals were detected in Parcel 28 surface and subsurface soil samples. The results are as follows:

- The 12 SVOCs and 1 VOC (acetone) were detected at concentrations less than the Non-Residential Direct Contact Soil Cleanup Criteria.
- Of the 17 metals, 1 (arsenic) was detected at a concentration in excess of the Non-Residential Direct Contact Soil Cleanup Criteria in one sample.

Four test pits located in an open field east of Building 2525 and Heliport Drive, and one test pit northeast of Building 2525, were excavated to determine if any contamination exists from former septic tank and leach fields that once serviced Building 2525. Soil sample depths were contingent upon field observations (e.g., depth to water table, thickness of layered engineered gravel) and field screening results. A total of eight subsurface soil samples (including two duplicate samples) were collected from the five test pits. No visual or olfactory evidence of impacted soil was noted. All samples were analyzed for TCL+30 (minus pesticides) and TAL metals. The results are as follows:

- A total of 12 SVOCs, 1 VOC, and 17 metals were detected in concentrations less than the Non-Residential Direct Contact Soil Cleanup Criteria in soil samples collected from test pits.

A total of five groundwater samples (including one duplicate sample) were collected from four distinct temporary wells that were installed with the Geoprobe® rig. Three temporary wells were installed downgradient of former drainage fields, and one temporary well was installed downgradient of a former storage pad area located in an open field west of Building 2290 and Guam Lane. Samples were analyzed for TCL+30 (without pesticides/PCBs), TAL metals, ammonia, nitrate, and nitrite.

A total of 1 SVOC, 3 VOCs, and 13 metals were detected in Parcel 28 groundwater samples. The results are as follows:

- One SVOC, bis(2-ethylhexyl) phthalate, was detected at concentrations less than the NJDEP GWQC.

- Three VOCs (acetone, chloroform, and toluene), were detected at concentrations less than the NJDEP GWQC in Parcel 28 groundwater samples.
- Two metals (aluminum and manganese) were detected at concentrations exceeding the NJDEP GWQC.
- Nitrite and nitrate were detected at concentrations less than the GWQC.

The geophysical survey was conducted to investigate the location of former septic tanks, USTs, and drywells. The results are as follows:

- No drywell was identified within Parcel 28; however, one possible UST (P28-8), one suspected septic holding tank, and one suspected septic distribution box and associated piping were identified.

Based upon the resulting data, the SI recommended that NFA be taken for soil within Parcel 28 and surface water and sediment be further evaluated within a BEE.

As part of the BEE, four surface water samples were collected from Shrewsbury Creek in the vicinity of the stormwater outfalls. These are discussed further in **Section 3.4.3.5**.

Shrewsbury Creek is north of Building 2525. In this area, Shrewsbury Creek is narrow and is non-tidal freshwater. Both banks of Shrewsbury Creek are steep and have not undergone stabilization. Though the banks are heavily vegetated, the surrounding area is predominantly pavement and buildings.

As indicated on the FTMM utility maps in **Appendix K**, several storm water lines drain the area of Parcel 28 around Building 2525, as well as the area of Parcel 15 around Building 2700, which discharges to Shrewsbury Creek. Numerous storm water, gas, and water utility lines in the area of Parcel 28 may act as additional contaminant migration pathways from Parcel 28 with direction dependent on the utility gradients.

Vegetation along the banks of Shrewsbury Creek is thick and includes common reed, black walnut, pin oak, wild grape, wild morning glory, pokeweed, Asiatic bittersweet, poison ivy, wild rose, sweet gum, milkweed, goldenrod, Virginia creeper, red cedar, Norway maple, white mulberry, black cherry, sassafras, and winged sumac.

GIS digital data available through the NJDEP indicate the presence of deciduous scrub/shrub wetlands along the narrow corridor of Shrewsbury Creek.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species.

Table 2-2
Ambient Levels of Selected Metals and Other Analytes in Soil

Parameter	N	Detects	MDL (mg/kg)	Mean (mg/kg)	Median (mg/kg)	Minimum (mg/kg)	Maximum (mg/kg)	90th Percentile (mg/kg)	95th Percentile (mg/kg)	Geometric Mean (mg/kg)
Metals										
Aluminum	95	95	20	6734	6800	424	23100	10800	12300	5425
Antimony	95	0	6	NA	NA	NA	NA	NA	NA	NA
Arsenic	95	86	1	7.9	5.2	0.50	83.1	13.6	15.7	4.7
Barium	95	62	20	36.0	28.3	10.0	154	65.8	83.7	27.3
Beryllium	95	15	0.5	0.36	0.29	0.25	1.80	0.68	0.76	0.33
Cadmium	95	5	0.5	0.36	0.29	0.25	2.70	0.32	0.85	0.32
Calcium	95	61	500	1312	995	250	21600	2000	3810	797
Chromium	95	95	1	18.7	11.8	1.1	171	34.7	39.8	12.9
Cobalt	95	7	5	3.5	2.9	2.5	32.0	3.2	6.7	3.1
Copper	95	86	2.5	15.0	9.3	1.3	93.0	33.3	41.3	9.7
Iron	95	95	10	11909	8830	735	68900	21100	35700	8448
Lead	95	86	10	59.7	37.6	5	344	144	179	37.5
Magnesium	95	56	500	1056	673	250	13800	1870	2660	664
Manganese	94	94	1.5	111	62.4	2.6	1030	206	423	60.1
Mercury	95	40	0.1	0.18	0.06	0.05	6.10	0.21	0.33	0.09
Nickel	94	42	4	5.2	2.4	2.0	16.9	12.3	13.9	4.1
Potassium	94	45	500	1022	310	250	22300	1750	2090	568
Selenium	94	0	1	NA	NA	NA	NA	NA	NA	NA
Silver	94	3	1	0.68	0.6	0.50	6.30	0.65	0.65	0.61
Sodium	94	0	500	NA	NA	NA	NA	NA	NA	NA
Thallium	94	2	1	0.67	0.6	0.50	1.70	1.15	1.25	0.64
Vanadium	94	89	5	21.1	16	2.5	202	35.5	46.3	15.8
Zinc	94	91	2	53.4	39.9	1.0	259	106	157	36.4
PAHs										
Benzo(a)anthracene	94	54	0.029	0.14	0.04	0.01	1.82	0.43	0.57	0.04
Benzo(a)pyrene	94	48	0.037	0.14	0.02	0.01	1.8	0.42	0.67	0.04
Benzo(b)fluoranthene	94	49	0.04	0.35	0.19	0.05	4.09	0.66	1.24	0.23
Benzo(b+k)fluoranthene	95	47	0.08	0.35	0.19	0.05	4.1	0.66	1.2	0.23
Dibenzo(a,h)anthracene	94	9	0.037	0.03	0.01	0.01	0.29	0.02	0.13	0.01
Indeno(1,2,3-c,d)pyrene	94	33	0.018	0.07	0.01	0.01	0.57	0.23	0.37	0.02
Chrysene	94	53	0.022	0.15	0.05	0.01	1.78	0.47	0.7	0.05

Notes:
Source - BEM Systems, Inc., 1998
N = Number of samples
MDL = Method detection limit

Table 2-7
Charles Wood Area
ECP Parcel and IRP Site Summary

Parcel Number	Building No. / Site Name	Design Use Description	Size of Parcel (Acres)	Selected for BEE	Basis/Remarks
1	2600, 3001 - 3052, 3216	Pine Brook residential housing area, General Storage Warehouse	63.14	No	This is the Pine Brook residential housing area in the southeast portion of Charles Wood Area (CWA) and includes one general storage warehouse (2600). No release or disposal of hazardous substances or petroleum products has occurred, and there has been no migration of such substances from adjacent areas. Tank AST-2070-a (500-gallon capacity for gasoline) and tank AST-2070-b (500-gallon capacity for diesel fuel) are in use; secondary containment is in place; and no evidence of a release was identified. Former residential fuel oil storage tanks have been either removed or closed in place and no contamination was identified during closure. No evidence of release or contamination has been detected; a Baseline Ecological Evaluation (BEE) is not required.
2	IRP Site FTMM-63 (Bldg 2603)	Sewage Lift Station	0.19	No	This parcel is a sewage lift station at which a 275-gallon underground storage tank (UST) and 225 cubic yards of potentially contaminated soil were removed in 1998. No contaminants remain at the site in soil or groundwater at concentrations above New Jersey Department of Environmental Protection (NJDEP) cleanup criteria. Tank AST-2603 (500-gallon capacity for diesel) and an emergency generator are present for the lift station; secondary containment is in place; and no evidence of a release was identified. Though Wampum Brook runs past Parcel 2, potentially contaminated soil was removed and no contamination remains in soil or groundwater. No migration pathway exists to environmentally sensitive areas. A BEE is not required. BEEs and sampling being conducted related to CW-6 also addresses Parcel 2 and Wampum Brook.
3	3050	Former UST	0.05	No	This is the location of a former residential UST for #2 fuel oil (UST-3050-30). The UST and 23 cubic yards of potentially contaminated soil have been removed. A Closure Report was submitted to NJDEP on 06/01/00, and a No Further Action (NFA) approval letter was received from the NJDEP on 8/29/00. Contaminated soils have been removed and no migration pathway exists to environmentally sensitive areas, so a BEE is not required.
4	3027	Former UST	0.05	No	This is the location of a former residential UST for #2 fuel oil (UST-3027-28). The UST and 8.7 cubic yards of petroleum-contaminated soil have been removed. A closure report was submitted to the NJDEP requesting an NFA determination on 10/17/2001; however, no regulatory concurrence is required for former residential USTs. Contaminated soils have been removed and no migration pathway exists to environmentally sensitive areas, so a BEE is not required.
5	3021	Former UST	0.08	No	Former Residential UST-3021-27 (#2 fuel oil) and 113 tons of contaminated soil were removed from this parcel. No contamination above NJDEP criteria remains in groundwater. A Closure Report was submitted to the NJDEP, and an NFA approval letter was received from the NJDEP on 10/17/00. Though Wampum Brook runs past Parcel 5, potentially contaminated soil was removed and no contamination remains in soil or groundwater; a BEE is not required. No migration pathway exists to environmentally sensitive areas. BEEs and sampling being conducted related to CW-6 also addresses Parcel 5 and Wampum Brook.
6	FTMM-31 (CW-9)	Former Sludge Disposal	1.60	No	This parcel was investigated under the Fort Monmouth Installation Restoration Program (IRP). Sludge generated from Fort Monmouth sewage treatment plants was historically stored in this area before being used as a soil conditioner and fertilizer on the golf course. This parcel is located on the CWA Golf Course southeast of Building 2070. No contaminants were identified above NJDEP Direct Contact Soil Cleanup Criteria or groundwater quality standards during the Site Investigation. An NFA determination was approved by the NJDEP in 1996. Since no contaminants are present, a BEE is not required.
7	IRP Site FTMM-28 (CW-6)	Former Pesticide Storage Building 2044 UST-2044-24 UST-2044-32 UST-2044-33	0.67	Yes	This parcel was investigated under the Fort Monmouth IRP. Use of pesticides and herbicides prior to and as part of Army ownership have occurred in this parcel. The pesticide dieldrin was detected in one soil sample slightly above NJDEP Direct Contact Soil Cleanup Criteria; pesticides - heptachlor epoxide and chlordane as well as arsenic were historically detected above criteria in groundwater but have been at concentrations below criteria in recent rounds of sampling. A Remedial Investigation (RI) report requesting an NFA determination from the NJDEP was submitted in May 2005. Three former USTs and potentially contaminated soil were removed in 1993. Fuel-related contaminants were initially detected in groundwater above NJDEP criteria and a long term monitoring program was initiated. No fuel-related contaminants were detected subsequent to 1997, and an NFA approval letter for all three former USTs was received from the NJDEP on 1/10/2003. A BEE is recommended to address potential contamination related to CW-6 in soils and sediment/soils in adjacent deciduous wooded wetlands as well as Wampum Brook.
8	2043	UST-2043-36	0.05	No	This is the location of a former UST for diesel fuel (UST-2043-36). The UST and potentially contaminated soil have been removed. No contaminants were detected in groundwater above the NJDEP groundwater criteria. A closure report was submitted to the NJDEP requesting an NFA determination in 1998, and an NFA approval letter was received from the NJDEP on 10/23/2000. Contaminated soils have been removed and no migration pathway exists to environmentally sensitive areas, so a BEE is not required.

Table 2-7
Charles Wood Area
ECP Parcel and IRP Site Summary

Parcel Number	Building No. / Site Name	Design Use Description	Size of Parcel (Acres)	Selected for BEE	Basis/Remarks
9	2068 Golf Course Pesticide Mixing Area Outdoor Pool & Chlorination facilities Residential housing	Golf Course Pesticide Mixing Area Outdoor Pool & Chlorination facilities Residential housing	161.27	No	This parcel is inclusive of the CWA Golf Course (including clubhouse, maintenance facilities, and current pesticide mixing facilities), residential housing along Megill Drive (Buildings 2022 - 2042), and the outdoor pool and associated chlorination facilities. The current pesticide mixing facilities are state-of-the-art and include secondary containment. No storage of pesticides occurs on Fort Monmouth property. No release or disposal of hazardous substances or petroleum products has occurred, and there has been no migration of such substances from adjacent areas. Tanks AST-2021, AST-2043, and AST-2044 are in use; secondary containment is in place; and no evidence of a release was identified. Twenty-one (21) former residential fuel oil USTs have been removed, no contamination was identified during closure, and no regulatory concurrence is required. Four non-residential USTs have been removed; no contamination was identified during closure; and NFA approval letters were received from the NJDEP in 2000. No contamination or releases have been identified; a BEE is not required.
10	2000	Former UST	0.04	No	Former Residential UST-2000-38 (#2 fuel oil). Petroleum-related contaminants were detected in post-excavation soil samples at concentrations below the NJDEP cleanup criteria. A Closure Report was submitted to the NJDEP, and an NFA approval letter was received from the NJDEP on 1/10/2003. Contaminated soils were removed and no migration pathways are present to environmentally sensitive areas; a BEE is not required.
11	2067	UST-2067-37	0.08	No	This is the location of a former UST for #2 fuel oil (UST-2067-37). The UST and 90 cubic yards of potentially contaminated soil have been removed. A closure report was submitted to the NJDEP requesting an NFA determination in 2002, and an NFA approval letter was received from the NJDEP on 1/10/2003. Contaminated soils were removed and no migration pathways are present to environmentally sensitive areas; a BEE is not required.
12	FTMM-29 (CW-7)	Former Polychlorinated Biphenyl (PCB) Transformer Location	0.10	No	This parcel was investigated under the Fort Monmouth IRP. A PCB transformer, formerly located in front of the Officers Club in Building 2000, was removed from service in 1990 and disposed off site; PCB contamination in the soil was removed in 1998. An RI report requesting an NFA determination from the NJDEP was submitted in September 2004. Subsequent to NJDEP's response to the NFA request, additional surface water, sediment, and soil samples were collected and concentrations were below criteria. An additional request for an NFA determination will be submitted to NJDEP. Though Parkers Creek is within 300 feet of Parcel 12, PCB contaminated soil has been removed and migration pathways to Parkers Creek are not present; a BEE is not required.
13	Former Residential Bldgs 2004 - 2016	Potential USTs associated with former residential housing	6.42	No	A 1956 fuel distribution plan displays fuel oil USTs associated with former residential dwellings in this area. Due to the age of these USTs, there is no documentation regarding whether they have been removed. This area is currently paved. No contamination has been detected and no suspected USTs were identified during a geophysical survey conducted as part of the 2008 Site Investigation; a BEE is not required.
14	NW Area of CWA	Former Residential Housing in NW Area of CWA Former #2 Fuel oil UST Former wash rack, vehicle storage area	77.47	No	Former residential area in northwest portion of CWA. Based on the timeframe in which these early structures existed (buildings were demolished prior to 1960), it is likely that USTs were utilized for fuel storage. No documentation exists confirming whether USTs have been removed. One suspected UST was identified during a geophysical survey conducted as part of the 2008 Site Investigation and is currently being addressed. This parcel also includes a former UST for #2 fuel oil (UST-2275-12) at which a release was noted during removal activities. The UST and contaminated soils have been removed. A closure report was submitted to the NJDEP requesting an NFA determination in 1998, and an NFA approval letter was received from the NJDEP on 8/29/2000. This parcel includes the area identified in a 1947 aerial photograph as a vehicle wash rack and vehicle storage area. Contaminated soil has been removed, evidence of a release to groundwater has not been detected, and there are no migration pathways to environmentally sensitive areas; a BEE is not required. BEEs and sampling being conducted related to Parcel 15 and Parcel 28 also address Parcel 14 and Shrewsbury Creek.

Table 2-7
Charles Wood Area
ECP Parcel and IRP Site Summary

Parcel Number	Building No. / Site Name	Design Use Description	Size of Parcel (Acres)	Selected for BEE	Basis/Remarks
15	2700 (Myer Center) 2705 FTMM-23 (CW-2)	Industrial and Laboratory Activities	37.99	Yes	This parcel encompasses current and former laboratory and industrial processes within Building 2700 and the surrounding area. Building 2705 is a former photo processing facility and night vision laboratory. Chemical and hazardous susbstance use has been extensively documented in association with the historic and current research and industrial activities in this parcel. Due to groundwater volatile organic compound contamination identified in adjacent parcel 16, vapor intrusion is a potential recognized environmental condition in this area. The former wastewater treatment lime pit located northwest of Building 2700 was investigated under the Fort Monmouth IRP as Site FTMM-23 (CW-2). The lime pit was demolished and disposed of in 2002. An NFA determination has been requested from the NJDEP. No response has been received from the NJDEP. Tank AST-2700A (500-gallon capacity for diesel fuel) and tank AST-2700B (500-gallon capacity for diesel fuel) are in use; secondary containmen is in place; and no evidence of a release was identified. A 1999 freon release due to a ruptured disc on equipment in Building 2706 is listed in the New Jersey Hazardous Material Incident Database. Acenaphthene, fluorene, chromium, and copper were identified as constituents of concern in sediment during the 2008 Site Investigation. A BEE is recommended for Parcel 15 to address potential discharges through stormwater outfalls into Shrewsbury Creek.
16	FTMM-22 (CW-1)	Former Wastewater Treatment Lime Pit	0.62	No	The former wastewater treatment lime pit located in the courtyard of Building 2700 and is being addressed under the Fort Monmouth IRP as Site FTMM-22 (CW-1). Volatile organic compounds are present in groundwater at concentrations above NJDEP Groundwater Quality Criteria. At present, the contaminant plume has not encroached upon Building 2700. However, the downgradient migration pathway is in the direction of the referenced building and vapor intrusion is a potential recognized environmental condition. A contaminant treatment system (soil vapor extraction and air sparging) was in place until 2005. Treatment of the groundwater through enhanced bioremediation (Hydrogen Release Compound [HRC] injection) will commence in FY 07 with the goal of achieving groundwater compliance by FY10. No migration of contaminants towards Parker Creek is occurring and a BEE is not recommended.
17	UST-2700-36 UST-2700-37 UST-2700-38 UST-2700-39	Former #6 Fuel oil USTs	0.16	No	Five former #6 fuel oil tanks (UST-2700-35, UST-2700-36, UST-2700-37, UST-2700-38, and UST-2700-39) and a total of 500 cubic yards of potentially contaminated soil were removed in 1998. A closure report was submitted to the NJDEP requesting an NFA determination in 2000, and an NFA approval letter was received from the NJDEP on 10/23/2000. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
18	UST-2700-61	Former #2 Fuel oil UST	0.05	No	A former #2 fuel oil UST and potentially contaminated soil were removed in 1994. Petroleum-related contaminants were detected in confirmatory soil samples at concentrations below the NJDEP cleanup criteria. A closure report was submitted to the NJDEP requesting an NFA determination in 2002, and an NFA approval letter was received from the NJDEP on 1/10/2003. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required. BEEs and sampling being conducted related to Parcel 15 and Parcel 28 also address Parcel 18 and Shrewsbury Creek.
19	UST-2337-65	Former #2 Fuel oil UST	0.17	No	A former #2 fuel oil UST and petroleum-contaminated soil were removed in 1994. Petroleum-related contaminants were detected in confirmatory soil samples at concentrations below the NJDEP cleanup criteria. A closure report was submitted to the NJDEP requesting an NFA determination in 2002, and an NFA approval letter was received from the NJDEP on 1/10/2003. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required. BEEs and sampling being conducted related to Parcel 15 and Parcel 28 also address Parcel 19 and Shrewsbury Creek.
20	along SW portion Parkers Creek	SW portion Parkers Creek	8.30	No	This is the undisturbed, wooded area surrounding Parkers Creek in the southwest portion of the CWA. No release or disposal of hazardous substances or petroleum products has occurred; a BEE is not required.
21	FTMM-25 (CW-3A)	Suspected former landfill	2.08	Yes	The suspected former landfill located in the southwestern portion of the CWA north of Building 2707 is being addressed under the Fort Monmouth IRP as Site FTMM-25 (CW-3A). Construction debris and coal ash were identified during the excavation of exploratory test pits. No contaminants of concern were identified in soil or groundwater at this site during RIs conducted under the IRP, and an NFA determination was submitted for NJDEP approval. A BEE is recommended since a potential migration pathway may exist for contaminants to enter Shrewsbury Creek.
22	UST-2707-40	Former #2 Fuel oil UST	0.05	No	A former #2 fuel oil UST and petroleum-contaminated soil were removed in 1998. A closure report was submitted to the NJDEP requesting an NFA determination in 1999, and an NFA approval letter was received from the NJDEP on 2/24/2000. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
23	UST-2500-53 UST-2500-54 UST-2500-55	Former Gasoline USTs	0.05	No	Five former gasoline USTs and petroleum-contaminated soil were removed in 1993. A closure report was submitted to the NJDEP requesting an NFA determination in 1996, and an NFA approval letter was received from the NJDEP on 4/20/2001. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.

Table 2-7
Charles Wood Area
ECP Parcel and IRP Site Summary

Parcel Number	Building No. / Site Name	Design Use Description	Size of Parcel (Acres)	Selected for BEE	Basis/Remarks
24	UST-2502-13	Former #2 Fuel oil UST	0.03	No	A former #2 fuel oil UST and petroleum-contaminated soil were removed in 1996. A closure report was submitted to the NJDEP requesting an NFA determination in 1998, and an NFA approval letter was received from the NJDEP on 8/29/2000. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
25	UST-2503-14	Former #2 Fuel oil UST	0.03	No	A former #2 fuel oil UST and petroleum-contaminated soil were removed in 1996. A closure report was submitted to the NJDEP requesting an NFA determination in 1998, and an NFA approval letter was received from the NJDEP on 7/10/1998. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
26	UST-2504-15	Former #2 Fuel oil UST	0.05	No	A former #2 fuel oil UST and petroleum-contaminated soil were removed in 1995. A closure report was submitted to the NJDEP requesting an NFA determination in 2000, and an NFA approval letter was received from the NJDEP on 10/23/00. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
27	2501 2503 2506 2507 2624 2625 2630 2632 2704 2707 2708 2709 2710 2713 Former Watson Laboratories	Southwest portion of CWA that includes the former Pulse Power Center, Machine Shop, Paint and Fabrication facility, Former Motor Pool, and portions of the former Watson laboratories	29.83	Yes	This parcel in the southwestern portion of CWA includes numerous current and former industrial and research operations. This area formerly housed the Pulse Power Center (2707, 2708, 2709, 2710, 2713), a paint shop (2506), a machine shop (2503), motor pool (2501), hazardous waste storage locations, and portions of the former Watson laboratories. 2501 - Former motor pool. 2503 - This facility is a machine shop and formerly contained a parts cleaner that utilized solvents. 2506 - Former paint and fabrication shop that utilized solvents and petroleum products. 2507 - Tactical Vehicle Repair Shop where petroleum and solvent use would be common during vehicle maintenance operations. 2624 - Former Hazardous Waste Storage Facility; 1980 U.S. Army Toxic and Hazardous Materials Agency reported that this facility was used for storage of bulk research chemicals. 2704 - Environmental testing of electronic equipment. Floor drains shown as connected to storm sewer. Former Watson Laboratories - this former complex of laboratories included Buildings 2532, 2533, 2534, and 2538. Operations at these former facilities occurred in the early to mid-1950s. The buildings have been demolished. Four aboveground storage tanks currently in use. Twelve (12) USTs removed from 1993 to 2002. No releases noted. NJDEP Closure Approval Letters received for seven closures. Awaiting NJDEP response for five tanks closed in 2002. Metals were identified as constituents of concern in sediment during the 2008 Site Investigation. A BEE is recommended to address potential discharges from floor drains and storm sewers from Buildings 2507 and 2704 into Shrewsbury Creek.
28	2525 2535 2539 2540 Former Motor Pool NW of 2566	Former Eatontown Laboratory, Battery Test Facility, Safety calibration laboratory office, Former Motor Pool	37.78	Yes	This parcel encompasses Buildings 2525, 2535, 2539, 2540, and all land within this area. Numerous demolished buildings located to the east and southeast of 2525. Industrial operations include the battery test facility (2535), former Eatontown laboratory (2525), and the Safety office calibration laboratory. Outdoor storage and ground staining were identified in the area of the former motor pool in aerial photographs from 1947, 1957, 1963, 1974, and 1991. Ten (10) former fuel oil USTs have been removed; no contamination was identified during closure; and NFA approval letters were received from the NJDEP. Chromium was identified as a constituent of concern in sediment during the 2008 Site Investigation. A BEE is recommended to address potential historic discharges from former floor drains to outfalls that were associated with Building 2525 into Shrewsbury Creek.
29	UST-2561-31	Former #2 Fuel oil UST	0.05	No	A former #2 fuel oil UST and petroleum-contaminated soil were removed in 1995. A closure report was submitted to the NJDEP requesting an NFA determination in 1998, and an NFA approval letter was received from the NJDEP on 7/10/98. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
30	UST-2562-41	Former gasoline UST	0.05	No	A former gasoline UST and potentially contaminated soil were removed in 1993. All confirmatory soil analytical results were below NJDEP criteria. Methyl-tertiary-butyl ether (MTBE) and lead were previously detected in groundwater above NJDEP criteria, but have been below the standards since November 1998. A closure report requesting NFA was submitted to the NJDEP on 01/02/02. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
31	UST-2537-27	Former #2 Fuel oil UST	0.05	No	A former #2 fuel oil UST and 15 cubic yards of petroleum-contaminated soil were removed in 1997. A closure report was submitted to the NJDEP requesting an NFA determination in 1998, and an NFA approval letter was received from the NJDEP on 8/29/00. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
32	Former Indoor Small Arms Range (Bldg T-2537) FTMM-26 (CW-4)	Former Indoor Small Arms Range (Bldg T-2537)	0.33	No	The former indoor small arms firing range located west of Building 2566 was investigated under the Fort Monmouth IRP as Site FTMM-26 (CW-4). Lead identified in soil above NJDEP Direct Contact Soil Cleanup Criteria, spent rounds, and casings were removed in 1997. An RI report requesting an NFA determination from the NJDEP was submitted in October 2005. An NFA was issued on April 26, 2007. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas. A BEE is not required.

Table 2-7
Charles Wood Area
ECP Parcel and IRP Site Summary

Parcel Number	Building No. / Site Name	Design Use Description	Size of Parcel (Acres)	Selected for BEE	Basis/Remarks
33	UST-2534-24	Former #2 Fuel oil UST	0.05	No	A former #2 fuel oil UST was removed in 1994. Petroleum-related contaminants were detected in post-excavation soil samples at concentrations below the NJDEP cleanup criteria. A Closure Report was submitted to the NJDEP, and an NFA approval letter was received from the NJDEP on 1/10/2003. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
34	2567 FTMM-58	Army & Air Force Exchange Service (AAFES) Gasoline Station (FTMM-58)	1.26	No	This parcel is being addressed under the Fort Monmouth IRP as Site FTMM-58 (Building 2567). Site FTMM-58 is an active gasoline service station operated by the AAFES organization. Three modern gasoline USTs are in use at Building 2567. The station is located at the corner of Hope Road and Laboratory Road. Five single-walled steel USTs and 1,000 cubic yards of petroleum-contaminated soil were removed as part of a renovation project that was initiated in 1991. Gasoline-related contaminants were detected in groundwater above NJDEP groundwater quality criteria. Due to groundwater contamination from volatile organic compounds, vapor intrusion is a recognized environmental condition in this area. A Classification Exception Area was filed with the NJDEP; and in situ bioremediation (Oxygen Release Compound [ORC] injection) and monitored natural attenuation, including groundwater monitoring, were selected as the remedial approach. Groundwater contamination is restricted to the immediate vicinity of Building 2567 and no evidence of migration to environmentally sensitive areas has been detected; a BEE is not required.
35	Child Development Center (2290) Residential Housing (2231-2240, 2260) FTMM-27 Former sewage treatment plant	2290, 2231 - 2240, 2260	58.88	No	This parcel includes the Child Development Center (2290), existing residential housing (2231 - 2240, 2260), the former sewage treatment plant, and the wooded portion of CWA south of 2566. No release or disposal of hazardous substances or petroleum products has occurred, and there has been no migration of such substances from adjacent areas. The former Charles Wood Sanitary Treatment Plant (STP) is addressed under the Fort Monmouth IRP as Site FTMM-27 (CW-5). The former STP was located in the center of the CWA, bounded by Hope Road to the east, Corregidor Road to the north, Guam Lane to the west, and Laboratory Road to the south. The STP was closed on October 29, 1975, and demolished in 1983. No compounds of concern were detected above NJDEP criteria, and an NFA determination was approved by the NJDEP in 1994. Eleven former residential fuel oil USTs have been removed; no contamination was identified during closure; and no regulatory concurrence is required. Since no contamination is present, a BEE is not required.

Table 2-8
Main Post, Fort Monmouth, New Jersey
ECP Parcel and IRP Site Summary

Parcel Number	Building No. / Associated IRP Site / Associated UST	Design Use Description	Size of Parcel (Acres)	Selected for BEE	Basis/Remarks
36	1200 1201 1202 1203 1204 1205 1206 1207 1208 1209 1210 1211 1212 1230 1231 1152 170 200 FTMM-09, 47	Current use is administrative and government tenant activities, electrical substation (1231), Military Academy Prep School (1204, 1230), former Signal School (1200)	118.54	No	This parcel is the western portion of Main Post. Batteries associated with Uninterrupted Power Supplies (UPSs) are present in association with electrical substations and computer/mission activities throughout the area. Two aboveground storage tanks (ASTs), one located at Building 200 and one located at Building 127, are in use with secondary containment in place. One underground storage tank (UST) with leak detection and secondary containment in place is located at Building 1203. FTMM-09 (M-9 Former Polychlorinated Biphenyl [PCB] Transformer Site) and FTMM-47 (Buildings 1002, 1208, and 1209 former PCB transformer site) were investigated under the Intallation Restoration Program (IRP) and it was determined no transformers were leaking and all transformers are considered non-PCB class equipment. Staining of concrete and elevated concentrations of PCBs in concrete samples collected below existing transformers at Buildings 1208 and 1209 were determined to be minor in nature and will be addressed accordingly upon removal or replacement of existing transformers. A No Further Action (NFA) determination was approved by the New Jersey Department of Environmental Protection (NJDEP) in 1994. No release or disposal of hazardous substances or petroleum products has occurred, and there has been no migration of such substances from adjacent areas; therefore, no Baseline Ecological Evaluation (BEE) is required.
37	1220 FTMM-10	Boiler Plant	1.06	No	This parcel includes the boiler plant (Building 1220), small amounts of various chemicals utilized during operation of the facility, and associated current and former petroleum storage locations. Ten former fuel oil USTs and petroleum-contaminated soil were removed, and NFA approval letters were received from the NJDEP in 2000 and 2003. FTMM-10 (Asbestos Storage Area) was inspected under the IRP, no asbestos containing material was found, and an NFA determination was approved by the NJDEP in 1994. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
38	Former Outdoor Firing Range (1940-1955 Pistol Range) FTMM-21	Former Outdoor Small Arms Firing Range	0.59	No	This parcel is the 1940-1955 Small Arms Training Range and is included in the Fort Monmouth Military Munitions Response Program (MMRP). The area has been a maintained grass-covered area for over 40 years. Due to the historic use of this site as a small arms firing range, metals contamination in soil was investigated and no metals were found above NJDEP soil criteria. The former pistol range is overlain by maintained grass areas and asphalt pavement. No contaminants were identified during the 2008 Site Investigation; therefore, no BEE is required.
39	1150	Vail Hall - Communications back up and administrative offices	0.60	Yes	This parcel is the area between Building 1150 and Parkers Creek. Floor drains and a sump pump are present in the basement of 1150 for high water table intrusion and ultimately discharge to Parkers Creek via a basin behind the building. Building 1150 houses a large UPS room in the basement for communications backup and previous activities included film developing. Base/Neutrals (B/Ns) and metals were identified as constituents of concern in sediment during the 2008 Site Investigation. A BEE is recommended to address potential discharges to Parkers Creek.
40	FTMM-02	Former Landfill	8.10	Yes	This parcel was investigated under the Fort Monmouth IRP as Site FTMM-02. This is the location of former landfill M-2. An NFA recommendation was submitted to the NJDEP for near surface soil; NJDEP's response in June 2009 included a request for additional sediment samples from Mill Creek and a BEE. An equivalent to a Declaration of Environmental Restriction has been incorporated into the Fort Monmouth Master Plan for PCB contamination in below grade soil. A Groundwater CEA was established with the NJDEP. Volatile organic compounds present in groundwater at concentrations above NJDEP Groundwater Quality Criteria (NJ GWQC) are being remediated via enhanced bioremediation (Oxygen Release Compound [ORC] injection) through FY08. Long-term monitoring of groundwater and surface water continues on a quarterly basis. Potential migration pathways may exist for contaminants to enter Mill Creek from the Landfill; a BEE is recommended.
41	FTMM-59	Groundwater in vicinity of Building 1122	0.34	No	This parcel was investigated under the Fort Monmouth IRP as IRP Site FTMM-59. A Groundwater Classification Exception Area (CEA) was submitted to the NJDEP. Volatile organic compounds present in groundwater at concentrations above NJ GWQC are being remediated via enhanced bioremediation (Hydrogen Release Compound [HRC] injection). Long-term monitoring of groundwater and surface water continues on a quarterly basis. The identification of volatile organic compounds in the groundwater in excess of criteria and the potential for migration into overlying buildings qualifies vapor intrusion as a recognized environmental concern in this area. The contaminated groundwater will be evaluated through the BEE for Parcel 43 (Building 1122).
42	UST-1122-171	Former UST	0.02	No	A fuel oil tank and potentially contaminated soil were removed in 1994. Metals were detected in groundwater above criteria. Agreement was reached with the NJDEP in 1998 to conduct 4 rounds of sampling and close out the groundwater monitoring due to high background metals. Report was submitted and no response has been received from the NJDEP; monitoring is ongoing. The metals in groundwater will be evaluated through the BEE for Parcel 43 (Building 1122).
43	1122	Do-it-Yourself Auto Repair and Craft Shop	1.54	Yes	This parcel encompasses Building 1122 (Do-it-yourself auto repairs) and Building 1124 (Car wash). Building 1122 is a hazardous waste generator and numerous areas of patched asphalt and old concrete pads have been noted. An oil/water separator (w/vessel) and floor drains confirmed to be connected to sanitary system per 1993 floor plans. Surface drainage from this area may have had the potential to allow contaminants to migrate into Mill Creek and B/Ns and metals were identified as constituents of concern in sediment during the 2008 Site Investigation. A BEE is recommended.

Table 2-8
Main Post, Fort Monmouth, New Jersey
ECP Parcel and IRP Site Summary

Parcel Number	Building No. / Associated IRP Site / Associated UST	Design Use Description	Size of Parcel (Acres)	Selected for BEE	Basis/Remarks
44	Former Skeet Range FTMM-03, 04, 05, 06, and 08	Former Skeet Range and Former Landfills	25.30	Yes	This parcel includes one MMRP site (1940-1955 Skeet Range) and IRP sites FTMM-03, 04, 05, 06, and 08. The IRP sites are former landfill areas (M-3, M-4, M-5, M-8) and a post burning area (M-6). Extensive soil evaluation has been conducted throughout this parcel, and an NFA determination has been requested from the NJDEP in relation to near surface soils throughout the parcel. No response has been received from the NJDEP. The Department of Public Works incorporated an equivalent to a Declaration of Environmental Restriction into the Fort Monmouth Master Plan for PCB below grade soil contamination at M-8. FTMM-03 - Groundwater - CEA currently being prepared for subsequent submission to the NJDEP. A Monitored Natural Attenuation (MNA) program is approved by the NJDEP and is currently under way. Long-term monitoring of groundwater and surface water continues on a quarterly basis. FTMM-05 - Groundwater - CEA currently being prepared for subsequent submission to the NJDEP. An HRC injection program is approved by the NJDEP and is currently under way through FY08 to address volatile organic compounds in groundwater. Long-term monitoring of groundwater and surface water continues on a quarterly basis throughout the parcel. BEE recommended for Former Landfills since a potential migration pathway may exist for contaminants to enter either Lafetra Creek, Mill Creek or Parkers Creek from the Landfills.
45	UST-697-194 UST-697-195 UST-697-195	Former USTs	0.04	No	Three 1,000-gallon waste oil tanks were removed on June 1, 1990. No documentation existed on condition of tanks or adjacent soils during removal. A site assessment was initiated at the suspected locations of the former USTs in November 1992. Petroleum-related compounds were detected in soil samples below State criteria. Initial groundwater samples exceeded NJ GWQC for chlorinated volatile organic compounds and pesticides. Closure Report submitted to NJDEP on 02/26/96 recommending additional groundwater sampling. Quarterly groundwater samples were collected from August 1997 to December 2001. Groundwater concentrations in the 2001 samples were below the NJ GWQC. Revised Closure Report submitted to NJDEP on 5/15/02. NJDEP closure approval letter received 01/10/2003. No contamination remains at the site and no migration to environmentally sensitive areas has been detected; therefore, no BEE is required. BEEs and sampling being conducted related to M-8 and M-18 also address Parcel 45 and Parkers Creek.
46	FTMM-07	Former Incinerator	0.03	No	This parcel was investigated under the Fort Monmouth IRP as Site FTMM-07 (M-7 Burning Area). The M-7 burning area was a former incinerator located within Building 697. The incinerator was used until 1990 for burning classified documents. The Incinerator was dismantled in 1993; NFA determination approved by NJDEP in 1994. There is no contamination present at Parcel 46 or evidence of migration to environmentally sensitive areas; therefore, no BEE is required. BEEs and sampling being conducted related to M-8 and M-18 also address Parcel 46 and Parkers Creek.
47	FTMM-19	Former Pistol Range	2.23	No	This parcel includes a former pistol range and the former sanitary treatment plant (FTMM-19). The firing range was used from 1935 to 1940 for small arms. The sewage treatment plant closed in 1975. No compounds of concern detected above NJDEP criteria for soil or sediment. NFA approved by NJDEP in 1996. Since no contaminants were found at Parcel 47, no BEE is required.
48	FTMM-18	Former Training Area	4.85	Yes	This parcel was investigated under the Fort Monmouth IRP as Site FTMM-18 - Near Surface Soils (Cover Soil). A geophysical survey and subsequent trenching identified buried waste materials at the site. A BEE is recommended since a potential migration pathway may exist for contaminants to enter Parkers Creek.
49	283, 288, 291, 292, 293, 295	Former Squier Laboratory Complex, Museum, Battery Test Facility	9.09	Yes	Building 283 is currently administrative space. Previous use included the Squier laboratory - primary R&D laboratory until 1954 (when the laboratory operations were transferred to Building 2700). Former repair/experimental work within this parcel included photographic equipment, a battery test facility (which was destroyed by fire in the 1980s and subsequently rebuilt), climatic testing lab, plastics research and development. Numerous former buildings existed in this parcel that were associated with Squier laboratory operations in the 1950s. B/Ns and PCBs were identified as constituents of concern in soil and metals were identified as constituents of concern in sediment during the 2008 Site Investigation. Migration of contaminants from UST at Building 283 or discharges from former septic and sump systems associated with Squier Complex to Parkers Creek may have occurred, so a BEE is recommended.
50	FTMM-54 Building 296) FTMM-55 (Building 290) FTMM-61 (Building 283)	Former fuel distribution facility, Former USTs	2.18	No	Three sites within this parcel are included in the Fort Monmouth IRP. Site FTMM-54 is a former abandoned fuel distribution facility that was removed during a renovation project at Building 296. Benzene and lead are present in groundwater above criteria and are being addressed through the implementation of MNA, which includes quarterly groundwater monitoring. Site FTMM-55 is the site of a former UST system which was located at Building 290. Petroleum-contaminated soil has been removed; lead and arsenic detections in groundwater are being addressed through MNA (including quarterly groundwater monitoring), while a request for an NFA determination is under review by the NJDEP. FTMM-61 is a former 3,000-gallon UST site at which petroleum-contaminated soil was removed and petroleum-related contaminants are present in groundwater. In situ bioremediation (ORC injection) is being conducted through FY08 to address groundwater, long-term monitoring of groundwater is ongoing. In total within this parcel, 15 USTs that were removed had evidence of petroleum release during closure and were properly addressed via removal of contaminated soil, and NFA approval letters were received for all 15 USTs. Contaminated groundwater is addressed through the Fort Monmouth IRP as summarized above. The identification of volatile organic compounds in the groundwater in excess of criteria indicates vapor intrusion is a potential recognized environmental concern in this area. Contaminated soils have been removed and no pathways to environmentally sensitive areas are present; no BEE is required. BEEs and sampling being conducted related to M-8 and M-18 also address Parcel 50 and Parkers Creek.

Table 2-8
Main Post, Fort Monmouth, New Jersey
ECP Parcel and IRP Site Summary

Parcel Number	Building No. / Associated IRP Site / Associated UST	Design Use Description	Size of Parcel (Acres)	Selected for BEE	Basis/Remarks
51	750 Area 787, 788, 789 500 Area 600 Area 1100 former Barracks FTMM-11	Motor Pool Administrative Barracks Former USTs	87.00	No	This parcel includes the 750 motor pool; the area around Buildings 787, 788, and 789; the 600 Area Buildings; 500 Area Buildings; former barracks along Semaphore Ave, and IRP Site FTMM-11. Per communications with facility personnel involved with the 750 Motor Pool construction project in the 1980s, multiple former USTs associated with former barracks in the area were removed during construction. Extensive soil sampling and three UST removals were conducted in the area of Buildings 787, 788, and 789 as part of the U.S. Army's Residential Communities Initiative (RCI) and Enhanced Use Leasing (EUL) programs. Soil grid sampling was conducted throughout the area. Locations at which contaminated soil was identified above NJDEP residential cleanup criteria were excavated and disposed off site. Numerous UST removals and extensive investigation of the 600 Area were conducted under the 600 Area Work Plan that was approved by the NJDEP. A petroleum release was documented to have potentially occurred at 24 of the removed USTs in this parcel. An NFA approval letter was obtained from the NJDEP for all 24 locations where evidence of a petroleum release was identified. Current operations in the 600 Area include dry metal fabrication of vehicle equipment shelters (no solvents used). Small amounts of chemicals are utilized in this area, and lead acid batteries are present in association with emergency generators and UPSs. FTMM-11 (M-11 Elevated Water Tank) was investigated unde the IRP. Site reconnaissance work revealed no visible stains, stressed vegetation or soil at the site and an NFA determination was approved by the NJDEP in 1994. Eleven suspected USTs were identified during a geophysical survey conducted as part of the 2008 Site Investigation and are currently being addressed. This parcel consists of maintained grass and pavement associated with residential housing and the 750 motor pool. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
52	FTMM-53, Bldg 699	gasoline service station	1.38	No	This parcel was investigated under the Fort Monmouth IRP as FTMM-53 (Building 699). Site FTMM-53 is an active gasoline service station operated by the Army & Air Force Exchange Service (AAFES) organization. On November 5, 1984, a tank tightness test identified a leak in two USTs. No action was taken until 1989 when a line leak was identified; subsequently, the piping was excavated and replaced. Volatile organic compounds were identified in soil and groundwater at concentrations exceeding NJDEP cleanup criteria. Since that time, a groundwater treatment system (to recover free product and to control plume migration) has been operating in conjunction with a quarterly groundwater monitoring program. The cleanup strategy is to continue remedial action activities and monitoring efforts at the Building 699 site. Shut-down of the treatment system is expected in FY08 and quarterly groundwater monitoring of 13 wells will be performed for 2 years after shut-down. A CEA is currently being prepared for subsequent submission to the NJDEP. The identification of volatile organic compounds in the soil and groundwater in excess of criteria indicates vapor intrusion is a potential recognized environmental concern in this area and tetrachloroethene was identified as a constituent of concern in soil gas during the 2008 Site Investigation. Contaminated soil has been removed and contaminated groundwater is contained in the immediate vicinity of Building 699; no migration to environmentally sensitive areas had been detected; a BEE is not required.
53	700 Area	former housing	11.53	No	Extensive soil sampling and numerous UST removals were conducted as part of the U.S. Army's RCI and EUL programs. Soil grid sampling was conducted throughout the area. Locations at which contaminated soil was identified above NJDEP residential cleanup criteria were excavated and disposed off site and there are no migration pathways to environmentally sensitive areas; therefore, no BEE is recommended.
54	700 Area 800 Area	Lane Hall (Social events and food service) Former Dental Clinic	44.74	No	This parcel includes a sewage lift station (Building 752) at which antifreeze is stored for an emergency generator, former dental clinic and photoprocessing facility currently utilized as a locker room (Building 814); and Lane Hall (Building 702) which is utilized for social events and food service. No release or disposal of hazardous substances or petroleum products has occurred; therefore, no BEE is required.
55	876 FTMM-47	Former Motor Pool Former Medical and Veterinarian Laboratory	11.80	No	Medical and veterinarian laboratories were previously located in former Building 876 and a 1999 Chemical Inventory recorded storage of hazardous substances in this former building. A motor pool formerly existed within this parcel. FTMM-47 (Buildings 1002, 1208, and 1209 former PCB transformer site) was investigated under the IRP and it was determined the staining of concrete and elevated concentrations of PCBs in concrete samples collected below existing transformers at Building 1002 was minor in nature and will be addressed accordingly upon removal or replacement of existing transformers. An NFA determination was approved by the NJDEP. There are no migration pathways to environmentally sensitive areas; a BEE is not required.
56	800 Area RCI Project	Former housing	15.18	No	Extensive soil sampling and numerous UST removals were conducted as part of the U.S. Army's RCI and EUL programs. Soil grid sampling was conducted throughout the area. Locations at which contaminated soil was identified above NJDEP residential cleanup criteria were excavated and disposed off site. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
57		Former Coal Storage and RR Unloading area	8.71	No	Former coal storage and unloading area along former railroad in south central portion of Main Post. B/Ns were identified as constituents of concern in soil and metals were identified as constituents of concern in groundwater during the 2008 Site Investigation and are being further evaluated. No migration pathway to ecological receptors has been identified. There are no migration pathways to environmentally sensitive areas; a BEE is not required. BEE and sampling being conducted related to M-14 also addresses Parcel 57 and Husky Brook.

Table 2-8
Main Post, Fort Monmouth, New Jersey
ECP Parcel and IRP Site Summary

Parcel Number	Building No. / Associated IRP Site / Associated UST	Design Use Description	Size of Parcel (Acres)	Selected for BEE	Basis/Remarks
58	UST-800-127 UST-801-129	Former #2 fuel oil USTs	1.04	No	Two #2 fuel oil USTs and associated petroleum-contaminated soil were removed. Initial groundwater results showed one semi-volatile organic compound exceeded the NJ GWQC. A monitoring well was installed and no compounds were detected above NJ GWQC in four rounds of sampling. Closure Reports requesting NFA were submitted to the NJDEP, and an NFA approval letter was received from the NJDEP on 1/10/2003. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
60	1077, 1078	Residential Housing	4.22	No	Residential housing area southwest of Patterson Army Health Clinic. No release or disposal of hazardous substances or petroleum products has occurred, and there has been no migration of such substances from adjacent areas. Since no contaminants are present and no release has occurred, no BEE is required.
61	810, 1075, 1076	Medical Facility Veterinary Clinic	14.66	Yes	This parcel includes the veterinary clinic (Building 810), Patterson Army Health Clinic (Building 1075), and former Patterson Boiler Plant (former Building 1076). Former X-ray operations were conducted with film development at 1075; over the counter medicines stored on site; medical waste disposed through 1075. Based on extensive previous medical activities within this parcel, potential for historic release of developing chemicals and other waste associated with medical operations exists. B/Ns were identified as constituents of concern in soil and B/Ns and metals were identified as constituents of concern in sediment during the 2008 Site Investigation. Stormwater discharges to a tributary to Oceanport Creek from Building 1075 may have occurred; a BEE is recommended.
62	FTMM-13	Former Pathogenic Waste Incinerator	0.13	No	This parcel was investigated under the Fort Monmouth IRP as FTMM-13 (M-13 Pathogenic Waste Incinerator). The pathogenic waste incinerator formerly located on the west side of former Building 1076 was constructed in 1975. The pathogenic waste incinerator was taken out of service in December 1992. Site reconnaissance work revealed no ash or debris in or around the incinerator unit and the incinerator was dismantled in November 1993. An NFA determination was approved by the NJDEP in 1994. No contaminants have been identified and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
63	UST-810-131	Former #2 fuel oil UST	0.12	No	A former #2 fuel oil UST was removed in 1998. Visible petroleum contamination of soil was observed during the removal of the UST, and potentially contaminated soil was removed. No detections in groundwater or soil samples were above NJDEP criteria. A closure report was submitted to the NJDEP requesting an NFA determination in 2000, and an NFA approval letter was received from the NJDEP on 8/29/2000. No pathway to environmentally sensitive areas is present, so no BEE is required.
64	FTMM-64 (Building 812)	former gasoline distribution area	3.18	No	This parcel was investigated under the Fort Monmouth IRP as FTMM-64 (Building 812). This parcel is a former gasoline distribution area. Volatile organic compounds and metals are present in groundwater above the NJ GWQC; no contaminants identified in soil above criteria. Treatment of groundwater is underway via enhanced bioremediation (HRC/ORC injection). A CEA was submitted with the NJDEP, awaiting response. Long-term monitoring of groundwater continues on a quarterly basis. The identification of volatile organic compounds in the groundwater in excess of criteria indicates vapor intrusion is a potential recognized environmental concern in this area. There is no migration pathway to environmentally sensitive areas, so no BEE is required.
65	FTMM-66 (Building 886)	former fuel oil storage area	3.15	No	This parcel is addressed under the Fort Monmouth IRP as FTMM-66 (Building 886). Based upon historical records, Site FTMM-66 was identified as a former fuel oil storage area. Aerial photos indicate a former AST was located adjacent to Building 886, located off Murphy Drive on the Main Post. The AST had a storage capacity of 250,000 gallons and stored #2 fuel oil. The AST was removed in the 1970s. Soil contamination was identified at the site during the removal of a 1,000-gallon steel, fuel oil UST located on the west side of Building 886. Soils contained petroleum contamination exceeding NJDEP residential direct contact soil cleanup criteria, and free product was observed in groundwater. 4,000 tons of soil were removed in February 2003. A CEA was filed with the NJDEP and MNA, including groundwater monitoring, was selected as the remedial approach. Long-term groundwater monitoring continues on a quarterly basis. There is no migration pathway to environmentally sensitive areas, so no BEE is required.
66	900 Building Area	Electrical Substation General Storage Police Station	28.92	No	This parcel includes general storage (Buildings 908, 975 and 976), the police station (977), and an electrical substation (Building 978). The electrical substation (Building 978) houses 18 lead acid batteries and non-PCB transformers, all contained within secondary containment. Building 977 houses lead acid batteries associated with an emergency generator. Building 901, currently used in an administrative capacity, formerly housed radar training. Chemicals utilized in this operation included alcohols and freon 113. No release or disposal of hazardous substances or petroleum products has occurred, and there has been no migration of such substances from adjacent areas. Therefore, no BEE is required.
67	UST-949-203	Former #2 fuel oil UST	0.12	No	A former diesel UST and potentially contaminated soil were removed in 1998. One volatile organic compound was detected above the NJ GWQC during the initial round of groundwater sampling. Subsequent quarterly samples collected in 9/2000, 10/2000, 1/2001, and 4/2001 showed no compounds above NJ GWQC. Closure Report requesting NFA submitted to NJDEP on 07/17/2001. NJDEP Closure Approval Letter received on 01/10/2003. No contaminants remain at the site and there is no pathway to environmentally sensitive areas, so no BEE is required.
68	900 Building Area former USTs	Former #2 fuel oil USTs	4.74	No	This parcel includes 12 former USTs. Petroleum discharges were identified at five of the USTs and associated petroleum-contaminated soil was remediated. NFA approval letters were received in 2000 (UST-909-147, UST-914-152, UST-977-204, and UST-979-205) and 2003 (UST-905-145). Lead acid batteries associated with an emergency generator are present at Building 979. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.

Table 2-8
Main Post, Fort Monmouth, New Jersey
ECP Parcel and IRP Site Summary

Parcel Number	Building No. / Associated IRP Site / Associated UST	Design Use Description	Size of Parcel (Acres)	Selected for BEE	Basis/Remarks
69	900	Former vehicle repair/motor pool	0.31	Yes	This facility is a former vehicle repair/motor pool facility where solvent-based parts cleaners were previously utilized as part of routine vehicle maintenance activities. This building has been used as general storage for the past 10 years. Metals and B/Ns were identified as constituents of concern in sediment during the 2008 Site Investigation. Stormwater outfalls discharging into Oceanport Creek may have the potential to have led to migration of contaminants to Oceanport Creek, so a BEE is recommended.
70	551	Classroom, former (early 1950s) photoprocessing	1.73	No	Former industrial processes included the use of carbon tetrachloride, benzol, acids, and photographic chemicals in an adjacent Quonset hut in the early 1950s. This facility is currently used for administrative and classroom activities. No constituents of concern were identified in sediment or soil during the 2008 Site Investigation. Though Husky Brook is adjacent to Parcel 70, no contaminants have been found in environmental media, so a BEE is not required.
71	FTMM-12, FTMM-14	Former Landfill	14.65	Yes	This parcel was investigated under the Fort Monmouth IRP as FTMM-12 (M-12 Landfill) and FTMM-14 (M-14 Landfill). A remedial action that addressed soil erosion problems along Husky Brook was completed in June of 2001. An NFA recommendation for near surface soil was submitted to the NJDEP; NJDEP's response in July 2007 included a request for additional sediment samples from Husky Brook and a BEE. Metals and volatile organic compounds have been detected in groundwater slightly above the NJ GWQC. Long-term monitoring of groundwater and surface water continues on a quarterly basis, and a CEA request has been submitted to the NJDEP for groundwater. An NFA recommendation was submitted to the NJDEP. A BEE is recommended since a potential migration pathway may exist for contaminants to enter Husky Brook.
72	200 Area 300 Area	Residential Housing Parade Grounds Administrative	101.38	No	This parcel is located in the north-central portion of Main Post and includes residential housing along Gosselin Ave., Sherrill Ave., Allen Ave., and Signal Ave.; the parade grounds; administrative offices in Building 286 (Russell Hall), and electronic research facilities in the northeastern portion of the parcel. Hospital facilities were formerly located in Building 209 prior to the construction of Patterson Army Health Clinic. Building 209 is now used for administrative purposes. No release or disposal of hazardous substances or petroleum products has occurred, and there has been no migration of such substances from adjacent areas. Forty-five (45) former fuel oil USTs have been removed and no contamination was identified during closure. Approval of an NFA recommendation was received from the NJDEP for six USTs, the remaining 39 removed USTs were residential USTs for which no regulatory concurrence is required. Since no contamination is present related to Parcel 72, no BEE is required.
73	UST-286-60	Former #2 fuel oil UST	0.12	No	A former #2 fuel oil UST and 3 cubic yards of petroleum-contaminated soil were removed. A closure report was submitted to the NJDEP requesting an NFA determination in 1999, and an NFA approval letter was received from the NJDEP on 2/24/2000. Additionally, there are no migration pathways to environmentally sensitive areas, so no BEE is required.
74	205, 206, 207, 208, 257, 282, 287	Residential Housing, Fire House, and former fuel oil USTs	10.74	No	This parcel includes the fire house and existing housing southeast of Hidreth Ave. Eight former residential fuel oil USTs and associated petroleum-contaminated soil have been removed. No regulatory concurrence is required for residential USTs. Despite no requirement for regulatory concurrence, an NFA approval letter was obtained for 7 of the 8 USTs. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
75	FTMM-20	Pre-1941 Sewage Treatment Plant	0.28	Yes	This parcel is addressed under the Fort Monmouth IRP as FTMM-20 (Pre-1941 Sewage Treatment Plant). During the RI, metals were detected in sediment samples above criteria. Though these metals may be comparable to background levels; a BEE is recommended.
76	200 Area 300 Area	Residential Housing Former Barracks	12.06	No	This parcel includes the existing residential housing buildings north of Housing Ave. and the former 300 Area Barracks. Numerous USTs are illustrated on historic maps associated with the 300 Area Barracks that are not documented to have been removed. Thirteen (13) residential USTs and associated petroleum-contaminated soil (for which no NJDEP closure approval is required) were removed in association with existing residential housing in this parcel as well. Seven suspected USTS were identified during a geophysical survey conducted as part of the 2008 Site Investigation; however, no constituents of concern were identified in soil or groundwater. The 7 suspected USTs are currently being investigated. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
77	UST-210-8	Former #2 fuel oil UST	0.37	No	A former #2 fuel oil UST and 10 cubic yards of petroleum-contaminated soil were removed in 1994, and no contaminants were detected in groundwater above NJDEP criteria. A closure report was submitted to the NJDEP requesting an NFA determination in 1996. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
78	FTMM-15	Elevated Water Tank	0.30	Yes	This parcel is addressed under the Fort Monmouth IRP as Site FTMM-15 (M-15 Water Tank). Two pesticides and three metals were identified above NJDEP direct contact soil cleanup criteria. A corrective action was implemented in 1999 involving the removal of the contaminated soil from the site. A Remedial Action report will be submitted to NJDEP with an NFA recommendation from the Army. RI sampling had confirmed that horizontal migration towards Parkers Creek had occurred prior to Remedial Action, so BEE is recommended.

Table 2-8
Main Post, Fort Monmouth, New Jersey
ECP Parcel and IRP Site Summary

Parcel Number	Building No. / Associated IRP Site / Associated UST	Design Use Description	Size of Parcel (Acres)	Selected for BEE	Basis/Remarks
79	142 494 Bldg 75 Former Tank Farm	Box/Crate Shop Marina Former Bulk Petroleum Storage Tanks	43.64	No	This parcel includes the Box/Crate shop (all hazmat packaged and shipped through this building, but not stored at this location), the water supply treatment building (Building 494), former Building 75 Tank Area adjacent to the railroad, the marina, and the former 400 area housing. There were 38 USTs removed from this parcel. Eight of the tanks had leaked and soil removals were conducted. Some of the USTs were residential and did not require closure documentation. Twenty-five (25) approval letters for the UST removals were received from the NJDEP. Four suspected USTs were identified during a geophysical survey conducted as part of the 2008 Site Investigation; however, no constituents of concern were identified in soil or groundwater. The four suspected USTs are currently being investigated. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
80	Former Buildings 105 and 106		0.93	No	This parcel includes former Buildings 105 and 106 - former photoprocessing facilities located northeast of Oceanport Ave., directly southeast of the current credit union (Building 495). These building served as photoprocessing facilities from the 1940s until they were demolished in the 1980s. No constituents of concern wer idetified during the 2008 Site Investigation and the parcel consists of maintained lawn, pavement, and buildigns. No migration pathway to sensitive environmental resource is present; a BEE is not required.
81	FTMM-16 (Bldg 498)	Former Pesticide Storage Area	0.12	Yes	A former pesticide storage and mixing area was located at the M-16 site on Main Post. The facility (Building 498) is a brick structure and was constructed in 1939. Pesticide management practices were conducted at the site until the late 1950s. Remedial actions were completed in 1999 under the Fort Monmouth IRP to remove pesticide-contaminated soil. A Remedial Action report will be submitted to NJDEP with an NFA recommendation from the Army. Sampling prior to Remedial Action confirmed that migration horizontally in the direction of Oceanport Creek had occurred, so a BEE is recommended.
82	400 Area RCI	Remediated soil contamination in 400 Area	0.13	No	PCB-contaminated soil was excavated to below NJDEP cleanup criteria and disposed off site in 2005 as part of the U.S. Army's RCI and EUL programs. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
83	109	Former photoprocessing Current and former maintenance shops (carpentry, plumbing, heating, HVAC, electrical) Former coal storage	35.34	No	This parcel is located in the northeastern portion of the Main Post and is associated with numerous current and former industrial processes and vehicle operations including former vehicle wash platforms, former photoprocessing and printing plants, current and former vehicle maintenance areas, former heating plants, former refrigerant repair, former coal storage, and current and former carpentry, plumbing, and electrical shops. Three modern USTs are currently in use at Building 273 (Garrison Motor Pool), three waste oil ASTs are present at Building 484, one waste oil AST is present at Building 481, and one waste oil AST is present at Building 121. All existing USTs and ASTs have secondary containment in place. Numerous former USTs have been removed throughout this parcel, and petroleum-contaminated soil was addressed when encountered at each UST location. Lead and B/Ns were identified as constituents of concern in surface soil during the 2008 Site Investigation. The entire parcel consists of maintained lawn, pavement, and buildings. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
84	FTMM-56 (Former Building 80)	Former #2 fuel oil UST	0.29	No	This parcel is addressed under the Fort Monmouth IRPas Site FTMM-56 (Building 80). A former #2 fuel oil UST and 56 cubic yards of petroleum-contaminated soil were removed in 1993. Although a discharge was identified during the UST closure, the discharge is believed to have come from activities prior to and not related to the UST removal (pre-1984). Gasoline-related constituents and one pesticide were detected at concentrations above the NJ GWQC. MNA (which includes quarterly groundwater monitoring) has been implemented as the remedial approach for this parcel pending approval of an NFA recommendation by the NJDEP. An RI report requesting an NFA determination was submitted to the NJDEP in May 2005. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
85	UST-116-9	Former #2 fuel oil UST	0.13	No	A former #2 fuel oil UST and petroleum-contaminated soil were removed in 1994. A closure report was submitted to the NJDEP requesting an NFA determination in 2000, and an NFA approval letter was received from the NJDEP on 10/23/00. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
86	UST-117-72	#2 fuel oil UST	0.13	No	A former #2 fuel oil UST was removed in 1994. Petroleum-related contaminants were detected in confirmatory soil samples at concentrations below the NJDEP cleanup criteria. A closure report was submitted to the NJDEP requesting an NFA determination in 1998. There are no migration pathways to environmentally sensitive areas; a BEE is not required.
87	UST-64-4 (#2 fuel oil) UST-65-5 (#2 fuel oil) UST-161-14 (#2 fuel oil) UST-161-68 (waste oil) UST-173-19 (#2 fuel oil)	5 former USTs	0.45	No	This parcel includes 5 former USTs and associated petroleum-contaminated soil that were removed. Closure Reports requesting NFA have been submitted for all 5 USTs. NFA approval letters were received from NJDEP for UST-64-4 on 10/23/00, UST-65-5 on 8/29/2000, and UST-173-19 on 1/10/2003. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
88	FTMM-17 (Former Building 65)	Former Pesticide Storage Area	0.27	No	This parcel was included in the Fort Monmouth IRP under Site FTMM-17 (M-17 Former Pesticide Storage Area, Bldg 65). Building 65 has been demolished; chlordane was detected in the soil 6-12 inches below grade consistent with termite control practices in the 1980s; no chlordane was detected in groundwater. An NFA determination was approved by the NJDEP in 1994. There are no migration pathways to environmentally sensitive areas; a BEE is not required.

Table 2-8
Main Post, Fort Monmouth, New Jersey
ECP Parcel and IRP Site Summary

Parcel Number	Building No. / Associated IRP Site / Associated UST	Design Use Description	Size of Parcel (Acres)	Selected for BEE	Basis/Remarks
89	UST-64-3 'UST-485-57	2 former #2 fuel oil USTs	0.14	No	Two former #2 fuel oil tanks (UST-64-3, UST-485-57) and petroleum-contaminated soil were removed. A closure report was submitted to the NJDEP requesting an NFA determination in 2000, and an NFA approval letter was received from the NJDEP on 8/29/2000. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
90	FTMM-57 (Former Bldg 108 USTs)	5 former #2 fuel oil USTs	0.38	No	Five former USTs associated with former Building 108 are addressed under the Fort Monmouth IRP as Site FTMM-57. The 5 USTs were removed in 1993; volatile organic compounds and metals have been detected in groundwater above NJ GWQC. A CEA for site groundwater, which restricts the use of groundwater within a defined area until such time that contaminants of concern achieve compliance with the NJ GWQC, was filed with the NJDEP. An RI report requesting an NFA determination has been submitted to the NJDEP. Currently, as part of a monitoring program, four groundwater monitoring wells are sampled on a quarterly basis. Contaminated groundwater is restricted to the area in the vicinit of the former USTs and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
91	UST-280-25	Former #2 Fuel oil UST	0.14	No	A former #2 fuel oil UST and petroleum-contaminated soil were removed in 1997. A closure report was submitted to the NJDEP requesting an NFA determination in 2000, and an NFA approval letter was received from the NJDEP on 10/23/2000. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
92	UST-484-56	Former #2 Fuel oil UST	0.04	No	A former #2 fuel oil UST and 13 cubic yards of petroleum-contaminated soil were removed in 1995. Petroleum-related contaminants were detected in confirmatory soil samples at concentrations below the NJDEP cleanup criteria. A closure report was submitted to the NJDEP requesting an NFA determination in 1998, and an NFA approval letter was received from the NJDEP on 8/29/2000. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
93	UST-482-54	Former #2 Fuel oil UST	0.04	No	A former #2 fuel oil UST and petroleum-contaminated soil were removed in 1994. Petroleum-related contaminants were detected in confirmatory soil samples at concentrations below the NJDEP cleanup criteria and groundwater results were below the NJ GWQC. A closure report was submitted to the NJDEP requesting an NFA determination in 2002, and an NFA approval letter was received from the NJDEP on 1/10/2003. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
94	UST-164-15 UST-277-24	Former #2 Fuel oil USTs	0.17	No	Two former #2 fuel oil tanks (UST-164-15, UST-277-24) and petroleum-contaminated soil were removed. A closure report was submitted to the NJDEP requesting an NFA determination in 2002, and an NFA approval letter was received from the NJDEP on 1/10/2003. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.
95	PCB Transformer leak near Bldgs 454 and 456	Pole Mounted PCB Transformer leak	0.44	No	This parcel is located northeast of Oceanport Ave. in the vicinity of Buildings 454 and 456. Three pole-mounted 50 KVA transformers (PCB-contaminated class) were knocked to the ground as a result of a storm in 1992 and the contents of two of the transformers leaked onto the ground. The transformers were properly disposed of along with 50 cubic yards of PCB-contaminated soil. Final post-excavation samples were non-detect for PCBs and showed levels of total petroleum hydrocarbons (TPH) below the NJDEP standard. An additional 20 surface soil samples were collected from the perimeter of the entire excavation. These samples were analyzed for TPH. None of these samples contained TPH in excess of the NJDEP soil standard. Contaminated soil has been removed and there are no migration pathways to environmentally sensitive areas; a BEE is not required.

ArcGIS File: F:\GISDATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_021_Fig2-1_High_Tide_Salinity_BEE_rpt.mxd (4/20/2011)

LEGEND

- **Surface Water Sampling Point** — High Tide Salinity Measurements (ppt)
- **BEE Sampling Location** — High Tide Salinity Measurement (ppt)
- Water Feature
- Road Centerline
- IRP Site
- ECP Parcel
- Building
- Water Body
- Installation Boundary
- Municipal Boundary

N

0 500 1,000 2,000

Scale: Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

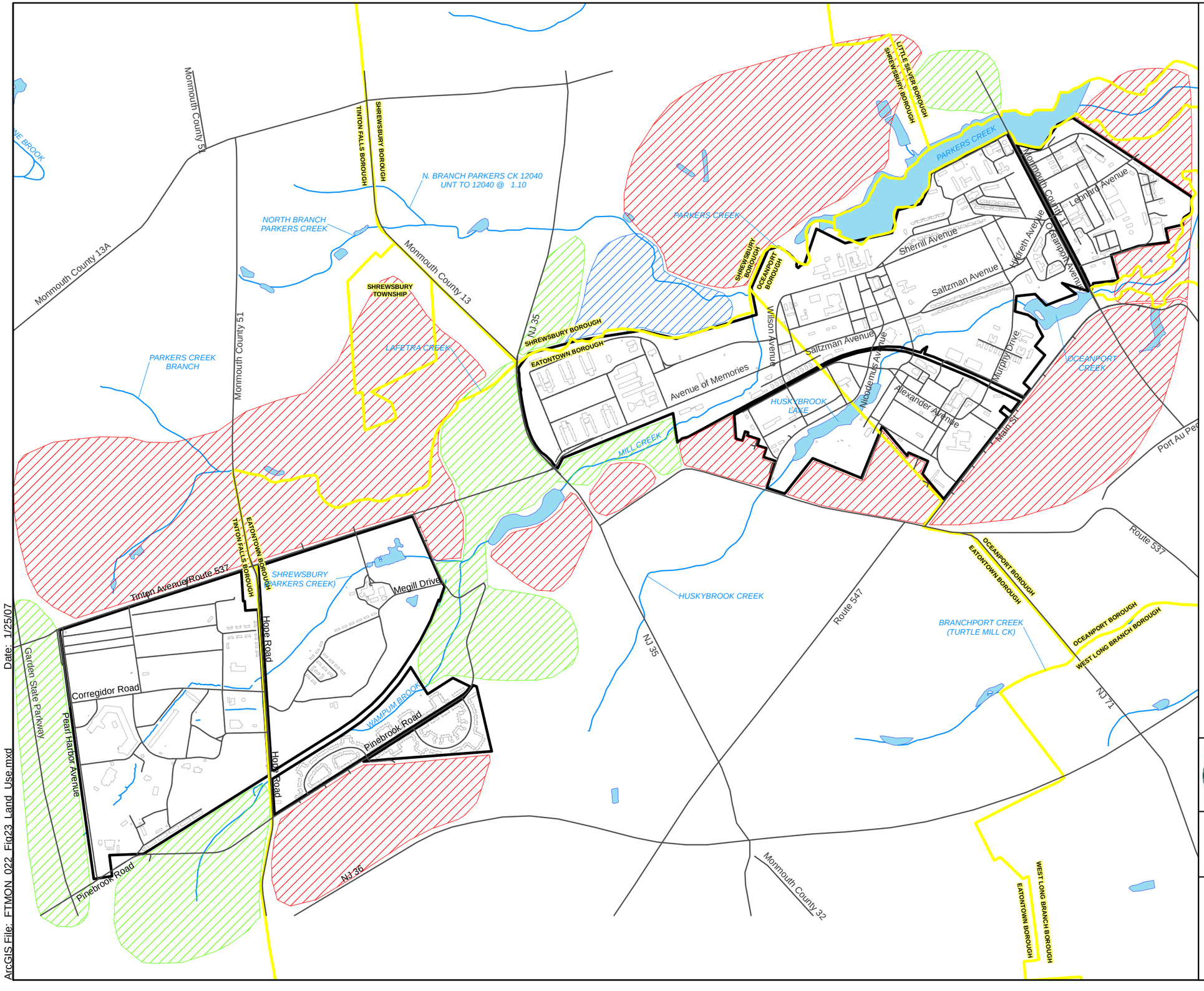
Shaw® Shaw Environmental, Inc.

FIGURE 2-1

FORT MONMOUTH
BASELINE ECOLOGICAL
EVALUATION REPORT

HIGH TIDE SALINITY RESULTS

MAIN POST
FORT MONMOUTH
NEW JERSEY



LEGEND

- Road Centerline
- Water Feature
- Building
- Water Body
- Installation Boundary
- Municipal Boundary

Land Use

- Industrial/Commercial
- Residential/Recreational
- Undeveloped

N

Scale:

0 750 1,500 3,000 Feet

Note: Schematic representation of prevalent surrounding land use only. Boundaries of surrounding land use designations are not exact.

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw® Shaw Environmental, Inc.

FIGURE 2-2

ADJACENT LAND USE MAP

FORT MONMOUTH
NEW JERSEY

Date: 1/25/07

ArcGIS File: FTMON_022_Fig23_Land_Use.mxd

3.0 DATA EVALUATION

In order to evaluate the nature of contaminants detected at the FTMM sites and to identify the COPECs, several steps were followed. The first step was a review of the analytical data collected from the environmental media with regards to the sites and selection of the data appropriate for use in the BEE. The second step was the identification of the most appropriate and applicable criteria or benchmarks for comparison to data. The third step was the identification of the COPECs at the sites and an evaluation of these COPECs in terms of potential ecological impact, including the use of conservative wildlife exposure models. The following sections describe these steps in detail.

3.1 REVIEW OF AVAILABLE SITE DATA

Site data addressed in this BEE include data previously collected for RIs (e.g., near surface soil data for former landfills), ECP SIs, and routine environmental monitoring (e.g., groundwater data) and data collected specifically to fill data gaps for the BEE. The data evaluated in this BEE appear in **Appendix A** (RI data), **Appendix B** (ECP SI data), **Appendix C** (groundwater monitoring data), and **Appendix D** (BEE investigation data).

Exposure of ecological receptors to contaminants in soil predominantly occurs within the surface soils. Ecological receptors are not frequently exposed to subsurface soils; therefore, subsurface soils collected at 2 feet bgs and below are not evaluated in this BEE. Near-surface soil data are available for most IRP sites in RI reports [Landfill 2 (FTMM-2), Landfill 3 (FTMM-3), Landfill 4 (FTMM-4), Landfill 5 (FTMM-5), Landfill 8 (FTMM-8), Landfill 12 (FTMM-12), Landfill 14 (FTMM-14), Former Training Area/Landfill (FTMM-18), and Landfill CW-3A (FTMM-25)] and most ECP Parcels in the SI report (Parcel 15, Parcel 27, Parcel 5, Parcel 39, Parcel 49, Parcel 61, Parcel 69). Contaminated soils have been excavated and removed and the areas backfilled and graded at Building 283, Building 1122, the Water Tank FTMM-15, the pre-1941 STP (FTMM-20), and Building 498 (FTMM-16); soils at these sites are not addressed in the BEE. Only subsurface soil sample data was previously available for the Former Pesticide Storage Area, CW-6 (FTMM-28); soils samples were collected as part of the BEE investigation from this site to support the BEE.

Though ecological receptors are not exposed directly to contaminants in groundwater, pathways may exist by which groundwater may flow to potential exposure points (e.g., discharge of groundwater into surface water bodies). Therefore, the most recent 2-year period of readily available groundwater data from routine environmental monitoring are evaluated in this BEE to best represent current conditions; this constitutes the 2008 and 2009 calendar years. Though groundwater may discharge to surface water bodies, groundwater contaminant concentrations are not meant to represent potential surface water concentrations. It should be noted also that, though the CEAs are meant to minimize the potential human health exposure to contaminants in groundwater, they do not inhibit potential ecological exposures. Groundwater data are available from the routine environmental monitoring for applicable IRP sites [Landfill 2 (FTMM-2), Landfill 3 (FTMM-3), Landfill 4 (FTMM-4), Landfill 5 (FTMM-5), Landfill 8 (FTMM-8), Landfill 12 (FTMM-12), Landfill 14 (FTMM-14), Building 498/FTMM-16, Former Training Area/Landfill FTMM-18, Landfill CW-3A (FTMM-25), Former Pesticide Storage Area/CW-6 (FTMM-28), Building 1122 (FTMM-59), and Building 283 (FTMM-61)] and from the SI Report (Shaw, 2008) for applicable ECP sites (Parcel 15, Parcel 28, Parcel 49, and Parcel 69). No groundwater samples were collected as part of the BEE.

Ecological receptors may be exposed directly to contaminants in surface water and sediment of the various creeks and ponds that drain the sites. As with soils, ecological receptors are not frequently exposed to contaminants in subsurface sediments. The top 6.0 inches of sediment is usually considered to be the biotic zone, and only data from the top 6 inches of sediments is evaluated in this BEE. Previous sediment data for most IRP sites addressed only PCBs. Sediment samples were collected as part of the BEE from applicable IRP sites for an expanded analytical program [Landfill 2 (FTMM-2), Landfill 3 (FTMM-3), Landfill 4 (FTMM-4), Landfill 5 (FTMM-5), Landfill 8 (FTMM-8), Landfill 12 (FTMM-12), Landfill 14 (FTMM-14), Water Tank/FTMM-15, Building 498/FTMM-16, Former Training Area/Landfill FTMM-18, Pre-1941 STP/FTMM-20, Landfill CW-3A (FTMM-25), Former Pesticide Storage Area/CW-6 (FTMM-28), Building 1122 (FTMM-59), and Building 283 (FTMM-61)]. The data from the samples collected as part of this BEE, and not the previous IRP sediment samples, are evaluated in this BEE. The previous IRP

sediment data, though not quantitatively addressed in the BEE, are provided in **Appendix L** and are consistent with the current BEE investigation data. Sediment data are also available from the SI Report (Shaw, 2008) for applicable ECP sites (Parcel 15, Parcel 27, Parcel 28, Parcel 39, Parcel 43, Parcel 49, Parcel 61, and Parcel 69) and are evaluated in this BEE.

As with sediment, surface water analysis in previous samples, particularly for IRP sites, has been for a limited suite of parameters. Surface water samples evaluated in this BEE were collected as part of the BEE for an expanded analytical program; surface water samples were collected for applicable IRP and ECP sites [Landfill 2 (FTMM-2), Landfill 3 (FTMM-3), Landfill 4 (FTMM-4), Landfill 5 (FTMM-5), Landfill 8 (FTMM-8), Landfill 12 (FTMM-12), Landfill 14 (FTMM-14), Water Tank/FTMM-15, Building 498/FTMM-16, Former Training Area/Landfill FTMM-18, Pre-1941 STP/FTMM-20, Landfill CW-3A (FTMM-25), Former Pesticide Storage Area/CW-6 (FTMM-28), Building 1122 (FTMM-59), Building 283 (FTMM-61), Parcel 15, Parcel 27, Parcel 28, Parcel 39, Parcel 43, Parcel 49, Parcel 61, and Parcel 69).

3.2 BEE SITE INVESTIGATION METHODOLOGIES

This section describes the methods utilized in conducting the BEE field activities. This work included the following:

- Surface soil sampling.
- Sediment sampling.
- Surface water sampling.

This section also describes the collection procedures for field quality control (QC) samples, the decontamination procedures for sampling equipment, and the management procedures for investigation-derived wastes (IDW). **Table 3-1** and **Table 3-2** present a list of all samples collected and parameters analyzed as part of the BEE field activities. The sample locations are presented on **Figure 3-1** for the MP and on **Figure 3-2** for the CWA. The 2010 sampling and analysis activities were conducted to meet NJDEP requirements (N.J.A.C. 7:26E-3.11; NJDEP, 2009b) for a BEE. Though a BEE is often performed as part of an SI, this work is not intended to satisfy the general requirements of an SI or RI as presented in the TRSR (N.J.A.C. 7:26E; NJDEP, 2009b) nor is it intended to provide data necessary for a sediment quality evaluation (NJDEP, 1998). Previous reports and comments were reviewed to identify previous data gaps and data needs, and surface water, sediment, and surface soil samples were collected to fill data gaps and gather enough information to satisfy the requirements of a BEE.

3.2.1 SURFACE SOIL SAMPLING

Surface soil samples collected during the BEE were collected from the top 6 inches of the soil. Soil samples were collected from the surface through use of a decontaminated hand trowel. The surficial vegetative material was first removed from the sampling location prior to sample collection. A decontaminated stainless steel trowel was than manually inserted in the soil to extract the sample and transfer it into a decontaminated stainless steel bowl for homogenization.

Once collected all surface soil samples were field screened with a properly calibrated photoionization detector (PID) instrument. To field screen the soil sample, a decontaminated stainless-steel trowel was used to make a cross-sectional slice of the soil sample in order to expose the porous surface.

During the sampling, samples collected for VOCs analysis were collected in accordance with TRSR, N.J.A.C. 7:26E-2.1(a)4 (NJDEP, 2009b) and NJDEP sampling procedures (NJDEP, 2005) using the En Core® method. For this method, laboratory prepared sample bottles are used but do not contain preservatives, and the following procedures were followed:

- Surface soil was trimmed away from the soil boring and the sample was collected immediately from the exposed surface using the coring device.
- The En Core® sampler was loaded according to manufacturer's instructions.
- The lid was secured immediately and the container was placed within the designated resealable bag.

- No additional tape/adhesive labels were affixed to the sample container but the resealable bags were properly labeled.
- Samples were placed upright into an iced cooler.
- An additional aliquot was collected from each sample location to determine percent moisture content.

The remaining soil was used for other analyses, which included SVOCs, pesticides, PCBs, metals, grain size, and organic carbon content. The procedure for homogenizing and sampling for these analyses was as follows:

- Any rocks or large organic matter was removed from the sample.
- The sample was thoroughly mixed within the stainless steel bowl by turning the entire sample over at least three times using a stainless steel trowel or scoop.
- The entire sample was then homogenized using the coning and quartering procedure.
- The required soil volume was then placed into the appropriate sample bottles.
- A label containing the applicable sample specific information was affixed to each sample bottle.
- The sample bottles were placed into an iced cooler.

The latitude and longitude of each sample location was recorded with a hand-held global positioning system (GPS) unit. Disposable latex gloves were used during all sampling activities and were changed between each sample location. The chain-of-custody (COC) was completed after sample collection and sealed in a plastic bag and taped to the lid inside the sample cooler for transport to the analytical laboratory.

3.2.2 SURFACE WATER SAMPLING

The collection of surface water samples proceeded from downstream to upstream locations so that disturbances related to prior sampling would not affect sample quality. In tidal waters where downstream and upstream is dependent on the predominant direction of flow of the surface water at the time of collection, surface water samples were collected during outgoing tides for consistency between samples. At each location, the surface water sample was collected prior to sediment sample collection to reduce sediment load in the samples.

Surface water samples were collected by simple immersion of laboratory cleaned sample bottles in accordance with the Field Sampling Procedures Manual (FSPM) (NJDEP, 2005). This was accomplished by gently dipping an unpreserved, pre-cleaned bottle in the water with the mouth of the bottle facing the upgradient direction to eliminate the collection of resuspended sediments from lowering the bottle. Where sample bottles could not be dipped without disturbing underlying sediment, an extendable pole was used to dip the sample bottles. The sample water was then transferred to the appropriate (preserved, if applicable) sample containers.

The following steps were taken during the sample water collection:

- For samples taken from a boat, the boat was anchored or secured in an appropriate location to enable the boat to drift over the desired sample location.
- The water depth was measured and the state of the tide was estimated.
- The probe of the calibrated multi-parameter water quality meter was lowered to mid-depth of the water column and the field parameters were recorded after stabilization of the readings.
- A clean, sample-dedicated bottle was then dipped below the surface.
- All appropriate sample containers were carefully filled by pouring the surface water from the sampling bottle into the appropriate sample containers.

- For dissolved metals, a peristaltic pump equipped with dedicated tubing and an in-line 0.45 micrometer filter was used to transfer surface water samples directly into appropriate preserved sample containers.
- A label containing the applicable sample specific information was affixed to each sample bottle.
- The sample bottles were placed into an iced cooler.

The latitude and longitude of each sample location was recorded with a hand-held GPS unit. Disposable latex gloves were used during all sampling activities and were changed between each sample location. The COC was completed after sample collection and sealed in a plastic bag and taped to the lid inside the sample cooler for transport to the analytical laboratory.

3.2.3 SEDIMENT SAMPLING

The collection of sediment samples proceeded from downstream to upstream locations so that disturbances related to prior sampling would not affect sample quality. The sampling of tidal waters was completed from the predominant downgradient flow of the surface water at the time of collection. Sediment samples were collected from previous sample locations, depositional zones, or potential migration pathways. Areas where stream bank stabilization efforts disturbed sediments were avoided during sediment sampling; in these areas, sediment sampling was conducted when tides were low enough to visually identify undisturbed sediments. At each location where applicable, sediment samples were collected after surface water samples.

Sediment sampling was conducted, whenever possible, from the shoreline. Sediment samples were collected from the 0- to 6-inch interval. Sediment samples from wetland areas without overlying water (e.g., sediments in the wetlands near the Former Pesticide Storage Area/CW-6) were collected with a hand trowel. Submerged sediments were collected with a hand auger. All sampling locations were GPS located.

The following steps were taken during sample collection:

- For samples taken from a boat, the boat was anchored or secured in an appropriate location to enable the boat to drift over the desired sample location.
- The water depth was measured and the state of the tide was estimated.
- The probe of the calibrated multi-parameter water quality meter was lowered to mid-depth of the water column and the field parameters were recorded after stabilization of the readings.
- The sediment sample was collected and the top 6 inches of material was transferred to a stainless steel bowl.
- Once collected, the sediment samples were field screened with a properly calibrated PID.
- The sample for VOC analysis was immediately collected from the stainless steel bowl using En Core methods previously described for soil samples.
- The remaining sample was then homogenized using the coning and quartering method described for soil samples.
- All appropriate sample containers were carefully filled using a dedicated soil sampling scoop.
- A label containing the applicable sample specific information was affixed to each sample bottle.
- The sample bottles were placed into an iced cooler.

3.2.4 DECONTAMINATION PROCEDURES

All equipment that came into contact with potentially contaminated material was decontaminated prior to use at each sampling location. Given that surface water samples were collected through immersion of dedicated sampling bottles and filtered samples used dedicated tubing and in-line filters,

decontamination was not applicable to surface water sampling. Decontamination procedures for field equipment were in accordance with the NJDEP FSPM (NJDEP, 2005) three-step decontamination procedure for non-aqueous samples, which is detailed below. All equipment was thoroughly decontaminated before use and between sampling locations.

All decontaminated equipment was stored on plastic sheeting or wrapped in aluminum foil. Stainless steel hand augers, bowls, trowels, and other sampling equipment were decontaminated as follows:

- Equipment was cleaned with a brush in a tap water and Alconox wash.
- Equipment was rinsed with tap water.
- Equipment was rinsed with distilled and deionized water.

3.2.5 INVESTIGATION-DERIVED WASTE

Sampling activities performed as part of the BEE generated a variety of IDW including used person protective equipment (PPE), decontamination fluids, and disposable sampling equipment. The procedures and practices of handling IDW generated during the BEE site activities were consistent with the NJDEP FSPM (NJDEP, 2005) and the guide "Management of Investigation-Derived Waste During Site Inspections" (USEPA, 1991).

Decontamination of sampling equipment generated IDW consisting of decontamination waters. Decontamination water was re-applied to the ground surface since all of the following criteria were met:

- The water was not permitted to migrate off site.
- There was no potential for contaminating a previously uncontaminated aquifer.
- The discharge would not cause contamination to the ground surface soil.
- There was no immediate threat to human health or the environment.
- There was no indication from field instrumentation or visual observations to indicate that the material is a potential RCRA hazardous waste.

IDW was also generated from use of PPE (e.g., gloves) and disposable equipment (filters, tubing, soil scoops) during the BEE. This material was stored in plastic garbage bags and taken off site for proper disposal.

3.2.6 QUALITY CONTROL

To ensure the quality of the data collected during the 2010 BEE sampling event, all field procedures were conducted in accordance with methodologies outlined in **Section 3.1** and the BEE WP (Shaw, 2010). The field sampling methodologies utilized were developed based on the NJDEP FSPM, N.J.A.C. 7:14 – Technical Requirements for Site Remediation, and N.J.A.C 7:14B – USTs. All laboratory analyses were conducted by NJDEP certified and National Environmental Laboratory Accreditation Program approved laboratories. Included within **Appendix E** is a table that provides the minimum of ESC for each contaminant included in the analytical program and the subcontract laboratory's expected Method Detection Limits (MDLs).

3.2.6.1 COMPLETENESS

Completeness is a measure of the amount of information that must be collected during a field investigation to allow for a successful achievement of the sampling activities. Sampling completeness for this BEE was assessed through the evaluation of the total number of samples proposed in the WP versus the actual number of samples collected and analyzed. A total of 151 samples were proposed for collection in the WP and 152 samples were collected. Thus, the resulting sampling completeness for this project was 100.6 percent for all matrices. One proposed surface water sample (CW3-SW8) was not collected because there was no water existing in Shrewsbury Creek at the proposed location. The furthest upgradient location on Shrewsbury Creek at which surface water existed and a sample was able to be collected was location CW3-SW8. One surface water and one sediment sample (CWA-SD1 and

CWA-SW1) were added to the sampling and analysis program during field operations. The samples added were collected within Shrewsbury Creek at the furthest point downstream on the CWA property.

3.2.6.2 REPRESENTATIVENESS AND DOCUMENTATION QUALITY REVIEW

Representativeness is a measure of the degree to which the results accurately reflect the media that were sampled. Procedures based on NJDEP protocol were utilized to ensure that samples collected were representative of their respective media. These procedures contained sampling protocols (e.g., sediment sampling) and field handling protocols (e.g., storage, shipping) which were designed to protect the representativeness of the collected samples. Field activities were audited and documentation of sample collection, shipment, and receipt activities were reviewed for accuracy and completeness and to ensure the implementation of standard operating procedures (SOPs).

Review of accuracy, precision, and completeness of sample documentation and observations from field audits suggest that the designed sampling program for the BEE was followed and resulted in the collection of representative samples.

3.2.6.3 REVIEW OF QC SAMPLES

Standard QC checks were implemented during all field and laboratory activities conducted during the 2010 BEE. These included field checks such as the collection of field/rinse blanks, trip blanks, and duplicate samples for laboratory analysis, as well as laboratory QC checks such as method blanks. Laboratory reports included in **Appendix F** contain a full description of the final results, methods of analysis, levels of detection, and method blank data.

Analytical data were evaluated against method blank, trip blank, and field blank data in order to evaluate the contribution of constituents detected in QC samples to the analytical results. Results of the analyses of field/rinse blanks were used to assess the effectiveness of equipment decontamination procedures in preventing cross-contamination between samples and to determine if compounds detected in the collected samples were attributable to the sampling equipment. One field/rinse blank was collected on each day of sampling and analyzed for all parameters.

Trip blanks were used to determine if any on-site atmospheric contaminants were seeping into the sample bottles, or if cross-contamination of samples was occurring during shipment or storage of the sample containers. Trip blanks are applicable to aqueous VOC samples. The trip blanks accompanied the samples into the field prior to sampling, remained with the collected samples during the sampling sequence, accompanied all aqueous VOC sample bottles shipped to the laboratory, and remained with the samples at the off-site laboratory prior to analysis. Trip blanks were analyzed from each day of sampling and analyzed for VOCs, except for on the second day of sampling when a trip blank was not supplied by the laboratory with the sample bottles. Due to the low frequency and concentrations of VOCs detected in aqueous samples, this did not impact the analyses; in most instances, the trip blanks were demonstrated analyte-free. Results of method blank analyses were used to determine if constituents detected in samples were introduced during sample extraction and analysis.

A summary of constituents detected in blank samples (field/rinse blanks and trip blanks) is included in **Appendix F**. Most of the analytes detected in blank samples are common laboratory contaminants and were likely introduced into the samples during laboratory extraction/analysis. The low concentrations of constituents identified in field/rinsate blanks indicate that no significant cross-contamination occurred between samples.

Field duplicates were collected to identify the cumulative precision of the sampling and analytical process and sent to the laboratory blind. The Relative Percent Difference (RPD) was calculated only for those analytes which were detected in both samples of the duplicate pair. Analytes that were non-detect in either or both of the samples of the duplicate pair were excluded from the duplicate assessment. Precision control criterion was established at 50% RPD for the aqueous and solid samples. All analytes exceeding criteria are treated as estimated (“J” qualified) for the field duplicate pair based upon high RPD(s). Most of the high RPDs were observed for analytes that were detected at very low concentrations that were laboratory qualified as estimated due to low concentrations at or below the MDL. The poor precision is probably due to sample non-homogeneity and/or sample matrix effects with the given

analysis. A summary of RPDs for duplicate sample pairs collected during the 2010 BEE is included in **Appendix F**.

Full data validation was not required to achieve the BEE objectives.

3.2.6.4 WORK PLAN VARIANCES

Overall, the sampling and analyses performed were sufficient to meet project objectives and comply with the WP. Variances that occurred during implementation of the field and laboratory efforts were minimal. One proposed surface water sample (CW3-SW8) was not collected because there was no water existing in the creek at the proposed location. The furthest upgradient location at which surface water existed was sampled (location CW3-SW8) as prescribed in the WP. One surface water and one sediment sample (CWA-SD1 and CWA-SW1) were added to the sampling and analysis program during field operations. The two samples were collected within Wampum Brook at the furthest point downstream on the CWA property.

3.2.6.5 REVIEW OF TENTATIVELY IDENTIFIED COMPOUNDS

The VOC+15 and SVOC+15 lists of organic compounds designated for analysis included up to 30 non-targeted organic compounds as detected by GC/MS analysis. A summary of total TICs in samples collected during the 2010 BEE sampling event is provided in **Appendix F**. All detected non-targeted compounds are reported as TICs in the laboratory deliverables, also included in **Appendix F**.

A qualitative review was conducted and TICs were identified at low concentrations in one or more soil, sediment, and surface water samples. TICs are commonly observed in soil, surface water, and sediment samples and are likely attributable to naturally-occurring organic constituents due to elevated carbon content. The majority of observed TICs are commonly detected constituents that were present at low concentrations.

3.2.6.6 METHOD DETECTION LIMITS

In order to accurately identify COPECs in environmental media, it is useful to be able to detect potential contaminants that are present at concentrations greater than the ESC. Thus, one data quality objective (DQO) of the analytical program is to have MDLs at concentrations at or less than the ESC wherever possible. Unfortunately, for some parameters, the conservative benchmarks used as ESC are less than normal laboratory MDLs. The DQO for surface water samples was set at the lower of the freshwater ESC and the saltwater ESC, the DQO for sediment samples was set at the lower of the freshwater sediment ESC and the saltwater sediment ESC, and the DQO for soil was set at the soil ESC (**Section 3.3**). Included within **Appendix E** is a table that provides the minimum of ESC for each contaminant included in the analytical program and the subcontract laboratory's expected MDLs.

In surface water, MDLs for hexachlorobenzene, toxaphene, 4,4′-DDE, cadmium, copper, and silver were greater than the DQOs in all samples. The MDL for benzo(*a*)anthracene was greater than the DQO in one sample and the MDLs for Aroclor 1016 and Aroclor 1254 were greater than the DQOs in some of the samples.

In sediments, MDLs for acrylonitrile, methylene bromide, diethyl phthalate, 2-chlorophenol, 2,4-dichlorophenol, 2,4,5-trichlorophenol, 2,4,6-trichlorophenol, pentachlorophenol, 4-nitrophenol, and toxaphene were greater than the DQOs in all samples. The MDLs for several PAHs [acenaphthene, acenaphthylene, benzo(*a*)pyrene, benzo(*k*)fluoranthene, dibenzo(*a,h*)anthracene, fluorene, 2-methylnaphthalene, and naphthalene], phthalates [bis(2-ethylhexyl) phthalate, butyl benzyl phthalate, and di-*n*-butyl phthalate)], phenolic compounds (phenol and 2-4-dimethylphenol), other SVOCs (2,4-dinitrotoluene, hexachlorobutadiene, hexachloroethane, and nitrobenzene), pesticides (toxaphene, 4,4′-DDT, and heptachlor), PCBs (Aroclor 1016, Aroclor 1221, Aroclor 1232, Aroclor 1248, Aroclor 1260), and metals (antimony, selenium, and silver) were greater than the DQOs in some of the samples.

It should be noted that a MDL greater than the DQO does not imply that the MDL is greater than the media-specific ESC. Additionally, many of the elevated MDLs were in samples in which the parameter was detected; thus, the elevated MDL has no impact on the ability to detect the parameter. The evaluation of COPECs with regard to elevated MDLs is discussed in more detail in **Section 3.4**.

3.3 IDENTIFICATION OF STANDARDS AND BENCHMARKS

The TRSR references several sources for ESC for use in a BEE. This includes ESC sources for sediment, surface water, and soil. The NJDEP also maintains a table of current recommended ESC based on those aforementioned sources as well as others (NJDEP, 2009c). The SRP's Environmental Toxicology and Risk Assessment Unit has developed this table from various sources to allow ease of reference for selection of ESC for surface water, sediment, and soil.

Not all contaminants have listed ESC for all media; contaminants detected in environmental media without ESC are identified in this BEE report, but the development of ESC is beyond the scope of the BEE. The most recent version of the cited ESC is used in this BEE. The NJDEP ESC table, which was last updated on March 10, 2009, is presented in **Appendix E**. Also included within **Appendix E** is a table that provides the minimum of those ESC for each contaminant and the subcontract laboratory's MDLs.

Some contaminants for some media have multiple values provided. The following sections describe the process used in selection of appropriate ESC for this BEE and is meant to provide a systematic approach which maintains appropriate conservativeness in this screening level assessment.

3.3.1 IDENTIFICATION OF STANDARDS AND BENCHMARKS FOR SEDIMENT

For sediments, the TRSR referenced sources are the following:

- USEPA Briefing Report to the EPA Science Advisory Board on the Equilibrium Partitioning Approach to Generate Sediment Quality Criteria (USEPA, 1989b).
- USEPA Technical Basis for Deriving Sediment Quality Criteria for Nonionic Organic Contaminants for the Protection of Benthic Organisms by Using Equilibrium Partitioning (USEPA, 1993a).
- Effects Range-Low (ER-L) and Effects Range-Median (ER-M) values (Long et al., 1995).
- Lowest Effect Level (LEL) and Severe Effect Level (SEL) values (Persaud et al., 1993).

The first two sources provide a method for determining screening criteria based on the equilibrium partitioning approach which uses applicable surface water screening criteria organic carbon partitioning coefficients. As such, these criteria are a function of the site-specific organic carbon content in the sediment and are usually presented based on 1% total organic carbon content.

The ER-L and ER-M values were developed for marine environments and are based on evaluation of data from numerous studies including equilibrium partitioning modeling, laboratory bioassays, and field studies. The ER-L values represent a concentration at which adverse effects are only found in approximately 10% of the studies. The ER-M values represent a concentration at which adverse effects are found in approximately 50% of the studies.

The LEL and SEL values were developed for freshwater environments and are also based on evaluation of data from numerous studies and include equilibrium partitioning modeling, laboratory bioassays, and field studies, as well as sediment background levels. The LEL values represent a level of contamination that has no effect on the majority of sediment-dwelling organisms. The SEL values represent a level of contamination which is likely to affect the health of sediment-dwelling organisms.

NJDEP (1998) recommends using benchmarks listed in the TRSR from Long et al. (1995) and Persaud et al. (1993) as well as chronic values from MacDonald et al. (1992) for several VOCs.

The NJDEP maintains a table of current recommended ESC based on these aforementioned sources as well as others (NJDEP, 2009c). This table often has more than one value for a given parameter and a given medium (e.g., sediment, surface water, soil). For this BEE, the three sources listed above (Long et al., 1995; Persaud et al., 1993; MacDonald et al., 1992) as presented in the NJDEP table (NJDEP, 2009c) are used as the primary source of ESC.

For saltwater sediments, the ER-L (Long et al., 1995) is used as the ESC. If an ER-L is not available, but a chronic value based on equilibrium partitioning (MacDonald et al., 1992) is available, then the chronic value is used. If no values are provided from one of these two primary sources, then values

available from secondary sources [e.g., USEPA Region V ecological screening values (USEPA Region 5, 2003)] are used.

For freshwater sediments, the LEL (Persaud et al., 1993) is used as the ESC. If an LEL is not available, but the table recommends the use of either the saltwater chronic value based on equilibrium partitioning (MacDonald et al., 1992) or the saltwater ER-L (Long et al., 1995), then the saltwater chronic value or saltwater ER-L is used. It should be noted that though the table may list a value as an LEL it may not actually be the LEL as determined by Persaud et al. (1993). If no values are provided from one of these three primary sources, then values available from secondary sources [e.g., USEPA Region V ecological screening values (USEPA Region 5, 2003), NOAA Quick Screening Reference Tables (Buchman, 2008)] are used.

3.3.2 IDENTIFICATION OF STANDARDS AND BENCHMARKS FOR SURFACE WATER

For surface water, the TRSR referenced sources are the following:

- USEPA Ambient Water Quality Criteria, 40 CFR Part 131 (USEPA, 2006a; 2010).
- New Jersey Surface Water Quality Standards (N.J.A.C., 2010).

These sources contain values for freshwater and saltwater and include values for the protection of human health and protection of aquatic organisms from effects due to both acute and chronic exposures. The NJDEP table (NJDEP, 2009c) includes values from these sources and they are used as the primary source of surface water ESC. Values developed for the protection of human health are never used as ESC for an ecological evaluation. If provided, values used for the protection from chronic effects are used as ESC. Acute values are only used as ESC if, values used for the protection of aquatic life from chronic effects are not available.

The freshwater surface water ESC for several metals are functions of site-specific hardness. The equations used for these calculations are provided with the NJDEP table (**Appendix E**). The minimum hardness detected in a surface water body during the BEE investigation near an individual site where freshwater criteria are potentially applicable was used to calculate the site-specific ESC for the individual site. Freshwater hardness-dependent criteria were not calculated for individual sites where only saltwater criteria are applicable and the magnitude of the measured hardness render the calculated criteria irrelevant.

For chromium, values may be presented for total chromium, trivalent chromium, or hexavalent chromium. When available from primary sources, the value for total chromium is used as the ESC for this BEE. If not available from a primary source for total chromium, then the value for trivalent chromium is used for this BEE. Values provided for hexavalent chromium are used as ESC in this BEE if, and only if, values from primary sources for total chromium and trivalent chromium are not available. The freshwater ESC used in this BEE is based on total chromium and the saltwater ESC is based on hexavalent chromium.

The freshwater surface water ESC for pentachlorophenol is a function of pH. A pH value of 6 was used to determine an ESC for surface water bodies at the MP and a value of 5.76 was used at the CWA; these represent the minimum pH values measured during the BEE investigation.

If no values are provided from one of these primary sources, then values available from secondary sources [e.g., USEPA Region V ecological screening values (USEPA Region 5, 2003)] are used. The NJDEP table also provides some values that were developed specific to Shell Oil at an active remediation site. These values are not used as ESC in this BEE, since other sources were available.

3.3.3 IDENTIFICATION OF STANDARDS AND BENCHMARKS FOR SOIL

For soil, the TRSR referenced sources are the following:

- Fish and Wildlife Service Contaminant Hazard Reviews (Eisler, 1999).
- Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Terrestrial Plants (Will and Suter, 1995).

The contaminant hazard reviews available from the Fish and Wildlife Service do not necessarily provide values to use as soil ESC but provide information related to toxicity, bioaccumulation, and bioavailability of contaminants to wildlife. This information is utilized by others (USEPA, 2005a; Efroymson et al., 1997a; Sample et al.,1996) in developing appropriate values.

The toxicological benchmarks for plants cited above have been revised (Efroymson et al., 1997b) and, like the 1994 revision, were developed for Oak Ridge National Laboratory (ORNL) using a method similar to that used for calculating the ER-L and ER-M values (Long and Morgan, 1990; Long et al., 1995). Other benchmarks for the protection of wildlife for contaminants in soil have also been derived for ORNL (Sample et al., 1996). In this document, several species-specific benchmarks are determined based on food chain modeling for different contaminants. The NJDEP table provides the minimum of the plant toxicity and wildlife benchmarks as wildlife preliminary remediation goals (PRGs) for potential use as soil ESC.

The USEPA (2005a) developed ecological soil screening levels (Eco-SSLs). These represent the result of a multi-stakeholder group consisting of federal, state, consulting, industry, and academic participants performed in order to conserve resources by limiting the need for EPA and other risk assessors to perform repetitious toxicity data literature searches and data evaluations for the same contaminants at every site. The general approach to develop these Eco-SSLs involved a literature search, screening the literature for acceptability, evaluating the results for applicability in deriving the Eco-SSLs, and deriving the value. These values represent a broad spectrum of wildlife and include mammals, birds, plants, and soil invertebrates. The literature screened in this process included that used by ORNL in developing wildlife PRGs.

The USEPA Eco-SSLs (USEPA, 2005a), the ORNL wildlife PRGs (Sample et al., 1996), and the ORNL plant toxicity benchmarks (Efroymson et al., 1997b), are considered the primary source of values for ESC in this BEE. The most conservative (i.e., minimum) values from the NJDEP tables (2009c) that represent either the USEPA Eco-SSLs or the ORNL wildlife PRGs or plant toxicity benchmarks are used as ESC for this BEE. If values are not available from either of these sources, then secondary sources are used for ESC. These include the USEPA Region V ecological screening values (USEPA Region 5, 2003). Though developed from food chain models, as were those for Eco-SSLs and wildlife PRGs, these values did not involve as comprehensive an effort in either the literature review or screening for acceptability and do not provide sufficient supporting documentation.

3.4 IDENTIFICATION OF COPECS

COPECs are defined for the purposes of this BEE as those constituents that were detected at concentrations greater than the appropriate screening benchmarks in any of the samples from a given medium from a site. For some parameters, the conservative benchmarks used as ESC are lower than normal laboratory method detection limits (MDLs). If these parameters are not detected, it is possible that they are present at a concentration exceeding the ESC. This is particularly important for surface water and sediment, the two media to which ecological receptors may be directly and routinely exposed. Therefore, for parameters not detected in samples from either surface water or sediment, the MDLs were also compared to the ESC. These parameters were not identified as possible COEPCs if any of the following were true:

- These parameters were not identified as COPECs in other site media.
- These parameters were not detected exceeding the ESC in samples for which the MDL was not greater than the conservative ESC.
- The MDLs for these parameters were only marginally greater than the conservative ESC, or related parameters (e.g., other chlorinated benzenes, other related pesticides) were not detected above ESC in these samples.
- These parameters are not expected to be found as site-related contaminants.

For surface water, MDLs for a few SVOCs, pesticides, PCBs, and metals were above one or both ESC in some or all samples.

- The MDLs for hexachlorobenzene exceeded the freshwater ESC in all surface water samples; there is no saltwater ESC. However, this organic compound was not identified as a COPEC in other media at the sites and is not considered a COPEC in surface water. The MDL for benzo(*a*)pyrene exceeded the freshwater ESC in one sample at one site; it was, however, detected in that sample and is considered a COPEC at that site.

- The MDLs for toxaphene exceeded the freshwater and saltwater ESC in all surface water samples; however, this pesticide was not identified as a COPEC in other media at the sites and is not considered a COPEC in surface water. The MDLs for 4,4′-DDE exceeded the freshwater ESC in all surface water samples; there is no saltwater ESC. Though 4,4′-DDE was identified as a COPEC in soil, groundwater, or sediment at some sites, 4,4′-DDE is not considered to be mobile in abiotic media and is expected to adsorb strongly to organic matter; however, based on the extremely low ESC for 4,4′-DDE in surface water [0.00000000451 micrograms/liter (µg/L)], 4,4′-DDE is considered a possible COPEC in surface water if it is identified as a COPEC in sediment.

- The MDLs for Aroclor 1016 and Aroclor 1254 were marginally greater than the freshwater ESC at some sites, but less than the saltwater ESC. These Aroclors are considered possible COPECs in surface water only if they are detected at concentrations exceeding the ESC.

- The MDLs for cadmium, copper, and silver were greater than one or both ESC in some or all samples. The MDLs for cadmium and silver exceeded the freshwater ESC in all samples but were below the saltwater ESC. The MDLs for copper exceeded the saltwater ESC but were below the freshwater ESC. Cadmium, copper, and silver are identified as possible COPECs in surface water if they are identified as COPECs in other site media.

For sediment, MDLs for some VOCs, SVOCs, pesticides, PCBs, and metals were greater than one or both ESC in some or all samples. It should be noted that organic parameters that were not detected in the BEE investigation sediment samples were reported at the MDL. Those in the SI data are presented as non-detect at a reporting limit; organic parameters were routinely presented detectable to a detection limit concentration of one-tenth this reporting limit.

- The MDLs for acrylonitrile and methyl bromide exceeded the freshwater sediment ESC in all samples; there are no saltwater sediment ESC. These were not identified as COPECs in other media and are not considered COPECs in sediment. The MDL for 1,1-dichloroethene exceeded the freshwater ESC in one sample at one site in the BEE investigation and in all samples in the SI. It was not detected at the BEE investigation site in the other samples nor was it identified as a COPEC in other media at these sites; and it is not considered a COPEC in sediment at the site. The MDL for 1,2-dichlorobenzene exceeded the saltwater ESC in all SI samples; it was not identified as a COPEC in other media at those sites and is not considered a COPEC in sediment.

- The MDLs for nine PAHs [acenaphthene, acenaphthylene, anthracene, benzo(*g,h,i*)perylene, benzo(*k*)fluoranthene, dibenzo(*a,h*)anthracene, fluorene, 2-methylnaphthalene, and naphthalene] were only marginally greater than the ESC in some or all samples from some sites. In samples where MDLs exceeded applicable ESC in only some samples, these PAHs were either detected in samples at the sites and considered COPECs or not detected in the samples at the site for which MDLs met the ESC and are not considered COPECs. In samples where MDLs exceeded applicable ESC in all samples, these PAHs were considered possible COPECs in sediment if identified as COPECs in other site media.

- The MDLs for four phthalates [bis(2-ethylhexyl) phthalate, butyl benzyl phthalate, diethyl phthalate, and di-*n*-butyl phthalate) exceeded the ESC in some or all samples at some sites. Most of these MDLs were only marginally greater than the ESC, and these phthalates were not detected in sediment samples for which the MDLs met the ESC or identified as COPECs in other site media. These phthalates are not considered COPECs in sediment.

- The MDLs for several phenolic compounds (phenol, 2-chlorophenol, 2,4-dichlorophenol, 2,4,5-trichlorophenol, 2,4,6-trichlorophenol, pentachlorophenol, 2,4-dimethylphenol,

4-nitrophenol, and 2,4-dinitrophenol) exceeded the ESC in some or all samples at some sites. Of these, only 2,4-dintirophenol was detected in any sediment samples and it is considered a COPEC at those sites. The other phenolic compounds were not identified as COPECs in other media at these sites and were not detected in other samples for which the MDLs met the ESC; these phenolic compounds are not considered COPECs at the sites.

- The MDLs for four other SVOCs (2,4-dinitrotoluene, hexachlorobutadiene, hexachloroethane, 1,2,4-trichlorobenzene, hexachlorobenzene, and nitrobenzene) exceeded the ESC in some or all samples at some sites. Of these, hexachlorobutadiene was detected in sediment at one site and it is considered a COPEC at that site and was identified as a COPEC in surface water at another site; it is considered a possible COPEC in sediment at that site. The other SVOCs were not identified as COPECs in other media at these sites, were not detected in other samples for which the MDLs met the ESC, and related compounds were not identified as COPECs at the sites; these SVOCs are not considered COPECs at the sites.
- The MDLs for three pesticides (toxaphene, 4,4′-DDT, and heptachlor) exceeded the ESC in some or all samples at some sites. The MDLs for toxaphene exceeded the freshwater sediment ESC in all samples; there is no saltwater sediment ESC for toxaphene. Toxaphene was not identified as a COPEC in other media and it is not considered a COPEC in sediment. The MDL for 4,4′-DDT exceeded the freshwater sediment ESC in one samples; it was, however, detected in that sample and is considered a COPEC at the site. The MDLs for heptachlor only marginally exceeded the saltwater sediment ESC in some samples but were all below the freshwater sediment ESC.
- The MDLs for five PCB mixtures (Aroclor 1016, Aroclor 1221, Aroclor 1232, Aroclor 1248, and Aroclor 1260) marginally exceeded the ESC in some or all samples at some sites. The Aroclor 1221 and Aroclor 1232 MDLs slightly exceeded the saltwater ESC in some samples at one site, but were below the freshwater ESC; these Aroclors were not detected in the samples where the MDLs met the ESC and are not considered COPECs at the sites. The MDL for Aroclor 1248 in one sample marginally exceeded the freshwater ESC; Aroclor 1248 was not detected in the other samples and it is not considered a COPEC at the site. The MDLs for Aroclor 1016 and Aroclor 1260 marginally exceeded the ESC in samples at several sites. Aroclor 1260 was detected in samples at three sites and is considered a COPEC at those sites. Aroclor 1016 and Aroclor 1260 were not detected in any of the other sediment samples at the other sites where MDLs met the ESC and they were not identified as COPECs in other media; Aroclor 1016 and Aroclor 1260 are not considered COPECs in sediment at these sites.
- The MDLs of three metals (antimony, selenium, and silver) exceeded the ESC at a few sites. Where selenium MDLs exceeded the ESC, selenium was detected exceeding the ESC and selenium is considered a COPEC. The MDLs for antimony and silver exceeded the ESC in only one sample at one site. Antimony and silver were not detected at concentrations exceeding the ESC in the other samples at the site where the MDLs met the ESC and these metals are not considered COPECs in sediment at the site.

The following sections present the concentrations measured in background media during the BEE investigation and address the identification of COPECs, as well as possible COPECs based on MDL review, for each of the sites and parcels addressed in this BEE.

3.4.1 CONSTITUENTS IN BACKGROUND MEDIA

As noted in **Section 2.4.7**, the local geology and soil types determine the levels of naturally-occurring constituents present in soil. These natural background levels (**Table 2-3**) are meant to be inclusive of naturally-occurring levels in soil as well as those from regional deposition but not those from point source contamination. The local geology and soil types determine the levels of naturally-occurring constituents present in soil (Dooley, 2001; Sanders, 2003; BEM Systems, Inc., 1998).

Background levels for FTMM were reported by Weston (1995) in the SI report (**Appendix H**). FTMM-specific background levels were reported for soil, groundwater, surface water, and sediment, and

background levels were reported for Monmouth County for soil and groundwater for select constituents. In addition to characterizing background levels related to soil geology and regional deposition, the FTMM-specific levels also incorporate effects from local land use (**Section 2.4.9**).

Background concentrations of constituents were also investigated during the BEE investigation. Surface water and sediment samples were analyzed for the same constituents as were site samples. Nine surface water and sediment samples were collected from locations upgradient of the MP on Husky Brook, Mill Creek, Lafetra Creek, and Northern Branch of Parkers Creek. One surface water and two sediment samples were collected from locations upgradient of the CWA on Shrewsbury Creek. One surface water and sediment sample were collected from Wampum Brook in the CWA, but upgradient of site activities. Additionally, one surface water and one sediment sample each were collected from both Shrewsbury Creek and Wampum Brook in the CWA at points near the downgradient (eastern) border of the CWA. The background samples are intended to describe the general background characteristics of surface water and sediment in the FTMM area from natural and regional anthropogenic inputs. Though background samples collected on Mill Creek are downgradient of the CWA, they are intended to provide information regarding the constituents and concentrations that may enter the MP from upgradient natural or anthropogenic sources; the samples collected immediately downgradient of the CWA on Shrewsbury Creek and Wampum Brook provide additional information. All background sampling locations were in freshwater areas, and the following discussions compare results to both freshwater and saltwater criteria since background concentrations can affect both freshwater and saltwater areas on site.

3.4.1.1 MAIN POST BACKGROUND

3.4.1.1.1 Main Post Surface Water Background

Nine surface water samples were collected from locations upgradient of the MP activities. Two were collected from Husky Brook, three were collected from Mill Creek, three were collected from Lafetra Creek, and one was collected from the North Branch of Parkers Creek. Parameters detected in surface water samples are presented in **Table D-1**.

VOCs. Three VOCs were detected in surface water from MP background samples. Chloroform and PCE were detected in one sample each, and *cis*-1,2-dichloroethene was detected in three samples. All detected concentrations were less than the available freshwater and saltwater ESC.

Pesticides/PCBs. No pesticides or PCBs were detected in surface water from MP background samples.

SVOCs. Four SVOCs were detected in surface water from MP background samples. Benzoic acid and 1,2,4-tetrachlorobenzene were detected in one sample each; anthracene and benzo(*a*)anthracene were detected in two samples each. The detected concentrations of anthracene and benzo(*a*)anthracene were greater than the applicable freshwater or saltwater ESC.

Metals. A total of 14 metals were detected in surface water from MP background samples: aluminum, arsenic, barium, calcium, iron, lead, magnesium, manganese, mercury, nickel, potassium, sodium, thallium, and zinc. Only lead was detected at concentrations greater than the applicable freshwater or saltwater ESC.

A summary of the MP background surface water concentrations is presented in **Table 3-3**. This table includes the number of detected concentrations, the number of exceedances for freshwater ESC and saltwater ESC, the range of detected concentrations, and the location of the maximum detected concentration.

3.4.1.1.2 Main Post Sediment Background

Nine sediment samples were collected from locations upgradient of the MP activities. Two were collected from Husky Brook, three were collected from Mill Creek, three were collected from Lafetra Creek, and one was collected from the North Branch of Parkers Creek. Parameters detected in surface sediment samples are presented in **Table D-2**.

VOCs. Four VOCs were detected in sediment from MP background samples. Acetone was detected in six samples, methylene chloride was detected in four samples, toluene was detected in one

sample, and 2-butanone was detected in two samples. All detected concentrations were less than the available freshwater and saltwater sediment ESC.

Pesticides. Two pesticides (4,4′-DDD and 4,4′-DDE) were detected in sediment from MP background samples. 4,4′-DDD and 4,4′-DDE were detected in samples from Mill Creek and Husky Brook and most detected concentrations exceeded the saltwater sediment ESC but not the freshwater sediment ESC.

PCBs. Two PCB mixtures (Aroclor 1242 and Aroclor 1254) were detected in sediment from MP background samples. PCBs were detected in samples from Mill Creek. Most detected concentrations exceeded the fresh water or saltwater sediment ESC.

SVOCs. A total of 20 SVOCs were detected in sediment from MP background samples. Bis(2-ethylhexyl) phthalate, butyl benzyl phthalate, and dimethyl phthalate were detected in some sediment samples, but, as noted elsewhere, phthalates are commonly found in field and laboratory QC samples and may not be representative of actual conditions. Other SVOCs detected in sediment from MP background samples were acenaphthene, acenaphthylene, anthracene, benzo(*a*)anthracene, benzo(*a*)pyrene, benzo(*b*)fluoranthene, benzo(*g,h,i*)perylene, benzo(*k*)fluoranthene, chrysene, dibenzo(*a,h*)anthracene, dibenzofuran, 3,3′-dichlorobenzidine, fluoranthene, fluorene, indeno(1,2,3-*cd)*pyrene, phenanthrene, and pyrene. Most were found at concentrations that were greater than the freshwater or saltwater sediment ESC.

Metals. A total of 23 metals were detected in sediment from MP background samples: aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, silver, sodium, thallium, vanadium, and zinc. Most of the metals with applicable freshwater or saltwater sediment ESC were found at concentrations in one or more sediment sample exceeding the ESC: antimony, arsenic, barium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, selenium, silver, vanadium, and zinc.

A summary of the MP background sediment concentrations is presented in **Table 3-4**. This table includes the number of detected concentrations, the number of exceedances for freshwater ESC and saltwater sediment ESC, the range of detected concentrations, and the location of the maximum detected concentration.

3.4.1.2 CHARLES WOOD AREA BACKGROUND

3.4.1.2.1 Charles Wood Area Surface Water Background

Two surface water samples were collected from locations upgradient of the CWA activities. One was collected from Shrewsbury Creek and one was collected from Wampum Brook. Parameters detected in surface water samples are presented in **Table D-3**.

VOCs. One VOC was detected in surface water from CWA background samples. Methyl *tert*-butyl ether (MTBE) was detected in one sample. The detected concentration was less than the freshwater and saltwater ESC.

Pesticides. One pesticide was detected in surface water from CWA background samples. 4,4′-DDD was detected in one surface water sample. There are no available freshwater or saltwater ESC for 4,4′-DDD.

PCBs. One PCB mixture was detected in surface water from CWA background samples. Aroclor 1242 was detected in one surface water sample at a concentration greater than both the freshwater and saltwater ESC.

SVOCs. One SVOC was detected in surface water from CWA background samples. Anthracene was detected in one surface water sample; the concentration was greater than the applicable freshwater ESC.

Metals. A total of 19 metals were detected in surface water from CWA background samples: aluminum, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, sodium, vanadium, and zinc. The detected

concentrations of total cadmium, total chromium, total copper, total lead, total vanadium, and total zinc exceeded the applicable freshwater ESC in one or both samples; however, only the dissolved concentrations of cadmium, cobalt, and lead were above the applicable freshwater ESC. These exceedances of dissolved concentration ESC were all from the surface water sample from Wampum Brook. Concentrations of total nickel and dissolved nickel exceeded the saltwater ESC. Total chromium, copper, lead, and zinc also exceeded the saltwater ESC in at least one sample.

A summary of the CWA background surface water concentrations is presented in **Table 3-5**. This table includes the number of detected concentrations, the number of exceedances for freshwater ESC and saltwater ESC, the range of detected concentrations, and the location of the maximum detected concentration.

3.4.1.2.2 Charles Wood Area Sediment Background

Three sediment samples were collected from locations upgradient of the CWA activities. Two were collected from Shrewsbury Creek and one was collected from Wampum Brook. Parameters detected in surface sediment samples are presented in **Table D-4**.

VOCs. Five VOCs were detected in sediment from CWA background samples. Acetone, methylene chloride, and 2-butanone were detected in one or two samples from Shrewsbury Creek. Styrene and toluene were detected in the sample from Wampum Brook. All detected concentrations were less than the available freshwater and saltwater sediment ESC.

Pesticides. One pesticide (4,4′-DDD) was detected in sediment from CWA background samples. 4,4′-DDD was detected in one sample from Shrewsbury Creek. The detected concentration was less than the applicable freshwater sediment ESC but above the saltwater sediment ESC.

PCBs. No PCBs were detected in sediment from CWA background samples.

SVOCs. A total of 18 SVOCs were detected in sediment from CWA background samples. Dimethyl phthalate was detected in all sediment samples, but, as noted elsewhere, phthalates are commonly found in field and laboratory QC samples and may not be representative of actual conditions. Other SVOCs detected in sediment from CWA background samples were acenaphthene, acenaphthylene, anthracene, benzo(*a*)anthracene, benzo(*a*)pyrene, benzo(*b*)fluoranthene, benzo(*g,h,i*)perylene, benzo(*k*)fluoranthene, chrysene, dibenzofuran, fluoranthene, fluorene, indeno(1,2,3-*cd*)pyrene, 2-methylnaphthalene, naphthalene, phenanthrene, and pyrene. Though all 18 were detected in Wampum Brook, dimethyl phthalate and three of the PAHs [anthracene, benzo(*a*)anthracene, and benzo(*a*)pyrene] were also detected in Shrewsbury Creek. Most of the PAHs in Wampum Brook were found at concentrations that were greater than the freshwater or saltwater sediment ESC.

Metals. A total of 20 metals were detected in sediment from CWA background samples: aluminum, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, sodium, vanadium, and zinc. Seven of the metals with applicable freshwater or saltwater sediment ESC were found at concentrations in one or more sediment sample greater than the ESC: barium, cadmium, chromium, lead, mercury, nickel, and selenium.

A summary of the CWA background sediment concentrations is presented in **Table 3-6**. This table includes the number of detected concentrations, the number of exceedances for freshwater ESC and saltwater sediment ESC, the range of detected concentrations, and the location of the maximum detected concentration.

3.4.1.3 CHARLES WOOD AREA DOWNGRADIENT SURFACE WATER

Two surface water samples were collected from locations downgradient of the CWA activities. One was collected from Shrewsbury Creek and one was collected from Wampum Brook. Parameters detected in surface water samples are presented in **Table D-5**.

VOCs. VOCs were not detected in surface water from CWA downgradient samples.

Pesticides. No pesticides were detected in surface water from CWA downgradient samples.

PCBS. One PCB mixture was detected in surface water from CWA downgradient samples. Aroclor 1242 was detected in the sample from Wampum Brook at a concentration less than that from the Wampum Brook background sample. The detected concentration was above both the freshwater and saltwater ESC.

SVOCs. One SVOC was detected in surface water from CWA background samples. Hexachlorobutadiene was detected in the Shrewsbury Creek downgradient sample at a concentration greater than the applicable freshwater ESC.

Metals. A total of 15 metals were detected in surface water from CWA downgradient samples: aluminum, arsenic, barium, calcium, cadmium, cobalt, iron, lead, magnesium, manganese, nickel, potassium, selenium, sodium, and zinc. The detected concentrations of total cadmium exceeded the freshwater ESC in Wampum Brook but not in Shrewsbury Creek; the dissolved concentrations were below the ESC. Total lead and dissolved lead exceeded the freshwater ESC in both samples. Dissolved selenium also slightly exceeded the freshwater ESC in the Shrewsbury Creek sample.

A summary of the CWA downgradient surface water concentrations is presented in **Table 3-7**. This table includes the number of detected concentrations, the number of exceedances for freshwater ESC and saltwater ESC, the range of detected concentrations, and the location of the maximum detected concentration.

3.4.1.4 CHARLES WOOD AREA DOWNGRADIENT SEDIMENT

Two sediment samples were collected from locations downgradient of the CWA activities. One was collected from Shrewsbury Creek and one was collected from Wampum Brook. Parameters detected in surface sediment samples are presented in **Table D-6**.

VOCs. Two VOCs were detected in sediment from CWA downgradient samples. Acetone was detected in both sediment samples and methylene chloride was detected in the sample from Shrewsbury Creek. All detected concentrations were less than the available freshwater and saltwater sediment ESC.

PCBs. Aroclor 1242 was detected in sediment from CWA downgradient samples. Aroclor 1242 was detected in the sample from Wampum Brook. The detected concentration was below the applicable freshwater sediment ESC but above the saltwater sediment ESC. No other PCBs were detected in sediment from CWA downgradient samples.

SVOCs. A total of eight SVOCs were detected in sediment from CWA downgradient samples. Dimethyl phthalate was detected in both sediment samples, but, as noted elsewhere, phthalates are commonly found in field and laboratory QC samples and may not be representative of actual conditions. Other SVOCs detected in sediment from CWA downgradient samples were anthracene, benzo(*a*)anthracene, and benzo(*a*)pyrene which were detected in both samples, acenaphthene and phenanthrene which were detected in the Shrewsbury Creek sample, and fluoranthene and pyrene which were detected in the Wampum Brook sample. The concentrations of acenaphthene and phenanthrene in the Wampum Brook sample were greater than the freshwater sediment ESC.

Metals. A total of 21 metals were detected in sediment from CWA downgradient samples: aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, sodium, vanadium, and zinc. Seven of the metals with applicable freshwater or saltwater sediment ESC were found at concentrations in one or more sediment sample exceeding the ESC: cadmium, chromium, and selenium in both samples; arsenic, mercury, and lead in Shrewsbury Creek; and nickel in Wampum Brook.

A summary of the CWA downgradient sediment concentrations is presented in **Table 3-8**. This table includes the number of detected concentrations, the number of exceedances for freshwater ESC and saltwater sediment ESC, the range of detected concentrations, and the location of the maximum detected concentration.

3.4.2 MAIN POST

3.4.2.1 LANDFILL 2 (FTMM-2)

Near surface soil, groundwater, surface water, and sediment analytical data were evaluated for the identification of COPECs related to Landfill 2 (FTMM-2).

3.4.2.1.1 COPECs for Soil at Landfill 2 (FTMM-2)

Near surface (6-12 inches bgs) soil samples were collected from Landfill 2 (FTMM-2) as part of the IRP RI investigation (Versar, 2001). A total of 195 samples were analyzed for SVOCs, pesticides, PCBs, and metals. Parameters detected in near surface soil samples are presented in **Table A-1**.

SVOCs. A total of 22 SVOCs were detected in near surface soil samples from Landfill 2 (FTMM-2). Of these 22 SVOCs, five were detected at concentrations exceeding the soil ESC in at least one sample. Benzo(*a*)pyrene was detected in five samples at concentrations exceeding the 1.52 mg/kg ESC. Benzo(*a*)anthracene, chrysene, naphthalene and bis(2-ethylhexyl) phthalate were detected at concentrations exceeding the soil ESC in one or two samples each. Bis(2-ethylhexyl) phthalate is commonly found in field and laboratory QC samples, and bis(2-ethylhexyl) phthalate is not considered a COPEC. These four PAHs, benzo(*a*)pyrene, benzo(*a*)anthracene, chrysene, and naphthalene, are considered COPECs in soil at Landfill 2 (FTMM-2).

Pesticides. Eight pesticides were detected in near surface soil samples from Landfill 2 (FTMM-2). Six of these pesticides were detected at concentrations exceeding the soil ESC in at least one sample. 4,4′-DDT was detected in most of the soil samples and the majority of these contained 4,4′-DDT at concentrations that were greater than the 0.00035 mg/kg ESC. 4,4′-DDD was detected in two samples at concentrations that exceeded the 0.758 mg/kg ESC. 4,4′-DDE was detected in only one sample at a concentration that exceeded the 0.596 mg/kg ESC. Dieldrin was detected in several samples with concentrations exceeding the 0.0049 mg/kg ESC. Endrin was detected in one sample at a concentration exceeding the 0.0101 mg/kg ESC. gamma-BHC was also detected in one sample at a concentration exceeding the 0.005 mg/kg ESC. These six pesticides (4,4′-DDD, 4,4′-DDT, 4,4′-DDE, dieldrin, endrin, and gamma-BHC) are considered COPECs at Landfill 2 (FTMM-2).

PCBs. Four Aroclors were detected in near surface soil samples from Landfill 2 (FTMM-2). These were detected infrequently. Aroclor 1242 and Aroclor 1248 were detected in one sample each. Aroclor 1254 was detected in four samples and Aroclor 1260 was detected in three samples. Most of these concentrations exceeded the ESC. These PCB mixtures (Aroclor 1242, Aroclor 1248, Aroclor 1254, and Aroclor 1260) are considered COPECs in soil at Landfill 2 (FTMM-2).

Metals. A total of 23 metals were detected in near surface soil samples from Landfill 2 (FTMM-2) of which most metals were detected in the majority of the samples. Thallium and silver were detected in 1 and 10 samples, respectively. Eighteen metals (aluminum, antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, vanadium, and zinc) were detected at concentrations exceeding the soil ESC. Aluminum, like iron, is a common component of soils and sediments and is not considered a COPEC except in conditions of very low pH where aluminum could be bioavailable; aluminum is not considered a COPEC in soil at Landfill 2 (FTMM-2). The other 17 metals (antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, vanadium, and zinc) are considered COPECs in soil at Landfill 2 (FTMM-2).

3.4.2.1.2 COPECs for Groundwater at Landfill 2

Sixteen groundwater monitoring wells at Landfill 2 (FTMM-2) have been monitored during the 2008-2009 time period. Mill Creek could receive groundwater discharge from Landfill 2 (FTMM-2). Mill Creek, in the vicinity of Landfill 2 (FTMM-2), is classified as freshwater (**Section 2.4.3**). Parameters detected in groundwater samples are presented in **Table C-1**.

VOCs. A total of nine VOCs were detected in groundwater samples from Landfill 2 (FTMM-2) during the 2008-2009 time period. Of these 16 VOCs, one (chlorobenzene) was detected at concentrations exceeding the freshwater ESC (47 µg/L); these samples were all collected from one

monitoring well (M2MW03). Mill Creek, in the vicinity of Landfill 2 (FTMM-2), is freshwater. Chlorobenzene is considered a COPEC in groundwater at Landfill 2 (FTMM-2).

SVOCs. A total of four SVOCs were detected in groundwater samples from Landfill 2 (FTMM-2) during the 2008-2009 time period. No SVOCs were detected at concentrations exceeding the freshwater ESC; SVOCs are not considered COPECs in groundwater at Landfill 2 (FTMM-2).

PCBs. No PCBs were detected in groundwater samples from Landfill 2 (FTMM-2) during the 2008-2009 time period. PCBs are not considered COPECs in groundwater at Landfill 2 (FTMM-2).

Pesticides. A total of 19 pesticides were detected in groundwater samples from Landfill 2 (FTMM-2) during the 2008-2009 time period. Of the 19 pesticides, nine pesticides were detected exceeding the freshwater ESC in at least one sample. Aldrin, alpha-chlordane, gamma-chlordane, 4,4′-DDE, 4,4′-DDT, endrin, heptachlor, heptachlor epoxide, and methoxychlor were detected at concentrations above their ESC. Of these, aldrin and endrin were detected exceeding the ESC in only one of the wells, and alpha-chlordane and heptachlor epoxide were detected exceeding the ESC in only two of the monitoring wells. These nine pesticides (aldrin, alpha-chlordane, gamma-chlordane, 4,4′-DDE, 4,4′-DDT, endrin, heptachlor, heptachlor epoxide, and methoxychlor) are considered COPECs in groundwater at Landfill 2 (FTMM-2).

Metals. A total of eight metals were detected in groundwater samples from Landfill 2 (FTMM-2) during the 2008-2009 time period. Of these eight, five (antimony, barium, cadmium, lead, and selenium) were detected in at least one groundwater sample at concentrations exceeding the freshwater ESC. One sample had an antimony concentration exceeding the freshwater ESC of 80 µg/L. Barium concentrations in four of the monitoring wells had concentrations exceeding the 220 µg/L freshwater ESC. Cadmium was detected at a concentration exceeding the freshwater ESC (0.16 µg/L) in one well. Lead and selenium were detected at concentrations exceeding the ESC (5.4 and 5 µg/L, respectively) in most, if not all, of the wells. Antimony, barium, cadmium, lead, and selenium are considered COPECs in groundwater at Landfill 2 (FTMM-2).

3.4.2.1.3 COPECs for Surface Water at Landfill 2 (FTMM-2)

Two surface water samples were collected from Mill Creek adjacent to Landfill 2 (FTMM-2) as part of the 2010 BEE. One sample was collected immediately downstream of a storm water outfall from the area of Building 1150 in Parcel 39 and the other sample was downstream of all storm water outfalls from Parcel 39 (**Appendix K**). Mill Creek, in the vicinity of Landfill 2 (FTMM-2), is classified as freshwater (**Section 2.4.3**). Parameters detected in surface water samples are presented in **Table D-7**.

Pesticides. No pesticides were detected in surface water samples at Landfill 2 (FTMM-2). Pesticides are not considered COPECs in surface water at Landfill 2 (FTMM-2).

PCBs. No PCBs were detected in surface water samples at Landfill 2 (FTMM-2). PCBs are not considered COPECs in surface water at Landfill 2 (FTMM-2).

VOCs. Three VOCs were detected in at least one of the two surface water samples. PCE, TCE, and *cis*-1,2-dichloroethene were detected at concentrations less than the ESC. VOCs are not considered COPECs in surface water at Landfill 2 (FTMM-2).

SVOCs. Three SVOCs were detected in at least one of the two surface water samples. Anthracene (0.10 and 0.11 µg/L) and benzo(*a*)anthracene (0.22 and 0.23 µg/L) were detected exceeding the freshwater ESC (0.035 and 0.025 µg/L, respectively); 1,2,4-trichlorobenzene was detected in one surface water sample at a concentration less than the ESC. Anthracene and benzo(*a*)anthracene are considered COPECs in surface water at Landfill 2 (FTMM-2).

Metals. A total of 12 metals were detected in surface water samples at Landfill 2 (FTMM-2). One metal was detected at concentrations exceeding the freshwater ESC. Total lead (6.2 and 6.36 µg/L) and dissolved lead (7.86 and 10.1 µg/L) were detected at concentrations exceeding the freshwater ESC for dissolved lead (5.4 µg/L). Lead is considered a COPEC in surface water at Landfill 2 (FTMM-2).

3.4.2.1.4 COPECs for Sediment at Landfill 2 (FTMM-2)

Thirteen sediment samples (including one duplicate sample) were collected from Mill Creek adjacent to Landfill 2 (FTMM-2) as part of the 2010 BEE. Sediment sample locations were based on previous sediment sampling conducted for the RI and were located in the field based on depositional characteristics and potential contaminant migration pathways and included storm water outfalls (**Appendix K**) into Mill Creek in the vicinity of Landfill 2 (FTMM-2) from the area of Building 1150 and Parcel 39 (**Section 3.4.2.13**). Mill Creek, in the vicinity of Landfill 2 (FTMM-2), is classified as freshwater (**Section 2.4.3**). Parameters detected in sediment samples are presented in **Table D-8**.

VOCs. Three VOCs (acetone, methylene chloride, and 2-butanone) were detected in at least one sediment sample each, but none were detected at concentrations exceeding the ESC.

Pesticides. Four pesticides (4,4'-DDT, 4,4'-DDE, 4,4'-DDD, and alpha-chlordane) were detected in at least one sediment sample each from Landfill 2. None were detected at concentrations exceeding the freshwater sediment ESC and pesticides are not considered COPECs in sediment at Landfill 2 (FTMM-2).

PCBs. Three PCBs mixtures (Aroclor 1242, Aroclor 1254, and Aroclor 1260) were detected in at least one sediment sample each from Landfill 2 (FTMM-2); each was detected at a concentration greater than the freshwater sediment ESC in at least one sample. Aroclor 1242 was detected in one sample (0.12 mg/kg) greater than the ESC for PCBs of 0.07 mg/kg. Aroclor 1254 was detected in one sample (0.064 mg/kg) greater than the 0.06 mg/kg freshwater sediment ESC for Aroclor 1254, and Aroclor 1260 was detected in two samples (0.01 and 0.04 mg/kg) greater than the 0.005 mg/kg freshwater sediment ESC for Aroclor 1260. Aroclor 1242, Aroclor 1254, and Aroclor 1260 are considered COPECs in sediment at Landfill 2 (FTMM-2).

SVOCs. A total of 20 SVOCs were detected in surface sediment samples at Landfill 2 (FTMM-2). Of the 20 detected SVOCs, six were detected in at least one sediment sample at concentrations exceeding the ESC. Bis(2-ethylhexyl) phthalate was detected in one sediment sample at a concentration (0.28 mg/kg) which exceeds the freshwater sediment ESC of 0.182 mg/kg. As noted elsewhere, bis(2-ethylhexyl) phthalate is commonly found in field and laboratory QC samples and is not considered a COPEC in sediment at Landfill 2 (FTMM-2). Chrysene (0.37 mg/kg), dibenzo(*a,h*)anthracene (0.1 mg/kg), 2,4-dinitrophenol (1.1 mg/kg), and pyrene (0.71 mg/kg) were detected in one sample each above the freshwater sediment ESC. Fluoranthene (0 0.92 mg/kg) was detected above the ESC in one sample. All SVOC exceedances were detected in only 2 of the 12 sediment samples (M2-SD7 and M2-SD13). Chrysene, dibenzo(*a,h*)anthracene, 2,4-dinitrophenol, fluoranthene, and pyrene are considered COPECs in sediment at Landfill 2 (FTMM-2).

Metals. Of the 22 metals detected in sediment at Landfill 2 (FTMM-2), seven (arsenic, cadmium, chromium, copper, lead, mercury, and nickel) were detected in at least one sample at concentrations exceeding the freshwater sediment ESC. Arsenic concentrations in one sample (8.09 mg/kg), cadmium concentrations in all 12 samples (1.44 to 2.76 mg/kg), chromium concentrations in all 12 samples (31.8 to 125 mg/kg), copper concentrations in one sample (22.5 mg/kg), lead in four samples (31.2 to 52.8 mg/kg), mercury in one sample (0.21 mg/kg), and nickel in one sample (29.2 mg/kg) exceeded the freshwater sediment ESC (6 mg/kg arsenic, 0.6 mg/kg cadmium, 26 mg/kg chromium, 16 mg/kg copper, 31 mg/kg lead, 0.2 mg/kg mercury, and 16 mg/kg nickel). Though there are no freshwater sediment ESC for barium and selenium, detected concentrations of these metals were detected at concentrations greater than the available saltwater sediment ESC in some sediment samples. These metals were identified as COPECs in soil and groundwater at Landfill 2 (FTMM-2) and are considered COPECs in sediment. Arsenic, barium, cadmium, chromium, copper, lead, mercury, nickel, and selenium are considered COPECs in sediment at Landfill 2 (FTMM-2).

3.4.2.1.5 Summary of COPECs for Landfill 2 (FTMM-2)

Parameters detected in soil, groundwater, surface water, or sediment at Landfill 2 (FTMM-2) at concentrations greater than the applicable ESC are identified as COPECs for the site. Though cadmium and 4,4′-DDE were not detected in surface water at Landfill 2 (FTMM-2), their MDLs were greater than the freshwater ESC. Given that cadmium is considered a COPEC in soil, groundwater, and sediment and 4,4′-DDE is considered a COPEC in soil and groundwater (though not sediment), they are considered

possible COPECs in surface water. The COPECs, and possible COPECs, identified for Landfill 2 (FTMM-2) are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
Not Applicable	Chlorobenzene	None	None
Pesticides			
Gamma-BHC 4,4′-DDD 4,4′-DDE 4,4′-DDT Dieldrin Endrin	Aldrin gamma-Chlordane alpha-Chlordane DDE DDT Endrin Heptachlor Heptachlor epoxide Methoxychlor	None	None
PCBs			
Aroclor 1242 Aroclor 1248 Aroclor 1254 Aroclor 1260	None	None	Aroclor 1242 Aroclor 1254 Aroclor 1260
SVOCs			
Benzo(*a*)anthracene Benzo(*a*)pyrene Chrysene Naphthalene	None	Anthracene Benzo(*a*)anthracene	Chrysene Dibenzo(*a,h*)anthracene 2,4-Dinitrophenol Fluoranthene Pyrene
Metals			
Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Lead Manganese Mercury Nickel Selenium Silver Thallium Vanadium Zinc	Antimony Barium Cadmium Lead Selenium	Lead	Arsenic Barium Cadmium Chromium Copper Lead Mercury Nickel Selenium
Possible COPECs			
		DDE Cadmium	

3.4.2.2 LANDFILL 3 (FTMM-3)

Near surface soil, groundwater, surface water, and sediment analytical data were evaluated for the identification of COPECs related to Landfill 3.

3.4.2.2.1 COPECs for Soil at Landfill 3 (FTMM-3)

Near surface (6-12 inches bgs) soil samples were collected from Landfill 3 (FTMM-3) as part of the IRP RI investigation (Versar, 2004a). A total of 205 samples were analyzed for SVOCs, pesticides, PCBs, and metals. Parameters detected in near surface soil samples are presented in **Table A-2**.

SVOCs. A total of 23 SVOCs were detected in near surface soil samples from Landfill 3 (FTMM-3). Of these 23 SVOCs, 13 were detected at concentrations exceeding the soil ESC in at least one sample. Phenanthrene, fluoranthene, pyrene, benzo(*b*)fluoranthene, indeno(1,2,3-*cd)*pyrene, dibenzo(*a,h*)anthracene, and benzo(*g,h,i*)perylene were detected exceeding the ESC in one soil sample each; most of these exceedances occurred in the same soil sample. In addition, benzo(*a*)anthracene, naphthalene, and chrysene were detected in several soil samples at concentrations exceeding the ESC. Benzo(*a*)pyrene was detected at concentrations exceeding the ESC in more than 10% of the soil samples. Bis(2-ethylhexyl) phthalate and di-*n*-butyl phthalate were also detected at concentrations greater than the ESC. As noted elsewhere, phthalates are commonly found in field and laboratory QC samples, and these phthalates are not considered COPECs. Benzo(*a*)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(*g,h,i*)perylene, chrysene, dibenzo(*a,h*)anthracene, fluoranthene, indeno(1,2,3-*cd*)pyrene, naphthalene, phenanthrene, and pyrene are considered COPECs in soil at Landfill 3 (FTMM-3).

Pesticides. Ten pesticides were detected in near surface soil samples from Landfill 3 (FTMM-3). Nine of these pesticides were detected at concentrations exceeding the soil ESC in at least one sample. 4,4′-DDT was detected in most of the samples and the majority of the concentrations exceeded the 0.0035 mg/kg ESC. 4,4′-DDD was detected in two samples at concentrations that were greater than the 0.758 mg/kg ESC. 4,4′-DDE, dieldrin, and gamma-BHC were detected in several samples at concentrations that were exceeding the ESC. Endrin was detected in one sample at a concentration above the 0.0101 mg/kg ESC. Heptachlor was detected in one sample at a concentration above the 0.00598 mg/kg ESC. Gamma- and alpha-chlordane were detected in two samples each above the 0.224 mg/kg chlordane ESC. 4,4′-DDD, 4,4′-DDE, 4,4′-DDT, dieldrin, endrin, gamma-BHC, alpha-chlordane, gamma-chlordane, and heptachlor are considered COPECs at Landfill 3 (FTMM-3).

PCBs. One PCB Aroclor was detected in near surface soil samples from Landfill 3 (FTMM-3). Aroclor 1260 was detected in six samples. These concentrations were above the 0.371 mg/kg ESC. Aroclor 1260 is considered a COPEC in soil at Landfill 3 (FTMM-3).

Metals. A total of 23 metals were detected in near surface soil samples from Landfill 3 (FTMM-3) of which most metals were detected in the majority of the samples. Thallium and silver were detected infrequently, being detected in 2 and 25 samples, respectively; antimony was detected in less than half the samples (102 of 205). Sixteen metals (aluminum, antimony, arsenic, barium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, selenium, silver, vanadium, and zinc) were detected at concentrations exceeding the soil ESC. Aluminum, like iron, is a common component of soils and sediments and is not considered a COPEC except in conditions of very low pH where aluminum could be bioavailable; aluminum is not considered a COPEC in soil at Landfill 3 (FTMM-3). Antimony, arsenic, barium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, selenium, silver, vanadium, and zinc are considered COPECs in soil at Landfill 3 (FTMM-3).

3.4.2.2.2 COPECs for Groundwater at Landfill 3 (FTMM-3)

Eight groundwater monitoring wells at Landfill 3 (FTMM-3) have been monitored for VOCs during the 2008-2009 time period. Lafetra Creek could receive groundwater discharge from Landfill 3 (FTMM-3). Lafetra Creek, in the vicinity of Landfill 3 (FTMM-3), is classified as saline estuarine (**Section 2.4.3**). Parameters detected in groundwater samples are presented in **Table C-2**.

VOCs. A total of 11 VOCs were detected in groundwater samples from Landfill 3 (FTMM-3) during the 2008-2009 time period. None of the detected VOCs were at concentrations greater than the applicable saltwater ESC. VOCs are not considered COPECs in groundwater at Landfill 3 (FTMM-3).

3.4.2.2.3 COPECs for Surface Water at Landfill 3 (FTMM-3)

Two surface water samples were collected from Lafetra Creek adjacent to Landfill 3 (FTMM-3) as part of the 2010 BEE. Lafetra Creek, in the vicinity of Landfill 3 (FTMM-3), is classified as saline estuarine (**Section 2.4.3**). Parameters detected in surface water samples are presented in **Table D-9**.

VOCs. No VOCs were detected in surface water samples at Landfill 3 (FTMM-3). VOCs are not considered COPECs in surface water at Landfill 3 (FTMM-3).

SVOCs. No SVOCs were detected in surface water samples at Landfill 3 (FTMM-3). SVOCs are not considered COPECs in surface water at Landfill 3 (FTMM-3).

Pesticides. No pesticides were detected in surface water samples at Landfill 3 (FTMM-3). Pesticides are not considered COPECs in surface water at Landfill 3 (FTMM-3).

PCBs. No PCBs were detected in surface water samples at Landfill 3 (FTMM-3). PCBs are not considered COPECs in surface water at Landfill 3 (FTMM-3).

Metals. A total of 13 metals were detected in surface water samples at Landfill 3 (FTMM-3). None of these were detected at concentrations exceeding the saltwater ESC. Metals are not considered COPECs in surface water at Landfill 3 (FTMM-3).

3.4.2.2.4 COPECs for Sediment at Landfill 3 (FTMM-3)

Twelve sediment samples (including one duplicate sample) were collected from Lafetra Creek adjacent to Landfill 3 (FTMM-3) as part of the 2010 BEE. Sediment sample locations were based on previous sediment sampling conducted for the RI and were located in the field based on depositional characteristics and potential contaminant migration pathways. Lafetra Creek, in the vicinity of Landfill 3 (FTMM-3), is classified as saline estuarine (**Section 2.4.3**). Parameters detected in sediment samples are presented in **Table D-10**.

VOCs. A total of seven VOCs were detected in sediment samples at Landfill 3 (FTMM-3). None were detected at concentrations exceeding the available saltwater sediment ESC. VOCs are not considered COPECs in sediment at Landfill 3 (FTMM-3).

PCBs. No PCBs were detected in sediment samples at Landfill 3 (FTMM-3). PCBs are not considered COPECs at Landfill 3 (FTMM-3).

Pesticides. Three pesticides (4,4'-DDD, 4,4'-DDE, and 4,4'-DDT) were detected in one or two sediment samples each at Landfill 3 (FTMM-3). Only one sample had concentrations exceeding the ESC. Sample M3-SD10 had a concentration of 0.0095 mg/kg 4,4′-DDD, which is greater than the saltwater sediment ESC (0.002 mg/kg) and a concentration of 0.18 mg/kg 4,4′-DDT, which is greater than the saltwater sediment ESC (0.001 mg/kg). 4,4′-DDD and 4,4′-DDT are considered COPECs in sediment at Landfill 3 (FTMM-3).

SVOCs. A total of 15 SVOCs were detected in surface sediment samples at Landfill 3 (FTMM-3). Of the 15 detected SVOCs, one was detected in one sediment sample at a concentration greater than the saltwater ESC. Bis(2-ethylhexyl) phthalate was detected in one sediment sample at a concentration (5.5 mg/kg) exceeding the saltwater sediment ESC of 0.18216 mg/kg. As noted elsewhere, bis(2-ethylhexyl) phthalate is commonly found in field and laboratory QC samples and is not considered a COPEC in sediment at Landfill 3 (FTMM-3).

Metals. Of the 23 metals detected in sediment at Landfill 3 (FTMM-3), 13 (arsenic, barium, cadmium, chromium, cobalt, copper, lead, mercury, nickel, selenium, silver, vanadium, and zinc) were detected in at least one sample at concentrations greater than the saltwater sediment ESC and are considered COPECs in sediment at Landfill 3 (FTMM-3).

3.4.2.2.5 Summary of COPECs for Landfill 3 (FTMM-3)

Parameters detected in soil, groundwater, surface water, or sediment at Landfill 3 (FTMM-3) at concentrations greater than the applicable ESC were identified as COPECs for the site. Though copper was not detected in surface water at Landfill 3 (FTMM-3), its MDLs were greater than the saltwater ESC. Given that copper is considered a COPEC in soil and sediment, it is considered a possible COPEC in surface water. The COPECs, and possible COPECs, identified for Landfill 3 (FTMM-3) are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
Not Applicable	None	None	None
Pesticides			
Gamma-BHC	Not Applicable	None	DDD

Soil	Groundwater	Surface Water	Sediment
alpha-Chlordane gamma-Chlordane 4,4′-DDD 4,4′-DDE 4,4′-DDT Dieldrin Endrin Heptachlor			DDT
PCBs			
Aroclor 1260	Not Applicable	None	None
SVOCs			
Benzo(*a*)anthracene Benzo(*a*)pyrene Benzo(*b*)fluoranthene Benzo(*g,h,i*)perylene Chrysene Dibenzo(*a,h*)anthracene Fluoranthene Indeno(1,2,3-*cd*)pyrene Naphthalene Phenanthrene Pyrene	Not Applicable	None	None
Metals			
Antimony Arsenic Barium Cadmium Chromium Cobalt Copper Lead Manganese Mercury Nickel Selenium Silver Vanadium Zinc	Not Applicable	None	Arsenic Barium Cadmium Chromium Cobalt Copper Lead Mercury Nickel Selenium Silver Vanadium Zinc
Possible COPECs			
		Copper	

3.4.2.3 LANDFILL 4 (FTMM-4)

Near surface soil, groundwater, surface water, and sediment analytical data were evaluated for the identification of COPECs related to Landfill 4 (FTMM-4).

3.4.2.3.1 COPECs for Soil at Landfill 4 (FTMM-4)

Near surface (6-12 inches bgs) soil samples were collected from Landfill 4 (FTMM-4) as part of the IRP RI investigation (Versar, 2004b). A total of 63 samples were analyzed for SVOCs, pesticides, PCBs, and metals. Parameters detected in near surface soil samples are presented in **Table A-3**.

SVOCs. A total of 22 SVOCs were detected in near surface soil samples from Landfill 4 (FTMM-4). Of these 22 SVOCs, three were detected at concentrations exceeding the soil ESC in at least one sample. Bis(2-ethylhexyl) phthalate was detected frequently and several samples had concentrations that were greater than the 0.925 mg/kg ESC. As noted elsewhere, bis(2-ethylhexyl) phthalate is commonly found in field and laboratory QC samples; therefore, it is not considered a COPEC. Benzo(*a*)pyrene was detected in more than half of the 63 samples and two samples had concentrations (3.5 and 1.6 mg/kg) greater than the 1.52 mg/kg ESC. Naphthalene was detected in four samples at

concentrations exceeding the 0.0994 mg/kg ESC. Benzo(*a*)pyrene and naphthalene are considered COPECs in soil at Landfill 4 (FTMM-4).

Pesticides. Four pesticides were detected in near surface soil samples from Landfill 4 (FTMM-4). Three of these pesticides were detected at concentrations exceeding the soil ESC in at least one sample. 4,4′-DDT was detected in most of the 63 samples and the majority of these had concentrations that were greater than the 0.0035 mg/kg ESC. 4,4′-DDD was detected in one sample at a concentration that exceeded the 0.758 mg/kg ESC. 4,4′-DDE was detected in three samples at concentrations that were greater than the 0.596 mg/kg ESC. 4,4′-DDD, 4,4′-DDE, and 4,4′-DDT are considered COPECs at Landfill 4 (FTMM-4).

PCBs. No PCBs were detected in near surface soil samples from Landfill 4 (FTMM-4). PCBs are not considered COPECs in soil at Landfill 4 (FTMM-4).

Metals. A total of 23 metals were detected in near surface soil samples from Landfill 4 (FTMM-4) of which most metals were detected in the majority of the samples. Cadmium, thallium, selenium, and silver were detected infrequently. Thallium and selenium were detected in one sample each, cadmium was detected in four samples, and selenium was detected in 13 samples. Sixteen metals (aluminum, antimony, arsenic, barium, cadmium, chromium, cobalt, copper, lead, mercury, nickel, selenium, silver, thallium, vanadium, and zinc) were detected at concentrations exceeding the soil ESC. Aluminum, like iron, is a common component of soils and sediments and is not considered a COPEC except in conditions of very low pH where aluminum could be bioavailable; aluminum is not considered a COPEC in soil at Landfill 4 (FTMM-4). Antimony, arsenic, barium, cadmium, chromium, cobalt, copper, lead, mercury, nickel, selenium, silver, thallium, vanadium, and zinc are considered COPECs in soil at Landfill 4 (FTMM-4).

3.4.2.3.2 COPECs for Groundwater at Landfill 4 (FTMM-4)

Four monitoring wells at Landfill 4 (FTMM-4) have been monitored for metals during the 2008-2009 time period. Sampling for SVOCs, pesticides, PCBs, and VOCs was discontinued after the October 2004 sampling event per NJDEP approval letter dated November 2004. SVOCs, pesticides, PCBs, and VOCs are not considered COPECs in groundwater at Landfill 4 (FTMM-4). Mill Creek could receive groundwater discharge from Landfill 4 (FTMM-4). Mill Creek, in the vicinity of Landfill 4 (FTMM-4), is classified as saline estuarine (**Section 2.4.3**). Parameters detected in groundwater samples are presented in **Table C-3**.

Metals. A total of 12 metals were detected in groundwater samples from Landfill 4 (FTMM-4) during the 2008-2009 time period. Of these 12, five were detected at concentrations that exceeded the saltwater ESC in at least one sample. Arsenic was detected at concentrations greater than the saltwater ESC in three monitoring wells. Selenium was detected at concentrations greater than the saltwater ESC in two wells. Cadmium, copper, and lead were detected at concentrations exceeding the saltwater ESC in one sample each. Arsenic, cadmium, copper, lead, and selenium are considered COPECs in groundwater at Landfill 4 (FTMM-4).

3.4.2.3.3 COPECs for Surface Water at Landfill 4 (FTMM-4)

One surface water sample was collected from Mill Creek adjacent to Landfill 4 (FTMM-4) as part of the 2010 BEE. One sample was collected downstream of the storm water outfall at the northern end of Landfill 4 (FTMM-4) and the other sample was collected downstream of the storm water outfall at the southern end of Landfill 4 (FTMM-4) (**Appendix K**). Mill Creek, in the vicinity of Landfill 4 (FTMM-4), is classified as saline estuarine (**Section 2.4.3**). Parameters detected in the surface water sample are presented in **Table D-11**.

PCBs. No PCBs were detected in surface water samples at Landfill 4 (FTMM-4). PCBs are not considered COPECs in surface water at Landfill 4 (FTMM-4).

Pesticides. No pesticides were detected in surface water samples at Landfill 4 (FTMM-4). Pesticides are not considered COPECs in surface water at Landfill 4 (FTMM-4).

VOCs. Two VOCs were detected in the surface water sample. PCE (0.6 µg/L) and *cis*-1,2-dichloroethene (1.1 µg/L) were detected at concentrations less than the ESC. VOCs are not considered COPECs in surface water at Landfill 4 (FTMM-4).

SVOCs. Four SVOCs were detected in the surface water sample. There are no saltwater ESC four these SVOCs; they are not considered COPECs in surface water at Landfill 4 (FTMM-4).

Metals. A total of 12 metals were detected in the surface water sample at Landfill 4 (FTMM-4). None of these were detected at concentrations greater than the saltwater ESC. Metals are not considered COPECs in surface water at Landfill 4 (FTMM-4).

3.4.2.3.4 COPECs for Sediment at Landfill 4 (FTMM-4)

Six sediment samples were collected from Mill Creek adjacent to Landfill 4 (FTMM-4) as part of the 2010 BEE. Sediment sample locations were based on previous sediment sampling conducted for the RI and were located in the field based on depositional characteristics and potential contaminant migration pathways and included storm water outfalls (**Appendix K**) into Mill Creek in the vicinity of Landfill 4 (FTMM-4) from the surrounding areas including Buildings 689, 1123, and 1221. Mill Creek, in the vicinity of Landfill 4 (FTMM-4), is classified as saline estuarine (**Section 2.4.3**). Parameters detected in the sediment samples are presented in **Table D-12**.

VOCs. A total of two VOCs (acetone and methylene chloride) were detected in sediment samples at Landfill 4 (FTMM-4). None were detected at concentrations exceeding the available saltwater sediment ESC. VOCs are not considered COPECs in sediment at Landfill 4 (FTMM-4).

PCBs. Three PCB mixtures (Aroclor 1232, Aroclor 1242, and Aroclor 1260) were detected in at least one sediment sample each from Landfill 4 (FTMM-4); all were detected at concentrations greater than the saltwater sediment ESC in at least one sample. Aroclor 1232 was detected in one sample (0.093 mg/kg) and Aroclor 1242 was detected in two samples (0.055 mg/kg and 0.075 mg/kg) greater than the ESC for PCBs in saltwater sediment of 0.023 mg/kg. Aroclor 1260 was detected in five samples (0.010 mg/kg to 0.036 mg/kg) above the 0.005 mg/kg saltwater sediment ESC for Aroclor 1260. These three PCBs are considered COPECs in sediment at Landfill 4 (FTMM-4).

Pesticides. Three pesticides (4,4'-DDD, 4,4'-DDE, and 4,4'-DDT) were detected in one to three sediment samples each at Landfill 4 (FTMM-4). 4,4′-DDD in two samples and 4,4′-DDT in one sample were at concentrations exceeding the saltwater ESC. 4,4′-DDD and 4,4′-DDT are considered COPECs in sediment at Landfill 4 (FTMM-4).

SVOCs. A total of 15 SVOCs were detected in surface sediment samples at Landfill 4 (FTMM-4). Of the 15 detected SVOCs, six were detected in one sediment sample (M4-SD4) at concentrations exceeding the ESC. Acenaphthene (0.12 mg/kg), anthracene (0.15 mg/kg), benzo(*a*)anthracene (0.31 mg/kg), fluoranthene (0.70 mg/kg), fluorene (0.097 mg/kg), and phenanthrene (0.62 mg/kg) were detected above the saltwater sediment ESC at M4-SD4. Acenaphthene, anthracene, benzo(*a*)anthracene, fluoranthene, fluorene, and phenanthrene are considered COPECs in sediment at Landfill 4 (FTMM-4).

Metals. Of the 23 metals detected in sediment at Landfill 4 (FTMM-4), seven (arsenic, cadmium, cobalt, lead, mercury, and selenium) were detected in at least one sample at concentrations greater than the saltwater sediment ESC. Arsenic concentration in one sample (10.2 mg/kg), cadmium concentrations in three samples (1.26 to 1.49 mg/kg), cobalt concentrations in four samples (13.9 to 24.6 mg/kg), lead in two samples (52.3 to 65.1 mg/kg), mercury concentrations in three samples (0.188 to 0.257 mg/kg), and selenium concentrations in all six samples (1.63 to 3.67 mg/kg) exceeded the freshwater sediment ESC (8.2, 1.2, 10, 47, 0.15, and 1 mg/kg, respectively). Arsenic, cadmium, lead, mercury, nickel, and selenium are considered COPECs in sediment at Landfill 4 (FTMM-4).

3.4.2.3.5 Summary of COPECs for Landfill 4 (FTMM-4)

Parameters detected in soil, groundwater, surface water, or sediment at Landfill 4 (FTMM-4) at concentrations greater than the applicable ESC were identified as COPECs for the site. Though copper was not detected in surface water at Landfill 4 (FTMM-4), its MDLs were greater than the saltwater ESC. Given that copper is considered a COPEC in soil and groundwater (though not in sediment), it is

considered a possible COPEC in surface water. The COPECs, and possible COPECs, identified for Landfill 4 (FTMM-4) are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
Not Applicable	None	None	None
Pesticides			
4,4′-DDD 4,4′-DDE 4,4′-DDT	None	None	DDD DDT
PCBs			
None	None	None	Aroclor 1232 Aroclor 1242 Aroclor 1260
SVOCs			
Benzo(*a*)pyrene Naphthalene	None	None	Acenaphthene Anthracene Benzo(a)anthracene Fluoranthene Fluorene Phenanthrene
Metals			
Antimony Arsenic Barium Cadmium Chromium Cobalt Copper Lead Mercury Nickel Selenium Silver Thallium Vanadium Zinc	Arsenic Cadmium Copper Lead Selenium	None	Arsenic Cadmium Cobalt Lead Mercury Selenium
Possible COPECs			
		Copper	

3.4.2.4 LANDFILL 5 (FTMM-5)

Near surface soil, groundwater, surface water, and sediment analytical data were evaluated for the identification of COPECs related to Landfill 5 (FTMM-5).

3.4.2.4.1 COPECs for Soil at Landfill 5 (FTMM-5)

Near surface (6-12 inches bgs) soil samples were collected from Landfill 5 (FTMM-5) as part of the IRP RI investigation (Versar, 2004c). A total of 173 samples were analyzed for SVOCs, pesticides, PCBs, and metals. Parameters detected in near surface soil samples are presented in **Table A-4**.

SVOCs. A total of 27 SVOCs were detected in near surface soil samples from Landfill 5 (FTMM-5). Of these 27 SVOCs, six were detected at concentrations exceeding the soil ESC in at least one sample. Benzo(*a*)anthracene, 2-methylnaphthalene, and chrysene were detected in one or two samples each at concentrations exceeding the ESC. Benzo(*a*)pyrene was detected in eight samples at concentrations exceeding the 1.52 mg/kg ESC. Naphthalene was detected in 16 samples at concentrations exceeding the 0.0994 mg/kg ESC. Bis(2-ethylhexyl) phthalate was detected in two samples at concentrations exceeding the 0.925 mg/kg ESC. As noted elsewhere, bis(2-ethylhexyl) phthalate is commonly found in field and laboratory QC samples; therefore, it is not considered a COPEC.

Benzo(a)anthracene, benzo(a)pyrene, 2-methylnaphthalene, naphthalene, and chrysene are considered COPECs in soil at Landfill 5 (FTMM-5).

Pesticides. Twelve pesticides were detected in near surface soil samples from Landfill 5 (FTMM-5). Eight of these pesticides were detected at concentrations exceeding the soil ESC in at least one sample. 4,4′-DDT was detected at concentrations that were greater than the 0.0035 mg/kg ESC in about 20% of the samples. 4,4′-DDD was detected in three samples at concentrations that were greater than the 0.758 mg/kg ESC. 4,4′-DDE was detected in five samples at concentrations that were greater than the 0.596 mg/kg ESC. Dieldrin was detected in one sample at a concentration greater than the 0.0049 mg/kg ESC. Endosulfan sulfate was detected in one sample at a concentration greater than the 0.0358 mg/kg ESC. Endrin aldehyde was detected in one sample at a concentration greater than the 0.0105 mg/kg ESC. Heptachlor was detected in one sample at a concentration greater than the 0.00598 mg/kg ESC. Heptachlor epoxide was detected in one sample at a concentration greater than the 0.152 mg/kg ESC. Gamma- and alpha-chlordane were detected in one sample each at concentrations exceeding the 0.224 mg/kg chlordane ESC. alpha-Chlordane, gamma-chlordane, 4,4′-DDD, 4,4′-DDE, 4,4′-DDT, dieldrin, endosulfan sulfate, endrin aldehyde, heptachlor, and heptachlor epoxide are considered COPECs at Landfill 5 (FTMM-5).

PCBs. One PCB mixture (Aroclor 1254) was detected in near surface soil samples from Landfill 5 (FTMM-5). Aroclor 1254 was detected in two samples. One concentration was greater than the 0.371 mg/kg ESC. Aroclor 1254 is considered a COPEC in soil at Landfill 5 (FTMM-5).

Metals. A total of 23 metals were detected in near surface soil samples from Landfill 5 (FTMM-5) and most metals were detected in the majority of the samples. Thallium, selenium, and silver were detected infrequently, being detected in 41, 32, and 17 samples, respectively; cadmium was detected in less than half the samples (68 of 173). Eighteen metals (aluminum, antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, vanadium, and zinc) were detected at concentrations exceeding the soil ESC. Aluminum, like iron, is a common component of soils and sediments and is not considered a COPEC except in conditions of very low pH where aluminum could be bioavailable; aluminum is not considered a COPEC in soil at Landfill 5 (FTMM-5). Antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, vanadium, and zinc are considered COPECs in soil at Landfill 5 (FTMM-5).

3.4.2.4.2 COPECs for Groundwater at Landfill 5 (FTMM-5)

Ten groundwater monitoring wells at Landfill 5 (FTMM-5) have been monitored for VOCs during the 2008-2009 time period. Mill Creek could receive groundwater discharge from Landfill 5 (FTMM-5). Mill Creek, in the vicinity of Landfill 5 (FTMM-5), is classified as saline estuarine (**Section 2.4.3**). Parameters detected in groundwater samples are presented in **Table C-4**.

VOCs. A total of six VOCs were detected in groundwater samples from Landfill 5 (FTMM-5) during the 2008-2009 time period. No VOCs were found at concentrations exceeding the available saltwater ESC. VOCs are not considered COPECs in groundwater at Landfill 5 (FTMM-5).

3.4.2.4.3 COPECs for Surface Water at Landfill 5 (FTMM-5)

One surface water sample was collected from Mill Creek adjacent to Landfill 5 (FTMM-5) as part of the 2010 BEE. The surface water sample was collected at an approximate mid-point of Landfill 5 and downstream of potential storm water outfalls located immediately upstream of Landfill 5 (**Appendix K**). Additionally, one surface water sample collected in relation of Landfill 8 (FTMM-8) was collected at the northern end of Landfill 5 just upstream of the confluence of Mill Creek with Lafetra Creek (**Section 3.4.2.5**). Mill Creek, in the vicinity of Landfill 5 (FTMM-5), is classified as saline estuarine (**Section 2.4.3**). Parameters detected in the surface water sample are presented in **Table D-13**.

PCBs. No PCBs were detected in surface water samples at Landfill 5 (FTMM-5). PCBs are not considered COPECs in surface water at Landfill 5 (FTMM-5).

Pesticides. No pesticides were detected in surface water samples at Landfill 5 (FTMM-5). Pesticides are not considered COPECs in surface water at Landfill 5 (FTMM-5).

VOCs. Two VOCs were detected in the surface water sample. PCE (0.69 µg/L) and *cis*-1,2-dichloroethene (0.97 µg/L) were detected at concentrations below the available ESC. VOCs are not considered COPECs in surface water at Landfill 5 (FTMM-5).

SVOCs. Two SVOCs were detected in the surface water sample. None were detected at concentrations exceeding the saltwater ESC. SVOCs are not considered COPECs in surface water at Landfill 5 (FTMM-5).

Metals. A total of 13 metals were detected in the surface water sample at Landfill 5 (FTMM-5). None of these were detected at concentrations exceeding the saltwater ESC. Metals are not considered COPECs in surface water at Landfill 5 (FTMM-5).

3.4.2.4.4 COPECs for Sediment at Landfill 5 (FTMM-5)

Seven sediment samples (including one duplicate sample) were collected from Mill Creek adjacent to Landfill 5 (FTMM-5) as part of the 2010 BEE. Sediment sample locations were based on previous sediment sampling conducted for the RI and were located in the field based on depositional characteristics and potential contaminant migration pathways. Mill Creek, in the vicinity of Landfill 5 (FTMM-5), is classified as saline estuarine (**Section 2.4.3**). Parameters detected in the sediment samples are presented in **Table D-14**.

VOCs. A total of five VOCs were detected in sediment samples at Landfill 5 (FTMM-5). None were detected at concentrations exceeding the available freshwater sediment ESC. VOCs are not considered COPECs in sediment at Landfill 5 (FTMM-5).

PCBs. No PCBs were detected in sediment samples at Landfill 5 (FTMM-5). PCBs are not considered COPECs in sediment at Landfill 5 (FTMM-5).

Pesticides. Four pesticides (alpha-chlordane, 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT) were detected in four sediment samples each at Landfill 5 (FTMM-5). Three of these pesticides, 4,4'-DDD (0.0036 to 0.016 mg/kg), 4,4'-DDE (0.003 to 0.0072 mg/kg), and 4,4'-DDT (0.0011 to 0.0021 mg/kg), were detected in three to four sediment samples at concentrations greater than the saltwater sediment ESC of 0.002 mg/kg for 4,4′-DDD, 0.0022 mg/kg for 4,4′-DDE, and 0.001 mg/kg for 4,4′-DDT. 4,4′-DDD, 4,4′-DDE, and 4,4′-DDT are considered COPECs in sediment at Landfill 5 (FTMM-5).

SVOCs. A total of 16 SVOCs were detected in surface sediment samples at Landfill 5 (FTMM-5). Of the 16 detected SVOCs, nine were detected in at least one sediment sample at concentrations exceeding the saltwater sediment ESC. Acenaphthylene (0.15 mg/kg), anthracene (0.15 to 0.23 mg/kg), benzo(*a*)anthracene (0.34 mg/kg), fluoranthene (0.67 mg/kg), fluorene (0.27 mg/kg), 2-methylnaphthalene (0.40 mg/kg), naphthalene (0.26 mg/kg), phenanthrene (0.36 and 0.96 mg/kg), and pyrene (0.58 and 0.70 mg/kg) were detected at concentrations exceeding the freshwater sediment ESC. Acenaphthylene, anthracene, benzo(*a*)anthracene, fluoranthene, fluorene, 2-methylnaphthalene, naphthalene, phenanthrene, and pyrene are considered COPECs in sediment at Landfill 5 (FTMM-5).

Metals. Of the 23 metals detected in sediment at Landfill 5 (FTMM-5), 12 (arsenic, barium, cadmium, chromium, cobalt, lead, mercury, nickel, selenium, silver, vanadium, and zinc) were detected in at least one sample at concentrations greater than the saltwater sediment ESC. Arsenic concentrations in three samples (11.0 to 43.5 mg/kg), barium in one sample (50.7 mg/kg), cadmium concentrations in three samples (1.72 to 6.65 mg/kg), chromium in one sample (119 mg/kg), cobalt in one sample (13.3 mg/kg), lead in one sample (62.4 mg/kg), mercury in one sample (0.155 mg/kg), nickel in one sample (27.6 mg/kg), selenium in all seven samples (1.33 to 13.2 mg/kg), silver in one sample (1.29 mg/kg), vanadium in one sample (71.6 mg/kg), and zinc in two samples (150 and 203 mg/kg) exceeded the saltwater sediment ESC (8.2, 48, 1.2, 81, 10, 47, 0.15, 21, 1, 1, 57, and 150 mg/kg, respectively). Arsenic, barium, cadmium, chromium, cobalt, lead, mercury, nickel, selenium, silver, vanadium, and zinc are considered COPECs in sediment at Landfill 5 (FTMM-5).

3.4.2.4.5 Summary of COPECs for Landfill 5 (FTMM-5)

Parameters detected in soil, groundwater, surface water, or sediment at Landfill 5 (FTMM-5) at concentrations greater than the applicable ESC were identified as COPECs for the site. Though copper was not detected in surface water at Landfill 5 (FTMM-5), its MDLs were greater than the saltwater ESC.

Given that copper is considered a COPEC in soil (but not in sediment), it is considered a possible COPEC in surface water. The COPECs, and possible COPECs, identified for Landfill 5 (FTMM-5) are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
Not Applicable	None	None	None
Pesticides			
alpha-Chlordane gamma-Chlordane 4,4′-DDD 4,4′-DDE 4,4′-DDT Dieldrin Endosulfan sulfate Endrin aldehyde Heptachlor Heptachlor epoxide	Not Applicable	None	DDD DDE DDT
PCBs			
Aroclor 1254	Not Applicable	None	None
SVOCs			
Benzo(*a*)anthracene Benzo(*a*)pyrene Chrysene Naphthalene 2-Methylnaphthalene	Not Applicable	None	Acenaphthylene Anthracene Benzo(*a*)anthracene Fluoranthene Fluorene 2-Methylnaphthalene Naphthalene Phenanthrene Pyrene
Metals			
Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Lead Manganese Mercury Nickel Selenium Silver Thallium Vanadium Zinc	Not Applicable	None	Arsenic Barium Cadmium Chromium Cobalt Lead Mercury Nickel Selenium Silver Vanadium Zinc
Possible COPECs			
		Copper	

3.4.2.5 LANDFILL 8 (FTMM-8)

Near surface soil, groundwater, surface water, and sediment analytical data were evaluated for the identification of COPECs related to Landfill 8 (FTMM-8).

3.4.2.5.1 COPECs for Soil at Landfill 8 (FTMM-8)

Near surface (6-12 inches bgs) soil samples were collected from Landfill 8 (FTMM-8) as part of the IRP RI investigation (Versar, 2004d). A total of 291 samples were analyzed for SVOCs, pesticides, PCBs, and metals. Parameters detected in near surface soil samples are presented in **Table A-5**.

SVOCs. A total of 35 SVOCs were detected in near surface soil samples from Landfill 8 (FTMM-8). Of these 35 SVOCs, 20 were detected at concentrations exceeding the soil ESC in at least one sample. Twelve of these SVOCs exceeded the soil ESC in the same two or three samples; these were 2,4-dimethylphenol, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(*b*)fluoranthene, benzo(*k*)fluoranthene, indeno(1,2,3-*cd*)pyrene, dibenzo(*a,h*)anthracene, and benzo(*g,h,i*)perylene. Benzo(*a*)anthracene, chrysene, benzo(*a*)pyrene, and 2-methylnaphthalene were detected exceeding the ESC in less than 5 percent of the soil samples and naphthalene was detected above the ESC in about 10% of the soil samples. The highest concentrations of these four PAHs were detected in the same three samples as the exceedances of the other PAH ESC. Hexachlorobenzene was detected in one sample at a concentration greater than the 0.199 mg/kg ESC. Butyl benzyl phthalate and bis(2-ethylhexyl) phthalate were detected in several samples at concentrations exceeding the ESC of 0.239 and 0.925 mg/kg, respectively. As noted elsewhere, phthalates are commonly found in field and laboratory QC samples, and phthalates are not considered COPECs. Naphthalene, 2-methylnaphthalene, 2,4-dimethylphenol, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(*b*)fluoranthene, benzo(k)fluoranthene, indeno(1,2,3-*cd*)pyrene, dibenzo(a,h)anthracene, benzo(*g,h,i*)perylene, benzo(*a*)anthracene, chrysene, and benzo(*a*)pyrene are considered COPECs in soil at Landfill 8 (FTMM-8).

Pesticides. Ten pesticides were detected in near surface soil samples from Landfill 8 (FTMM-8). Each of these pesticides were detected at concentrations exceeding the soil ESC in at least one sample. 4,4′-DDT was detected in most of the 291 samples and these concentrations greater than the 0.0035 mg/kg ESC. 4,4′-DDD was detected at concentrations greater than the 0.758 mg/kg ESC in less than 5 percent of the samples. 4,4′-DDE was detected in one sample at a concentration that was above the 0.596 mg/kg ESC. Dieldrin was detected at concentrations exceeding the 0.049 mg/kg ESC in about 20% of the samples. Endrin, heptachlor, heptachlor epoxide, alpha-chlordane, gamma-chlordane, and gamma-BHC were detected in one sample each at concentrations that were exceeding the ESC. 4,4′-DDD, 4,4-DDE, 4,4-DDT, dieldrin, endrin, heptachlor, heptachlor epoxide, alpha-chlordane, gamma-chlordane, and gamma-BHC are considered COPECs at Landfill 8 (FTMM-8).

PCBs. Three PCB Aroclors were detected in near surface soil samples from Landfill 8 (FTMM-8) in less than 5% of the samples and most of these concentrations were exceeding the ESC. Aroclor 1016, Aroclor 1254, and Aroclor 1260 are considered COPECs in soil at Landfill 8 (FTMM-8).

Metals. A total of 23 metals were detected in near surface soil samples from Landfill 8 (FTMM-8) of which most metals were detected in the majority of the samples. Thallium was detected infrequently, being detected in only two samples; silver was detected in less than half the samples (83 of 291). Eighteen metals (aluminum, antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, vanadium, and zinc) were detected at concentrations exceeding the soil ESC. Aluminum, like iron, is a common component of soils and sediments and is not considered a COPEC except in conditions of very low pH where aluminum could be bioavailable; aluminum is not considered a COPEC in soil at Landfill 8 (FTMM-8). Antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, selenium, silver, thallium, vanadium, and zinc are considered COPECs in soil at Landfill 8 (FTMM-8).

3.4.2.5.2 COPECs for Groundwater at Landfill 8 (FTMM-8)

Monitoring for VOCs and pesticides have occurred at 14 groundwater monitoring wells at Landfill 8 (FTMM-8) during the 2008-2009 time period. Sampling for SVOCs, PCBs, and metals was discontinued after the March 2004 sampling event per NJDEP approval letter dated November 2004. SVOCs, PCBs, and metals are not considered COPECs in groundwater at Landfill 8 (FTMM-8). Parkers Creek could receive groundwater discharge from Landfill 8 (FTMM-8). Parkers Creek, in the vicinity of Landfill 8 (FTMM-8), is classified as saline estuarine (**Section 2.4.3**). Parameters detected in groundwater samples are presented in **Table C-5**.

VOCs. A total of 15 VOCs were detected in groundwater samples from Landfill 8 (FTMM-8) during the 2008-2009 time period. None of these were detected in concentrations that exceeded the available saltwater ESC. VOCs are not considered COPECs in groundwater at Landfill 8 (FTMM-8).

Pesticides. A total of 12 pesticides were detected in groundwater samples from Landfill 8 (FTMM-8) during the 2008-2009 time period. Eight of these (alpha- and gamma-chlordane, 4,4'-DDT, dieldrin, endosulfan I, endrin, heptachlor, and methoxychlor) were detected in concentrations that exceeded the saltwater ESC, and they are considered COPECs in groundwater at Landfill 8 (FTMM-8).

3.4.2.5.3 COPECs for Surface Water at Landfill 8 (FTMM-8)

Three surface water samples were collected from Parkers Creek adjacent to Landfill 8 (FTMM-8) as part of the 2010 BEE. One surface water sample was collected at the upstream end Landfill 8 (FTMM-8), at the northern end of Landfill 5 (FTMM-5), just upstream of the confluence of Mill Creek with Lafetra Creek. The other two samples were collected adjacent to Landfill M-8 on the west and east side near existing groundwater monitoring well locations. Additionally, another surface water sample was collected in relation to Site FTMM-18 (**Section 3.4.2.10**) to the east of Landfill 8 (FTMM-8) and near potential storm water outfalls (**Appendix K**). Parkers Creek, in the vicinity of Landfill 8 (FTMM-8), is classified as saline estuarine (**Section 2.4.3**). Parameters detected in surface water samples are presented in **Table D-15**.

PCBs. No PCBs were detected in surface water samples at Landfill 8 (FTMM-8). PCBs are not considered COPECs in surface water at Landfill 8.

Pesticides. No pesticides were detected in surface water samples at Landfill 8 (FTMM-8). Pesticides are not considered COPECs in surface water at Landfill 8 (FTMM-8).

VOCs. No VOCs were detected in surface water samples at Landfill 8 (FTMM-8). VOCs are not considered COPECs in surface water at Landfill 8 (FTMM-8).

SVOCs. One SVOC, dimethyl phthalate, was detected in one surface water sample. There are no available ESC for dimethyl phthalate, and it is not considered a COPEC for surface water at Landfill 8 (FTMM-8).

Metals. A total of 14 metals were detected in surface water samples at Landfill 8 (FTMM-8). None of these were detected at concentrations exceeding the saltwater ESC. Metals are not considered COPECs in surface water at Landfill 8 (FTMM-8).

3.4.2.5.4 COPECs for Sediment at Landfill 8 (FTMM-8)

Twelve sediment samples (including one duplicate sample) were collected from Parkers Creek adjacent to Landfill 8 (FTMM-8) as part of the 2010 BEE. Sediment sample locations were based on previous sediment sampling conducted for the RI and were located in the field based on depositional characteristics and potential contaminant migration pathways and included storm water outfalls (**Appendix K**) into Parkers Creek in the vicinity of Landfill 8 (FTMM-8) and Site FTMM-18 (**Section 3.4.2.10**). Parkers Creek, in the vicinity of Landfill 8 (FTMM-8), is classified as saline estuarine (**Section 2.4.3**). Parameters detected in sediment samples are presented in **Table D-16**.

VOCs. A total of seven VOCs were detected in sediment samples at Landfill 8 (FTMM-8). None were detected at concentrations exceeding the available saltwater sediment ESC. VOCs are not considered COPECs in sediment at Landfill 8 (FTMM-8).

PCBs. Two PCB mixtures (Aroclor 1242 and Aroclor 1260) were detected in one or two sediment samples each at Landfill 8 (FTMM-8). Aroclor 1242 was detected at concentrations greater than the saltwater sediment ESC for PCBs in two samples (0.05 and 0.17 mg/kg) and Aroclor 1260 was detected greater than both the saltwater sediment ESC for Aroclor 1260 in one sample (0.011 mg/kg). Aroclor 1242 and Aroclor 1260 are considered COPECs in sediment at Landfill 8 (FTMM-8).

Pesticides. Two pesticides (4,4'-DDD and 4,4'-DDE) were detected in two to three sediment samples each at Landfill 8 (FTMM-8). Three samples had detected concentrations (0.0021 to 0.0033 mg/kg) of 4,4'-DDD exceeding the saltwater sediment ESC. Detected concentrations of 4,4'-DDE were less than the ESC. Therefore, 4,4'-DDD is considered a COPEC in sediment at Landfill 8 (FTMM-8).

SVOCs. A total of nine SVOCs were detected in surface sediment samples at Landfill 8 (FTMM-8). None of the detected SVOCs exceeded the available saltwater sediment ESC. SVOCs are not considered COPECs in sediment at Landfill 8 (FTMM-8).

Metals. Of the 23 metals detected in sediment at Landfill 8 (FTMM-8), 14 were detected in at least one sample at concentrations greater than the saltwater sediment ESC. Barium in six samples (59.6 to 103 mg/kg), selenium in all 12 samples (2.64 to 13.8 mg/kg), and vanadium in four samples (60.9 to 99.1 mg/kg) exceeded the saltwater sediment ESC of 48, 1, and 57 mg/kg, respectively. One sample had a concentration of manganese (364 mg/kg) greater than the saltwater sediment ESC (260 mg/kg). Concentrations of the other 10 metals (arsenic, cadmium, chromium, cobalt, copper, lead, mercury, nickel, silver, and zinc) exceeded the saltwater sediment ESC in at least three samples each. Arsenic, barium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, selenium, silver, vanadium, and zinc are considered COPECs in sediment at Landfill 8 (FTMM-8).

3.4.2.5.5 Summary of COPECs for Landfill 8 (FTMM-8)

Parameters detected in soil, groundwater, surface water, or sediment at Landfill 8 (FTMM-8) at concentrations greater than the applicable ESC were identified as COPECs for the site. Though copper was not detected in surface water at Landfill 8 (FTMM-8), its MDLs were greater than the saltwater ESC. Given that copper is considered a COPEC in soil and sediment, it is considered a possible COPEC in surface water. The COPECs, and possible COPECs, identified for Landfill 8 (FTMM-8) are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
Not Applicable	None	None	None
Pesticides			
gamma-BHC alpha-Chlordane gamma-Chlordane 4,4′-DDD 4,4′-DDE 4,4′-DDT Dieldrin Endrin Heptachlor Heptachlor epoxide	alpha-Chlordane gamma-Chlordane 4,4′-DDT Dieldrin Endrin Endosulfan I Heptachlor Methoxychlor	None	DDD
PCBs			
Aroclor 1016 Aroclor 1254 Aroclor 1260	None	None	Aroclor 1242 Aroclor 1260
SVOCs			
Acenaphthene Anthracene Benzo(*a*)anthracene Benzo(*b*)fluoranthene Benzo(*a*)pyrene Benzo(*g,h,i*)perylene Benzo(*k*)fluoranthene Chrysene Dibenzo(a,h)anthracene Fluoranthene Fluorene Hexachlorobenzene Indeno(1,2,3-*cd*)pyrene 2-Methylnaphthalene 2,4-Dimethylphenol Naphthalene Phenanthrene	None	None	None

Soil	Groundwater	Surface Water	Sediment
Pyrene			
Metals			
Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Lead Manganese Mercury Nickel Selenium Silver Thallium Vanadium Zinc	None	None	Arsenic Barium Cadmium Chromium Cobalt Copper Lead Manganese Mercury Nickel Selenium Silver Vanadium Zinc
Possible COPECs			
		Copper	

3.4.2.6 LANDFILL 12 (FTMM-12)

Near surface soil, groundwater, surface water, and sediment analytical data were evaluated for the identification of COPECs related to Landfill 12 (FTMM-12).

3.4.2.6.1 COPECs for Soil at Landfill 12 (FTMM-12)

Near surface (6-12 inches bgs) soil samples were collected from Landfill 12 (FTMM-12) as part of the IRP RI investigation (Versar, 2003). A total of 147 samples were analyzed for SVOCs, pesticides, PCBs, and metals. Parameters detected in near surface soil samples are presented in **Table A-6**.

SVOCs. A total of 23 SVOCs were detected in near surface soil samples from Landfill 12 (FTMM-12). Of these 23 SVOCs, five were detected at concentrations exceeding the soil ESC in at least one sample. Benzo(*a*)anthracene was detected in four samples at concentrations exceeding the 5.21 mg/kg ESC. Chrysene was detected in four samples at concentrations exceeding the 4.73 mg/kg ESC. Benzo(*a*)pyrene and naphthalene were detected in several samples at concentrations exceeding the ESC of 1.52 and 0.0994 mg/kg, respectively. Bis(2-ethylhexyl) phthalate was detected in one sample at a concentration greater than the 0.925 mg/kg ESC. As noted elsewhere, bis(2-ethylhexyl) phthalate is commonly found in field and laboratory QC samples; therefore, it is not considered a COPEC. Benzo(*a*)anthracene, benzo(*a*)pyrene, naphthalene, and chrysene are considered COPECs in soil at Landfill 12 (FTMM-12).

Pesticides. Six pesticides were detected in near surface soil samples from Landfill 12 (FTMM-12). Four of these pesticides were detected at concentrations exceeding the soil ESC in at least one sample. 4,4′-DDT was detected in most of the 147 samples and the majority of these samples had concentrations that were greater than the 0.0035 mg/kg ESC. 4,4′-DDD, 4,4′-DDE, and dieldrin were detected in a few samples each at concentrations that exceeded the ESC. 4,4′-DDD, 4,4′-DDE, 4,4′-DDT, and dieldrin are considered COPECs at Landfill 12 (FTMM-12).

PCBs. No PCBs were detected in near surface soil samples from Landfill 12 (FTMM-12). PCBs are not considered COPECs in soil at Landfill 12 (FTMM-12).

Metals. A total of 23 metals were detected in near surface soil samples from Landfill 12 (FTMM-12) of which most metals were detected in the majority of the samples. Thallium and silver were detected infrequently, being detected in only one and 11 samples, respectively. Antimony and selenium were detected in less than half the samples. Fourteen metals (aluminum, antimony, arsenic, barium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, selenium, vanadium, and zinc) were detected at concentrations exceeding the soil ESC. Aluminum, like iron, is a common component of soils

and sediments and is not considered a COPEC except in conditions of very low pH where aluminum could be bioavailable; aluminum is not considered a COPEC in soil at Landfill 12 (FTMM-12). Antimony, arsenic, barium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, selenium, vanadium, and zinc are considered COPECs in soil at Landfill 12 (FTMM-12).

3.4.2.6.2 COPECs for Groundwater at Landfill 12 (FTMM-12)

Eleven monitoring wells at Landfill 12 (FTMM-12) have been monitored for metals during the 2008-2009 time period. Husky Brook could receive groundwater discharge from Landfill 12 (FTMM-12). Husky Brook, in the vicinity of Landfill 12 (FTMM-12), is classified as saline estuarine (**Section 2.4.3**). Parameters detected in groundwater samples are presented in **Table C-6**.

Metals. A total of 11 metals were detected in groundwater samples from Landfill 12 (FTMM-12) during the 2008-2009 time period. Of these 11, five were detected at concentrations that exceeded the saltwater ESC in at least one sample. Arsenic, cadmium, copper, nickel, and selenium were detected at concentrations exceeding the saltwater ESC. Arsenic, cadmium, copper, nickel, and selenium are considered COPECs in groundwater at Landfill 12 (FTMM-12).

3.4.2.6.3 COPECs for Surface Water at Landfill 12 (FTMM-12)

Five surface water samples (including a duplicate sample) were collected from Husky Brook in relation to Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14) as part of the 2010 BEE. One surface water sample was collected at the western end of Landfill 12 near a storm water outfall and drainage from Malterer Avenue and surrounding areas. One sample was collected near the confluence with the small tributary to Husky Brook and a sample related to Parcel 61 (**Section 3.4.2.15**) was collected at the southern end of this tributary near storm water outfalls from the areas to the south. One sample was collected in Husky Brook downstream of all storm water outfalls in the vicinity of Landfill 12 and Landfill 14 (**Appendix K**), and the other sample was collected in Oceanport Creek downstream of both Landfill 12 and Landfill 14. The evaluation of surface water samples is discussed in **Section 3.4.1.6** with respect to Landfill 14 (FTMM-14).

3.4.2.6.4 COPECs for Sediment at Landfill 12 (FTMM-12)

Thirteen sediment samples were collected from Husky Brook in relation to Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14) as part of the 2010 BEE. Sediment sample locations were based on previous sediment sampling conducted for the RI and were located in the field based on depositional characteristics and potential contaminant migration pathways and included storm water outfalls (**Appendix K**) into Husky Brook in the vicinity of Landfill 12 and Landfill 14 from the surrounding areas including Building 1075 and Parcel 61 (**Section 3.4.2.15**). The evaluation of sediment samples is discussed in **Section 3.4.2.7.4** with respect to Landfill 14 (FTMM-14).

3.4.2.6.5 Summary of COPECs for Landfill 12 (FTMM-12)

Parameters detected in soil, groundwater, surface water, or sediment at Landfill 12 (FTMM-12) at concentrations greater than the applicable ESC were identified as COPECs for the site. Though copper was not detected in surface water at Landfill 12 (FTMM-12), its MDLs were greater than the saltwater ESC. Given that copper is considered a COPEC in soil, groundwater, and sediment, it is considered a possible COPEC in surface water. The COPECs, and possible COPECs, identified for Landfill 12 (FTMM-12) are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
Not Applicable	Not Applicable	None	None
Pesticides			
4,4'-DDD 4,4'-DDE 4,4'-DDT Dieldrin	Not Applicable	None	4,4'-DDD 4,4'-DDE 4,4'-DDT
PCBs			
None	Not Applicable	None	Aroclor 1254

Soil	Groundwater	Surface Water	Sediment
SVOCs			
Benzo(*a*)anthracene Benzo(*a*)pyrene Chrysene Naphthalene	Not Applicable	None	Acenaphthene Anthracene Benzo(*a*)anthracene Benzo(*a*)pyrene Benzo(*g,h,i*)perylene Benzo(*k*)fluoranthene Chrysene Fluorene Fluoranthene Indeno(1,2,3-*cd*)pyrene Phenanthrene Pyrene
Metals			
Antimony Arsenic Barium Cadmium Chromium Cobalt Copper Lead Manganese Mercury Selenium Vanadium Zinc	Arsenic Cadmium Copper Nickel Selenium	None	Arsenic Barium Cadmium Chromium Cobalt Copper Lead Nickel Selenium Silver Vanadium Zinc
Possible COPECs			
		Copper	

3.4.2.7 LANDFILL 14 (FTMM-14)

Near surface soil, groundwater, surface water, and sediment analytical data were evaluated for the identification of COPECs related to Landfill 14 (FTMM-14).

3.4.2.7.1 COPECs for Soil at Landfill 14 (FTMM-14)

Near surface (6-12 inches bgs) soil samples were collected from Landfill 14 (FTMM-14) as part of the IRP RI investigation (Versar, 2004e). A total of 119 samples were analyzed for SVOCs, pesticides, PCBs, and metals. Parameters detected in near surface soil samples are presented in **Table A-7**.

SVOCs. A total of 21 SVOCs were detected in near surface soil samples from Landfill 14 (FTMM-14). Of these 21 SVOCs, five were detected at concentrations exceeding the soil ESC in at least one sample. Phenanthrene was detected in one sample at a concentration above the ESC of 45.7 mg/kg. Naphthalene was detected in six samples at concentrations that were greater than the 0.0994 mg/kg ESC. Benzo(*a*)anthracene and chrysene were detected at concentrations exceeding the soil ESC in the same two samples. Benzo(*a*)pyrene was detected in five samples at concentrations exceeding the 1.52 mg/kg ESC. The highest concentrations of these PAHs were detected in the same soil sample. Benzo(*a*)pyrene, benzo(*a*)anthracene, chrysene, naphthalene, and phenanthrene are considered COPECs in soil at Landfill 14 (FTMM-14).

Pesticides. Six pesticides were detected in near surface soil samples from Landfill 14 (FTMM-14). Four of these pesticides were detected at concentrations exceeding the soil ESC in at least one sample. 4,4′-DDT was detected in most of the 116 samples and the majority of these had concentrations that were greater than the 0.0035 mg/kg ESC. 4,4′-DDD was detected in one sample at a concentration that exceeded the 0.758 mg/kg ESC. 4,4′-DDE was detected in two samples at concentrations that were greater than the 0.596 mg/kg ESC. Dieldrin was detected in one sample at a concentration that exceeded the 0.049 mg/kg ESC. 4,4′-DDD, 4,4′-DDE, 4,4′-DDT, and dieldrin are considered COPECs at Landfill 14 (FTMM-14).

PCBs. No PCBs were detected in near surface soil samples from Landfill 14 (FTMM-14). PCBs are not considered COPECs in soil at Landfill 14 (FTMM-14).

Metals. A total of 22 metals were detected in near surface soil samples from Landfill 14 (FTMM-14) of which most metals were detected in the majority of the samples. Silver was detected infrequently, being detected in only two samples. Thirteen metals (aluminum, antimony, arsenic, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, vanadium, and zinc) were detected at concentrations exceeding the soil ESC. Aluminum, like iron, is a common component of soils and sediments and is not considered a COPEC except in conditions of very low pH where aluminum could be bioavailable; aluminum is not considered a COPEC in soil at Landfill 14 (FTMM-14). Antimony, arsenic, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, vanadium, and zinc are considered COPECs in soil at Landfill 14 (FTMM-14).

3.4.2.7.2 COPECs for Groundwater at Landfill 14 (FTMM-14)

Monitoring for VOCs and metals have occurred at six groundwater monitoring wells at Landfill 14 (FTMM-14) during the 2008-2009 time period. Sampling for SVOCs was discontinued after the August 2004 sampling event per NJDEP approval letter dated November 2004. SVOCs are not considered COPECs in groundwater at Landfill 14 (FTMM-14). Husky Brook could receive groundwater discharge from Landfill 14 (FTMM-14). Husky Brook, in the vicinity of Landfill 14 (FTMM-14), is classified as saline estuarine (**Section 2.4.3**). Parameters detected in groundwater samples are presented in **Table C-7**.

VOCs. A total of three VOCs were detected in groundwater samples from Landfill 14 (FTMM-14) during the 2008-2009 time period. None of these were detected in concentrations that exceeded the available saltwater ESC. VOCs are not considered COPECs in groundwater at Landfill 14 (FTMM-14).

Metals. A total of 11 metals were detected in groundwater samples from Landfill 14 (FTMM-14) during the 2008-2009 time period. Of these 11, five were detected at concentrations that exceeded the saltwater ESC in at least one sample. Arsenic, cadmium, copper, nickel, and selenium were detected at concentrations exceeding the saltwater ESC. Arsenic, cadmium, copper, nickel, and selenium are considered COPECs in groundwater at Landfill 14 (FTMM-14).

3.4.2.7.3 COPECs for Surface Water at Landfill 14 (FTMM-14)

Five surface water samples (including a duplicate sample) were collected from Husky Brook in relation to Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14) as part of the 2010 BEE. One surface water sample was collected at the western end of Landfill 14 near a storm water outfall and drainage from Malterer Avenue and surrounding areas. One sample was collected near the confluence with the small tributary to Husky Brook and a sample related to Parcel 61 (**Section 3.4.2.15**) was collected at the southern end of this tributary near storm water outfalls from the areas to the south (**Appendix K**). One sample was collected in Husky Brook downstream of all storm water outfalls in the vicinity of Landfill 12 and Landfill 14, and the other sample was collected in Oceanport Creek downstream of both Landfill 12 and Landfill 14. Husky Brook, in the vicinity of Landfill 12 (FTMM-12), is classified as saline estuarine (**Section 2.4.3**). Parameters detected in surface water samples are presented in **Table D-17**.

PCBs. No PCBs were detected in surface water samples at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14). PCBs are not considered COPECs in surface water at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14).

Pesticides. No pesticides were detected in surface water samples at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14). Pesticides are not considered COPECs in surface water at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14).

VOCs. Two VOCs, chloroform and *cis*-1,2-dichloroethene, were detected in surface water samples but none were detected at concentrations exceeding the available saltwater ESC. VOCs are not considered COPECs in surface water at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14).

SVOCs. Five SVOCs [anthracene, benzo(*a*)anthracene, benzo(a)pyrene, 3,3′-dichlorobenzidine, and 1,2,4-trichlorobenzene] were detected in surface water samples. There are no saltwater ESC for the detected SVOCs. SVOCs are not considered COPECs in surface water at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14).

Metals. A total of 14 metals were detected in surface water samples at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14). None of these were detected at concentrations exceeding the saltwater ESC. Metals are not considered COPECs in surface water at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14).

3.4.2.7.4 COPECs for Sediment at Landfill 14 (FTMM-14)

Thirteen sediment samples were collected from Husky Brook in relation to Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14) as part of the 2010 BEE. Husky Brook, in the vicinity of Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14), is classified as saline estuarine (**Section 2.4.3**). Sediment sample locations were based on previous sediment sampling conducted for the RI and were located in the field based on depositional characteristics and potential contaminant migration pathways and included storm water outfalls (**Appendix K**) into Husky Brook in the vicinity of Landfill 12 and Landfill 14 from the surrounding areas including Building 1075 and Parcel 61 (**Section 3.4.2.15**). Parameters detected in sediment samples are presented in **Table D-18**.

VOCs. A total of four VOCs were detected in sediment samples at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14). None were detected at concentrations exceeding the available saltwater sediment ESC. VOCs are not considered COPECs in sediment at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14).

PCBs. One PCB mixture (Aroclor 1254) was detected in one sediment sample at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14). Aroclor 1254 was detected at a concentration greater than the saltwater sediment ESC in one sample (0.23 mg/kg). Aroclor 1254 is considered a COPEC in sediment at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14).

Pesticides. Four pesticides (alpha-chlordane, 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT) were detected in 4 to 10 sediment samples each at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14). alpha-Chlordane concentrations did not exceed the saltwater sediment ESC. Nine samples had 4,4'-DDD concentrations (0.0031 to 0.0091 mg/kg) greater than the saltwater sediment ESC (0.002 mg/kg). Seven samples had 4,4'-DDE concentrations (0.0025 to 0.0071 mg/kg) greater than the saltwater sediment ESC (0.0022 mg/kg). Four samples had 4,4'-DDT concentrations (0.0014 to 0.013 mg/kg) greater than the saltwater sediment ESC (0.001 mg/kg). Therefore, 4,4′-DDD, 4,4′-DDE, and 4,4′-DDT are considered COPECs in sediment at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14).

SVOCs. A total of 15 SVOCs were detected in surface sediment samples at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14). Bis(2-ethylhexyl) phthalate was detected in one sediment sample; the concentration (0.84 mg/kg) was greater than the saltwater sediment ESC (0.18216 mg/kg). As noted previously, bis(2-ethylhexyl) phthalate is commonly found in field and laboratory QC samples and is not considered a COPEC in sediment at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14). Twelve PAHs were detected at concentrations exceeding the saltwater ESC in one to six samples each. These 12 PAHs, acenaphthene, anthracene, benzo(*a*)anthracene, benzo(*a*)pyrene, benzo(*g,h,i*)perylene, benzo(*k*)fluoranthene, chrysene, fluoranthene, fluorene, indeno(1,2,3-*cd*)pyrene, phenanthrene, and pyrene, are considered COPECs in sediment at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14).

Metals. Of the 22 metals detected in sediment at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14), 12 were detected in at least one sample at concentrations greater than the saltwater sediment ESC. Barium in one sample (54.0 mg/kg), selenium in 10 samples (1.04 to 5.99 mg/kg), and vanadium in one sample (61.1 mg/kg) exceeded the saltwater sediment ESC of 48, 1, and 57 mg/kg, respectively. One sample had a concentration of cobalt (13.7 mg/kg) greater than the saltwater sediment ESC (10 mg/kg). Concentrations of the other seven metals (arsenic, cadmium, chromium, copper, lead, nickel, silver, and zinc) exceeded saltwater ESC in one or two samples each. Arsenic, barium, cadmium, chromium, cobalt, copper, lead, nickel, selenium, silver, vanadium, and zinc are considered COPECs in sediment at Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14).

3.4.2.7.5 Summary of COPECs for Landfill 14 (FTMM-14)

Parameters detected in soil, groundwater, surface water, or sediment at Landfill 14 (FTMM-14) at concentrations greater than the applicable ESC were identified as COPECs for the site. Though copper was not detected in surface water at Landfill 14 (FTMM-14), its MDLs were greater than the saltwater ESC. Given that copper is considered a COPEC in soil, groundwater, and sediment, it is considered a

possible COPEC in surface water. The COPECs, and possible COPECs, identified for Landfill 14 (FTMM-14) are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
Not Applicable	None	None	None
Pesticides			
4,4'-DDD 4,4'-DDE 4,4'-DDT Dieldrin	Not Applicable	None	4,4'-DDD 4,4'-DDE 4,4'-DDT
PCBs			
None	Not Applicable	None	Aroclor 1254
SVOCs			
Benzo(*a*)anthracene Benzo(*a*)pyrene Chrysene Naphthalene Phenanthrene	None	None	Acenaphthene Anthracene Benzo(*a*)anthracene Benzo(*a*)pyrene Benzo(*g,h,*i)perylene Benzo(*k*)fluoranthene Chrysene Fluoranthene Fluorene Indeno(1,2,3-*cd*)pyrene Phenanthrene Pyrene
Metals			
Antimony Arsenic Cadmium Chromium Copper Lead Manganese Mercury Nickel Selenium Vanadium Zinc	Arsenic Cadmium Copper Nickel Selenium	None	Arsenic Barium Cadmium Chromium Cobalt Copper Lead Nickel Selenium Silver Vanadium Zinc
Possible COPECs			
		Copper	

3.4.2.8 WATER TANK (FTMM-15)

Surface water and sediment analytical data were evaluated for the identification of COPECs related to the water tank at Site FTMM-15.

3.4.2.8.1 COPECs for Surface Water at Site FTMM-15

Three surface water samples were collected from Parkers Creek in relation to Site FTMM-15 as part of the 2010 BEE. Parkers Creek could receive groundwater discharge from Site FTMM-15. Parkers Creek, in the vicinity of Site FTMM-15, is classified as saline estuarine (**Section 2.4.3**). Parameters detected in surface water samples are presented in **Table D-19**.

VOCs. No VOCs were detected in surface water samples at Site FTMM-15. VOCs are not considered COPECs in surface water at Site FTMM-15.

Pesticides. No pesticides were detected in surface water samples at Site FTMM-15. Pesticides are not considered COPECs in surface water at Site FTMM-15.

PCBs. No PCBs were detected in surface water samples at Site FTMM-15. PCBs are not considered COPECs in surface water at Site FTMM-15.

SVOCs. Two SVOCs [anthracene and benzo(*a*)anthracene] were detected in surface water samples. There are no available saltwater ESC for the detected SVOCs. PAHs are not considered COPECs in surface water at Site FTMM-15.

Metals. A total of 15 metals were detected in surface water samples at Site FTMM-15. None of these metals were detected at concentrations exceeding the applicable saltwater ESC. Metals are not considered COPECs for surface water at Site FTMM-15.

3.4.2.8.2 COPECs for Sediment at Site FTMM-15

Four sediment samples were collected from Parkers Creek adjacent to Site FTMM-15 as part of the 2010 BEE. Parkers Creek, in the vicinity of Site FTMM-15, is classified as saline estuarine (**Section 2.4.3**). Parameters detected in sediment samples are presented in **Table D-20**.

VOCs. A total of five VOCs were detected in sediment samples at Site FTMM-15. None were detected at concentrations exceeding the available saltwater sediment ESC. VOCs are not considered COPECs in sediment at Site FTMM-15.

PCBs. No PCBs were detected in sediment samples at Site FTMM-15. PCBs are not considered COPECs in sediment at Site FTMM-15.

Pesticides. One pesticide (4,4'-DDT) was detected in one sediment sample at Site FTMM-15. The detected concentration (0.0041 mg/kg) exceeded the saltwater sediment ESC (0.001 mg/kg). 4,4'-DDT is considered a COPEC in sediment at Site FTMM-15.

SVOCs. A total of six SVOCs were detected in surface sediment samples at Site FTMM-15. None of these were detected at concentrations exceeding the saltwater sediment ESC. SVOCs are not considered COPECs in sediment at Site FTMM-15.

Metals. A total of 23 metals were detected in sediment at Site FTMM-15. Of these 23 metals, nine were detected in at least one sample at concentrations exceeding the applicable saltwater sediment ESC. Chromium was detected in one sample at a concentration (95.5 mg/kg) greater than the ESC (81 mg/kg). Vanadium was detected in one sample at a concentration (83.2 mg/kg) greater than the ESC (57 mg/kg). Lead was detected in two samples at concentrations (59.7 and 108 mg/kg) greater than the ESC (47 mg/kg). Zinc was detected in two samples at concentrations (178 and 262 mg/kg) greater than the ESC (150 mg/kg). Arsenic was detected in three samples at concentrations (10.6 to 14.9 mg/kg) greater than the ESC (8.2 mg/kg). Mercury was detected in three samples at concentrations (0.16 to 0.293 mg/kg) greater than the ESC (0.15 mg/kg). Silver was detected in three samples at concentrations (1.25 to 1.44 mg/kg) greater than the ESC (1 mg/kg). All four samples had cadmium concentrations (1.31 to 2.97 mg/kg) and selenium concentrations (3.79 to 6.98 mg/kg) exceeding the ESC of 1.2 mg/kg for cadmium and 1 mg/kg for selenium. Arsenic, cadmium, chromium, lead, mercury, selenium, silver, vanadium, and zinc are considered COPECs in sediment at Site FTMM-15.

3.4.2.8.3 Summary of COPECs for Site FTMM-15

Parameters detected in soil, groundwater, surface water, or sediment at Site FTMM-15 at concentrations greater than the applicable ESC were identified as COPECs for the site. Copper was not detected in surface water at Site FTMM-15 and its MDLs were greater than the saltwater ESC. However, since copper was not identified as a COPEC in other site media, it is not considered a COPEC in surface water. The COPECs, and possible COPECs, identified for Site FTMM-15 are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
Not Applicable	Not Applicable	None	None
Pesticides			
Not Applicable	Not Applicable	None	DDT
PCBs			
Not Applicable	Not Applicable	None	None
SVOCs			
Not Applicable	Not Applicable	None	None

Soil	Groundwater	Surface Water	Sediment
Metals			
Not Applicable	Not Applicable	None	Arsenic Cadmium Chromium Lead Mercury Selenium Silver Vanadium Zinc

3.4.2.9 PESTICIDE STORAGE, BUILDING 498 (FTMM-16)

Surface water and sediment analytical data were evaluated for the identification of COPECs related to the Pesticide Storage, Building 498, at Site FTMM-16. No recent groundwater data is available for evaluation at Site FTMM-16.

3.4.2.9.1 COPECs for Surface Water at Site FTMM-16

Three surface water samples were collected from Oceanport Creek in relation to Site FTMM-16 as part of the 2010 BEE. Oceanport Creek, in the vicinity of Site FTMM-16, is classified as saline estuarine (**Section 2.4.3**). Parameters detected in surface water samples are presented in **Table D-21**.

VOCs. No VOCs were detected in surface water samples at Site FTMM-16. VOCs are not considered COPECs in surface water at Site FTMM-16.

SVOCs. No SVOCs were detected in surface water samples at Site FTMM-16. SVOCs are not considered COPECs in surface water at Site FTMM-16.

Pesticides. No pesticides were detected in surface water samples at Site FTMM-16. Pesticides are not considered COPECs in surface water at Site FTMM-16.

PCBs. No PCBs were detected in surface water samples at Site FTMM-16. PCBs are not considered COPECs in surface water at Site FTMM-16.

Metals. A total of 14 metals were detected in surface water samples at Site FTMM-16. Metals are not considered COPECs for surface water at Site FTMM-16.

3.4.2.9.2 COPECs for Sediment at Site FTMM-16

Five sediment samples (including one duplicate sample) were collected from Oceanport Creek adjacent to Site FTMM-16 as part of the 2010 BEE. Oceanport Creek, in the vicinity of Site FTMM-16, is classified as saline estuarine (**Section 2.4.3**). Parameters detected in sediment samples are presented in **Table D-22**.

VOCs. A total of six VOCs were detected in sediment samples at Site FTMM-16. None were detected at concentrations exceeding the available saltwater sediment ESC. VOCs are not considered COPECs in sediment at Site FTMM-16.

PCBs. No PCBs were detected in sediment samples at Site FTMM-16. PCBs are not considered COPECs in sediment at Site FTMM-16.

Pesticides. One pesticide (4,4'-DDD) was detected in one sediment sample at Site FTMM-16. The detected concentration (0.0014 mg/kg) was not above the saltwater sediment ESC (0.002 mg/kg); 4,4'-DDD is not considered a COPEC in sediment at Site FTMM-16.

SVOCs. A total of seven SVOCs were detected in surface sediment samples at Site FTMM-16. Only one, hexachlorobutadiene, was detected in one sample at a concentration (0.008 mg/kg) greater than the saltwater sediment ESC (0.0013 mg/kg). Hexachlorobutadiene is considered a COPEC in sediment at Site FTMM-16.

Metals. A total of 23 metals were detected in sediment at Site FTMM-16. Of these 23 metals, 12 were detected in three or four samples each at concentrations exceeding the applicable saltwater

sediment ESC. Arsenic was detected in four samples at concentrations (15.1 to 24.5 mg/kg) greater than the ESC (8.2 mg/kg). Cadmium was detected in four samples at concentrations (9.71 to 12.3 mg/kg) greater than the ESC (1.2 mg/kg). Chromium was detected in four samples at concentrations (117 to 144 mg/kg) greater than the ESC (81 mg/kg). Cobalt was detected in three samples at concentrations (12.5 to 13.6 mg/kg) greater than the ESC (10 mg/kg). Copper was detected in four samples at concentrations (42.3 to 124 mg/kg) greater than the ESC (34 mg/kg). Lead was detected in four samples at concentrations (74.5 to 212 mg/kg) greater than the ESC (47 mg/kg). Mercury was detected in three samples at concentrations (0.451 to 0.502 mg/kg) greater than the ESC (0.15 mg/kg). Nickel was detected in three samples at concentrations (30.7 to 35.2 mg/kg) greater than the ESC (21 mg/kg). Selenium was detected in four samples at concentrations (5.32 to 11.0 mg/kg) greater than the ESC (1 mg/kg). Silver was detected in four samples at concentrations (3.78 to 6.44 mg/kg) greater than the ESC (1 mg/kg). Vanadium was detected in three samples at concentrations (81.9 to 106 mg/kg) greater than the ESC (57 mg/kg). Zinc was detected in four samples at concentrations (160 to 500 mg/kg) greater than the ESC (150 mg/kg). Arsenic, cadmium, chromium, cobalt, copper, lead, mercury, nickel, selenium, silver, vanadium, and zinc are considered COPECs in sediment at Site FTMM-16.

3.4.2.9.3 Summary of COPECs for Site M-16

Parameters detected in soil, groundwater, surface water, or sediment at Site FTMM-16 at concentrations greater than the applicable ESC were identified as COPECs for the site. Though copper was not detected in surface water at Site FTMM-16, its MDLs were greater than the saltwater ESC. Given that copper was identified as a COPEC in sediment, it is considered a possible COPEC in surface water. The COPECs, and possible COPECs, identified for Site FTMM-16 are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
Not Applicable	Not Applicable	None	None
Pesticides			
Not Applicable	Not Applicable	None	None
PCBs			
Not Applicable	Not Applicable	None	None
SVOCs			
Not Applicable	Not Applicable	None	Hexachlorobutadiene
Metals			
Not Applicable	Not Applicable	None	Arsenic Cadmium Chromium Cobalt Copper Lead Mercury Nickel Selenium Silver Vanadium Zinc
Possible COPECs			
		Copper	

3.4.2.10 FORMER TRAINING AREA/LANDFILL (FTMM-18)

Near surface soil, groundwater, surface water, and sediment analytical data were evaluated for the identification of COPECs related to Site FTMM-18.

3.4.2.10.1 COPECs for Soil at Site FTMM-18

Near surface (6-12 inches bgs) soil samples were collected from Site FTMM-18 as part of the IRP RI investigation (Versar, 2004f). A total of 62 samples were analyzed for SVOCs, pesticides, PCBs, and metals. Parameters detected in near surface soil samples are presented in **Table A-8**.

SVOCs. A total of 22 SVOCs were detected in near surface soil samples from Site FTMM-18. Of these 22 SVOCs, two were detected at concentrations exceeding the soil ESC: benzo(a)pyrene was detected in two samples at concentrations exceeding the 1.52 mg/kg ESC and naphthalene was detected in five samples at concentrations exceeding the 0.0994 mg/kg ESC. Benzo(a)pyrene and naphthalene are considered COPECs in soil at Site FTMM-18.

Pesticides. Nine pesticides were detected in near surface soil samples from Site FTMM-18. Two of these pesticides was detected at concentrations exceeding the soil ESC in at least one sample. 4,4′-DDT was detected in several samples at concentrations that were greater than the 0.0035 mg/kg ESC and endrin aldehyde were detected in a sample at concentrations exceeding the ESC. 4,4′-DDT and endrin aldehyde are considered COPECs at Site FTMM-18.

PCBs. No PCBs were detected in near surface soil samples from Site FTMM-18. PCBs are not considered COPECs in soil at Site FTMM-18.

Metals. A total of 22 metals were detected in near surface soil samples from Site FTMM-18 of which most metals were detected in the majority of the samples. Silver was detected infrequently, being detected in only five samples. Twelve metals (aluminum, antimony, arsenic, cadmium, chromium, copper, lead, mercury, selenium, silver, vanadium, and zinc) were detected at concentrations exceeding the soil ESC. Aluminum, like iron, is a common component of soils and sediments and is not considered a COPEC except in conditions of very low pH where aluminum could be bioavailable; aluminum is not considered a COPEC in soil at Site FTMM-18. Antimony, arsenic, cadmium, chromium, copper, lead, mercury, selenium, silver, vanadium, and zinc are considered COPECs in soil at Site FTMM-18.

3.4.2.10.2 COPECs for Groundwater at Site FTMM-18

Monitoring for VOCs and metals have occurred at three groundwater monitoring wells at Site FTMM-18 during the 2008-2009 time period. Sampling for SVOCs, pesticides, and PCBs was discontinued after the November 2004 sampling event per NJDEP approval letter dated November 2004. SVOCs, pesticides, and PCBs are not considered COPECs in groundwater at Site FTMM-18. Parkers Creek could receive groundwater discharge from Site FTMM-18. Parkers Creek, in the vicinity of Site FTMM-18, is classified as saline estuarine (**Section 2.4.3**). Parameters detected in groundwater samples are presented in **Table C-8**.

VOCs. One VOC, acetone, was detected in groundwater samples from Site FTMM-18 during the 2008-2009 time period. There are no freshwater or saltwater ESC available for acetone. VOCs are not considered COPECs in groundwater at Site FTMM-18.

Metals. A total of 12 metals were detected in groundwater samples from Site FTMM-18 during the 2008-2009 time period. Four of these metals (arsenic, copper, selenium, and cadmium) were detected at concentrations that exceeded the saltwater ESC. Arsenic, cadmium, copper, and selenium are considered COPECs in groundwater at Site FTMM-18.

3.4.2.10.3 COPECs for Surface Water at Site FTMM-18

Two surface water samples were collected from Parkers Creek adjacent to Site FTMM-18 as part of the 2010 BEE. One surface water sample was collected west of Site FTMM-18 between outfalls between Site FTMM-8 and FTMM-18 (**Appendix K**), and the other sample was collected on the western side of Site FTMM-18 downstream of these two outfalls. Additionally, two surface water samples were collected in relation to Building 283 (FTMM-61) and Parcel 49 (**Section 3.4.2.14**) near storm water outfalls at the eastern end of Site FTMM-18 (**Appendix K**). Parkers Creek, in the vicinity of Site FTMM-18, is classified as saline estuarine (**Section 2.4.3**). Parameters detected in surface water samples are presented in **Table D-23**.

PCBs. No PCBs were detected in surface water samples at Site FTMM-18. PCBs are not considered COPECs in surface water at Site FTMM-18.

Pesticides. No pesticides were detected in surface water samples at Site FTMM-18. Pesticides are not considered COPECs in surface water at Site FTMM-18.

VOCs. No VOCs were detected in surface water samples at Site FTMM-18. VOCs are not considered COPECs in surface water at Site FTMM-18.

SVOCs. No SVOCs were detected in surface water samples at Site FTMM-18. SVOCs are not considered COPECs in surface water at Site FTMM-18.

Metals. A total of 14 metals were detected in surface water samples at Site FTMM-18. None of these metals were detected at concentrations exceeding the applicable saltwater ESC. Metals are not considered COPECs in surface water at Site FTMM-18.

3.4.2.10.4 COPECs for Sediment at Site FTMM-18

Five sediment samples were collected from Parkers Creek adjacent to Site FTMM-18 as part of the 2010 BEE. Sediment sample locations were based on previous sediment sampling conducted for the RI and were located in the field based on depositional characteristics and potential contaminant migration pathways and included storm water outfalls (**Appendix K**) into Parkers Creek in the vicinity of Site FTMM-18 from the surrounding areas including Buildings 291 to 296 and Building 283 (FTMM-61) in Parcel 49 (**Section 3.4.2.14**). Parkers Creek, in the vicinity of Site FTMM-18, is classified as saline estuarine (**Section 2.4.3**). Parameters detected in sediment samples are presented in **Table D-24**.

PCBs. No PCBs were detected in sediment samples at Site FTMM-18. PCBs are not considered COPECs at Site FTMM-18.

Pesticides. No pesticides were detected in sediment samples at Site FTMM-18. Pesticides are not considered COPECs at Site FTMM-18.

VOCs. A total of three VOCs were detected in sediment samples at Site FTMM-18. None were detected at concentrations exceeding the available saltwater sediment ESC. VOCs are not considered COPECs in sediment at Site FTMM-18.

SVOCs. Four SVOCs were detected in surface sediment samples at Site FTMM-18. None of the detected SVOCs exceeded the available saltwater sediment ESC. SVOCs are not considered COPECs in sediment at Site FTMM-18.

Metals. Of the 23 metals detected in sediment at Site FTMM-18, 12 were detected in at least one sediment sample each at concentrations exceeding the applicable saltwater sediment ESC. Arsenic was detected in two samples at concentrations (11.9 and 22.8 mg/kg) greater than the ESC (8.2 mg/kg). Cadmium was detected in four samples at concentrations (3.38 to 5.65 mg/kg) greater than the ESC (1.2 mg/kg). Chromium was detected in three samples at concentrations (84.6 to 132 mg/kg) greater than the ESC (81 mg/kg). Cobalt was detected in two samples at concentrations (11.6 and 56 mg/kg) greater than the ESC (10 mg/kg). Copper was detected in one sample at a concentration (82.9 mg/kg) greater than the ESC (34 mg/kg). Lead was detected in two samples at concentrations (67.7 and 166 mg/kg) greater than the ESC (47 mg/kg). Mercury was detected in three samples at concentrations (0.591 to 0.669 mg/kg) greater than the ESC (0.15 mg/kg). Nickel was detected in two samples at concentrations (22.3 to 45.1 mg/kg) greater than the ESC (21 mg/kg). Selenium was detected in five samples at concentrations (2.47 to 12.3 mg/kg) greater than the ESC (1 mg/kg). Silver was detected in two samples at concentrations (26.1 to 27.9 mg/kg) greater than the ESC (1 mg/kg). Vanadium was detected in one sample at a concentration (63 mg/kg) which exceeds the ESC (57 mg/kg). Zinc was detected in three samples at concentrations (187 to 358 mg/kg) greater than the ESC (150 mg/kg). Arsenic, cadmium, chromium, cobalt, copper, lead, mercury, nickel, selenium, silver, vanadium, and zinc are considered COPECs in sediment at Site FTMM-18.

3.4.2.10.5 Summary of COPECs for Site FTMM-18

Parameters detected in soil, groundwater, surface water, or sediment at Site FTMM-18 at concentrations greater than the applicable ESC were identified as COPECs for the site. Though copper was not detected in surface water at Site FTMM-18, its MDLs were greater than the saltwater ESC. Given that copper was identified as a COPEC in soil, groundwater, and sediment, it is considered a possible COPEC in surface water. The COPECs, and possible COPECs, identified for Site FTMM-18 are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
Not Applicable	None	None	None

Soil	Groundwater	Surface Water	Sediment
Pesticides			
4,4′-DDT Endrin aldehyde	None	None	None
PCBs			
None	None	None	None
SVOCs			
Benzo(a)pyrene Naphthalene	None	None	None
Metals			
Antimony Arsenic Cadmium Chromium Copper Lead Mercury Selenium Silver Vanadium Zinc	Arsenic Cadmium Copper Selenium	None	Arsenic Cadmium Chromium Cobalt Copper Lead Mercury Nickel Selenium Silver Vanadium Zinc
Possible COPECs			
		Copper	

3.4.2.11 PRE-1941 FORMER SANITARY SEWAGE TREATMENT PLANT, FTMM-20

Surface water and sediment analytical data were evaluated for the identification of COPECs related to the Pre-1941 Former Sanitary STP, Site FTMM-20.

3.4.2.11.1 COPECs for Surface Water at the Pre-1941 Former Sanitary STP FTMM-20

Two surface water samples were collected from Parkers Creek adjacent to Site FTMM-20 as part of the 2010 BEE. Parkers Creek, in the vicinity of Site FTMM-20, is classified as saline estuarine (**Section 2.4.3**). Parameters detected in surface water samples are presented in **Table D-25**.

PCBs. No PCBs were detected in surface water samples at Site FTMM-20. PCBs are not considered COPECs in surface water at Site FTMM-20.

Pesticides. No pesticides were detected in surface water samples at Site FTMM-20. Pesticides are not considered COPECs in surface water at Site FTMM-20.

VOCs. No VOCs were detected in surface water samples at Site FTMM-20. VOCs are not considered COPECs in surface water at Site FTMM-20.

SVOCs. One SVOC, dimethyl phthalate was detected in the surface water samples at Site FTMM-20. There are no surface water ESC for dimethyl phthalate. SVOCs are not considered COPECs in surface water at Site FTMM-20.

Metals. A total of 14 metals were detected in surface water samples at Site FTMM-20. Parkers Creek, in the vicinity of Site FTMM-20, is saline. None of these metals were detected at concentrations exceeding the applicable saltwater ESC. Metals are not considered COPECs for surface water at Site FTMM-20.

3.4.2.11.2 COPECs for Sediment at the Pre-1941 Former Sanitary STP FTMM-20

Two sediment samples were collected from Parkers Creek adjacent to Site FTMM-20 as part of the 2010 BEE. Parkers Creek, in the vicinity of Site FTMM-20, is classified as saline estuarine (**Section 2.4.3**). Parameters detected in sediment samples are presented in **Table D-26**.

PCBs. No PCBs were detected in sediment samples at Site FTMM-20. PCBs are not considered COPECs at Site FTMM-20.

Pesticides. No pesticides were detected in sediment samples at Site FTMM-20. Pesticides are not considered COPECs at Site FTMM-20.

VOCs. A total of two VOCs were detected in sediment samples at Site FTMM-20. None were detected at concentrations exceeding the available saltwater sediment ESC. VOCs are not considered COPECs in sediment at Site FTMM-20.

SVOCs. Four SVOCs were detected in surface sediment samples at Site FTMM-20. None of the detected SVOCs exceeded the available saltwater sediment ESC. SVOCs are not considered COPECs in sediment at Site FTMM-20.

Metals. Of the 23 metals detected in sediment at Site FTMM-20, 12 were detected in at least one sediment sample each at concentrations exceeding the applicable saltwater sediment ESC. Arsenic was detected in both samples at concentrations (9.36 and 23.8 mg/kg) greater than the ESC (8.2 mg/kg). Cadmium was detected in both samples at concentrations (1.31 to 2.87 mg/kg) greater than the ESC (1.2 mg/kg). Chromium was detected in one sample at a concentration (99.4 mg/kg) greater than the ESC (81 mg/kg). Cobalt was detected in one sample at a concentration (11.4 mg/kg) greater than the ESC (10 mg/kg). Copper was detected in one sample at a concentration (71.2 mg/kg) greater than the ESC (34 mg/kg). Lead was detected in one sample at a concentration (59.4 mg/kg) greater than the ESC (47 mg/kg). Mercury was detected in one sample at a concentration (0.322 mg/kg) greater than the ESC (0.15 mg/kg). Nickel was detected in one sample at a concentration (21.6 mg/kg) marginally greater than the ESC (21 mg/kg). Selenium was detected in both samples at concentrations (4.04 and 6.86 mg/kg) greater than the ESC (1 mg/kg). Silver was detected in both samples at concentrations (1.35 and 8.07 mg/kg) greater than the ESC (1 mg/kg). Vanadium was detected in one sample at a concentration (60.9 mg/kg) greater than the ESC (57 mg/kg). Zinc was detected in one sample at a concentration (184 mg/kg) greater than the ESC (150 mg/kg). Though Parkers Creek is tidal in the vicinity of Site M-20, the greatest concentrations of these metals were detected in the upstream sample and the lower concentrations were detected in the downstream sample. Arsenic, cadmium, chromium, cobalt, copper, lead, mercury, nickel, selenium, silver, vanadium, and zinc are considered COPECs in sediment at Site FTMM-20.

3.4.2.11.3 Summary of COPECs for Site FTMM-20

Parameters detected in soil, groundwater, surface water, or sediment at Site FTMM-20 at concentrations greater than the applicable ESC were identified as COPECs for the site. Though copper was not detected in surface water at Site FTMM-20, its MDLs were greater than the saltwater ESC. Given that copper was identified as a COPEC in sediment, it is considered a possible COPEC in surface water. The COPECs, and possible COPECs, identified for Site FTMM-20 are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
Not Applicable	Not Applicable	None	None
Pesticides			
Not Applicable	Not Applicable	None	None
PCBs			
Not Applicable	Not Applicable	None	None
SVOCs			
Not Applicable	Not Applicable	None	None
Metals			
Not Applicable	Not Applicable	None	Arsenic Cadmium Chromium Cobalt Copper Lead Mercury

Soil	Groundwater	Surface Water	Sediment
			Nickel Selenium Silver Vanadium Zinc
Possible COPECs			
		Copper	

3.4.2.12 BUILDING 1122, FTMM-59 (ECP PARCEL 43)

Groundwater, surface water, and sediment analytical data were evaluated for the identification of COPECs related to Building 1122, ECP Parcel 43.

3.4.2.12.1 COPECs for Groundwater at Building 1122, FTMM-59 (ECP Parcel 43)

Five groundwater monitoring wells were monitoring for VOCs during the 2008-2009 time period. Sampling for SVOCs, pesticides, PCBs, and metals was discontinued after the October 2004 sampling event per NJDEP approval letter dated November 2004. SVOCs, pesticides, PCBs, and metals are not considered COPECs in groundwater at Building 1122, FTMM-59 and Parcel 43. Mill Creek could receive groundwater discharge at Building 1122, Site FTMM-59 and Parcel 43. Mill Creek, in the vicinity of Building 1122, is classified as freshwater (**Section 2.4.3**). Parameters detected in groundwater samples are presented in **Table C-9**.

VOCs. Six VOCs were detected in groundwater samples during the 20008-2009 period. None of the detected VOCs were at concentrations greater than the applicable freshwater ESC. VOCs are not considered COPECs for groundwater at Building 1122, FTMM-59 and Parcel 43.

3.4.2.12.2 COPECs for Surface Water at Building 1122, FTMM-59 (ECP Parcel 43)

Two surface water samples were collected from Mill Creek adjacent to Building 1122, FTMM-59 and Parcel 43 as part of the 2010 BEE. One surface water sample was collected in Mill Creek to the east of Building 1122 at a storm water outfall, and the other sample was collected in Mill Creek at a point closest to Building 1122. Mill Creek, in the vicinity of Building 1122, FTMM-59 and Parcel 43, is classified as freshwater (**Section 2.4.3**). Parameters detected in surface water samples are presented in **Table D-27**.

PCBs. No PCBs were detected in surface water samples at Building 1122, FTMM-59 and Parcel 43. PCBs are not considered COPECs in surface at Building 1122, FTMM-59 and Parcel 43.

VOCs. Two VOCs (*cis*-1,2-dichloroethene and PCE) were detected in surface water samples at Building 1122, FTMM-59 and Parcel 43 but at concentrations less than the freshwater ESC. VOCs are not considered COPECs in surface at Building 1122, FTMM-59 and Parcel 43.

SVOCs. Six SVOCs, anthracene, benzo(*a*)anthracene, benzo(*a*)pyrene, benzoic acid, 3,3′-dichlorobenzidine, and 1,2,4-trichlorobenzene, were detected in the surface water samples at Building 1122, FTMM-59 and Parcel 43. Anthracene, benzo(a)pyrene, and benzo(a)anthracene concentrations exceeded the applicable freshwater ESC. Both anthracene concentrations (0.12 µg/L) exceeded the 0.035 µg/L ESC. One benzo(*a*)pyrene concentration (0.31 µg/L) exceeded the 0.014 µg/L ESC. Benzo(*a*)anthracene concentrations (0.23 and 0.24 µg/L) exceeded the 0.025 µg/L ESC. Anthracene, benzo(*a*)pyrene, and benzo(*a*)anthracene are considered COPECs in surface water at Building 1122.

Metals. A total of 12 metals were detected in surface water samples at Building 1122, FTMM-59 and Parcel 43. Only lead was detected at concentrations greater than the applicable freshwater ESC in the surface water samples. Total lead concentrations (6.8 and 7.76 µg/L) and dissolved lead concentrations (7.2 and 11.5 µg/L) exceeded the 5.4 µg/L freshwater ESC. Lead is considered a COPEC for surface water at Building 1122.

3.4.2.12.3 COPECs for Sediment at Building 1122, FTMM-59 (ECP Parcel 43)

Three surface sediment samples were collected from Mill Creek adjacent to Building 1122, FTMM-59 and Parcel 43 as part of the ECP SI (Shaw, 2008). These three sediment sample locations were selected to evaluate historical discharges from Building 1122 based on depositional characteristics and potential contaminant migration pathways and included the storm water outfall to the east of Building 1122 (**Appendix K**) into Mill Creek. Mill Creek, in the vicinity of Building 1122, FTMM-59 and Parcel 43, is classified as freshwater (**Section 2.4.3**). Parameters detected in sediment samples are presented in **Table B-1**.

PCBs. No PCBs were detected in sediment samples at Building 1122, FTMM-59 and Parcel 43. PCBs are not considered COPECs at Building 1122, FTMM-59 and Parcel 43.

VOCs. Two VOCs (acetone and methylene chloride) were detected in sediment samples at Building 1122, FTMM-59 and Parcel 43. None were detected at concentrations exceeding the available freshwater sediment ESC. VOCs are not considered COPECs in sediment at Building 1122, FTMM-59 and Parcel 43.

SVOCs. Eleven SVOCs were detected in surface sediment samples at Building 1122, FTMM-59 and Parcel 43. Eight of the detected SVOCs exceeded the available freshwater sediment ESC. Benzo(*a*)anthracene was detected in all three samples and two concentrations (0.510 and 0.610 mg/kg) exceeding the 0.32 mg/kg freshwater sediment ESC. Benzo(*a*)pyrene was detected in all three samples and two concentrations (0.510 and 0.610 mg/kg) exceeding the 0.37 mg/kg freshwater sediment ESC. Benzo(*k*)fluoranthene was detected in all three samples and two concentrations (0.340 and 0.390 mg/kg) exceeding the 0.24 mg/kg freshwater sediment ESC. Chrysene was detected in all three samples and two concentrations (0.86 and 0.88 mg/kg) exceeding the 0.34 mg/kg freshwater sediment ESC. Fluoranthene was detected in all three samples and two concentrations (1.40 and 1.30 mg/kg) exceeding the 0.75 mg/kg freshwater sediment ESC. Phenanthrene was detected in all three samples and one concentration (0.700 mg/kg) exceeded the 0.56 mg/kg freshwater sediment ESC. Pyrene was detected in all three samples and two concentrations (1.60 and 1.40 mg/kg) exceeded the 0.49 mg/kg freshwater sediment ESC. Bis(2-ethylhexyl) phthalate was detected in all three samples at concentrations from 0.440 mg/kg to 1.40 mg/kg. As noted previously, phthalates are common laboratory contaminants and are often found at low concentrations in both field and laboratory QC samples. Bis(2-ethylhexyl) phthalate is not considered a COPEC in surface sediment at Building 1122, FTMM-59 and Parcel 43. Benzo(*a*)anthracene, benzo(*a*)pyrene, benzo(*k*)fluoranthene, chrysene, fluoranthene, phenanthrene, and pyrene are considered COPECs in sediment at Building 1122, FTMM-59 and Parcel 43.

Metals. Of the 18 metals detected in sediment at Building 1122, FTMM-59 and Parcel 43, eight were detected in at least one sediment sample each at concentrations exceeding the applicable freshwater sediment ESC. Arsenic was detected in all three samples and the concentrations (7.48 to 10.2 mg/kg) exceeded the ESC (6 mg/kg). Cadmium was detected in all three samples and two concentrations (1.67 and 1.86 mg/kg) were greater than the ESC (0.6 mg/kg). Chromium was detected in all three samples and the concentrations (155 to 161 mg/kg) exceeded the ESC (26 mg/kg). Copper was detected in all three samples and the concentrations (29.1 to 53.6 mg/kg) were greater than the ESC (16 mg/kg). Lead was detected in all three samples and the concentrations (45.0 to 116 mg/kg) were greater than the ESC (31 mg/kg). Mercury was detected in all three samples and the concentrations (0.25 to 0.47 mg/kg) were greater than the ESC (0.2 mg/kg). Nickel was detected in all three samples and the concentrations (23.7 to 36.4 mg/kg) were greater than the ESC (16 mg/kg). Zinc was detected in all three samples and two concentrations (252 and 286 mg/kg) exceeded the ESC (120 mg/kg). Arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc are considered COPECs in sediment at Building 1122, FTMM-59 and Parcel 43.

3.4.2.12.4 Summary of COPECs for Building 1122, FTMM-59 and Parcel 43

Parameters detected in soil, groundwater, surface water, or sediment at Building 1122, FTMM-59 and Parcel 43 at concentrations greater than the applicable ESC were identified as COPECs for the site. Though cadmium and silver were not detected in surface water at Building 1122, FTMM-59 and Parcel 43, their MDLs were greater than the freshwater ESC. Given that cadmium is considered a COPEC in sediment, it is considered a possible COPEC in surface water. The sediment detection limits

for several PAHs [acenaphthene, acenaphthylene, anthracene, dibenzo(*a,h*)anthracene, fluorene, and 2-methylnaphthalene] exceeded the freshwater sediment ESC. Of these, acenaphthene was identified as a COPEC in surface water. Therefore, anthracene is considered a possible COPEC in sediment. The COPECs, and possible COPECs, identified for Building 1122, FTMM-59 and Parcel 43 are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
Not Applicable	None	None	None
Pesticides			
Not Applicable	None	None	Not Applicable
PCBs			
Not Applicable	None	None	None
SVOCs			
Not Applicable	None	Anthracene Benzo(a)anthracene Benzo(a)pyrene	Benzo(*a*)anthracene Benzo(*a*)pyrene Benzo(*k*)fluoranthene Chrysene Fluoranthene Phenanthrene Pyrene
Metals			
Not Applicable	None	Lead	Arsenic Cadmium Chromium Copper Lead Mercury Nickel Zinc
Possible COPECs			
		Cadmium	Anthracene

3.4.2.13 BUILDING 1150 (PARCEL 39)

Surface soil, surface water, and sediment analytical data were evaluated for the identification of COPECs related to Building 1150, ECP Parcel 39.

3.4.2.13.1 COPECs for Soil at Building 1150 (ECP Parcel 39)

One surface soil sample was collected as part of the ECP SI (Shaw, 2008). This sample was located at the outfall of a clay pipe leading from the direction of Building 1150. Parameters detected in the surface soil sample are presented in **Table B-2**.

VOCs. No VOCs were detected in the surface soil sample. VOCs are not considered COPECs at Parcel 39.

PCBs. No PCBs were detected in the surface soil sample. PCBs are not considered COPECs at Parcel 39.

SVOCs. Four SVOCs were detected in the surface soil sample at Parcel 39. No SVOCs were found at concentrations exceeding the soil ESC. SVOCs are not considered COPECs in surface soil at Parcel 69.

Metals. A total of 18 metals were detected in the surface soil sample. Of these 18, eight were found at concentrations exceeding the soil ESC. The concentration of aluminum (7450 mg/kg) was above the 50 mg/kg soil ESC. Aluminum, like iron, is a common component of soils and sediments and is not considered a COPEC except in conditions of very low pH where aluminum could be bioavailable; aluminum is not considered a COPEC in soil at Parcel 39. Cadmium, chromium, cobalt, lead, mercury, vanadium, and zinc are considered COPECs in soil at Parcel 39.

3.4.2.13.2 COPECs for Surface Water at Building 1150 (ECP Parcel 39)

One surface water sample was collected from Mill Creek adjacent to Building 1150 as part of the 2010 BEE; this surface water sample was also adjacent to Landfill 2, which is located south of Building 1150, across Mill Creek from Building 1150, and was collected immediately downstream of a storm water outfall from the area of Building 1150 in Parcel 39. Additionally, another surface water sample was collected downstream of all storm water outfalls from Parcel 39 (**Appendix K**) as part of the Landfill 2 (FTMM-2) sample collections (**Section 3.4.2.1.3**). Mill Creek, in the vicinity of Building 1150, Parcel 39, is classified as freshwater (**Section 2.4.3**). Parameters detected in the surface water sample are presented in **Table D-28**.

PCBs. No PCBs were detected in surface water samples at Building 1150. PCBs are not considered COPECs in surface water at Building 1150.

Pesticides. No pesticides were detected in surface water samples at Building 1150. Pesticides are not considered COPECs in surface water at Building 1150.

SVOCs. Three SVOCs, anthracene, benzo(*a*)anthracene, and 1,2,4-trichlorobenzene, were detected in the surface water samples at Building 1150. Anthracene and benzo(*a*)anthracene concentrations exceeded the applicable freshwater ESC. The anthracene concentration (0.11 µg/L) exceeded the 0.035 µg/L ESC and the benzo(*a*)anthracene concentration (0.22 µg/L) exceeded the 0.025 µg/L ESC. Anthracene and benzo(*a*)anthracene are considered COPECs in surface water at Building 1150.

Metals. A total of 12 metals were detected in surface water samples at Building 1150. Mill Creek, in the vicinity of Building 1150, is freshwater. Only lead was detected greater than the applicable freshwater ESC in the surface water sample. The total lead concentration (6.2 µg/L) and the dissolved lead concentration (10.1 µg/L) exceeded the 5.4 µg/L freshwater ESC. Lead is considered a COPEC for surface water at Building 1150.

3.4.2.13.3 COPECs for Sediment at Building 1150 (ECP Parcel 39)

Two surface sediment samples were collected from Mill Creek adjacent to Building 1150 as part of the ECP SI (Shaw, 2008). These were collected from deposition locations immediately downgradient of the drainage basin located immediately behind Building 1150 (**Appendix K**). Additionally, four sediment samples were collected as part of the 2010 BEE for Landfill 2 are adjacent to Building 1150 (**Section 3.4.2.1.3**). These sediment sample locations were based on previous sediment sampling conducted for the RI for Landfill 2 (FTMM-2) and were located in the field based on depositional characteristics and potential contaminant migration pathways and included storm water outfalls (**Appendix K**) into Mill Creek from the area of Building 1150 and Parcel 39. Mill Creek, in the vicinity of Building 1150, Parcel 39, is classified as freshwater (**Section 2.4.3**). Parameters detected in sediment samples as part of the ECP SI are presented in **Table B-3** and as part of the BEE are presented in **Table D-29**.

PCBs. One PCB mixture, Aroclor 1254, was detected in 2010 BEE sediment samples at Building 1150. Aroclor 1254 was detected in two samples and one concentration (0.064 mg/kg) exceeded the 0.06 mg/kg freshwater ESC. Aroclor 1254 is considered a COPEC at Building 1150.

VOCs. Three VOCs (acetone, methylene chloride, and 2-butanone) were detected in 2010 BEE sediment samples at Building 1150. None were detected at concentrations exceeding the available freshwater or saltwater sediment ESC. VOCs are not considered COPECs in sediment at Building 1150.

SVOCs. Eight SVOCs were detected in surface sediment samples at Building 1150 during the ECP SI and seven of these [benzo(*a*)anthracene, bis(2-ethylhexyl) phthalate, chrysene, di-*n*-butyl phthalate, fluoranthene, phenanthrene, and pyrene] were detected at concentrations exceeding the freshwater sediment ESC. Though 13 SVOCs were detected in surface sediment samples at Building 1150 during the 2010 BEE, only four of these [bis(2-ethylhexyl) phthalate, chrysene, fluoranthene, and pyrene] were detected at concentrations exceeding the freshwater sediment ESC. Concentrations detected during the 2010 BEE were less than those detected during the previous ECP SI. The concentrations of fluoranthene (0.92 mg/kg), chrysene (0.37 mg/kg), pyrene (0.71 mg/kg), and bis(2-ethylhexyl) phthalate (0.28 mg/kg) exceeded the ESC (0.75 mg/kg, 0.34 mg/kg, 0.49 mg/kg, and

0.182 mg/kg, respectively) in the BEE samples. In the SI samples, the concentrations of benzo(*a*)anthracene (0.54 mg/kg), bis(2-ethylhexyl) phthalate (2.1 and 1.3 mg/kg), chrysene (0.37 and 0.71 mg/kg), di-*n*-butyl phthalate (1.9 mg/kg), fluoranthene (0.99 mg/kg), phenanthrene (0.67 mg/kg), and pyrene (1.0 and 2.0 mg/kg) exceeded the ESC of 0.32, 0.182, 0.34, 1.114, 0.75, 0.56, and 0.49 mg/kg, respectively. As noted previously, phthalates are common laboratory contaminants and are often found at low concentrations in both field and laboratory QC samples. Bis(2-ethylhexyl) phthalate and di-*n*-butyl phthalate are not considered COPECs in surface sediment at Building 1150. Benzo(*a*)anthracene, chrysene, fluoranthene, phenanthrene, and pyrene are considered COPECs in sediment at Building 1150.

Metals. During the ECP SI, 18 metals were detected in sediment at Building 1150 and eight of these (arsenic, cadmium chromium, copper, lead, mercury, nickel, and zinc) were detected at concentrations exceeding the freshwater sediment ESC. Though 22 metals were detected in surface sediment samples at Building 1150 during the 2010 BEE, only three of these (arsenic, cadmium, and chromium) were detected at concentrations exceeding the freshwater sediment ESC. Concentrations detected during the BEE were generally less than those detected during the previous ECP SI. The concentrations of arsenic (8.09 and 8.89 mg/kg), cadmium (0.629 to 2.09 mg/kg), chromium (37.7 to 131 mg/kg), copper (27.7 to 41.0 mg/kg), lead (61.7 mg/kg), mercury (0.67 mg/kg), nickel (32.4 mg/kg), and zinc (210 mg/kg) exceeded the ESC of 6, 0.6, 26, 16, 31, 0.2, 16, and 120 mg/kg, respectively, in the BEE or SI samples. Vanadium was detected at concentrations exceeding the saltwater sediment ESC; there are no freshwater ESC for vanadium. Vanadium was identified as a COPEC in surface soil and is considered a COPEC in sediment. Arsenic, cadmium, chromium, copper, lead, mercury, nickel, vanadium, and zinc are considered COPECs in sediment at Building 1150.

3.4.2.13.4 Summary of COPECs for Building 1150

Parameters detected in soil, groundwater, surface water, or sediment at Building 1150 (Parcel 39) at concentrations greater than the applicable ESC were identified as COPECs for the site. Though cadmium and silver were not detected in surface water at Building 1150, their MDLs were greater than the freshwater ESC. Given that cadmium is considered a COPEC in sediment, it is considered a possible COPEC in surface water. The COPECs, and possible COPECs, identified for Building 1150 are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
None	Not Applicable	None	None
Pesticides			
Not Applicable	Not Applicable	None	None
PCBs			
None	Not Applicable	None	Aroclor 1254
SVOCs			
None	Not Applicable	Anthracene Benzo(*a*)anthracene	Benzo(*a*)anthracene Chrysene Fluoranthene Phenanthrene Pyrene
Metals			
Cadmium Chromium Cobalt Lead Mercury Vanadium Zinc	Not Applicable	Lead	Arsenic Cadmium Chromium Copper Lead Mercury Nickel Vanadium Zinc
Possible COPECs			
		Cadmium	

3.4.2.14 BUILDINGS 283, 288, 291, 293, 295 (FTMM-61 AND ECP PARCEL 49)

Surface soil, groundwater, surface water, and sediment analytical data were evaluated for the identification of COPECs related to Building 283 (FTMM-61) and Buildings 283, 288, 291, 293, and 295 (Parcel 49).

3.4.2.14.1 COPECs for Surface Soil at FTMM-61 and Parcel 49

Ten surface soil samples were collected in relation to FTMM-61 and Parcel 49 as part of the ECP SI (Shaw, 2008). Parameters detected in surface soil samples are presented in **Table B-4**.

PCBs. One PCB mixture, Aroclor 1260, was detected in three of the surface soil samples at FTMM-61 and Parcel 49. Two of the concentrations (0.47 and 8.85 mg/kg) exceeded the soil ESC (0.371 mg/kg). Aroclor 1260 is considered a COPEC in soil at Parcel 49.

SVOCs. Twenty-two SVOCs were detected in surface soil samples in at least one sample each at FTMM-61 and Parcel 49. Ten SVOCs were found at concentrations exceeding the soil ESC; nine of these SVOCs are PAHs. The highest concentrations of these PAHs were found in one of the soil samples: benzo(*a*)anthracene (80 mg/kg), benzo(*a*)pyrene (54 mg/kg), benzo(*b*)fluoranthene (75 mg/kg), chrysene (79 mg/kg), fluoranthene (190 mg/kg), 2-methylnaphthalene (4.4 mg/kg), naphthalene (11 mg/kg), phenanthrene (170 mg/kg), and pyrene (160 mg/kg). Benzo(*a*)anthracene, benzo(a)pyrene, and chrysene were also detected exceeding the ESC in one or two other surface soil samples, but at much lower concentrations. Butyl benzyl phthalate was also detected in three samples at concentrations (0.52 to 1.8 mg/kg) exceeding the 0.239 mg/kg ESC. As noted previously, phthalates are commonly found in field and laboratory QC samples and are not considered COPECs in sediment at FTMM-61 and Parcel 49. Benzo(*a*)anthracene, benzo(*a*)pyrene, benzo(*b*)fluoranthene, chrysene, fluoranthene, 2-methylnaphthalene, naphthalene, phenanthrene, and pyrene are considered COPECs in surface soil at Parcel 49.

Metals. A total of 19 metals were detected in surface soil samples; 10 (aluminum, arsenic, cadmium, chromium, copper, lead, manganese, mercury, vanadium, and zinc) of which were found at concentrations exceeding the soil ESC. Concentrations of aluminum (7,310 to 21,600 mg/kg) were greater than the 50 mg/kg soil ESC. Aluminum, like iron, is a common component of soils and sediments and is not considered a COPEC except in conditions of low pH where aluminum could be bioavailable; aluminum is not considered a COPEC in soil at FTMM-61 and Parcel 49. Arsenic, cadmium, chromium, copper, lead, manganese, mercury, vanadium, and zinc are considered COPECs in soil at FTMM-61 and Parcel 49.

3.4.2.14.2 COPECs for Groundwater at FTMM-61 and Parcel 49

Seven groundwater samples (including one duplicate sample) were collected from two distinct temporary wells and four monitoring wells as part of the ECP SI (Shaw, 2008). One of the temporary wells was located north of Building 283 and the other was located east of former Building 289. The monitoring wells were located along the northern perimeter of the former Squier Complex. Parkers Creek could receive groundwater discharge at FTMM-61 and Parcel 49. Parkers Creek, in the vicinity of FTMM-61 and Parcel 49, is classified as saline estuarine (**Section 2.4.3**). Parameters detected in groundwater samples are presented in **Table B-5**.

VOCs. Nine VOCs (acetone, benzene, bromodichloromethane, chloroform, ethylbenzene, methyl ethyl ketone, vinyl chloride, xylenes, and toluene) were detected in groundwater samples but at concentrations less than the ESC. VOCs are not considered COPECs at FTMM-61 and Parcel 49.

SVOCs. Four SVOCs were also detected in groundwater samples. One SVOC [bis(2-ethylhexyl) phthalate] was detected in the groundwater samples at concentrations exceeding the ESC. As noted previously, bis(2-ethylhexyl) phthalate, a commonly used plasticizer, is present in a wide variety of plastic products and is commonly detected in field and laboratory QC samples. It was detected in the field blank associated with FTMM-61 and Parcel 49 groundwater sampling (Shaw, 2008) and it is not considered a COPEC in groundwater at FTMM-61 and Parcel 49.

Metals. A total of 18 metals were detected in groundwater samples at FTMM-61 and Parcel 49. Only one metal, zinc, was detected at concentrations in at least one sample exceeding the applicable

saltwater ESC. Zinc was detected in three samples and two concentrations (103 and 107 µg/L) were greater than the 81 µg/L ESC. Zinc is considered a COPEC in groundwater at FTMM-61 and Parcel 49.

3.4.2.14.3 COPECs for Surface Water at FTMM-61 and Parcel 49

Two surface water samples were collected from Parkers Creek in relation to FTMM-61 and Parcel 49 as part of the 2010 BEE. These two surface water samples were collected at storm water line outfalls into Parkers Creek, to the east of Building 283 and north of Parcel 49. Parkers Creek, in the vicinity of FTMM-61 and Parcel 49, is classified as saline estuarine (**Section 2.4.3**). Parameters detected in surface water samples are presented in **Table D-30**.

PCBs. No PCBs were detected in surface water samples at FTMM-61 and Parcel 49. PCBs are not considered COPECs in sediment at FTMM-61 and Parcel 49.

VOCs. No VOCs were detected in surface water samples at FTMM-61 and Parcel 49. VOCs are not considered COPECs in sediment at FTMM-61 and Parcel 49.

SVOCs. One SVOC, dimethyl phthalate, was detected in the surface water samples at FTMM-61 and Parcel 49. There are no surface water ESC for dimethyl phthalate. SVOCs are not considered COPECs in surface water at FTMM-61 and Parcel 49.

Metals. A total of 13 metals were detected in surface water samples at FTMM-61 and Parcel 49. None of these metals were detected at concentrations exceeding the applicable saltwater ESC. Metals are not considered COPECs for surface water at FTMM-61 and Parcel 49.

3.4.2.14.4 COPECs for Sediment at FTMM-61 and Parcel 49

Seven surface sediment samples (including one duplicate sample) representing three sediment locations were collected from Parkers Creek in relation to FTMM-61 and Parcel 49 as part of the ECP SI (Shaw, 2008). These three sediment sample locations were selected to evaluate historical discharges from Building 283 and Parcel 49 based on depositional characteristics and potential contaminant migration pathways and included the storm water outfalls in Parkers Creek to the east of Building 283 (**Appendix K**) associated with former septic systems at Building 78 and sump pump discharges related to Building 283. Parkers Creek, in the vicinity of FTMM-61 and Parcel 49, is classified as saline estuarine (**Section 2.4.3**). Parameters detected in sediment samples are presented in **Table B-6**.

VOCs. No VOCs were detected in surface sediment samples at FTMM-61 and Parcel 49. VOCs are not considered COPECs at FTMM-61 and Parcel 49.

PCBs. No PCBs were detected in surface sediment samples at FTMM-61 and Parcel 49. PCBs are not considered COPECs at FTMM-61 and Parcel 49.

SVOCs. Ten SVOCs were detected in surface sediment samples at FTMM-61 and Parcel 49. One of the detected SVOCs exceeded the available saltwater sediment ESC. Di-*n*-butyl phthalate was detected in all samples at concentrations from 0.890 to 2.40 mg/kg. As noted previously, phthalates are common laboratory contaminants and are often found at low concentrations in both field and laboratory QC samples. Di-*n*-butyl phthalate is not considered a COPEC in surface sediment at FTMM-61 and Parcel 49.

Metals. Of the 20 metals detected in sediment at FTMM-61 and Parcel 49, 12 were detected in at least one sediment sample each at concentrations exceeding the applicable saltwater sediment ESC. Aluminum was detected in two sediment samples at concentrations (2.92 and 1.85%) exceeding the saltwater sediment ESC (1.8%). Aluminum, like iron, is a major component of soil and sediment, and is usually not considered a COPEC except in very low pH environments. Aluminum is not considered a COPEC at FTMM-61 and Parcel 49. Arsenic was detected in all samples and the concentrations (14.8 to 29.7 mg/kg) exceeding the ESC (8.2 mg/kg). Barium was detected in all samples and the concentrations (65.3 to 96.4 mg/kg) greater than the ESC (48 mg/kg). Cadmium was detected in all samples and concentrations in three samples (1.65 to 5.55 mg/kg) greater than the ESC (1.2 mg/kg). Chromium was detected in all samples and the concentrations (149 to 353 mg/kg) were greater than the ESC (81 mg/kg). Copper was detected in all samples and three concentrations (76.5 to 111 mg/kg) were greater than the ESC (34 mg/kg). Lead was detected in three samples and one concentration (148 mg/kg) was greater than the ESC (47 mg/kg). Mercury was detected in three samples and the concentrations (0.23 to 0.53

mg/kg) were greater than the ESC (0.15 mg/kg). Nickel was detected in all samples and two concentrations (44.0 and 68.5 mg/kg) were greater than the ESC (21 mg/kg). Silver was detected in one sample and the concentration (1.40 mg/kg) was greater than the ESC (1 mg/kg). Vanadium was detected in all samples and the concentrations (79.3 to 125 mg/kg) were greater than the ESC (57 mg/kg). Zinc was detected in all samples and two concentrations (1320 and 2090 mg/kg) exceeded the ESC (150 mg/kg). Arsenic, barium, cadmium, chromium, copper, lead, mercury, nickel, silver, vanadium, and zinc are considered COPECs in sediment at FTMM-61 and Parcel 49.

3.4.2.14.5 Summary of COPECs for FTMM-61 and Parcel 49

Parameters detected in soil, groundwater, surface water, or sediment at FTMM-61 and Parcel 49 at concentrations greater than the applicable ESC were identified as COPECs for the site. Though copper was not detected in surface water at FTMM-61 and Parcel 49, its MDLs were greater than the saltwater ESC. Given that copper was identified as a COPEC in soil and sediment (though not in groundwater), it is considered a possible COPEC in surface water. The sediment detection limits for several PAHs [acenaphthene, acenaphthylene, anthracene, benzo(*g,h,i*)perylene, dibenzo(*a,h*)anthracene, fluorene, 2-methylnaphthalene, and pyrene] were greater than the saltwater sediment ESC. These PAHs were not detected in any of the saltwater samples from FTMM-61 and Parcel 49; however, 2-methylnaphthalene and pyrene are considered COPECs in soil. Therefore, 2-methylnaphthalene and pyrene are considered possible COPECS in sediment. The COPECs, and possible COPECs, identified for FTMM-61 and Parcel 49 are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
Not Applicable	None	None	None
Pesticides			
Not Applicable	Not Applicable	Not Applicable	Not Applicable
PCBs			
Aroclor 1260	Not Applicable	None	None
SVOCs			
Benzo(*a*)anthracene Benzo(*a*)pyrene Benzo(*b*)fluoranthene Chrysene Fluoranthene 2-Methylnaphthalene Naphthalene Phenanthrene Pyrene	None	None	None
Metals			
Arsenic Cadmium Chromium Copper Lead Manganese Mercury Vanadium Zinc	Zinc	None	Arsenic Barium Cadmium Chromium Copper Lead Mercury Nickel Silver Vanadium Zinc
Possible COPECs			
		Copper	2-Methylnaphthalene Pyrene

3.4.2.15 BUILDING 1075 (ECP PARCEL 61)

Surface soil, surface water, and sediment analytical data were evaluated for the identification of COPECs related to Parcel 61.

3.4.2.15.1 COPECs for Surface Soil at Parcel 61

One surface soil sample was collected from Parcel 61 as part of the ECP SI (Shaw, 2008) near the southeastern corner of Building 1075. Parameters detected in the surface soil sample are presented in **Table B-7**.

PCBs. No PCBs were detected in the surface soil sample. PCBs are not considered COPECs at Parcel 61.

SVOCs. A total of 18 SVOCs were detected in the surface soil sample. Of these 18, three were detected above the soil ESC. Benzo(*a*)pyrene (3.7 mg/kg) exceeded the 1.52 mg/kg ESC, chrysene (5.0 mg/kg) exceeded the 4.73 mg/kg ESC, and naphthalene (1.2 mg/kg) exceeded the 0.0994 mg/kg ESC. These three PAHs are considered COPECs at Parcel 61.

Metals. A total of 18 metals were detected in the surface soil sample. Of these 18, eight (aluminum, cadmium, chromium, copper, lead, mercury, vanadium, and zinc) were identified at concentrations exceeding the soil ESC. The concentration of aluminum (10,100 mg/kg) exceeded the 50 mg/kg soil ESC. Aluminum, like iron, is a common component of soils and sediments and is not considered a COPEC except in conditions of very low pH where aluminum could be bioavailable; aluminum is not considered a COPEC in soil at Parcel 61. Cadmium, chromium, copper, lead, mercury, vanadium, and zinc are considered COPECs in soil at Parcel 61.

3.4.2.15.2 COPECs for Surface Water at Parcel 61

One surface water sample was collected from a tributary to Husky Brook in relation to Parcel 61 as part of the 2010 BEE. This surface water sample was collected directly downgradient of the stormwater outfall in the tributary to Husky Brook. Husky Brook, in the vicinity of Parcel 61, is classified as saline estuarine (**Section 2.4.3**). Parameters detected in surface water samples are presented in **Table D-31**.

VOCs. No VOCs were detected in surface water samples at Parcel 61. VOCs are not considered COPECs in surface water at Parcel 61.

PCBs. No PCBs were detected in surface water samples at Parcel 61. PCBs are not considered COPECs in surface water at Parcel 61.

SVOCs. Two SVOCs [benzo(*a*)anthracene and hexachlorobutadiene] were detected in the surface water sample. There are no available saltwater ESC for the detected SVOCs. Benzo(*a*)anthracene and hexachlorobutadiene are not considered COPECs in surface water at Parcel 61.

Metals. A total of 14 metals were detected in surface water samples at Parcel 61. None of these were detected at concentrations exceeding the available saltwater ESC. Metals are not considered COPECs in surface water at Parcel 61.

3.4.2.15.3 COPECs for Sediment at Parcel 61

Two sediment samples were collected from a tributary to Husky Brook in relation to Parcel 61 as part of the ECP SI (Shaw, 2008). One sediment sample was collected directly downgradient of the stormwater outfall into the tributary to Husky Brook and the other was collected downgradient of that near the confluence of the tributary with Husky Brook. Husky Brook, in the vicinity of Parcel 61, is classified as saline estuarine (**Section 2.4.3**). Parameters detected in sediment samples are presented in **Table B-8**.

VOCs. No VOCs were detected in sediment samples at Parcel 61. VOCs are not considered COPECs at Parcel 61.

PCBs. No PCBs were detected in sediment samples at Parcel 61. PCBs are not considered COPECs at Parcel 61.

SVOCs. A total of 13 SVOCs were detected in surface sediment samples at Parcel 61. Bis(2-ethylhexyl) phthalate was detected in both sediment samples; the concentrations (0.380 and 0.460 mg/kg) were greater than the saltwater sediment ESC (0.18216 mg/kg). As noted previously, phthalates are commonly found in field and laboratory QC samples and are not considered COPECs in sediment at Parcel 61. Ten PAHs were detected at concentrations exceeding the saltwater ESC in one or both

samples: acenaphthene (1.60 mg/kg), anthracene (0.160 and 0.290 mg/kg), benzo(a)anthracene (0.490 and 0.740 mg/kg), benzo(*a*)pyrene (0.430 and 0.650 mg/kg), benzo(*k*)fluoranthene (0.380 mg/kg), chrysene (0.710 and 0.920 mg/kg), fluoranthene (1.3 and 1.7 mg/kg), fluorene (0.140 mg/kg), phenanthrene (0.680 and 1.2 mg/kg), and pyrene (1.5 and 2.2 mg/kg). Acenaphthene, anthracene, benzo(*a*)anthracene, benzo(*a*)pyrene, benzo(*k*)fluoranthene, chrysene, fluoranthene, fluorene, phenanthrene, and pyrene are considered COPECs in sediment at Parcel 61.

Metals. Of the 17 metals detected in sediment at Parcel 61, two were detected in at least one sample at concentrations greater than the saltwater sediment ESC. Arsenic in one sample (13.3 mg/kg) was detected greater than the saltwater sediment ESC (8.2 mg/kg). Chromium was detected in one sample at a concentration (86.0 mg/kg) that exceeded the saltwater sediment ESC (81 mg/kg). Arsenic and chromium are considered COPECs in sediment at Parcel 61.

3.4.2.15.4 Summary of COPECs for Parcel 61

Parameters detected in soil, groundwater, surface water, or sediment at Building 1075 (Parcel 61) at concentrations greater than the applicable ESC were identified as COPECs for the site. Though copper was not detected in surface water at Parcel 61, its MDLs were greater than the saltwater ESC. Given that copper was identified as a COPEC in soil (though not in sediment), it is considered a possible COPEC in surface water. Several PAHs [acenaphthylene, benzo(*g,h,i*)perylene, dibenzo(*a,h*)anthracene, and 2-methylnaphthalene] were not detected in sediment samples, but their detection limits were greater than the saltwater sediment ESC in both samples. These were not identified as COPECs in other media at the site and are not considered COPECs in **sediment**. The COPECs, and possible COPECs, identified for Parcel 61 are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
Not Applicable	Not Applicable	None	None
Pesticides			
Not Applicable	Not Applicable	Not Applicable	Not Applicable
PCBs			
None	Not Applicable	None	None
SVOCs			
Benzo(*a*)pyrene Chrysene Naphthalene	Not Applicable	None	Acenaphthene Anthracene Benzo(*a*)anthracene Benzo(*a*)pyrene Benzo(*k*)fluoranthene Chrysene Fluoranthene Fluorene Phenanthrene Pyrene
Metals			
Cadmium Chromium Copper Lead Mercury Vanadium Zinc	Not Applicable	None	Arsenic Chromium
Possible COPECs			
		Copper	

3.4.2.16 BUILDING 900 (ECP PARCEL 69)

Surface soil, groundwater, surface water, and sediment analytical data were evaluated for the identification of COPECs related to Building 900 (Parcel 69).

3.4.2.16.1 COPECs for Soil at Parcel 69

Four surface soil samples were collected in relation to Parcel 69 as part of the ECP SI (Shaw, 2008). Parameters detected in surface soil samples are presented in **Table B-9**.

PCBs. No PCBs were detected in surface soil samples at Parcel 69. PCBs are not considered COPECs in soil at Parcel 69.

SVOCs. Four SVOCs were detected in surface soil samples in at least one sample each at Parcel 69. No SVOCs were found at concentrations exceeding the soil ESC. SVOCs are not considered COPECs in surface soil at Parcel 69.

Metals. A total of 17 metals were detected in surface soil samples. Of these 17, seven were identified at concentrations exceeding the soil ESC. Concentrations of aluminum (6,760 to 9,190 mg/kg) exceeded the 50 mg/kg soil ESC. Aluminum, like iron, is a common component of soils and sediments and is not considered a COPEC except in conditions of very low pH where aluminum could be bioavailable; aluminum is not considered a COPEC in soil at Parcel 69. Chromium, copper, lead, mercury, vanadium, and zinc are considered COPECs in soil at Parcel 69.

3.4.2.16.2 COPECs for Groundwater at Parcel 69

Three groundwater samples (including one duplicate sample) were collected from two distinct temporary wells as part of the ECP SI (Shaw, 2008). One of these was located in an area of a former waste oil AST east of Building 900 and the other was located downgradient of Building 900. Oceanport Creek could receive groundwater discharge at Parcel 69. Oceanport Creek, in the vicinity of Parcel 69, is classified as saline estuarine (**Section 2.4.3**). Parameters detected in groundwater samples are presented in **Table B-10**.

VOCs. Three VOCs (acetone, PCE, and toluene) were detected in groundwater samples but at concentrations less than the ESC. VOCs are not considered COPECs in groundwater at Parcel 69.

SVOCs. One SVOC [bis(2-ethylhexyl) phthalate] was also detected in the groundwater samples. As noted previously, bis(2-ethylhexyl) phthalate, a commonly used plasticizer, is present in a wide variety of plastic products and is commonly detected in field and laboratory QC samples. It was detected in the field blank associated with Parcel 69 groundwater sampling (Shaw, 2008) and it is not considered a COPEC in groundwater at Parcel 69.

3.4.2.16.3 COPECs for Surface Water at Parcel 69

One surface water sample was collected from Oceanport Creek in relation to Parcel 69 as part of the 2010 BEE. Oceanport Creek, in the vicinity of Parcel 69, is classified as saline estuarine (**Section 2.4.3**). Parameters detected in surface water samples are presented in **Table D-32**.

PCBs. No PCBs were detected in surface water samples at Parcel 69. PCBs are not considered COPECs in surface water at Parcel 69.

VOCs. No VOCs were detected in surface water samples at Parcel 69. VOCs are not considered COPECs in surface water at Parcel 69.

SVOCs. No SVOCs were detected in surface water samples at Parcel 69. SVOCs are not considered COPECs in surface water at Parcel 69.

Metals. A total of 10 metals were detected in surface water samples at Parcel 69. None of these metals were detected at concentrations exceeding the applicable saltwater ESC. Metals are not considered COPECs for surface water at Parcel 49.

3.4.2.16.4 COPECs for Sediment at Parcel 69

Four surface sediment samples representing two sediment locations were collected from Oceanport Creek in relation to Parcel 69 as part of the ECP SI (Shaw, 2008). Oceanport Creek, in the vicinity of Parcel 69, is classified as saline estuarine (**Section 2.4.3**). Parameters detected in sediment samples are presented in **Table B-11**.

PCBs. No PCBs were detected in surface sediment samples at Parcel 69. PCBs are not considered COPECs in sediment at Parcel 69.

VOCs. Three VOCs (acetone, carbon disulfide, and methylene chloride) were detected in sediment samples. VOCs are not considered COPECs in sediment at Parcel 69.

SVOCs. Five SVOCs were detected in surface sediment samples at Parcel 69. All five of the detected SVOCs exceeded the available saltwater sediment ESC. Di-*n*-butyl phthalate was detected in both samples at concentrations ranging from 1.20 to 4.80 mg/kg. As noted previously, phthalates are common laboratory contaminants and are often found at low concentrations in both field and laboratory QC samples. Bis(2-ethylhexyl) phthalate is not considered a COPEC in surface sediment at Parcel 69. Acenaphthene in two samples (0.50 and 1.2 mg/kg), fluoranthene (0.79 and 2.8 mg/kg), phenanthrene in one sample (0.25 mg/kg), and pyrene (1.1 and 3.1 mg/kg) exceeded the saltwater ESC of 0.016, 0.6, 0.24, and 0.665 mg/kg, respectively. Acenaphthene, fluoranthene, phenanthrene, and pyrene are considered COPECs in sediment at Parcel 69.

Metals. Of the 20 metals detected in sediment at Parcel 49, 14 were detected in at least one sediment sample each at concentrations exceeding the applicable saltwater sediment ESC. Aluminum was detected in both sediment samples and one concentration (4.13%) exceeded the saltwater sediment ESC (1.8%). Aluminum, like iron, is a major component of soil and sediment, and is usually not considered a COPEC except in very low pH environments. Aluminum is not considered a COPEC at Parcel 69. Arsenic was detected in all samples and one concentration (36.2 mg/kg) exceeded the ESC (8.2 mg/kg). Barium was detected in all samples and one concentration (89.6 mg/kg) exceeded the ESC (48 mg/kg). Cadmium was detected in one sample and the concentration (14.1 mg/kg) exceeded the ESC (1.2 mg/kg). Chromium was detected in all samples and the concentrations (74.5 to 345 mg/kg) were greater than the ESC (81 mg/kg). Cobalt was detected in both samples and one concentration (20.3 mg/kg) exceeded the ESC (10 mg/kg). Copper was detected in all samples and one concentration (203 mg/kg) exceeded the ESC (34 mg/kg). Lead was detected in both samples and one concentration (410 mg/kg) exceeded the ESC (47 mg/kg). Manganese was detected in both samples and one concentration (339 mg/kg) exceeded the ESC (260 mg/kg). Mercury was detected in one sample and the concentration (0.83 mg/kg) exceeded the ESC (0.15 mg/kg). Nickel was detected in all samples and one concentration (53.1 mg/kg) exceeded the ESC (21 mg/kg). Silver was detected in one sample and the concentration (9.99 mg/kg) exceeded the ESC (1 mg/kg). Vanadium was detected in all samples and one concentration (185 mg/kg) exceeded the ESC (57 mg/kg). Zinc was detected in all samples and one concentration (515 mg/kg) exceeded the ESC (150 mg/kg). Arsenic, barium, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, silver, vanadium, and zinc are considered COPECs in sediment at Parcel 69.

3.4.2.16.5 Summary of COPECs for Parcel 69

Parameters detected in soil, groundwater, surface water, or sediment at Building 900 (Parcel 69) at concentrations greater than the applicable ESC were identified as COPECs for the site. Though copper was not detected in surface water at Parcel 69, its MDLs were greater than the saltwater ESC. Given that copper was identified as a COPEC in soil and sediment, it is considered a possible COPEC in surface water. Several PAHs [acenaphthylene, anthracene, benzo(*a*)anthracene, benzo(*g,h,i*)perylene, benzo(*k*)fluoranthene, dibenzo(*a,h*)anthracene, fluorene, indeno(1,2,3-*cd*)pyrene, 2-methylnaphthalene, and naphthalene] were not detected in sediment samples but their detection limits were greater than the saltwater sediment ESC in both samples. These PAHs were not identified as COPECs in other site media and are not considered COPECs for sediment. The COPECs, and possible COPECs, identified for Parcel 69 are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
Not Applicable	None	None	None
Pesticides			
Not Applicable	Not Applicable	Not Applicable	Not Applicable
PCBs			
None	Not Applicable	None	None

Soil	Groundwater	Surface Water	Sediment
SVOCs			
None	None	None	Acenaphthene Fluoranthene Phenanthrene Pyrene
Metals			
Chromium Copper Lead Mercury Vanadium Zinc	Not Applicable	None	Arsenic Barium Cadmium Chromium Cobalt Copper Lead Manganese Mercury Nickel Silver Vanadium Zinc
Possible COPECs			
		Copper	

3.4.3 CHARLES WOOD AREA

3.4.3.1 LANDFILL, SITE CW-3A, FTMM-25

Near surface soil, groundwater, surface water, and sediment analytical data were evaluated for the identification of COPECs related to Landfill CW-3A (FTMM-25).

3.4.3.1.1 COPECs for Soil at Landfill CW-3A

Near surface (6-12 inches bgs) soil samples were collected from Landfill CW-3A (FTMM-25) as part of the IRP RI investigation (Versar, 2005b). A total of 48 samples were analyzed for SVOCs, pesticides, PCBs, and metals. Parameters detected in near surface soil samples are presented in **Table A-9**.

SVOCs. A total of 21 SVOCs were detected in near surface soil samples from Landfill CW-3A (FTMM-25). Of these 21 SVOCs, two were detected at concentrations exceeding the soil ESC in at least one sample. Naphthalene was detected in one sample at a concentration greater than the 0.0994 mg/kg ESC. Bis(2-ethylhexyl) phthalate was detected in two samples at concentrations exceeding the 0.925 mg/kg ESC. As noted elsewhere, bis(2-ethylhexyl) phthalate is commonly found in field and laboratory QC samples, and bis(2-ethylhexyl) phthalate is not considered a COPEC. Naphthalene is considered a COPEC in soil at Landfill CW-3A (FTMM-25).

Pesticides. Six pesticides were detected in near surface soil samples from Landfill CW-3A (FTMM-25). Four of these pesticides were detected at concentrations exceeding the soil ESC in at least one sample. 4,4′-DDT was detected in half of the 48 samples and the majority of these had concentrations that were greater than the 0.0035 mg/kg ESC. Dieldrin was detected in four samples and the concentrations were greater than the 0.049 mg/kg ESC. Endrin aldehyde and heptachlor were detected in one sample each at concentrations exceeding the 0.0105 and 0.0538 mg/kg ESC, respectively. 4,4′-DDT, endrin aldehyde, dieldrin, and heptachlor are considered COPECs at Landfill CW-3A (FTMM-25).

PCBs. Two Aroclors were detected in near surface soil samples from Landfill CW-3A (FTMM-25). Aroclor 1260 and Aroclor 1254 were detected in one sample each. The concentration of Aroclor 1254 exceeded the 0.371 mg/kg ESC. Aroclor 1254 is considered a COPEC in soil at Landfill CW-3A (FTMM-25).

Metals. A total of 22 metals were detected in near surface soil samples from Landfill CW-3A (FTMM-25) of which most metals were detected in the majority of the samples. Silver was detected

infrequently, being detected in seven samples; selenium was detected in less than half the samples (14 of 48). Fourteen metals (aluminum, antimony, arsenic, barium, cadmium, chromium, copper, lead, manganese, mercury, selenium, silver, vanadium, and zinc) were detected at concentrations exceeding the soil ESC. Aluminum, like iron, is a common component of soils and sediments and is not considered a COPEC except in conditions of very low pH where aluminum could be bioavailable; aluminum is not considered a COPEC in soil at Landfill CW-3A. Antimony, arsenic, barium, cadmium, chromium, copper, lead, manganese, mercury, selenium, silver, vanadium, and zinc are considered COPECs in soil at Landfill CW-3A (FTMM-25).

3.4.3.1.2 COPECs for Groundwater at Landfill CW-3A (FTMM-25)

Four groundwater monitoring wells at Landfill CW-3A (FTMM-25) have been monitored for metals during the 2008-2009 time period. Shrewsbury Creek could receive groundwater discharge from Landfill CW-3A (FTMM-25). Shrewsbury Creek, in the vicinity of Landfill CW-3A (FTMM-25), is classified as freshwater (**Section 2.4.3**). Parameters detected in groundwater samples are presented in **Table C-10**.

Metals. A total of 10 metals were detected in groundwater samples from Landfill CW-3A (FTMM-25) during the 2008-2009 time period. Of these 10, six (barium, cadmium, chromium, copper, lead, and selenium) were detected in at least one groundwater sample at concentrations exceeding the freshwater ESC. Barium concentrations in one well (CW3AMW02) were all greater than the 220 µg/L freshwater ESC. Barium did not exceed the ESC in any of the other three monitoring wells during this period. Most of the concentrations of copper from one well (CW3AMW03) exceeded the 6.5 µg/L site-specific freshwater ESC. Copper did not exceed the ESC in any of the other three monitoring wells during this period. Chromium was detected in one sample at a concentration greater than the freshwater ESC (19 µg/L). Cadmium, lead, and selenium were detected at concentrations exceeding the ESC in most, if not all, of the wells in at least one sample. Barium, cadmium, chromium, copper, lead, and selenium are considered COPECs in groundwater at Landfill CW-3A (FTMM-25).

3.4.3.1.3 COPECs for Surface Water at Landfill CW-3A (FTMM-25)

Two surface water samples were collected from Shrewsbury Creek adjacent to Landfill CW-3A (FTMM-25) as part of the 2010 BEE. One surface water sample was collected downstream of the stormwater outfall at the western end of Landfill CW-3A (**Appendix K**), and the other surface water sample was collected downgradient of that location. Shrewsbury Creek, in the vicinity of Landfill CW-3A (FTMM-25), is classified as freshwater (**Section 2.4.3**). Parameters detected in surface water samples are presented in **Table D-33**.

VOCs. One VOC was detected in at least one of the two surface water samples. Toluene was detected at a concentration (6.8 µg/L) less than the freshwater ESC. VOCs are not considered COPECs in surface water at Landfill CW-3A (FTMM-25).

SVOCs. Three SVOCs were detected in at least one of the two surface water samples. One sample had a concentration of 3,3′-dichlorobenzidine (0.61 µg/L) less than the freshwater ESC. Anthracene (0.11 µg/L) and benzo(*a*)pyrene (0.31 µg/L) were detected greater than the freshwater ESC (0.035 and 0.014 µg/L, respectively). Anthracene and benzo(*a*)pyrene are considered COPECs in surface water at Landfill CW-3A (FTMM-25).

PCBs. PCBs were not detected in surface water samples and are not considered COPECs in surface water at Landfill CW-3A (FTMM-25).

Pesticides. Pesticides were not detected in surface water samples and are not considered COPECs in surface water at Landfill CW-3A (FTMM-25).

Metals. A total of 18 metals were detected in surface water samples at Landfill CW-3A (FTMM-25). Of these 18, four were detected at concentrations exceeding the freshwater ESC. Total copper (8.48 µg/L) and total lead (6.18 and 8.81 µg/L) were detected at concentrations exceeding the freshwater ESC for dissolved copper (6.5 µg/L) and dissolved lead (5.4 µg/L); dissolved copper and dissolved lead were not detected. Copper and lead are not considered COPECs in surface water. Total cadmium (0.97 µg/L) and dissolved cadmium (0.79 µg/L) were detected at concentrations greater than the freshwater ESC (0.14 µg/L) in one surface water sample, and total zinc (117 µg/L) and dissolved zinc

(99.8 µg/L) were detected greater than the freshwater ESC (88 µg/L) in one surface water sample. Cadmium and zinc are considered COPECs in surface water at Landfill CW-3A (FTMM-25).

3.4.3.1.4 COPECs for Sediment at Landfill CW-3A (FTMM-25)

Six sediment samples were collected from Shrewsbury Creek adjacent to Landfill CW-3A (FTMM-25) as part of the 2010 BEE. Sediment sample locations were based on previous sediment sampling conducted for the RI and were located in the field based on depositional characteristics and potential contaminant migration pathways and included storm water outfalls (**Appendix K**) into Shrewsbury Creek in the vicinity of Landfill CW-3A (FTMM-25) from the area of Buildings 2707 and 2713 in Parcel 27 (**Section 3.4.3.4**). Shrewsbury Creek, in the vicinity of Landfill CW-3A (FTMM-25), is classified as freshwater (**Section 2.4.3**). Parameters detected in sediment samples are presented in **Table D-34**.

VOCs. Four VOCs (acetone, methylene chloride, toluene, and 2-butanone) were detected in at least one sediment sample each, but none were detected at concentrations exceeding the ESC.

PCBs. No PCBs were detected in sediment samples at Landfill CW-3A (FTMM-25).

Pesticides. Three pesticides (4,4'-DDT, 4,4'-DDE, and 4,4'-DDD) were detected in at least one sediment sample each from Landfill CW-3A. Only one sample had a 4,4'-DDD concentration (0.013 mg/kg) exceeding the freshwater sediment ESC (0.008 mg/kg), and 4,4'-DDD is considered a COPEC in sediment at Landfill CW-3A (FTMM-25).

SVOCs. A total of 16 SVOCs were detected in surface sediment samples at Landfill CW-3A (FTMM-25). Of the 16 detected SVOCs, 12 were detected in one sediment sample (CW3-SD6) at concentrations exceeding the freshwater ESC; these were all PAHs: 0.78 mg/kg acenaphthene, 4.1 mg/kg anthracene, 7.0 mg/kg benzo(a)anthracene, 4.6 mg/kg benzo(a)pyrene, 2.0 mg/kg benzo(*g,h,i*)perylene, 2.3 mg/kg benzo(*k*)fluoranthene, 5.6 mg/kg chrysene, 17 mg/kg fluoranthene, 1.4 mg/kg fluorene, 2.0 mg/kg indeno(1,2,3-*cd*)pyrene, 15 mg/kg phenanthrene, and 13 mg/kg pyrene. Acenaphthene, anthracene, benzo(*a*)anthracene, benzo(*a*)pyrene, benzo(*g,h,i*)perylene, benzo(*k*)fluoranthene, chrysene, fluoranthene, fluorene, indeno(1,2,3-*cd*)pyrene, phenanthrene, and pyrene are considered COPECs in sediment at Landfill CW-3A (FTMM-25).

Metals. Of the 20 metals detected in sediment at Landfill CW-3A (FTMM-25), five (arsenic, cadmium, chromium, copper, and lead) were detected in at least one sample at concentrations exceeding the freshwater sediment ESC. Arsenic concentrations in one sample (6.59 mg/kg), cadmium concentrations in three samples (1.07 to 3.38 mg/kg), chromium concentrations in five samples (29.3 to 145 mg/kg), copper concentrations in two samples (23.3 and 31.6 mg/kg), and lead in one sample (31.2 mg/kg) exceeded the ESC of 6, 0.6, 26, 16, and 31 mg/kg, respectively. Though there are no freshwater sediment ESC for barium, selenium, and vanadium, detected concentrations of these metals were detected at concentrations greater than the available saltwater sediment ESC. These metals were identified as COPECs in other environmental media at Landfill CW-3A (FTMM-25) and are considered COPECs in sediment. Arsenic, barium, cadmium, chromium, copper, lead, selenium, and vanadium are considered COPECs in sediment at Landfill CW-3A (FTMM-25).

3.4.3.1.5 Summary of COPECs for Landfill CW-3A (FTMM-25)

Parameters detected in soil, groundwater, surface water, or sediment at Landfill CW-3A (FTMM-25) at concentrations greater than the applicable ESC were identified as COPECs for the site. Though silver was not detected in surface water at Landfill CW-3A (FTMM-25), its MDLs were greater than the freshwater ESC. Given that silver is considered a COPEC in sediment (though not in soil or groundwater), it is considered a possible COPEC in surface water. The COPECs, and possible COPECs, identified for Landfill CW-3A (FTMM-25) are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
Not Applicable	Not Applicable	None	None
Pesticides			
DDT	Not Applicable	None	DDD

Soil	Groundwater	Surface Water	Sediment
Dieldrin Endrin aldehyde Heptachlor			
PCBs			
Aroclor 1254	Not Applicable	None	None
SVOCs			
Naphthalene	Not Applicable	Anthracene Benzo(a)pyrene	Acenaphthene Anthracene Benzo(*a*)anthracene Benzo(*a*)pyrene Benzo(*g,h,i*)perylene Benzo(*k*)fluoranthene Chrysene Fluoranthene Fluorene Indeno(1,2,3-*cd*)pyrene Phenanthrene Pyrene
Metals			
Antimony Arsenic Barium Cadmium Chromium Copper Lead Manganese Mercury Selenium Silver Vanadium Zinc	Barium Cadmium Chromium Copper Lead Selenium	Cadmium Zinc	Arsenic Barium Cadmium Chromium Copper Lead Selenium Vanadium
Possible COPECs			
		Silver	

3.4.3.2 FORMER PESTICIDE STORAGE AREA, SITE CW-6 (FTMM-28)

Surface soil, groundwater, surface water, and wetland sediment analytical data were evaluated for the identification of COPECs related to the Former Pesticide Storage Area, Site CW-6 (FTMM-28).

3.4.3.2.1 COPECs for Soil at Former Pesticide Storage Area, Site CW-6 (FTMM-28)

Four surface soil samples were collected as part of the 2010 BEE at Site CW-6 (FTMM-28). Parameters detected in sediment samples are presented in **Table D-35**.

VOCs. Five VOCs were detected in surface soil samples at Site CW-6 (FTMM-28). None of the VOCs were detected at concentrations exceeding the soil ESC. VOCs are not considered COPECs in soil at Site CW-6 (FTMM-28).

SVOCs. Fifteen SVOCs were detected in surface soil samples at Site CW-6 (FTMM-28). One SVOC, chrysene, was detected at a concentration (22 mg/kg) greater than the soil ESC (4.73 mg/kg). Chrysene is considered a COPEC in soil at Site CW-6 (FTMM-28).

Pesticides. Five pesticides were detected in surface soil samples at Site CW-6 (FTMM-28). Dieldrin (0.0092 mg/kg) and 4,4'-DDT (0.021 to 0.23 mg/kg) were detected in at least one soil sample each greater than the soil ESC of 0.049 and 0.0035 mg/kg, respectively. Dieldrin and 4,4'-DDT are considered COPECs in soil at Site CW-6 (FTMM-28).

PCBs. No PCBs were detected in surface soil samples at Site CW-6 (FTMM-28). PCBs are not considered COPECs in surface soil at Site CW-6 (FTMM-28).

Metals. A total of 23 metals were detected in surface soil samples at Site CW-6 (FTMM-28). Eleven metals (aluminum, antimony, arsenic, cadmium, chromium, copper, lead, mercury, selenium, vanadium, and zinc) were detected exceeding the ESC in at least one of the surface soil samples from Site CW-6 (FTMM-28). Aluminum (1,640 to 6,740 mg/kg), antimony (0.62 to 3.06 mg/kg), chromium (13.1 to 55.2 mg/kg), lead (30.9 to 356 mg/kg), mercury (0.218 to 8.1 mg/kg), selenium (1.1 to 7.61 mg/kg), vanadium (12.3 to 55.6 mg/kg), and zinc (42.5 to 373 mg/kg) were detected at concentrations exceeding the ESC in all four of the surface soil samples. Aluminum, like iron, is a common component of soils and sediments and is not considered a COPEC except in conditions of very low pH where aluminum could be bioavailable; aluminum is not considered a COPEC in soil at Landfill Site CW-6. Antimony, arsenic, cadmium, chromium, copper, lead, mercury, selenium, vanadium, and zinc are considered COPECs in soil at CW-6 (FTMM-28).

3.4.3.2.2 COPECs for Groundwater at Former Pesticide Storage Area, Site CW-6 (FTMM-28)

Four groundwater monitoring wells at Site CW-6 (FTMM-28) have been monitored during the 2008-2009 time period. Sampling for SVOCs and VOCs was discontinued after the November 2004 sampling event per NJDEP approval letter dated November 2004. SVOCs and VOCs are not considered COPECs in groundwater at Landfill 2. Wampum Brook could receive groundwater discharge from Site CW-6 (FTMM-28). Wampum Brook, in the vicinity of Site CW-6 (FTMM-28), is classified as freshwater (**Section 2.4.3**). Parameters detected in groundwater samples are presented in **Table C-11**.

Metals. A total of 11 metals were detected in groundwater samples from Site CW-6 (FTMM-28) during the 2008-2009 time period. Of these 11, four (cadmium, copper, lead, and selenium) were detected in at least one groundwater sample at concentrations exceeding the freshwater ESC. Lead concentrations in one well (CW6MW01) during two quarters in 2008 were greater than the 5.4 µg/L freshwater ESC. Copper exceeded the site-specific freshwater ESC for dissolved copper of 8.1 µg/L in two of the monitoring wells. Cadmium and selenium were detected at concentrations exceeding the ESC (0.14 and 5 µg/L, respectively) in all of the wells in at least one sample. Cadmium, copper, lead, and selenium are considered COPECs in groundwater at Landfill CW-3A.

3.4.3.2.3 COPECs for Surface Water at Former Pesticide Storage Area, Site CW-6 (FTMM-28)

Two surface water samples were collected as part of the 2010 BEE at Site CW-6 (FTMM-28). These were located upstream of Site CW-6 (FTMM-28) where Wampum Brook enters the CWA and downstream of Site CW-6 (FTMM-28) where Wampum Brook exits the CWA. Wampum Brook, in the vicinity of Site CW-6 (FTMM-28), is classified as freshwater (**Section 2.4.3**). Parameters detected in surface water samples are presented in **Table D-36**.

VOCs. One VOC was detected in surface water samples at Site CW-6 (FTMM-28). MTBE was detected in one sample at a concentration less than the freshwater ESC. VOCs are not considered COPECs in surface water at Site CW-6 (FTMM-28).

PCBs. One PCB mixture was detected in surface water samples at Site CW-6 (FTMM-28). Aroclor 1242 was detected in both surface water samples at concentrations (0.13 and 0.3 µg/L) exceeding the freshwater ESC (0.014 µg/L). Aroclor 1242 is considered a COPEC in surface water at Site CW-6 (FTMM-28).

SVOCs. No SVOCs were detected in surface water samples. SVOCs are not considered COPECs in surface water at Site CW-6 (FTMM-28).

Pesticides. No pesticides were detected in surface water samples. Pesticides are not considered COPECs in surface water at Site CW-6 (FTMM-28).

Metals. A total of 13 metals were detected in surface water samples at Site CW-6 (FTMM-28). Of these 13, three (cadmium, lead, and zinc) were detected at concentrations exceeding the freshwater ESC in at least one sample. Total cadmium (0.52 and 1.13 µg/L) and dissolved cadmium (0.8 µg/L) were detected greater than the site-specific freshwater ESC (0.14 µg/L) and total cobalt (29.4 µg/L) and dissolved cobalt (28.7 µg/L) were exceeded the freshwater ESC (24 µg/L) in one surface water sample. This sediment sample was collected from Wampum Brook upstream of Site CW-6 (FTMM-28) at the

upgradient boundary of the CWA. Cobalt is not considered a COPEC in surface water at Site CW-6 (FTMM-28). Total lead (7.94 and 8.09 µg/L) and dissolved lead (6.32 and 8.79 µg/L) were detected at concentrations exceeding the freshwater ESC (5.4 µg/L) in both samples. Cadmium and lead are considered COPECs in surface water at Site CW-6 (FTMM-28).

3.4.3.2.4 COPECs for Sediment at Former Pesticide Storage Area, Site CW-6 (FTMM-28)

Four sediment samples were collected from the wetland area southwest of Site CW-6 (FTMM-28) and two sediment samples were collected from Wampum Brook as part of the 2010 BEE. Wampum Brook, in the vicinity of Site CW-6 (FTMM-28), is classified as freshwater (**Section 2.4.3**). Parameters detected in sediment samples are presented in **Table D-37**.

VOCs. Five VOCs (acetone, methylene chloride, styrene, toluene, and 2-butanone) were detected in at least one sediment sample each, but none were detected at concentrations exceeding the freshwater sediment ESC. VOCs are not considered COPECs in wetland sediments at Site CW-6 (FTMM-28).

Pesticides. One pesticide (4,4'-DDE) was detected in one wetland sediment sample from Site CW-6 (FTMM-28). The concentration (0.006 mg/kg) exceeded the freshwater sediment ESC (0.005 mg/kg) and 4,4'-DDE is considered a COPEC in sediment at Site CW-6 (FTMM-28).

PCBs. Two PCB mixtures (Aroclor 1242 and Aroclor 1260) were detected in one sediment sample each. Aroclor 1260 was detected in one wetland sediment sample at a concentration (0.1 mg/kg) which exceeds the freshwater sediment ESC (0.005 mg/kg); Aroclor 1242 was detected at a concentration less than the freshwater sediment ESC for PCBs (0.07 mg/kg). Aroclor 1260 is considered a COPEC in wetland sediment at Site CW-6 (FTMM-28).

SVOCs. A total of 20 SVOCs were detected in surface sediment samples at Site CW-6 (FTMM-28). Of the 20 detected SVOCs, 15 were detected in one sediment sample (CW6-SD6) at concentrations exceeding the ESC; these were all PAHs: 0.47 mg/kg acenaphthene, 1.6 mg/kg acenaphthylene, 0.3 mg/kg anthracene, 1.0 mg/kg benzo(*a*)anthracene, 1.2 mg/kg benzo(*a*)pyrene, 0.89 mg/kg benzo(*g,h,i*)perylene, 0.74 mg/kg benzo(*k*)fluoranthene, 1.9 mg/kg chrysene, 4.9 mg/kg fluoranthene, 0.82 mg/kg fluorene, 0.98 mg/kg indeno(1,2,3-*cd*)pyrene, 1.3 mg/kg 2-methylnaphthalene, 4.4 mg/kg naphthalene, 8.3 mg/kg phenanthrene, and 3.3 mg/kg pyrene. This sediment sample was collected from Wampum Brook upstream of Site CW-6 (FTMM-28) at the upgradient boundary of the CWA. These PAHs are not considered COPECs in sediment at Site CW-6 (FTMM-28). One SVOC (2,4-dinitrophenol) was detected in two wetland sediment samples at concentrations (1.2 and 1.7 mg/kg) that exceeded the freshwater sediment ESC (0.00621 mg/kg). Thus, 2,4-dinitrophenol is considered a COPEC in wetland sediments at Landfill CW-6 (FTMM-28).

Metals. Of the 22 metals detected in sediment at Site CW-6 (FTMM-28), nine (arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc) were detected in at least one sample at concentrations exceeding the freshwater sediment ESC. Arsenic concentrations in two wetland samples (11.7 and 13.1 mg/kg), cadmium concentrations in five samples (0.9 to 5.56 mg/kg), chromium concentrations in six samples (35.3 to 150 mg/kg), copper concentrations in four samples (26.2 to 56.2 mg/kg), lead in four samples (124 to 218 mg/kg), mercury in three samples (0.426 to 6.6 mg/kg), nickel in three samples (16.2 to 56.2 mg/kg), silver in four samples (1.1 to 12.1 mg/kg), and zinc in one sample (168 mg/kg) exceeded the ESC of 6, 0.6, 26, 16, 31, 0.2, 16, 1.0, and 120 mg/kg, respectively. Though there are no freshwater sediment ESC for barium, selenium, and vanadium, detected concentrations of these metals were detected at concentrations greater than the available saltwater sediment ESC. Of these metals, selenium and vanadium were identified as COPECs in other environmental media at Site CW-6 (FTMM-28) and are considered COPECs in sediment. Arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, vanadium, and zinc are considered COPECs in sediment at Site CW-6 (FTMM-28).

3.4.3.2.5 Summary of COPECs for Site CW-6 (FTMM-28)

Parameters detected in soil, groundwater, surface water, or sediment at Site CW-6 (FTMM-28) at concentrations greater than the applicable ESC were identified as COPECs for the site. Though silver

and 4,4′-DDE were not detected in surface water at Landfill CW-6 (FTMM-28), their MDLs were greater than the freshwater ESC. Given that silver and 4,4′-DDE are considered COPECs in sediment (though not in soil or groundwater), they are considered possible COPECs in surface water. The COPECs, and possible COPECs, identified for Landfill CW-6 are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
None	None	None	None
Pesticides			
DDT Dieldrin	Not Applicable	None	DDE
PCBs			
None	Not Applicable	Aroclor 1242	Aroclor 1260
SVOCs			
Chrysene	None	None	2,4-Dinitrophenol
Metals			
Antimony Arsenic Cadmium Chromium Copper Lead Mercury Selenium Vanadium Zinc	Cadmium Copper Lead Selenium	Cadmium Lead	Arsenic Cadmium Chromium Copper Lead Mercury Nickel Selenium Silver Vanadium Zinc
Possible COPECs			
		DDE Silver	

3.4.3.3 BUILDING 2700 (ECP PARCEL 15)

Groundwater, surface water, and sediment analytical data were evaluated for the identification of COPECs related to Building 2700 and ECP Parcel 15.

3.4.3.3.1 COPECs for Groundwater at Building 2700 (Parcel 15)

Seven groundwater samples (including one duplicate sample) were collected from six distinct temporary wells as part of the ECP SI (Shaw, 2008). These were located along the downgradient boundary of the parcel along Shrewsbury Creek. Shrewsbury Creek could receive groundwater discharge from Parcel 15. Shrewsbury Creek, in the vicinity of Parcel 15, is classified as freshwater (**Section 2.4.3**). Parameters detected in groundwater samples are presented in **Table B-12**.

VOCs. One VOC, toluene, was detected in one groundwater sample but at a concentration less than the ESC. VOCs are not considered COEPCs in groundwater at Parcel 15.

SVOCs. One SVOC, bis(2-ethylhexyl) phthalate, was detected in three groundwater samples at concentrations from 1.19 to 4.04 µg/L exceeding the freshwater ESC of 0.3 µg/L. Bis(2-ethylhexyl) phthalate, a commonly used plasticizer, is present in a wide variety of plastic products and is commonly detected in field and laboratory QC samples. It was detected in the field blank associated with Parcel 15 groundwater sampling (Shaw, 2008) and it is not considered a COPEC in groundwater at Parcel 15.

Metals. A total of 19 metals were detected in Parcel 15 groundwater samples. Of the 19 metals detected, seven (barium, cadmium, chromium, copper, lead, selenium, and vanadium) were detected at least once at concentrations greater than the respective freshwater ESC. Barium, cadmium, chromium, copper, lead, selenium, and vanadium are considered COPECs in groundwater at Parcel 15.

3.4.3.3.2 COPECs for Surface Water at Building 2700 (ECP Parcel 15)

Two surface water samples were collected from Shrewsbury Creek adjacent to Parcel 15 as part of the 2010 BEE. These samples were collected at the discharge points of an underground stream diversion near the southwest end of Building 2525 and of a stormwater pipe outfall (**Appendix K**). Shrewsbury Creek, in the vicinity of Parcel 15, is classified as freshwater (**Section 2.4.3**). Parameters detected in surface water samples are presented in **Table D-38**.

VOCs. No VOCs were detected in surface water samples at Parcel 15. VOCs are not considered COPECs in surface water at Parcel 15.

SVOCs. No SVOCs were detected in surface water samples at Parcel 15. SVOCs are not considered COPECs in surface water at Parcel 15.

PCBs. No PCBs were detected in surface water samples at Parcel 15. PCBs are not considered COPECs in surface water at Parcel 15.

Metals. A total of 12 metals were detected in Parcel 15 surface water samples. Of the 12 metals detected, two (cadmium and lead) were detected at least once exceeding the freshwater ESC. Total cadmium was detected in one surface water sample at a concentration of 0.55 µg/L which exceeds the freshwater ESC of 0.15 µg/L. However, the ESC is based on dissolved cadmium and cadmium was not detected in either of the filtered surface water samples from Parcel 15; cadmium is not considered a COPEC in surface water at Parcel 15. Lead was detected in all surface water samples from Parcel 15. Total lead concentrations ranged from 6.84 to 8.3 µg/L and dissolved lead concentrations ranged from 4.33 to 8.27 µg/L. The freshwater ESC for lead of 5.4 µg/L is based on dissolved lead and one of the two filtered surface water samples had a lead concentration above the ESC. Lead is considered a COPEC in surface water at Parcel 15.

3.4.3.3.3 COPECs for Sediment at Building 2700 (ECP Parcel 15)

A total of three surface sediment samples were collected from three stormwater outfall locations within Shrewsbury Creek adjacent to Parcel 15 as part of the ECP SI (Shaw, 2008). These samples were collected at the discharge points of an underground stream diversion near the southwest end of Building 2525 and of two other stormwater pipe outfalls (**Appendix K**). Shrewsbury Creek, in the vicinity of Parcel 15, is classified as freshwater (**Section 2.4.3**). Parameters detected in sediment samples are presented in **Table B-13**.

SVOCs. A total of 10 SVOCs were detected in Parcel 15 surface sediment samples. One SVOC, bis(2-ethylhexyl) phthalate, was detected in one of three surface sediment samples with a concentration of 1.3 mg/kg which exceeds the freshwater sediment ESC of 0.182 mg/kg. As noted previously, phthalates are common laboratory contaminants and are often found at low concentrations in both field and laboratory QC samples. Bis(2-ethylhexyl) phthalate is not considered a COPEC in surface sediment at Parcel 15.

Metals. A total of 18 metals were detected in Parcel 15 surface sediment samples. Only one metal was detected in surface sediment samples from Parcel 15 at concentrations exceeding the freshwater sediment ESC. Total chromium was detected at concentrations ranging from 29.4 to 37.0 mg/kg. These are above the 26 mg/kg ESC, and chromium is considered a COPEC in sediment at Parcel 15.

3.4.3.3.4 Summary of COPECs for Parcel 15

Parameters detected in soil, groundwater, surface water, or sediment at Building 2700 (Parcel 15) at concentrations greater than the applicable ESC were identified as COPECs for the site. Though cadmium was not detected in filtered surface water samples at Parcel 15, their MDLs were greater than the freshwater ESC. Given that cadmium was detected at concentrations exceeding the freshwater ESC in unfiltered surface water samples and cadmium is considered a COPEC in groundwater, it is considered a possible COPEC in surface water. The COPECs, and possible COPECs, identified for Parcel 15 are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
Not Applicable	None	None	Not Applicable
Pesticides			
Not Applicable	Not Applicable	Not Applicable	Not Applicable
PCBs			
Not Applicable	Not Applicable	None	Not Applicable
SVOCs			
Not Applicable	None	None	None
Metals			
Not Applicable	Barium Cadmium Chromium Copper Lead Selenium Vanadium	Lead	Chromium
Possible COPECs			
		Cadmium	

3.4.3.4 BUILDINGS 2507 AND 2704 (ECP PARCEL 27)

Surface soil, surface water, and sediment analytical data were evaluated for the identification of COPECs related to Buildings 2507 and 2704 in ECP Parcel 27.

3.4.3.4.1 COPECs for Surface Soil at Buildings 2507 and 2704 (ECP Parcel 27)

Three surface soil samples (including one duplicate) were collected at Parcel 27 as part of the SI (Shaw, 2008). Parameters detected in surface soil samples are presented in **Table B-14**.

VOCs. No VOCs were detected in surface soil samples at Parcel 27. VOCs are not considered COPECs in surface soil.

PCBs. No PCBs were detected in surface soil samples at Parcel 27. PCBs are not considered COPECs in surface soil.

SVOCs. A total of eight SVOCs were detected in surface soil samples. Of these, only one was detected greater than the soil ESC. Bis(2-ethylhexyl) phthalate was detected in the duplicate sample at a concentration (0.940 mg/kg) which exceeds the 0.92954 mg/kg soil ESC. As noted elsewhere, bis(2-ethylhexyl) phthalate is commonly found in field and laboratory QC samples, and bis(2-ethylhexyl) phthalate is not considered a COPEC. SVOCs are not considered COPECs in soil at Parcel 27.

Metals. A total of 18 metals were detected in surface soil samples at Parcel 27. Of these, 10 (aluminum, arsenic, cadmium, chromium, copper, lead, manganese, mercury, vanadium, and zinc) were detected in at least one surface soil sample each above the soil ESC. Aluminum, like iron, is a common component of soils and sediments and is not considered a COPEC except in conditions of very low pH where aluminum could be bioavailable; aluminum is not considered a COPEC in soil at Parcel 27. Arsenic, cadmium, chromium, copper, lead, manganese, mercury, vanadium, and zinc are considered COPECs at Parcel 27.

3.4.3.4.2 COPECs for Surface Water at Buildings 2507 and 2704 (ECP Parcel 27)

Two surface water samples were collected from Shrewsbury Creek adjacent to Parcel 27, at an outfall and at an additional location downstream, as part of the 2010 BEE. One surface water sample was collected at a stormwater outfall and the other was collected downstream of that location. Shrewsbury Creek, in the vicinity of Parcel 27, is classified as freshwater (**Section 2.4.3**). Parameters detected in surface water samples are presented in **Table D-39**.

VOCs. No VOCs were detected in surface water samples at Parcel 27. VOCs are not considered COPECs in surface water at Parcel 27.

SVOCs. No SVOCs were detected in surface water samples at Parcel 27. SVOCs are not considered COPECs in surface water at Parcel 27.

PCBs. No PCBs were detected in surface water samples at Parcel 27. PCBs are not considered COPECs in surface water at Parcel 27.

Metals. A total of 14 metals were detected in Parcel 27 surface water samples. Of the 14 metals detected, three (cadmium, chromium, and lead) were detected at least once exceeding the freshwater ESC. Total cadmium was detected at concentrations of 0.76 and 0.88 µg/L and dissolved cadmium was detected at concentrations of 0.52 and 0.69 µg/L; these exceed ESC for dissolved cadmium of 0.16 µg/L. Chromium was detected in one filtered sample at a concentration (28.5 µg/L) greater than the ESC for dissolved chromium of 21 µg/L. Total lead was detected at concentrations of 5.46 and 10.6 µg/L and dissolved lead was detected at concentrations of 5.77 and 8.18 µg/L; these exceed the freshwater ESC for dissolved lead of 5.4 µg/L. Cadmium, chromium, and lead are considered COPECs in surface water at Parcel 27.

3.4.3.4.3 COPECs for Sediment at Buildings 2507 and 2704 (ECP Parcel 27)

Two surface sediment samples were collected from Shrewsbury Creek adjacent to Parcel 27, at an outfall and at an additional location downstream as part of the ECP SI (Shaw, 2008). One sediment sample was collected at a stormwater outfall and the other was collected downstream of that location. Shrewsbury Creek, in the vicinity of Parcel 27, is classified as freshwater (**Section 2.4.3**). Parameters detected in surface sediment samples are presented in **Table B-15**.

SVOCs. A total of seven SVOCs were detected in Parcel 27 surface sediment samples. None of the SVOCs detected in surface sediment samples exceeded the freshwater sediment ESC. SVOCs are not considered COPECs in sediment at Parcel 27.

Of the 17 metals detected, six (arsenic, cadmium, chromium, copper, lead, and zinc) were detected at concentrations exceeding the freshwater sediment ESC. Arsenic (6.11 mg/kg), copper (187 mg/kg), lead (84.9 mg/kg), and zinc (264 mg/kg) were detected greater than their ESC of 6, 16, 31, and 120 mg/kg, respectively, in one of the two surface sediments collected at Parcel 27. Cadmium (0.715 and 1.76 mg/kg) and total chromium (49.8 and 49.6 mg/kg) were detected at concentrations exceeding the ESC (0.6 and 26 mg/kg, respectively) in both surface sediment samples. Arsenic, cadmium, chromium, copper, lead, and zinc are considered COPECs in sediment at Parcel 27.

3.4.3.4.4 Summary of COPECs for Parcel 27

Parameters detected in soil, groundwater, surface water, or sediment at Buildings 2507 and2704 (Parcel 27) at concentrations greater than the applicable ESC were identified as COPECs for the site. The COPECs, and possible COPECs, identified for Parcel 27 are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
None	Not Applicable	None	Not Applicable
Pesticides			
Not Applicable	Not Applicable	Not Applicable	Not Applicable
PCBs			
None	Not Applicable	None	Not Applicable
SVOCs			
None	Not Applicable	None	None
Metals			
Arsenic Cadmium Chromium Copper Lead Manganese Mercury Vanadium Zinc	Not Applicable	Cadmium Chromium Lead	Arsenic Cadmium Chromium Copper Lead Zinc

3.4.3.5 BUILDING 2525 (ECP PARCEL 28)

Surface soil, groundwater, surface water, and sediment analytical data were evaluated for the identification of COPECs related to Building 2525 and ECP Parcel 28.

3.4.3.5.1 COPECs for Surface Soil at Building 2525 (ECP Parcel 28)

Two surface soil samples were collected from Parcel 28 as part of the ECP SI (Shaw, 2008). Parameters detected in surface soil samples are presented in **Table B-16**.

PCBs. No PCBs were detected in surface soil samples and PCBs are not considered COPECs at Parcel 28.

SVOCs. Five SVOCs were detected in surface soil samples but none were detected at concentrations greater than the soil ESC. SVOCs are not considered COPECs in surface soil at Parcel 28.

Metals. A total of 17 metals were detected in surface soil samples. Of these, five (aluminum, chromium, lead, vanadium, and zinc) were detected at concentrations exceeding the ESC in at least one sample each. Aluminum, like iron, is a common component of soils and sediments and is not considered a COPEC except in conditions of very low pH where aluminum could be bioavailable; aluminum is not considered a COPEC in soil at Parcel 28. Chromium, lead, vanadium, and zinc are considered COPECs at Parcel 28.

3.4.3.5.2 COPECs for Groundwater at Building 2525 (ECP Parcel 28)

Five groundwater samples (including one duplicate sample) were collected from four distinct temporary wells as part of the ECP SI (Shaw, 2008). Three of these were located downgradient of former drainage fields and one was located downgradient of a former storage pad area located in an open field west of Building 2290 and Guam Lane. Shrewsbury Creek could receive groundwater discharge from Parcel 28. Shrewsbury Creek, in the vicinity of Parcel 28, is classified as freshwater (**Section 2.4.3**). Parameters detected in groundwater samples are presented in **Table B-17**.

VOCs. Three VOCs (acetone, chloroform, and toluene) were detected in at least one groundwater sample each but at concentrations less than the ESC. VOCs are not considered COPECs in groundwater at Parcel 28.

SVOCs. One SVOC, bis(2-ethylhexyl) phthalate, was detected in three groundwater samples at concentrations from 0.94 to 2.30 µg/L which exceed the ESC of 0.3 µg/L. As discussed earlier, bis(2-ethylhexyl) phthalate, a commonly used plasticizer, is present in a wide variety of plastic products and is commonly detected in field and laboratory QC samples, and it is not considered a COPEC in groundwater at Parcel 28.

Metals. A total of 13 metals were detected in Parcel 28 groundwater samples. Of the 13 metals detected, only cadmium was detected at a concentration greater than the ESC. Detected concentrations ranged from 0.314 to 0.533 µg/L which exceed the freshwater ESC of 0.15 µg/L. Cadmium is considered a COPEC in groundwater at Parcel 28.

3.4.3.5.3 COPECs for Surface Water at Building 2525 (ECP Parcel 28)

Two surface water samples were collected from Shrewsbury Creek adjacent to Parcel 28 as part of the BEE. These were located downgradient of potential former discharge pipes which had been previously observed on the southeast bank of the creek. Shrewsbury Creek, in the vicinity of Parcel 28, is classified as freshwater (**Section 2.4.3**). Parameters detected in surface water samples are presented in **Table D-40**.

VOCs. No VOCs were detected in surface water samples at Parcel 28. VOCs are not considered COPECs in surface water at Parcel 28.

SVOCs. No SVOCs were detected in surface water samples at Parcel 28. SVOCs are not considered COPECs in surface water at Parcel 28.

PCBs. No PCBs were detected in surface water samples at Parcel 28. PCBs are not considered COPECs in surface water at Parcel 28.

Metals. A total of 11 metals were detected in Parcel 28 surface water samples. Of the 11 metals detected, only lead was detected at a concentration exceeding the freshwater ESC. Total lead was detected at concentrations of 6.36 and 7.74 µg/L and dissolved lead was detected at concentrations of 5.74 and 7.14 µg/L; these exceed the freshwater ESC for dissolved lead of 5.4 µg/L. Lead is considered a COPEC in surface water at Parcel 28.

3.4.3.5.4 COPECs for Sediment at Building 2525 (ECP Parcel 28)

Two surface sediment samples were collected from Shrewsbury Creek adjacent to Parcel 28 as part of the ECP SI (Shaw, 2008). These were located along the southeast bank of Shrewsbury Creek adjacent to Building 2525 directly downgradient of potential former discharge pipes observed on the southeast bank of the creek. Shrewsbury Creek, in the vicinity of Parcel 28, is classified as freshwater (**Section 2.4.3**). Parameters detected in surface sediment samples are presented in **Table B-18**.

VOCs. One VOC (acetone) was detected in both Parcel 28 surface sediment samples. There are no available sediment ESC for acetone. VOCs are not considered COPECs in sediment at Parcel 28.

SVOCs. A total of five SVOCs were detected in Parcel 28 surface sediment samples. None of the SVOCs detected in surface sediment samples exceeded the freshwater sediment ESC. SVOCs are not considered COPECs in sediment at Parcel 28.

Metals. Of the 17 metals detected, one (chromium) was detected at concentrations greater than the freshwater sediment ESC. Total chromium (36.8 and 43.0 mg/kg) was detected greater than the ESC (26 mg/kg) in both surface sediment samples. Chromium is considered a COPEC in sediment at Parcel 28.

3.4.3.5.5 Summary of COPECs for Parcel 28

Parameters detected in soil, groundwater, surface water, or sediment at Building 2525 (Parcel 28) at concentrations greater than the applicable ESC were identified as COPECs for the site. Though cadmium was not detected in surface water at Parcel 28, its MDLs were greater than the freshwater ESC. Given that cadmium is considered a COPEC in groundwater, it is considered a possible COPEC in surface water. The COPECs, and possible COPECs, identified for Parcel 28 are summarized below by medium.

Soil	Groundwater	Surface Water	Sediment
VOCs			
Not Applicable	None	None	None
Pesticides			
Not Applicable	Not Applicable	Not Applicable	Not Applicable
PCBs			
None	Not Applicable	None	Not Applicable
SVOCs			
None	None	None	None
Metals			
Chromium Lead Vanadium Zinc	Cadmium	Lead	Chromium
Possible COPECs			
		Cadmium	

Table 3-1
Sample and Analytical Summary
Main Post

IRP or ECP Site	BEE Sample Location Name	Sample Date	Sample Time	Top Depth	Bottom Depth	Media Sampled (SD, SW, and SS)			Analytical Suite												Comments/Variances
									VO+15 (Method 8260B)	BIN+15 (Method 8270C)	PCBs (Method 8082)	Pesticides (Method 8081A)	TAL Metals - SW - field filtered (Method 6010B/7470A)	TAL Metals - SW - unfiltered (Method 6010B/7470A)	TAL Metals - SS/SD - (Method 6010B/7471A)	Hardness (SM2340B)	TOC (Lloyd Kahn)	Grain Size (ASTM D442-53)	Filed Measured Parameters (dissolved oxygen, pH, temperature, salinity, and conductivity)	
M-2	M2-SD3	6/24/10	15:08	0	0.5	SD			x	x	x	x			x		x	x	x	
M-2	M2-SD4	6/24/10	15:24	0	0.5	SD			x	x	x	x			x		x	x	x	
M-2	M2-SD5	6/24/10	15:36	0	0.5	SD			x	x	x	x			x		x	x	x	
M-2	M2-SD6	6/24/10	15:53	0	0.5	SD			x	x	x	x			x		x	x	x	
M-2	M2-SD7	6/25/10	8:45	0	0.5	SD			x	x	x	x			x		x	x	x	
M-2	M2-SD8	6/25/10	9:05	0	0.5	SD			x	x	x	x			x		x	x	x	
M-2	M2-SD9	6/25/10	9:25	0	0.5	SD			x	x	x	x			x		x	x	x	
M-2	M2-SD10	6/25/10	9:40	0	0.5	SD			x	x	x	x			x		x	x	x	
M-2	M2-SD11	6/25/10	9:55	0	0.5	SD			x	x	x	x			x		x	x	x	
M-2	M2-SD12	6/25/10	10:10	0	0.5	SD			x	x	x	x			x		x	x	x	
M-2	M2-SD13	6/25/10	10:30	0	0.5	SD			x	x	x	x			x		x	x	x	
M-2	M2-SD14	6/24/10	14:15	0	0.5	SD			x	x	x	x			x		x	x	x	
M-2	M2-SW6	6/21/10	11:15	na	na		SW		x	x	x	x	x	x		x			x	
M-2	M2-SW11	6/21/10	11:30	na	na		SW		x	x	x	x	x	x		x			x	
Total Samples at M-2						12	2													
M-3	M3-SD1	6/18/10	10:38	0	0.5	SD			x	x	x	x			x		x	x	x	
M-3	M3-SD2	6/18/10	10:50	0	0.5	SD			x	x	x	x			x		x	x	x	
M-3	M3-SD3	6/18/10	11:28	0	0.5	SD			x	x	x	x			x		x	x	x	
M-3	M3-SD4	6/18/10	11:50	0	0.5	SD			x	x	x	x			x		x	x	x	
M-3	M3-SD5	6/18/10	13:33	0	0.5	SD			x	x	x	x			x		x	x	x	
M-3	M3-SD6	6/18/10	13:50	0	0.5	SD			x	x	x	x			x		x	x	x	
M-3	M3-SD7	6/18/10	14:08	0	0.5	SD			x	x	x	x			x		x	x	x	
M-3	M3-SD8	6/21/10	14:40	0	0.5	SD			x	x	x	x			x		x	x	x	
M-3	M3-SD9	6/21/10	14:57	0	0.5	SD			x	x	x	x			x		x	x	x	
M-3	M3-SD10	6/21/10	15:12	0	0.5	SD			x	x	x	x			x		x	x	x	
M-3	M3-SD11	6/21/10	14:25	0	0.5	SD			x	x	x	x			x		x	x	x	
M-3	M3-SW3	6/21/10	8:31	na	na		SW		x	x	x	x	x	x		x			x	
M-3	M3-SW8	6/21/10	8:50	na	na		SW		x	x	x	x	x	x		x			x	
Total Samples at M-3						11	2													

Table 3-1
Sample and Analytical Summary
Main Post

IRP or ECP Site	BEE Sample Location Name	Sample Date	Sample Time	Top Depth	Bottom Depth	Media Sampled (SD, SW, and SS)			Analytical Suite												Comments/Variances
									VO+15 (Method 8260B)	BIN+15 (Method 8270C)	PCBs (Method 8082)	Pesticides (Method 8081A)	TAL Metals - SW - field filtered (Method 6010B/7470A)	TAL Metals - SW - unfiltered (Method 6010B/7470A)	TAL Metals - SS/SD - (Method 6010B/7471A)	Hardness (SM2340B)	TOC (Lloyd Kahn)	Grain Size (ASTM D442-53)	Filed Measured Parameters (dissolved oxygen, pH, temperature, salinity, and conductivity)	
M-4	M4-SD1	6/22/10	13:55	0	0.5	SD			x	x	x	x			x		x	x	x	
M-4	M4-SD2	6/22/10	14:14	0	0.5	SD			x	x	x	x			x		x	x	x	
M-4	M4-SD3	6/22/10	14:30	0	0.5	SD			x	x	x	x			x		x	x	x	
M-4	M4-SD4	6/22/10	14:46	0	0.5	SD			x	x	x	x			x		x	x	x	
M-4	M4-SD5	6/22/10	15:07	0	0.5	SD			x	x	x	x			x		x	x	x	
M-4	M4-SD6	6/22/10	15:30	0	0.5	SD			x	x	x	x			x		x	x	x	
M-4	M4-SW4	6/21/10	9:45	na	na		SW		x	x	x	x	x	x		x			x	
Total Samples at M-4						6	1													
M-5	M5-SD1	6/17/10	12:18	0	0.5	SD			x	x	x	x			x		x	x	x	
M-5	M5-SD2	6/18/10	9:23	0	0.5	SD			x	x	x	x			x		x	x	x	
M-5	M5-SD3	6/18/10	9:37	0	0.5	SD			x	x	x	x			x		x	x	x	
M-5	M5-SD4	6/18/10	9:04	0	0.5	SD			x	x	x	x			x		x	x	x	
M-5	M5-SD5	6/18/10	9:57	0	0.5	SD			x	x	x	x			x		x	x	x	
M-5	M5-SD6	6/18/10	10:17	0	0.5	SD			x	x	x	x			x		x	x	x	
M-5	M5-SW4	6/18/10	8:45	na	na		SW		x	x	x	x	x	x		x			x	
Total Samples at M-5						6	1													

Table 3-1
Sample and Analytical Summary
Main Post

IRP or ECP Site	BEE Sample Location Name	Sample Date	Sample Time	Top Depth	Bottom Depth	Media Sampled (SD, SW, and SS)			Analytical Suite												Comments/Variances
									VO+15 (Method 8260B)	BIN+15 (Method 8270C)	PCBs (Method 8082)	Pesticides (Method 8081A)	TAL Metals - SW - field filtered (Method 6010B/7470A)	TAL Metals - SW - unfiltered (Method 6010B/7470A)	TAL Metals - SS/SD - (Method 6010B/7471A)	Hardness (SM2340B)	TOC (Lloyd Kahn)	Grain Size (ASTM D442-53)	Filed Measured Parameters (dissolved oxygen, pH, temperature, salinity, and conductivity)	
M-8	M8-SD1	6/23/10	13:05	0	0.5	SD			x	x	x	x			x		x	x	x	
M-8	M8-SD2	6/17/10	10:46	0	0.5	SD			x	x	x	x			x		x	x	x	
M-8	M8-SD3	6/17/10	16:24	0	0.5	SD			x	x	x	x			x		x	x	x	
M-8	M8-SD4	6/17/10	16:44	0	0.5	SD			x	x	x	x			x		x	x	x	
M-8	M8-SD5	6/17/10	16:00	0	0.5	SD			x	x	x	x			x		x	x	x	
M-8	M8-SD6	6/23/10	13:29	0	0.5	SD			x	x	x	x			x		x	x	x	
M-8	M8-SD7	6/23/10	13:38	0	0.5	SD			x	x	x	x			x		x	x	x	
M-8	M8-SD8	6/17/10	13:45	0	0.5	SD			x	x	x	x			x		x	x	x	
M-8	M8-SD9	6/17/10	11:35	0	0.5	SD			x	x	x	x			x		x	x	x	
M-8	M8-SD10	6/17/10	11:58	0	0.5	SD			x	x	x	x			x		x	x	x	
M-8	M8-SD12	6/17/10	12:50	0	0.5	SD			x	x	x	x			x		x	x	x	
M-8	M8-SW3	6/17/10	16:18	na	na		SW		x	x	x	x	x	x		x			x	
M-8	M8-SW7	6/23/10	11:05	na	na		SW		x	x	x	x	x	x		x			x	
M-8	M8-SW12	6/23/10	11:20	na	na		SW		x	x	x	x	x	x		x			x	
Total Samples at M-8						11	3													

Table 3-1
Sample and Analytical Summary
Main Post

IRP or ECP Site	BEE Sample Location Name	Sample Date	Sample Time	Top Depth	Bottom Depth	Media Sampled (SD, SW, and SS)			Analytical Suite												Comments/Variances
									VO+15 (Method 8260B)	BIN+15 (Method 8270C)	PCBs (Method 8082)	Pesticides (Method 8081A)	TAL Metals - SW - field filtered (Method 6010B/7470A)	TAL Metals - SW - unfiltered (Method 6010B/7470A)	TAL Metals - SS/SD - (Method 6010B/7471A)	Hardness (SM2340B)	TOC (Lloyd Kahn)	Grain Size (ASTM D442-53)	Filed Measured Parameters (dissolved oxygen, pH, temperature, salinity, and conductivity)	
M-12/M-14	M14-SD1	6/15/10	9:10	0	0.5	SD			x	x	x	x			x		x	x	x	
M-12/M-14	M14-SD2	6/15/10	9:40	0	0.5	SD			x	x	x	x			x		x	x	x	
M-12/M-14	M14-SD3	6/15/10	10:25	0	0.5	SD			x	x	x	x			x		x	x	x	
M-12/M-14	M14-SD4	6/15/10	10:50	0	0.5	SD			x	x	x	x			x		x	x	x	
M-12/M-14	M14-SD5	6/15/10	11:36	0	0.5	SD			x	x	x	x			x		x	x	x	
M-12/M-14	M14-SD6	6/15/10	12:10	0	0.5	SD			x	x	x	x			x		x	x	x	
M-12/M-14	M14-SD7	6/15/10	14:33	0	0.5	SD			x	x	x	x			x		x	x	x	
M-12/M-14	M14-SD8	6/15/10	15:23	0	0.5	SD			x	x	x	x			x		x	x	x	
M-12/M-14	M14-SD9	6/16/10	10:50	0	0.5	SD			x	x	x	x			x		x	x	x	
M-12/M-14	M14-SD10	6/16/10	11:22	0	0.5	SD			x	x	x	x			x		x	x	x	
M-12/M-14	M14-SD11	6/16/10	11:50	0	0.5	SD			x	x	x	x			x		x	x	x	
M-12/M-14	M14-SD12	6/28/10	13:45	0	0.5	SD			x	x	x	x			x		x	x	x	
M-12/M-14	M14-SD13	6/16/10	12:48	0	0.5	SD			x	x	x	x			x		x	x	x	
M-12/M-14	M14-SW3	6/22/10	10:08	na	na		SW		x	x	x	x	x	x		x			x	
M-12/M-14	M14-SW8	6/15/10	15:01	na	na		SW		x	x	x	x	x	x		x			x	
M-12/M-14	M14-SW12	6/28/10	13:53	na	na		SW		x	x	x	x	x	x		x			x	
M-12/M-14	M14-SW13	6/22/10	11:32	na	na		SW		x	x	x	x	x	x		x			x	
Total Samples at M-12/M-14						13	4													

Table 3-1
Sample and Analytical Summary
Main Post

IRP or ECP Site	BEE Sample Location Name	Sample Date	Sample Time	Top Depth	Bottom Depth	Media Sampled (SD, SW, and SS)			Analytical Suite												Comments/Variances
									VO+15 (Method 8260B)	BIN+15 (Method 8270C)	PCBs (Method 8082)	Pesticides (Method 8081A)	TAL Metals - SW - field filtered (Method 6010B/7470A)	TAL Metals - SW - unfiltered (Method 6010B/7470A)	TAL Metals - SS/SD - (Method 6010B/7471A)	Hardness (SM2340B)	TOC (Lloyd Kahn)	Grain Size (ASTM D442-53)	Filed Measured Parameters (dissolved oxygen, pH, temperature, salinity, and conductivity)	
M-15	M15-SD1	6/14/10	13:45	0	0.5	SD			x	x	x	x			x		x	x	x	
M-15	M15-SD2	6/14/10	14:10	0	0.5	SD			x	x	x	x			x		x	x	x	
M-15	M15-SD3	6/14/10	14:30	0	0.5	SD			x	x	x	x			x		x	x	x	
M-15	M15-SD4	6/14/10	15:02	0	0.5	SD			x	x	x	x			x		x	x	x	
M-15	M15-SW1	6/14/10	13:40	na	na		SW		x	x	x	x	x	x		x			x	
M-15	M15-SW2	6/14/10	14:00	na	na		SW		x	x	x	x	x	x		x			x	
M-15	M15-SW4	6/14/10	14:55	na	na		SW		x	x	x	x	x	x		x			x	
Total Samples at M-15						4	3													

Table 3-1
Sample and Analytical Summary
Main Post

IRP or ECP Site	BEE Sample Location Name	Sample Date	Sample Time	Top Depth	Bottom Depth	Media Sampled (SD, SW, and SS)			Analytical Suite											Comments/Variances
									VO+15 (Method 8260B)	BIN+15 (Method 8270C)	PCBs (Method 8082)	Pesticides (Method 8081A)	TAL Metals - SW - field filtered (Method 6010B/7470A)	TAL Metals - SW - unfiltered (Method 6010B/7470A)	TAL Metals - SS/SD - (Method 6010B/7471A)	Hardness (SM2340B)	TOC (Lloyd Kahn)	Grain Size (ASTM D442-53)	Filed Measured Parameters (dissolved oxygen, pH, temperature, salinity, and conductivity)	
M-16	M16-SD1	6/14/10	10:04	0	0.5	SD			x	x	x	x			x		x	x	x	
M-16	M16-SD2	6/14/10	10:44	0	0.5	SD			x	x	x	x			x		x	x	x	
M-16	M16-SD3	6/14/10	11:10	0	0.5	SD			x	x	x	x			x		x	x	x	
M-16	M16-SD4	6/14/10	11:55	0	0.5	SD			x	x	x	x			x		x	x	x	
M-16	M16-SW1	6/23/10	11:55	na	na		SW		x	x	x	x	x	x		x			x	
M-16	M16-SW2	6/23/10	12:05	na	na		SW		x	x	x	x	x	x		x			x	
M-16	M16-SW4	6/23/10	12:18	na	na		SW		x	x	x	x	x	x		x			x	
Total Samples for M-16						4	3													

Table 3-1
Sample and Analytical Summary
Main Post

IRP or ECP Site	BEE Sample Location Name	Sample Date	Sample Time	Top Depth	Bottom Depth	Media Sampled (SD, SW, and SS)			Analytical Suite												Comments/Variances
									VO+15 (Method 8260B)	BIN+15 (Method 8270C)	PCBs (Method 8082)	Pesticides (Method 8081A)	TAL Metals - SW - field filtered (Method 6010B/7470A)	TAL Metals - SW - unfiltered (Method 6010B/7470A)	TAL Metals - SS/SD - (Method 6010B/7471A)	Hardness (SM2340B)	TOC (Lloyd Kahn)	Grain Size (ASTM D442-53)	Filed Measured Parameters (dissolved oxygen, pH, temperature, salinity, and conductivity)	
M-18	M18-SD1	6/16/10	15:45	0	0.5	SD			x	x	x	x			x		x	x	x	
M-18	M18-SD2	6/17/10	9:03	0	0.5	SD			x	x	x	x			x		x	x	x	
M-18	M18-SD3	6/16/10	16:36	0	0.5	SD			x	x	x	x			x		x	x	x	
M-18	M18-SD4	6/16/10	17:00	0	0.5	SD			x	x	x	x			x		x	x	x	
M-18	M18-SD5	6/17/10	10:00	0	0.5	SD			x	x	x	x			x		x	x	x	
M-18	M18-SW3	6/22/10	10:08	na	na		SW		x	x	x	x	x	x		x			x	
M-18	M18-SW5	6/17/10	9:50	na	na		SW		x	x	x	x	x	x		x			x	
Total Samples for M-18						5	2													
M-20	M20-SD1	6/23/10	9:50	0	0.5	SD			x	x	x	x			x		x	x	x	
M-20	M20-SD2	6/23/10	10:15	0	0.5	SD			x	x	x	x			x		x	x	x	
M-20	M20-SW1	6/23/10	9:45	na	na		SW		x	x	x	x	x	x		x			x	
M-20	M20-SW2	6/23/10	10:10	na	na		SW		x	x	x	x	x	x		x			x	
Total Samples for M-20						2	2													

Table 3-1
Sample and Analytical Summary
Main Post

IRP or ECP Site	BEE Sample Location Name	Sample Date	Sample Time	Top Depth	Bottom Depth	Media Sampled (SD, SW, and SS)	Analytical Suite											Comments/Variances
							VO+15 (Method 8260B)	BIN+15 (Method 8270C)	PCBs (Method 8082)	Pesticides (Method 8081A)	TAL Metals - SW - field filtered (Method 6010B/7470A)	TAL Metals - SW - unfiltered (Method 6010B/7470A)	TAL Metals - SS/SD - (Method 6010B/7471A)	Hardness (SM2340B)	TOC (Lloyd Kahn)	Grain Size (ASTM D442-53)	Filed Measured Parameters (dissolved oxygen, pH, temperature, salinity, and conductivity)	
43 & Building 1122	P43-SW2	6/22/10	9:36	na	na	SW	x	x	x		x	x		x			x	
43 & Building 1122	P43-SW3	6/22/10	9:18	na	na	SW	x	x	x		x	x		x			x	
Total Samples for ECP43						2												
49 & Building 283	P49-SW2	6/23/10	8:53	na	na	SW	x	x	x		x	x		x			x	
49 & Building 283	P49-SW3	6/23/10	8:40	na	na	SW	x	x	x		x	x		x			x	
Total Samples for ECP49						2												
61	P61-SW1	6/15/10	14:01	na	na	SW	x	x	x		x	x		x			x	
Total Samples for ECP61						1												
69	P69-SW2	6/28/10	13:30	na	na	SW	x	x	x		x	x		x			x	
Total Samples for ECP69						1												

Table 3-1
Sample and Analytical Summary
Main Post

IRP or ECP Site	BEE Sample Location Name	Sample Date	Sample Time	Top Depth	Bottom Depth	Media Sampled (SD, SW, and SS)			Analytical Suite												Comments/Variances
									VO+15 (Method 8260B)	BN+15 (Method 8270C)	PCBs (Method 8082)	Pesticides (Method 8081A)	TAL Metals - SW - field filtered (Method 6010B/7470A)	TAL Metals - SW - unfiltered (Method 6010B/7470A)	TAL Metals - SS/SD - (Method 6010B/7471A)	Hardness (SM2340B)	TOC (Lloyd Kahn)	Grain Size (ASTM D442-53)	Filed Measured Parameters (dissolved oxygen, pH, temperature, salinity, and conductivity)	
NA	MP-SD1	6/25/10	12:05	0	0.5	SD			x	x	x	x			x		x	x	x	
NA	MP-SD2	6/25/10	14:15	0	0.5	SD			x	x	x	x			x		x	x	x	
NA	MP-SD3	6/25/10	15:05	0	0.5	SD			x	x	x	x			x		x	x	x	
M-2	M2-SD1	6/25/10	13:40	0	0.5	SD			x	x	x	x			x		x	x	x	
M-2	M2-SD2	6/24/10	14:40	0	0.5	SD			x	x	x	x			x		x	x	x	
M-3	M3-SD12	6/21/10	15:40	0	0.5	SD			x	x	x	x			x		x	x	x	
M-3	M3-SD13	6/25/10	11:25	0	0.5	SD			x	x	x	x			x		x	x	x	
M-8	M8-SD11	6/21/10	10:15	0	0.5	SD			x	x	x	x			x		x	x	x	
M-12/M-14	M14-SD14	6/16/10	14:12	0	0.5	SD			x	x	x	x			x		x	x	x	
NA	MP-SW1	6/25/10	11:55	na	na		SW		x	x	x	x	x	x		x			x	
NA	MP-SW2	6/25/10	14:02	na	na		SW		x	x	x	x	x	x		x			x	
NA	MP-SW3	6/25/10	14:58	na	na		SW		x	x	x	x	x	x		x			x	
M-2	M2-SW1	6/25/10	13:38	na	na		SW		x	x	x	x	x	x		x			x	
M-2	M2-SW2	6/24/10	14:33	na	na		SW		x	x	x	x	x	x		x			x	
M-3	M3-SW12	6/22/10	8:43	na	na		SW		x	x	x	x	x	x		x			x	
M-3	M3-SW13	6/25/10	11:15	na	na		SW		x	x	x	x	x	x		x			x	
M-8	M8-SW11	6/21/10	10:05	na	na		SW		x	x	x	x	x	x		x			x	
M-12/M-14	M14-SW14	6/22/10	12:09	na	na		SW		x	x	x	x	x	x		x			x	
Total Upgradient Samples						9	9													
Total Samples at MP						83	38	0	121	121	121	115	38	38	83	38	83	83	121	

Notes:
ASTM - American Society for Testing and Materials
B/N - Base/Neutral
BEE - Baseline Ecological Evaluation
ECP - Environmental Condition of Property
IRP - Installation Restoration Property
na - not applicable
PCB - Polychlorinated Biphenyl
SD - Sediment
SS - Surface Soil
SW - Surface Water
TAL - Target Analyte List
TOC - Total Organic Carbon

Table 3-2
Sampling and Analytical Summary
Charles Wood Area

IRP or ECP Site	BEE Sample Location Name	Sample Date	Sample Time	Top Depth	Bottom Depth	Media Ssampled (SD, SW, and SS)			Analytical Suite											Comments/Variances
									VO+15 (Method 8260B)	BN+15 (Method 8270C)	PCBs (Method 8082)	Pesticides (Method 8081A)	TAL Metals - SW - field filtered (Method 6010B/7470A)	TAL Metals - SW - unfiltered (Method 6010B/7470A)	TAL Metals - SS/SD - (Method 6010B/7471A)	Hardness (SM2340B)	TOC (Lloyd Kahn)	Grain Size (ASTM D442-53)	Filed Measured Parameters (dissolved oxygen, pH, temperature, salinity, and conductivity)	
CW-3	CW3-SD1	6/28/10	8:50	0	0.5	SD			x	x	x	x			x		x	x	x	
CW-3	CW3-SD2	6/28/10	9:05	0	0.5	SD			x	x	x	x			x		x	x	x	
CW-3	CW3-SD3	6/28/10	9:18	0	0.5	SD			x	x	x	x			x		x	x	x	
CW-3	CW3-SD4	6/28/10	9:40	0	0.5	SD			x	x	x	x			x		x	x	x	
CW-3	CW3-SD5	6/28/10	10:20	0	0.5	SD			x	x	x	x			x		x	x	x	
CW-3	CW3-SD6	6/28/10	10:48	0	0.5	SD			x	x	x	x			x		x	x	x	
CW-3	CW3-SW4	6/28/10	9:50	na	na		SW		x	x	x	x	x	x		x			x	
CW-3	CW3-SW5	6/28/10	10:15	na	na		SW		x	x	x	x	x	x		x			x	
Total Samples at CW-3						6	2													
CW-6	CW6-SD1	6/18/10	16:32	0	0.5	SD			x	x	x	x			x		x	x	x	
CW-6	CW6-SD2	6/18/10	16:14	0	0.5	SD			x	x	x	x			x		x	x	x	
CW-6	CW6-SD3	6/18/10	16:42	0	0.5	SD			x	x	x	x			x		x	x	x	
CW-6	CW6-SD4	6/18/10	16:47	0	0.5	SD			x	x	x	x			x		x	x	x	
CW-6	CW6-SD5	6/24/10	10:35	0	0.5	SD			x	x	x	x			x		x	x	x	
CW-6	CW6-SD6	6/24/10	9:40	0	0.5	SD			x	x	x	x			x		x	x	x	
CW-6	CW6-SW5	6/24/10	10:29	na	na		SW		x	x	x	x	x	x		x			x	
CW-6	CW6-SW6	6/24/10	9:33	na	na		SW		x	x	x	x	x	x		x			x	
CW-6	CW6-SS1	6/18/10	15:23	0	0.5			SS	x	x	x	x			x		x	x		
CW-6	CW6-SS2	6/18/10	15:40	0	0.5			SS	x	x	x	x			x		x	x		
CW-6	CW6-SS3	6/18/10	15:50	0	0.5			SS	x	x	x	x			x		x	x		
CW-6	CW6-SS4	6/18/10	15:59	0	0.5			SS	x	x	x	x			x		x	x		
Total Samples at CW-6						6	2	4												
15	P15-SW1	6/24/10	12:33	na	na		SW		x	x	x		x	x		x			x	
15	P15-SW3	6/24/10	12:15	na	na		SW		x	x	x		x	x		x			x	
Total Samples at ECP15							2													

Table 3-2
Sampling and Analytical Summary
Charles Wood Area

IRP or ECP Site	BEE Sample Location Name	Sample Date	Sample Time	Top Depth	Bottom Depth	Media Ssampled (SD, SW, and SS)			Analytical Suite												Comments/Variances
									VO+15 (Method 8260B)	B/N+15 (Method 8270C)	PCBs (Method 8082)	Pesticides (Method 8081A)	TAL Metals - SW - field filtered (Method 6010B/7470A)	TAL Metals - SW - unfiltered (Method 6010B/7470A)	TAL Metals - SS/SD - (Method 6010B/7471A)	Hardness (SM2340B)	TOC (Lloyd Kahn)	Grain Size (ASTM D442-53)	Filed Measured Parameters (dissolved oxygen, pH, temperature, salinity, and conductivity)	
27	P27-SW1	6/25/10	15:58	na	na		SW		x	x	x		x	x		x			x	
27	P27-SW2	6/25/10	15:45	na	na		SW		x	x	x		x	x		x			x	
Total Samples at ECP27							2													
28	P28-SW1	6/24/10	11:54	na	na		SW		x	x	x		x	x		x			x	
28	P28-SW2	6/24/10	11:34	na	na		SW		x	x	x		x	x		x			x	
Total Samples for ECP28							2													
CW-3	CW3-SD7	6/28/10	11:40	0	0.5	SD			x	x	x	x			x		x	x	x	
CW-3	CW3-SD8	6/28/10	12:10	0	0.5	SD			x	x	x	x			x		x	x	x	
CW-3	CW3-SW7	6/28/10	11:35	na	na		SW		x	x	x	x	x	x		x			x	
CW-3	CW3-SW8	na	na	na	na				x	x	x	x	x	x		x			x	Sample not collected. There was no water existing in the creek upstream of the CW3-SW7 sample location.
Total Upgradient Samples						2	1													
CWA	CWA-SD1	6/24/10	9:00	0	0.5	SD			x	x	x	x			x		x	x	x	Sample added to program to evaluate the furthest downgradient location within Wampum Brook on CWA.
CWA	CWA-SW1	6/24/10	8:55	na	na		SW		x	x	x	x	x	x		x			x	Sample added to program to evaluate the furthest downgradient location within Wampum Brook on CWA.
Total Samples Downgradient of CWA						1	1													
Total Samples at CWA						15	12	4	30	30	30	24	12	12	18	12	18	18	26	

Notes:
ASTM - American Society for Testing and Materials
B/N - Base/Neutral
BEE - Baseline Ecological Evaluation
CWA - Charles Wood Area
ECP - Environmental Condition of Property
IRP - Installation Restoration Property
na - not applicable
NEW - indicates location does not coincide with a previous sample location
PCB - Polychlorinated Biphenyl
SD - Sediment
SS - Surface Soil
SW - Surface Water
TAL - Target Analyte List
TOC - Total Organic Carbon

Table 3-3
Summary of Analytes Detected in Main Post Background Surface Water Samples

Analyte	ESC		# of Freshwater ESC Exceedances	# of Saltwater ESC Exceedances	# of Detections	# of Samples	Minimum Concentration	Maximum Concentration	Location of Maximum
	FW-SW	SW-SW							
VOCs (ug/L)									
Chloroform	140	NAV	0	0	1	9	2.9	2.9	M14-SW14
cis-1,2-Dichloroethene	NAV	NAV	0	0	3	9	1.3	3.3	MP-SW3
Tetrachloroethene	45	NAV	0	0	1	9	1.3	1.3	M2-SW2
SVOCs (ug/L)									
Anthracene	0.035	NAV	2	0	2	9	0.052	0.12	M14-SW14
Benzo(a)anthracene	0.025	NAV	2	0	2	9	0.23	0.23	M14-SW14; M3-SW12
Benzoic acid	NAV	NAV	0	0	1	9	12	12	MP-SW1
1,2,4-Trichlorobenzene	30	NAV	0	0	1	9	0.56	0.56	M14-SW14
Pesticides (ug/L)	***None detected***								
PCBs (ug/L)	***None detected***								
Metals (ug/L)									
Aluminum	NAV	NAV	0	0	14	18	6.63	78.6	M3-SW12
Arsenic	150	36	0	0	2	18	4.67	4.73	M8-SW11-Diss
Barium	220	NAV	0	0	18	18	31.4	64.7	M2-SW1; MP-SW2-Diss
Calcium	NAV	NAV	0	0	18	18	22600	40700	M8-SW11
Iron	NAV	NAV	0	0	18	18	84.8	2520	M3-SW12
Lead	5.4	24	18	0	18	18	5.79	18.8	M2-SW1-Diss
Magnesium	NAV	NAV	0	0	18	18	3550	53800	M8-SW11
Manganese	NAV	NAV	0	0	18	18	32.1	106	M8-SW11
Mercury	0.77	0.94	0	0	2	18	0.09	0.11	MP-SW1-Diss
Nickel	33	22	0	0	15	18	4.65	15.8	MP-SW3
Potassium	NAV	NAV	0	0	18	18	2400	19900	M8-SW11
Sodium	NAV	NAV	0	0	18	18	24300	433000	M8-SW11
Thallium	10	NAV	0	0	5	18	3.33	8.77	M8-SW11
Zinc	85	81	0	0	18	18	38.1	59.9	MP-SW2
Misc. (ug/L)									
Hardness	na	na	na	na	9	9	71124	323391	M8-SW11

Notes:
ug/L = micrograms per liter
ESC = Ecological Screening Criteria (See Section 3.3)
FW-SW = Fresh Water-Surface Water
SW-SW = Salt Water-Surface Water
NAV = No Available Value
FW-SW ESC for cadmium, chromium, copper, nickel, and zinc are based on minimum detected hardness in Main Post site and background samples (Appendix E)
na = Not Applicable

Table 3-4
Summary of Analytes Detected in Main Post Background Sediment Samples

Analyte	ESC		# of FW-SED ESC Exceedances	# of SW-SED ESC Exceedances	# of Detections	# of Samples	Minimum Concentration	Maximum Concentration	Location of Maximum
	FW-SED	SW-SED							
VOCs (mg/kg)									
Acetone	NAV	NAV	0	0	6	9	0.012	0.34	MP-SD2
Methylene chloride	0.159	NAV	0	0	4	9	0.0025	0.0088	MP-SD2
Toluene	2.5	2.5	0	0	1	9	0.013	0.013	MP-SD3
2-Butanone	NAV	NAV	0	0	2	9	0.0094	0.095	MP-SD2
SVOCs (mg/kg)									
Acenaphthene	0.016	0.016	2	2	2	9	0.11	0.12	M3-SD12
Acenaphthylene	0.044	0.044	1	1	1	9	0.089	0.089	MP-SD2
Anthracene	0.22	0.085	1	4	6	9	0.017	0.25	MP-SD3
Benzo(a)anthracene	0.32	0.261	4	4	7	9	0.018	1.2	MP-SD3
Benzo(a)pyrene	0.37	0.43	3	3	7	9	0.025	1.2	MP-SD3
Benzo(b)fluoranthene	10.4	1.8	0	0	5	9	0.066	1.8	MP-SD3
Benzo(g,h,i)perylene	0.17	0.17	3	3	3	9	0.38	0.87	MP-SD3
Benzo(k)fluoranthene	0.24	0.24	3	3	4	9	0.13	0.64	MP-SD3
bis(2-Ethylhexyl)phthalate	0.182	0.18216	0	0	1	9	0.069	0.069	M3-SD12
Butylbenzylphthalate	1.97	0.063	0	1	1	9	0.6	0.6	M2-SD2
Chrysene	0.34	0.384	4	4	5	9	0.064	1.7	MP-SD3
Dibenz(a,h)anthracene	0.06	0.063	1	1	1	9	0.088	0.088	M3-SD12
Dibenzofuran	NAV	NAV	0	0	2	9	0.062	0.082	MP-SD2
3,3'-Dichlorobenzidine	0.127	NAV	0	0	1	9	0.016	0.016	M3-SD13
Dimethylphthalate	NAV	NAV	0	0	9	9	0.28	0.79	MP-SD2
Fluoranthene	0.75	0.6	4	4	6	9	0.064	4.5	MP-SD3
Fluorene	0.19	0.019	1	2	2	9	0.13	0.32	MP-SD2
Indeno(1,2,3-c,d)pyrene	0.2	0.2	3	3	4	9	0.095	0.84	MP-SD3
Phenanthrene	0.56	0.24	3	4	5	9	0.15	3.1	MP-SD3
Pyrene	0.49	0.665	4	4	5	9	0.12	3	MP-SD3
Pesticides (mg/kg)									
4,4'-DDD	0.008	0.002	0	3	3	9	0.0022	0.0047	M2-SD1
4,4'-DDE	0.005	0.0022	0	1	2	9	0.0017	0.0034	M14-SD14
PCBs (mg/kg)									
Aroclor 1242	0.07	0.023	0	1	1	9	0.064	0.064	M2-SD2
Aroclor 1254	0.06	0.06	1	1	2	9	0.021	0.086	M2-SD1
Metals (mg/kg)									
Aluminum	25500	18000	0	0	9	9	965	17600	M3-SD13
Antimony	3	9.3	2	0	7	9	1.08	6.96	M2-SD2
Arsenic	6	8.2	7	6	9	9	0.68	61.6	M3-SD13
Barium	NAV	48	0	5	9	9	11.5	196	MP-SD2
Beryllium	NAV	NAV	0	0	9	9	0.2	3.83	MP-SD2
Cadmium	0.6	1.2	9	8	9	9	0.75	17.2	M3-SD13

Table 3-4
Summary of Analytes Detected in Main Post Background Sediment Samples

Analyte	ESC		# of FW-SED ESC Exceedances	# of SW-SED ESC Exceedances	# of Detections	# of Samples	Minimum Concentration	Maximum Concentration	Location of Maximum
	FW-SED	SW-SED							
Calcium	NAV	NAV	0	0	8	9	446	4310	MP-SD1
Chromium	26	81	8	3	9	9	9.24	125	M3-SD13
Cobalt	50	10	0	4	9	9	1.05	16.8	MP-SD2
Copper	16	34	3	2	6	9	1.88	165	M2-SD2
Iron	NAV	NAV	0	0	9	9	2960	162000	M3-SD13
Lead	31	47	4	2	9	9	5.61	945	M2-SD1
Magnesium	NAV	NAV	0	0	9	9	192	4650	M3-SD13
Manganese	630	260	0	1	9	9	4.86	551	MP-SD1
Mercury	0.2	0.15	1	1	8	9	0.02	0.424	MP-SD2
Nickel	16	21	4	3	9	9	2.55	53.5	MP-SD2
Potassium	NAV	NAV	0	0	9	9	507	12000	MP-SD1
Selenium	NAV	1	0	8	9	9	0.95	19	M3-SD13
Silver	1	1	1	1	1	9	11.2	11.2	MP-SD2
Sodium	NAV	NAV	0	0	9	9	28.6	1230	M8-SD11
Thallium	NAV	NAV	0	0	3	9	0.88	3.02	M3-SD13
Vanadium	NAV	57	0	4	9	9	6.82	218	M3-SD13
Zinc	120	150	5	4	9	9	31.4	423	MP-SD2
Misc. (mg/kg)									
Total Organic Carbon	na	na	na	na	9	9	900	6100	MP-SD2

Notes:
mg/kg = micrograms per kilogram
ESC = Ecological Screening Criteria (See Section 3.3)
FW-SED = Fresh Water-Sediment
SW-SED = Salt Water-Sediment
NAV = No Available Value
na = Not Applicable

Table 3-5
Summary of Analytes Detected in Charles Wood Area Background Surface Water Samples

Analyte	ESC		# of Freshwater ESC Exceedances	# of Saltwater ESC Exceedances	# of Detections	# of Samples	Minimum Concentration	Maximum Concentration	Location of Maximum
	FW-SW	SW-SW							
VOCs (ug/L)									
Methyl-tert-butyl ether	51000	18000	0	0	1	2	3.8	3.8	CW3-SW7
SVOCs (ug/L)									
Anthracene	0.035	NAV	1	0	1	2	0.11	0.11	CW3-SW7
Pesticides (ug/L)									
4,4'-DDD	NAV	NAV	0	0	1	2	0.008	0.008	CW3-SW7
PCBs (ug/L)									
Aroclor 1242	0.014	0.03	1	1	1	2	0.3	0.3	CW6-SW6
Metals (ug/L)									
Aluminum	NAV	NAV	0	0	4	4	14	9500	CW3-SW7
Arsenic	150	36	0	0	2	4	6.83	20.7	CW3-SW7
Barium	220	NAV	0	0	4	4	73.8	131	CW3-SW7
Beryllium	3.6	NAV	0	0	1	4	0.8	0.8	CW3-SW7
Cadmium	0.14	8.8	3	0	3	4	0.8	2.07	CW3-SW7
Calcium	NAV	NAV	0	0	4	4	28400	30300	CW3-SW7
Chromium	19	50	1	1	2	4	2.55	55.5	CW3-SW7
Cobalt	24	NAV	2	0	3	4	7.94	29.4	CW6-SW6
Copper	6.5	3.1	1	1	1	4	9.99	9.99	CW3-SW7
Iron	NAV	NAV	0	0	4	4	1440	38400	CW3-SW7
Lead	5.4	24	3	1	3	4	6.32	69.7	CW3-SW7
Magnesium	NAV	NAV	0	0	4	4	5730	14100	CW3-SW7
Manganese	NAV	NAV	0	0	4	4	127	160	CW3-SW7
Mercury	0.77	0.94	0	0	2	4	0.1	0.41	CW3-SW7
Nickel	34	22	0	2	3	4	14.5	32.6	CW6-SW6
Potassium	NAV	NAV	0	0	4	4	3370	14300	CW3-SW7
Sodium	NAV	NAV	0	0	4	4	66800	120000	CW3-SW7-Diss
Vanadium	12	NAV	1	0	2	4	6.91	60.1	CW3-SW7
Zinc	88	81	1	1	4	4	45.2	149	CW3-SW7
Misc. (ug/L)									
Hardness	na	na	na	na	2	2	94486	133738	CW3-SW7

Notes:
ug/L = micrograms per liter
ESC = Ecological Screening Criteria (See Section 3.3)
FW-SW = Fresh Water-Surface Water
SW-SW = Salt Water-Surface Water
NAV = No Available Value
FW-SW ESC for cadmium, chromium, copper, nickel, and zinc are based on minimum detected hardness in Charles Wood Area site and background samples (Appendix E).
na = Not Applicable

Table 3-6
Summary of Analytes Detected in Charles Wood Area Background Sediment Samples

Analyte	ESC		# of FW-SED ESC Exceedances	# of SW-SED ESC Exceedances	# of Detections	# of Samples	Minimum Concentration	Maximum Concentration	Location of Maximum
	FW-SED	SW-SED							
VOCs (mg/kg)									
Acetone	NAV	NAV	0	0	2	3	0.093	0.34	CW3-SD8
Methylene chloride	0.159	0.159	0	0	2	3	0.0093	0.013	CW3-SD7
Styrene	0.254	0.254	0	0	1	3	0.001	0.001	CW6-SD6
Toluene	2.5	2.5	0	0	1	3	0.002	0.002	CW6-SD6
2-Butanone	NAV	NAV	0	0	1	3	0.1	0.1	CW3-SD8
SVOCs (mg/kg)									
Acenaphthene	0.016	0.016	1	1	1	3	0.47	0.47	CW6-SD6
Acenaphthylene	0.044	0.044	1	1	1	3	1.6	1.6	CW6-SD6
Anthracene	0.22	0.085	1	1	3	3	0.011	0.3	CW6-SD6
Benzo(a)anthracene	0.32	0.261	1	1	1	3	0.028	1.0	CW6-SD6
Benzo(a)pyrene	0.37	0.43	1	1	3	3	0.03	1.2	CW6-SD6
Benzo(b)fluoranthene	10.4	1.8	0	1	1	3	2.1	2.1	CW6-SD6
Benzo(g,h,i)perylene	0.17	0.17	1	1	1	3	0.89	0.89	CW6-SD6
Benzo(k)fluoranthene	0.24	0.24	1	1	1	3	0.74	0.74	CW6-SD6
Chrysene	0.34	0.384	1	1	1	3	1.9	1.9	CW6-SD6
Dibenzofuran	NAV	NAV	0	0	1	3	0.48	0.48	CW6-SD6
Dimethylphthalate	NAV	NAV	0	0	3	3	0.45	1.6	CW3-SD7
Fluoranthene	0.75	0.6	1	1	1	3	4.9	4.9	CW6-SD6
Fluorene	0.19	0.019	1	1	1	3	0.82	0.82	CW6-SD6
Indeno(1,2,3-c,d)pyrene	0.2	0.2	1	1	1	3	0.98	0.98	CW6-SD6
2-Methylnaphthalene	0.07	0.07	1	1	1	3	1.3	1.3	CW6-SD6
Naphthalene	0.16	0.16	1	1	1	3	4.4	4.4	CW6-SD6
Phenanthrene	0.56	0.24	1	1	1	3	8.3	8.3	CW6-SD6
Pyrene	0.49	0.665	1	1	1	3	3.3	3.3	CW6-SD6
Pesticides (mg/kg)									
4,4'-DDD	0.008	0.002	0	1	1	3	0.0031	0.0031	CW3-SD7
PCBs (mg/kg)	***None detected***								
Metals (mg/kg)									
Aluminum	25500	18000	0	0	3	3	860	10200	CW3-SD7
Arsenic	6	8.2	0	0	3	3	0.68	5.43	CW3-SD8
Barium	NAV	48	0	2	3	3	4.41	140	CW3-SD8
Beryllium	NAV	NAV	0	0	3	3	0.38	1.14	CW3-SD7
Cadmium	0.6	1.2	2	0	3	3	0.38	1.08	CW3-SD7
Calcium	NAV	NAV	0	0	3	3	16.7	2480	CW3-SD7
Chromium	26	81	3	1	3	3	60.7	97.3	CW3-SD8
Cobalt	50	10	0	0	3	3	3.74	8.94	CW6-SD6
Copper	16	34	0	0	3	3	2.49	7.09	CW3-SD8
Iron	NAV	NAV	0	0	3	3	9040	14700	CW3-SD7
Lead	31	47	1	0	3	3	5.67	36	CW3-SD7
Magnesium	NAV	NAV	0	0	3	3	160	1900	CW3-SD7
Manganese	630	260	0	0	3	3	4.36	69.1	CW3-SD8
Mercury	0.2	0.15	1	1	3	3	0.064	0.251	CW3-SD7
Nickel	16	21	1	1	3	3	9.51	56.2	CW6-SD6
Potassium	NAV	NAV	0	0	3	3	441	2000	CW3-SD7
Selenium	NAV	1	0	3	3	3	1.82	4.15	CW3-SD8
Sodium	NAV	NAV	0	0	3	3	150	4050	CW3-SD8
Vanadium	NAV	57	0	0	3	3	10.7	50.3	CW3-SD7
Zinc	120	150	0	0	3	3	15.3	84.9	CW3-SD7
Misc. (mg/kg)									
Total Organic Carbon	na	na	na	na	3	2	540	8200	CW3-SD8

Notes:
mg/kg = micrograms per kilogram
ESC = Ecological Screening Criteria (See Section 3.3)
FW-SED = Fresh Water-Sediment
SW-SED = Salt Water-Sediment
NAV = No Available Value
na = Not Applicable

Table 3-7
Summary of Analytes Detected in Charles Wood Area Downgradient Surface Water Samples

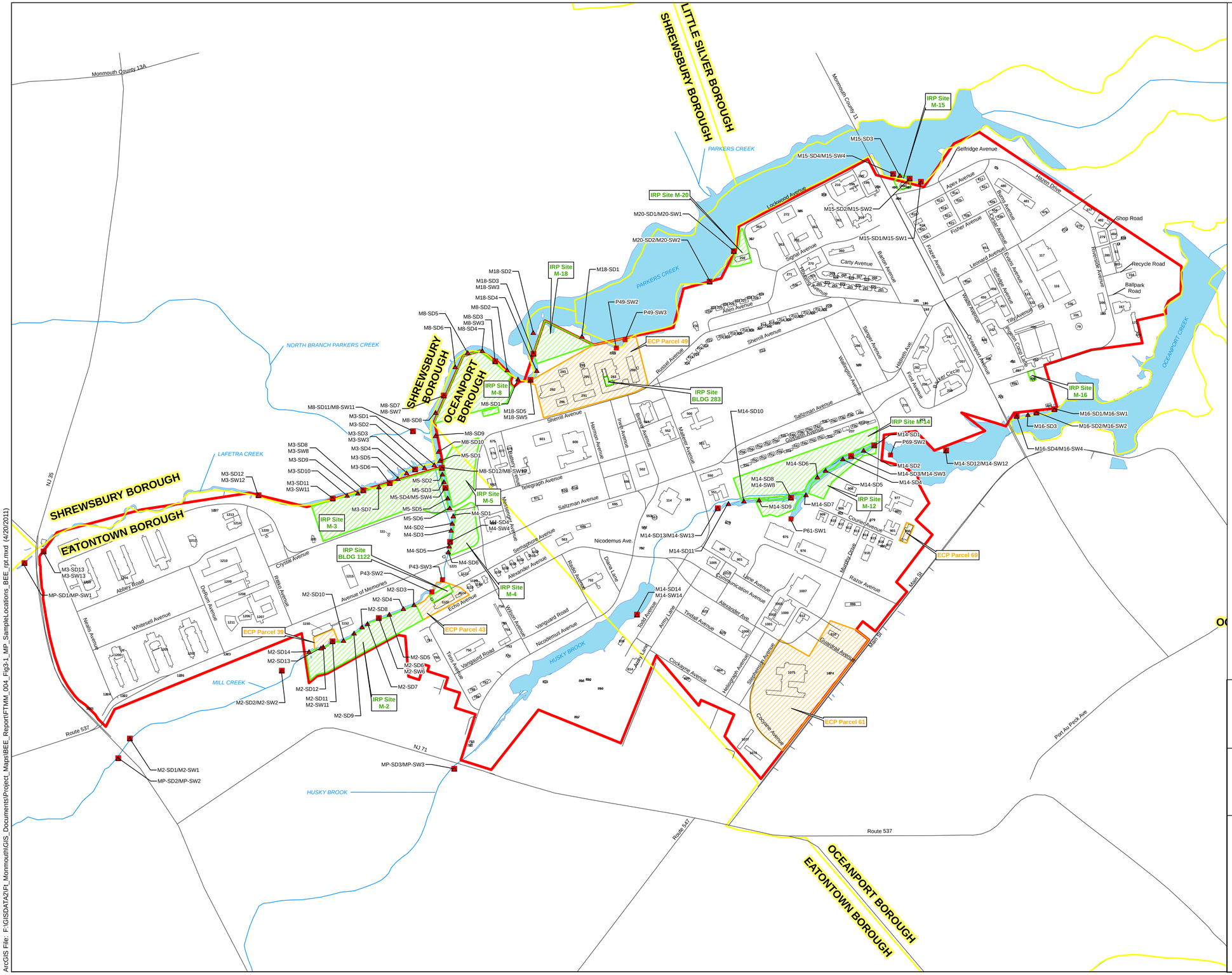
Analyte	ESC		# of Freshwater ESC Exceedances	# of Saltwater ESC Exceedances	# of Detections	# of Samples	Minimum Concentration	Maximum Concentration	Location of Maximum
	FW-SW	SW-SW							
VOCs (ug/L)	***None detected***								
SVOCs (ug/L)									
Hexachlorobutadiene	0.053	NAV	1	0	1	2	0.12	0.12	CWA-SW1
Pesticides (ug/L)	***None detected***								
PCBs (ug/L)	***None detected***								
Aroclor 1242	0.014	0.03	1	1	0	2	0.13	0.13	CW6-SW5
Metals (ug/L)									
Aluminum	NAV	NAV	0	0	4	4	11.4	130	CW6-SW5
Arsenic	150	36	0	0	2	4	7.47	10.2	CWA-SW1
Barium	220	NAV	0	0	2	4	58.5	76.1	CWA-SW1
Cadmium	0.14	8.8	1	0	1	4	0.52	0.52	CW6-SW5
Calcium	NAV	NAV	0	0	4	4	29600	45600	CWA-SW1
Iron	NAV	NAV	0	0	4	4	252	10800	CWA-SW1
Lead	5.4	24	4	0	4	4	8.09	14	CWA-SW1-Diss
Magnesium	NAV	NAV	0	0	4	4	4490	4830	CW6-SW5
Manganese	NAV	NAV	0	0	4	4	109	591	CWA-SW1
Nickel	34	22	0	1	2	4	20.8	23	CW6-SW5
Potassium	NAV	NAV	0	0	4	4	3100	5340	CWA-SW1
Selenium	5	71	1	0	1	4	5.33	5.33	CWA-SW1-Diss
Sodium	NAV	NAV	0	0	4	4	36100	55500	CW6-SW5
Zinc	88	81	0	0	4	4	48.3	80.1	CW6-SW5
Misc. (ug/L)									
Hardness	na	na	na	na	2	2	95205	132498	CWA-SW1

Notes:
ug/L = micrograms per liter
ESC = Ecological Screening Criteria (See Section 3.3)
FW-SW = Fresh Water-Surface Water
SW-SW = Salt Water-Surface Water
NAV = No Available Value
FW-SW ESC for cadmium, chromium, copper, nickel, and zinc are based on minimum detected hardness in Charles Wood Area site and background samples (Appendix E).
na = Not Applicable

Table 3-8
Summary of Analytes Detected in Charles Wood Area Downgradient Sediment Samples

Analyte	ESC		# of FW-SED ESC Exceedances	# of SW-SED ESC Exceedances	# of Detections	# of Samples	Minimum Concentration	Maximum Concentration	Location of Maximum
	FW-SED	SW-SED							
VOCs (mg/kg)									
Acetone	NAV	NAV	0	0	2	2	0.015	0.021	CWA-SD1
Methylene chloride	0.159	NAV	0	0	1	2	0.0032	0.0032	CWA-SD1
SVOCs (mg/kg)									
Acenaphthene	0.016	0.016	1	1	1	2	0.49	0.49	CWA-SD1
Anthracene	0.22	0.085	0	0	2	2	0.0053	0.082	CWA-SD1
Benzo(a)anthracene	0.32	0.261	0	0	2	2	0.031	0.033	CW6-SD5
Benzo(a)pyrene	0.37	0.43	0	0	2	2	0.02	0.036	CW6-SD5
Dimethylphthalate	NAV	NAV	0	0	2	2	0.43	0.53	CWA-SD1
Fluoranthene	0.75	0.6	0	0	1	2	0.093	0.093	CW6-SD5
Phenanthrene	0.56	0.24	1	1	1	2	0.6	0.6	CWA-SD1
Pyrene	0.49	0.665	0	0	1	2	0.068	0.068	CW6-SD5
Pesticides (mg/kg)	***None detected***								
PCBs (mg/kg)	***None detected***								
Aroclor 1242	0.07	0.023	0	1	1	2	0.05	0.05	CW6-SD5
Metals (mg/kg)									
Aluminum	25500	18000	0	0	2	2	2170	4170	CWA-SD1
Antimony	3	9.3	0	0	1	2	0.76	0.76	CWA-SD1
Arsenic	6	8.2	1	0	2	2	3.18	6.29	CWA-SD1
Barium	NAV	48	0	0	2	2	13.1	40.3	CWA-SD1
Beryllium	NAV	NAV	0	0	2	2	0.44	1.02	CW6-SD5
Cadmium	0.6	1.2	2	1	2	2	1.15	1.34	CW6-SD5
Calcium	NAV	NAV	0	0	1	2	5370	5370	CWA-SD1
Chromium	26	81	2	0	2	2	32.8	50.2	CW6-SD5
Cobalt	50	10	0	0	2	2	3.36	5.82	CW6-SD5
Copper	16	34	0	0	2	2	4.63	15.6	CWA-SD1
Iron	NAV	NAV	0	0	2	2	14200	15700	CW6-SD5
Lead	31	47	1	0	2	2	13.4	32.4	CWA-SD1
Magnesium	NAV	NAV	0	0	2	2	316	1270	CWA-SD1
Manganese	630	260	0	0	2	2	4.9	59.6	CWA-SD1
Mercury	0.2	0.15	1	1	2	2	0.047	0.249	CWA-SD1
Nickel	16	21	1	1	2	2	8.06	29.7	CW6-SD5
Potassium	NAV	NAV	0	0	2	2	871	1560	CWA-SD1
Selenium	NAV	1	0	2	2	2	2.72	3.17	CW6-SD5
Sodium	NAV	NAV	0	0	2	2	133	238	CWA-SD1
Vanadium	NAV	57	0	0	2	2	19.9	24.1	CWA-SD1
Zinc	120	150	0	0	2	2	49.8	104	CWA-SD1
Misc. (mg/kg)									
Total Organic Carbon	na	na	na	na	2	2	3700	4700	CW6-SD5

Notes:
mg/kg = micrograms per kilogram
ESC = Ecological Screening Criteria (See Section 3.3)
FW-SED = Fresh Water-Sediment
SW-SED = Salt Water-Sediment
NAV = No Available Value
na = Not Applicable



Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw® Shaw Environmental, Inc.

FIGURE 3-1

FORT MONMOUTH BASELINE ECOLOGICAL EVALUATION REPORT

SAMPLE LOCATIONS

MAIN POST
FORT MONMOUTH
NEW JERSEY

ArcGIS File: F:\GISDATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_004_Fig3-1_MP_SampleLocations_BEE_rpt.mxd (4/20/2011)

TINTON FALLS BOROUGH

EATONTOWN BOROUGH

PARKERS CK BRANCH 12046

UNT TO 12046 @ 1.90

SHREWSBURY (PARKERS CREEK)

WAMPUM BROOK

Route 537

Tinton Avenue

Hope Road

Guam Lane

Hemphill Road

Rabbit Avenue

Tinton Falls Public Works Way

Charles Wood Area

Corregidor Road

Laboratory Road

Coppuck Place Drive

Radiac Way

Hellfgott Drive

Quartz Avenue

Watson Avenue

Pearl Harbor Avenue

Satellite Road

Fire Line Drive

Radar Avenue

Academy Avenue

Monmouth County 51

Megill Drive

Megill Circle

Lowther Drive

Maxwell Place

Wigwag Road

Helms Drive

Pinebrook Road

Mitchell Drive

NJ 36

ECP Parcel 15

ECP Parcel 26

ECP Parcel 27

IRP Site CW-3A

IRP Site CW-6

CWA-SD1/CWA-SW1

CW3-SD1

CW3-SD2

CW3-SD3

CW3-SD4
CW3-SW4

CW3-SD5
CW3-SW5

CW3-SD6

CW3-SD7
CW3-SW7

CW3-SD8

P28-SW2

P28-SW1

P15-SW3

P15-SW1

P27-SW2

P27-SW1

CW6-SS1

CW6-SS2

CW6-SS3

CW6-SS4

CW6-SD1

CW6-SD2

CW6-SD3

CW6-SD4

CW6-SD5/CW6-SW5

CW6-SD6/CW6-SW6

LEGEND

Sample Locations

- Sediment Sample Location
- Surface Water Sample Location
- Sediment/Surface Water Sample Location
- Surface Soil Sample Location
- Road Centerline
- Water Feature
- Building
- Municipal Boundary
- Water Body
- IRP Site
- ECP Parcel
- Installation Boundary

N

Scale:

0 300 600 1,200

Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw® Shaw Environmental, Inc.

FIGURE 3-2

FORT MONMOUTH BASELINE ECOLOGICAL EVALUATION REPORT

SAMPLE LOCATIONS

CHARLES WOOD AREA
FORT MONMOUTH
NEW JERSEY

ArcGIS File: F:\GISDATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_005_Fig3-2_CWA_SampleLocations_BEE_rpt.mxd (4/20/2011)

4.0 ECOLOGICAL EVALUATION

COPECs were identified in the previous section through a comparison of analytical data from site media (surface soil, groundwater, surface water, and sediment) to concentrations used as screening levels for ecological concern. A qualitative determination of the potential for adverse effects from site constituents is made in this section based on the COPECs, the presence of environmentally sensitive areas, and the potential migration pathways of site constituents.

COPECs identified at potential exposure points, such as surface water and sediments of the creeks and rivers and wetland soils at the Pesticide Storage Area CW-6 (FTMM-28), are compared to background and ambient levels of those constituents (**Section 2.4.7**, **Table 2-2**, **Appendix G**, and **Table 3-3 through Table 3-6**). The potential risk to wildlife exposed to constituents present in surface water, sediment, and food items (aquatic plants, fish, and invertebrates) at concentrations above background are evaluated through the use of food chain models to provide additional lines of evidence to support the conclusions of the ecological evaluations for each of the applicable IRP sites and ECP Parcels addressed in this BEE. The wildlife exposure models are discussed in **Section 4.1**, and the ecological evaluation of each site or parcel is discussed in **Section 4.2** for the MP and **Section 4.3** for the CWA.

4.1 WILDLIFE EXPOSURE MODELS

Wildlife may be exposed through dietary consumption of contaminants present in sediment or wetland soils at concentrations greater than background. In order to assess the potential risks to various feeding guilds from soil or sediment-related constituents, a food web model was constructed for the following target species: the American Robin (*Turdus migratorius*), the Great Blue Heron (*Ardes herodeus*), and the Mallard Duck (*Anas platyrhynchos*). These food web models were used to evaluate wildlife exposure to COPECs present at concentrations above those in background.

The first species, the American Robin, is a terrestrial invertivore and may be exposed to constituents in soil from consumption of invertebrates that accumulate constituents from the soil and from incidental ingestion of soil. The American Robin is chosen to represent exposures to invertivorous species.

The remaining two species are aquatic-based species and may be exposed to constituents present in the sediment through bioaccumulation in dietary items: aquatic plants, small fish, and aquatic vertebrates and invertebrates.

The Great Blue Heron is the largest member of the wading birds in North America with long necks and spear-like bills. It is widely distributed in both saltwater and freshwater environments. Fish are the preferred prey, but Great Blue Herons also eat amphibians, reptiles, crustaceans, insects, birds, and mammals. A limited area of the MP, particularly some of the wetland area along Oceanport Creek, was identified through the NJDEP Landscape Project Critical Wildlife Habitat database as habitat Rank 4 for the Least Tern; this rank indicates at least one or more occurrences of a state endangered species. Like the Great Blue Heron, the Least Tern is piscivorous, but is a more seasonal resident, is limited in adequate foraging areas at the site, is mainly marine, and has a much larger foraging area. The Great Blue Heron was chosen to represent piscivorous birds that may be exposed throughout the waterways in and around FTMM.

The Mallard is a surface-feeding duck common to both freshwater and saltwater wetlands. Their feeding methods often include filtering through soft mud for food, exposing them to potential sediment-related contaminants. They feed mostly on aquatic plants, depending on the season, and are the most abundant duck in the United States being widespread throughout the United States. The Mallard was chosen to represent herbivorous birds with direct exposure to sediments.

The wildlife exposure estimates are expressed as the body weight-normalized average daily doses from all exposure routes: food consumption, water consumption, and incidental soil or sediment consumption. This is expressed through the following equation:

where:

ADD	=	average daily dose (mg/kg-day)
BW	=	body weight (kg)
IR_{food}	=	ingestion rate of food by receptor species (kg/day)
f_i	=	fraction of daily diet comprised of food item i
C_i	=	Concentration of COPEC in food item i (mg/kg)
IR_{water}	=	ingestion rate of water (L/day)
C_{water}	=	Concentration of COPEC in water (mg/L)
f_{soil}	=	fraction of daily diet comprised of soil
M_{diet}	=	weighted average moisture content of diet expressed as a fraction
C_{soil}	=	concentration of COPEC in soil (mg/kg)
AUF	=	area use factor which is the fraction of a species' range occupied by the site

Ingestion rates, exposure factors, and other natural history parameters for these target species are presented in **Table 4-1** and are from the Wildlife Exposure Factors Handbook (USEPA, 1993b).

Literature-derived bioconcentration factors (or bioaccumulation factors or biotransfer factors) were used to estimate COPEC concentrations in food items (e.g., aquatic plants, invertebrates, and fish). The bioaccumulation factors (BAFs) for soil invertebrates, aquatic plants, fish and aquatic vertebrates and invertebrates for the COPECs are listed in **Table 4-2**, **Table 4-3**, and **Table 4-4**, respectively.

The soil-to-invertebrate bioaccumulation factors were obtained from several sources. The primary sources were the recommended BAFs from the USEPA's ecological soil screening level guidance (USEPA. 1995 et seq.). Regression models were developed for Oak Ridge National Laboratory (Sample et al., 1998a) for use in estimating the uptake of inorganic elements from soil by earthworms. The median BAF was used for mercury from this source. The bioconcentration factor (BCF) for the remaining inorganics were from USEPA (1999) or, by default, set at the geometric mean of all the inorganic BCFs from that guidance (USEPA, 1999) as recommended by that guidance. For non-chlorinated organic compounds with log K_{OW} values less than 5, the BCF was set at 0.7 (for dry weight) as recommended by the State of Washington (WAC Title 173) in its wildlife exposure models.

The sediment-to-aquatic plant bioaccumulation factors were obtained mostly from the USEPA's *Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities* (1999). In accordance with USEPA (1999), inorganic COPECs without BAFs used the geometric mean of the available inorganic BAFs and organic COPECs without BAFs used the regression equation of Travis and Arms (1988). BAFs for DDD and DDT used the BAF for DDE as a surrogate.

The sediment-to-aquatic invertebrate bioaccumulation factors were obtained mostly from the USEPA's *Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities* (1999). These values are also used as a conservative estimate of BAFs for foraging fish which would experience less exposure to sediment contaminants than benthic invertebrates which experience continuous direct contact with sediments. In accordance with USEPA (1999), inorganic COPECs without BAFs used the geometric mean of the available inorganic BAFs. BAFs for DDD and DDT used the BAF for DDE as a surrogate. BAFs for several PAHs were obtained from the USEPA's National Sediment Quality Inventory assuming 10.5% lipid in species and 2% organic carbon content in sediment.

The soil/sediment ingestion rate for the receptor species is most often represented as a percentage of a receptor species' diet expressed as a ratio of dry weights. These soil ingestion rates are presented in **Table 4-4** along with other natural history parameters for the receptor species. In order to account for the methodology used in the estimation of the soil ingestion rates, the moisture content of the receptor species' diets must be accounted for. The relationship used to estimate the soil ingestion rates for the receptors in this BEE is as follows:

Where:

IR_{soil} = ingestion rate of soil (mg/kg-day)
IR_{food} = ingestion rate of food by receptor species (kg/day)
f_{soil} = fraction of daily diet comprised of soil
M_{diet} = weighted average moisture content of diet expressed as a fraction

The bioaccumulation models and the exposure models are related to the concentrations of COPECs in various environmental media (e.g., sediment). For each site addressed in this BEE where constituent concentrations are detected at concentrations above ESCs and above background concentrations, a conservative estimate of the concentration to which a receptor would be exposed over time needs to be estimated. The concentration is referred to as the exposure point concentration and it is the arithmetic average concentration for a COPEC based on a set of sampling results for the area. Average concentrations were calculated using ProUCL Version 4.00.05 using one-half the detection limit or Kaplan-Meir Method when non-detects were present. For the conservative purposes of the screening level risk assessment, the maximum detected concentration is used initially for each site where COPECs are present at concentrations above background.

The area use factor (AUF) is the fraction of a species' foraging range that is occupied by the site. For example, the foraging area for the Great Blue Heron is reported as averaging 4.5 hectares (HA). If the potential foraging area of the site is 0.45 HA, then the fraction intake from the site is only 10% and the AUF is 0.1. Another consideration regarding the fraction intake from the site is the amount of time per year that a species may spend in the habitat associated with the site. With avian species, this is usually due to seasonal differences and migration. It should be noted that, though a species may seem to be present in an area year-round, the winter and breeding season populations are often different with the local winter population migrating further north during the breeding season, and the local breeding season population migrating from the south. For the conservative purposes of the screening level risk assessment, the AUF is initially set equal to one (assumes the target species only forages at the site) and the seasonality is not considered.

Ecological effects due to exposure to contaminants are estimated using toxicity reference values (TRVs). TRVs are analogous to the reference doses used in human health risk assessments. However, reference doses in human health risk assessments are defined as "safe" levels, whereas TRVs may be based on No Observable Adverse Effect Levels (NOAELs), Lowest Observable Adverse Effect Levels (LOAELs), or other toxicity data. Dose-based toxicological benchmarks based on laboratory test animals were obtained from the literature and are presented in **Table 4-5**. Data from chronic toxicity studies and from studies that addressed survival, growth, or reproduction endpoints are used in preference to shorter term studies or studies where effects could not be directly linked to impacts on survival, growth, or reproduction. The primary sources for avian TRVs were the recommended NOAELs from the USEPA's ecological soil screening level guidance (USEPA. 1995 et seq.). When not available through these primary sources, NOAEL TRVs were obtained from the literature (Sample et al., 1996; USEPA, 1999; Eisler, 1987). Though the ecological soil screening level guidance does not recommend LOAELs, LOAELs were obtained from these guidances following their methodology: LOAELs were obtained from the same study that provided the NOAELs or LOAELs were calculated as the geometric means of LOAELs from reproduction and growth studies whenever NOAELs were calculated as the geometric means of those studies.

The potential risks to wildlife via exposure to COPECs through the food web are estimated by comparing the potential exposures (expressed as the average daily dose) to the TRVs. This comparison is made in the form of the hazard quotient (HQ) which is the ratio of the estimated average daily dose (ADD) to the TRV:

$$\frac{\quad}{\quad}$$

For the conservative purposes of the screening level risk assessment, a NOAEL-based HQ is initially determined using the NOAEL-based TRV as the denominator. When the NOAEL-based HQ is greater than one, indicating that the conservatively estimated exposure may be greater than the NOAEL,

then a LOAEL-based HQ is also calculated. The potential wildlife screening level wildlife risk evaluations are presented in the following sections for sites where COPECs are detected in sediment or wetland soils at concentrations above background.

4.2 MAIN POST

On the MP, 13 IRP Sites and five ECP Parcels were addressed in this BEE. Two of the IRP sites are contained within ECP Parcels and are addressed as one.

4.2.1 LANDFILL 2 (FTMM-2)

Near surface soil, groundwater, surface water, and sediment data were evaluated. Ecological receptors are not directly exposed to near surface soils or groundwater, but ecological receptors may be exposed to surface water or sediment. This evaluation identified several pesticides, PCBs, SVOCs, and metals as COPECs in near surface soil and one VOC, several pesticides, and several metals as COPECs in groundwater. Though there are no direct ecological exposures to near surface soils or groundwater, the COPECs may have the potential to migrate towards environmentally sensitive habitats where ecological receptors could be exposed to contaminants. Two SVOCs and lead were identified as COPECs in surface water. PCBs, SVOCs, and metals were identified as COPECs in sediment. Though 4,4′-DDE and cadmium were not detected in surface water, their surface water MDLs were greater than the applicable ESC. Given that 4,4′-DDE is a COPEC in soil and cadmium is a COPEC in soil, groundwater, and sediment, they are considered possible COPECs in surface water. **Table 4-6** and **Table 4-7** provide a summary of the COPECs in surface water and sediment at Landfill 2 (FTMM-2) as well as background and ambient levels of those constituents. Though PCBs and SVOCs in sediment were detected very infrequently at concentrations above the ESCs, some detected concentrations were above background. The maximum sediment barium concentration also exceeded BEE background concentrations. A summary of the wildlife HQs for these COPECs is presented in **Table 4-8**.

GIS digital data available through the NJDEP indicate the presence of deciduous wetlands along Mill Creek and to the east and west of Landfill 2 (**Figure 4-1**) as well as herbaceous wetlands across the site (**Figure 4-2**). A site visit on September 9, 2009, confirmed the presence of deciduous wetlands bordering Mill Creek and Landfill 2 (FTMM-2); however, the site itself was typical of upland habitat and not herbaceous wetlands.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species.

The potential for ecological effects from COPECs at Landfill 2 (FTMM-2) is judged to be minimal for the following reasons:

- Ecological receptors are not frequently exposed to subsurface soils; COPECs are in subsurface soils and ecological exposure is unlikely though contaminants may migrate to potential exposure points.
- Most SVOCs, pesticides, and PCBs in soil were detected infrequently at concentrations exceeding the ESC.
- Ecological receptors are not exposed directly to contaminants in groundwater, though groundwater may flow to potential exposure points.
- Though identified as COPECs in near surface soil or groundwater, VOCs and pesticides were not identified as COPECs in surface water or sediment where exposure may occur.
- Lead concentrations in surface water and sediment were similar to those in background samples (**Table 3-3**).
- PCBs in sediment at low concentrations are ubiquitous due to varied anthropogenic sources. Detected concentrations of PCBs were low, mostly within a factor of 2 of the LELs used for screening and orders of magnitude less than the SELs, and detected concentrations were similar to those in background samples (**Table 3-4**).

- PAHs have many anthropogenic sources and are ubiquitous in environmental media. The few detected concentrations of PAHs identified as COPECs were at low concentrations and at concentrations similar to those in background samples (**Table 3-3** and **Table 3-4**). These SVOCs, though some were identified as COPECs in soil, were not identified as COPECs in groundwater indicating that their current presence in surface water and sediment may not be due to migration from Landfill 2 (FTMM-2).
- The concentrations of metals in surface water and sediment exceeding ESC were similar to those found in background samples (**Table 3-3** and **Table 3-4**).
- Conservative wildlife HQs, assuming foraging only at the point of maximum concentration, for PBCs and SVOCs are less than one. Though the NOAEL-based Great Blue Heron HQ for barium based on foraging only at the maximum detected concentration is greater than one, HQs based on average detected concentrations or the size of the potential foraging area are well below one (0.63 and 0.33, respectively).

Within the landfill, COPECs were identified in soils and groundwater that could migrate to ecological exposure points in nearby surface water or sediment. COPECs in surface water were limited to two PAHs and lead, and COPECs in sediment, though potentially related to landfill soil or groundwater COPECs indicating a potential migration pathway, are at low concentrations relative to the ESC and similar to background concentrations. Based on wildlife exposure models for this site, the HQs do not indicate an ecological concern. Based on these considerations and the information provided in this report, it is concluded that constituents at Landfill 2 (FTMM-2) are unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments at Landfill 2 (FTMM-2) are not warranted or recommended.

4.2.2 LANDFILL 3 (FTMM-3)

Near surface soil, groundwater, surface water, and sediment data were evaluated. Ecological receptors are not directly exposed to near surface soils or groundwater, but ecological receptors may be exposed to surface water or sediment. This evaluation identified one PCB, several pesticides, SVOCs, and metals as COPECs in near surface soil. VOCs were not identified as COPECs in groundwater. Though there are no direct ecological exposures to near surface soils, the COPECs in soil may have the potential to migrate towards environmentally sensitive habitats where ecological receptors could be exposed to contaminants. No COPECs were identified as COPECs in surface water; however, given that the surface water MDL for copper was greater than the applicable ESC and copper was identified as a COPEC in other site media, copper is considered a possible COPEC in surface water. Two pesticides and several metals were identified as COPECs in sediment. **Table 4-9** and **Table 4-10** provide a summary of the COPECs in surface water and sediment at Landfill 3 (FTMM-3) as well as background and ambient levels of those constituents. Though DDD and DDT in sediment were detected in only one sample each at concentrations above the ESCs, these detected concentrations were above background. The maximum sediment copper concentration also exceeded BEE background concentrations. A summary of the wildlife HQs for these COPECs is presented in **Table 4-11**.

GIS digital data available through the NJDEP indicate the presence of freshwater tidal wetlands (**Figure 4-2**) along Lafetra Creek opposite Landfill 3 (FTMM-3) as well as deciduous wetlands (**Figure 4-1**) further to the north and to the west of Landfill 3 (FTMM-3).

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species and that Lafetra Creek as well as the adjacent wetlands are Conservation Rank 4 as potential bald eagle foraging habitat (**Figure 4-3**), indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. The presence of bald eagles has not been documented for this site.

The potential for ecological effects from COPECs at Landfill 3 (FTMM-3) is judged to be minimal for the following reasons:

- Ecological receptors are not frequently exposed to subsurface soils; COPECs are in subsurface soils and ecological exposure is unlikely though contaminants may migrate to potential exposure points.
- With the exception of two PAHs and 4,4′-DDT, SVOCs and pesticides in soil were detected infrequently at concentrations exceeding the ESC.
- No COPECs were identified in groundwater that may flow to potential exposure points.
- The concentration of 4,4-DDD (0.0095 mg/kg) exceeded the saltwater sediment ESC (0.002 mg/kg). One detected concentration (0.18 mg/kg) of 4,4′-DDT, exceeded the ER-L value used for screening (0.001 mg/kg) as well as the ER-M value (0.007 mg/kg) but similar to that reported in SI background samples for sediment and soil (Weston, 1995).
- Though identified as COPECs in near surface soil, PCBs were not identified as COPECs in surface water or sediment where ecological exposures may occur.
- PAHs, though identified as COPECs in near surface soil, were not identified as COPECs in surface water or sediment where ecological exposure may occur.
- With the exception of the concentration of copper in one sediment sample, the concentrations of metals were similar to those found in background samples (**Table 3-3** and **Table 3-4**). The remaining sediment sample copper concentrations were low with respect to the ESC and similar to that in most of the background samples.
- Conservative wildlife HQs for DDD and DDT are less than one. Though the NOAEL-based Mallard and Great Blue Heron HQs for copper based on the maximum detected concentration is greater than one, HQs based on average detected concentrations or the size of the potential foraging area are well less than one.

Within the landfill, COPECs were identified in soils that could migrate to ecological exposure points in nearby surface water or sediment. No COPECs were identified in surface water. The metals COPECs in sediment, though potentially related to landfill soil COPECs, are mostly found at low concentrations in relation to the ESC and similar to background concentrations. The wildlife exposure model HQs for this site do not indicate an ecological concern. Based on these considerations and the information provided in this report, it is concluded that constituents at Landfill 3 (FTMM-3) are unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments at Landfill 3 (FTMM-3) are not warranted or recommended.

4.2.3 LANDFILL 4 (FTMM-4)

Near surface soil, groundwater, surface water, and sediment data were evaluated. Ecological receptors are not directly exposed to near surface soils or groundwater, but ecological receptors may be exposed to surface water or sediment. This evaluation identified a few pesticides, two SVOCs, and several metals as COPECs in near surface soil. Five metals were identified as COPECs in groundwater. Though there are no direct ecological exposures to near surface soils or groundwater, the COPECs in soil and groundwater may have the potential to migrate towards environmentally sensitive habitats where ecological receptors could be exposed to contaminants. No COPECs were identified as COPECs in surface water; however, given that the surface water MDL for copper was greater than the applicable ESC and copper was identified as a COPEC in other site media, copper is considered a possible COPEC in surface water. Two pesticides, three PCBs, six SVOCs, and six metals were identified as COPECs in sediment. **Table 4-12** and **Table 4-13** provide a summary of the COPECs in surface water and sediment at Landfill 4 (FTMM-4) as well as background and ambient levels of those constituents. Though DDD and DDT in sediment were detected infrequently at concentrations above the ESCs, these detected concentrations were above background. The maximum sediment PCB concentrations also exceeded BEE background concentrations. A summary of the wildlife HQs for these COPECs is presented in **Table 4-14**.

No significant habitats in the vicinity of Landfill 4 are identified within the GIS digital data available through the NJDEP.

The potential for ecological effects from COPECs at Landfill 4 (FTMM-4) is judged to be minimal for the following reasons:

- Ecological receptors are not frequently exposed to subsurface soils; COPECs are in subsurface soils and ecological exposure is unlikely though contaminants may migrate to potential exposure points.
- With the exception of 4,4′-DDT, pesticide and SVOC concentrations in soil exceeding COPECs were detected infrequently at concentrations exceeding the ESC.
- Ecological receptors are not exposed directly to contaminants in groundwater, though groundwater may flow to potential exposure points.
- Though identified as COPECs in near surface soil, pesticides were not identified as COPECs in surface water and detected infrequently in sediment where ecological exposures may occur. Detected concentrations in sediment were low with respect to the applicable ESC.
- Though copper was identified as a potential COPEC in surface water, copper concentrations in sediment were similar to those in background samples (**Table 3-4**).
- Though PCBs were detected in sediment, they were not detected in near surface soils at Landfill 4 (FTMM-4), and may not be related to the Landfill. PCBs at low concentrations are ubiquitous due to varied anthropogenic sources. Detected concentrations of PCBs in sediment were low, all within a factor of 8 of the ER-Ls used for screening and orders of magnitude less than the ER-Ms, and detected concentrations were similar to those in background samples (**Table 3-4**).
- PAHs in surface water and sediment have many anthropogenic sources and are ubiquitous in environmental media. The few detected concentrations of PAHs identified as COPECs were at low concentrations and at concentrations similar to those in background samples (**Table 3-3** and **Table 3-4**).
- The concentrations of metals in surface water and sediment were similar to those found in background samples (**Table 3-3** and **Table 3-4**).
- Conservative wildlife HQs, assuming foraging only at the point of maximum concentration, for DDD, DDT, and PCBs are less than one.

Within the landfill, COPECs were identified in soils and groundwater that could migrate to ecological exposure points in nearby surface water or sediment. COPECs in surface water were limited to lead which is found at similar concentrations within background samples. The metals COPECs in sediment, though potentially related to landfill soil or groundwater COPECs indicating a potential migration pathway, are found at low concentrations in relation to the ESC and similar to background concentrations. Conservative wildlife HQs are all less than one indicating no ecological concern. Based on these considerations and the information provided in this report, it is concluded that constituents at Landfill 4 (FTMM-4) are unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments at Landfill 4 (FTMM-4) are not warranted or recommended.

4.2.4 LANDFILL 5 (FTMM-5)

Near surface soil, groundwater, surface water, and sediment data were evaluated. Ecological receptors are not directly exposed to near surface soils or groundwater, but ecological receptors may be exposed to surface water or sediment. This evaluation identified one PCB, several pesticides, SVOCs, and metals as COPECs in near surface soil. No VOCs were identified as COPECs in groundwater. Though there are no direct ecological exposures to near surface soils or groundwater, the COPECs in soil may have the potential to migrate towards environmentally sensitive habitats where ecological receptors could be exposed to contaminants. No COPECs were identified as COPECs in surface water; however, given that the surface water MDL for copper was greater than the applicable ESC and copper was identified as a COPEC in other site media, copper is considered a possible COPEC in surface water. Three pesticides, several SVOCs, and several metals were identified as COPECs in sediment. **Table 4-15** and **Table 4-16** provide a summary of the COPECs in surface water and sediment at Landfill

5 (FTMM-5) as well as background and ambient levels of those constituents. The maximum sediment DDD, DDE, and DDT concentrations also exceeded BEE background concentrations. A summary of the wildlife HQs for these COPECs is presented in **Table 4-17**.

Though the GIS digital data available through the NJDEP do not indicate the presence of critical habitats at Landfill 5 (FTMM-5), the forested area to the north is Habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species, and is listed as Conservation Rank 4 as potential bald eagle foraging habitat (**Figure 4-3**), indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. The presence of bald eagles has not been documented for this site.

The potential for ecological effects from COPECs at Landfill 5 (FTMM-5) is judged to be minimal for the following reasons:

- Ecological receptors are not frequently exposed to subsurface soils; COPECs are in subsurface soils and ecological exposure is unlikely though contaminants may migrate to potential exposure points.
- Most SVOCs, pesticides, and PCBs in soil were detected infrequently at concentrations exceeding the ESC.
- No VOCs were identified as COPECs in groundwater that may flow to potential exposure points.
- Though copper was identified as a potential COPEC in surface water, copper concentrations in sediment were similar to those in background samples (**Table 3-4**).
- All detected concentrations of the pesticides 4,4′-DDD, 4,4′-DDE, and 4,4′-DDT were within a factor of eight of the saltwater sediment ESC (most were within a factor of three of the ER-Ls) and below the ER-Ms.
- Though identified as COPECs in near surface soil, PCBs were not identified as COPECs in surface water or sediment where ecological exposures may occur.
- PAHs have many anthropogenic sources and are ubiquitous in environmental media. The few detected concentrations of PAHs identified as COPECs were at low concentrations and most were similar to those in background samples (**Table 3-3** and **Table 3-4**).
- The concentrations of metals in sediment were similar to those found in background samples (**Table 3-3** and **Table 3-4**).
- Conservative wildlife HQs, assuming foraging only at the point of maximum concentration, for DDD, DDE, and DDT are less than one.

Within the landfill, COPECs were identified in soils and groundwater that could migrate to ecological exposure points in nearby surface water or sediment. No COPECs were identified in surface water. COPECs in sediment, though potentially related to landfill soil COPECs, are at low concentrations and similar to background concentrations. Pesticides in sediment, though potentially related to landfill soil, were detected infrequently and at low concentrations in relation to the ESC. Conservative wildlife HQs are all less than one indicating no ecological concern. Based on these considerations and the information provided in this report, it is concluded that constituents at Landfill 5 (FTMM-5) are unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments at Landfill 5 (FTMM-5) are not warranted or recommended.

4.2.5 LANDFILL 8 (FTMM-8)

Near surface soil, groundwater, surface water, and sediment data were evaluated. Ecological receptors are not directly exposed to near surface soils or groundwater, but ecological receptors may be exposed to surface water or sediment. This evaluation identified several pesticides, PCBs, SVOCs, and metals as COPECs in near surface soil. Several pesticides were identified as COPECs in groundwater. Though there are no direct ecological exposures to near surface soils or groundwater, the COPECs in soils and groundwater may have the potential to migrate towards environmentally sensitive habitats

where ecological receptors could be exposed to contaminants. No COPECs were identified as COPECs in surface water; however, given that the surface water MDL for copper exceeded the applicable ESC and copper was identified as a COPEC in other site media, copper is considered a possible COPEC in surface water. Two PCBs, 4,4-DDD, and several metals were identified as COPECs in sediment. **Table 4-18** and **Table 4-19** provide a summary of the COPECs in surface water and sediment at Landfill 8 (FTMM-8) as well as background and ambient levels of those constituents. Though PCBs in sediment were detected infrequently at concentrations above the ESCs, these detected concentrations were above background. The maximum sediment chromium, cobalt, mercury, and nickel concentrations also exceeded BEE background concentrations. A summary of the wildlife HQs for these COPECs is presented in **Table 4-20**.

GIS digital data available through the NJDEP indicate the presence of Phragmites dominated wetlands (**Figure 4-2**) along Parkers Creek opposite Landfill 8 (FTMM-8), with deciduous shrub/scrub wetlands and deciduous wetlands present further from the landfill (**Figure 4-1**). Landfill 8 (FTMM-8) is identified as a coastal forest habitat.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland areas across Parkers Creek and the forested areas on Landfill 8 (FTMM-8) are habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species. Parkers Creek, as well as the wetlands and forested area, is listed as Conservation Rank 4 as potential bald eagle foraging habitat, indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. The presence of bald eagles has not been documented for this site.

The potential for ecological effects from COPECs at Landfill 8 (FTMM-8) is judged to be minimal for the following reasons:

- Ecological receptors are not frequently exposed to subsurface soils; COPECs are in subsurface soils and ecological exposure is unlikely though contaminants may migrate to potential exposure points.
- Most SVOCs, PCBs, and pesticides in soil were detected infrequently at concentrations exceeding the ESC.
- Ecological receptors are not exposed directly to contaminants in groundwater, though groundwater may flow to potential exposure points.
- Though copper was identified as a potential COPEC in surface water, copper concentrations in sediment were similar to those in background samples (**Table 3-4**).
- Though several pesticides were identified as COPECs in near surface soil and groundwater, only 4,4′-DDD was detected as a COPEC in sediment where ecological exposure may occur indicating no significant migration of organic COPECs from the landfill.
- The three detected concentrations (0.0021, 0.0023, and 0.0033 mg/kg) in sediment of the pesticide, 4,4-DDD, were only marginally greater than the saltwater sediment ESC (0.002 mg/kg).
- Though identified as COPECs in near surface soil, PCBs were not identified as COPECs in surface water where ecological exposures may occur.
- PCBs at low concentrations in sediment are ubiquitous due to varied anthropogenic sources. Detected concentrations of PCBs in sediment were all within a factor of eight of the ER-Ls and orders of magnitude less than the ER-Ms, and detected concentrations were similar to those in background samples (**Table 3-4**).
- Though identified as PAHs in near surface soil, PAHs were not identified as COPECs in surface water or sediment where ecological exposures may occur.

- The concentrations of metals were similar to those found in background samples for the BEE investigation (**Table 3-3** and **Table 3-4**) or the background soil and sediment concentrations reported in the SI (Weston, 1995).
- Conservative wildlife HQs, assuming foraging only at the point of maximum concentration, for PCBs and mercury are less than one. Though the NOAEL-based Great Blue Heron HQs for chromium, cobalt, and nickel based on foraging only at the maximum detected concentration are greater than one, HQs based on the size of the potential foraging area are well less than one (0.56, 0.40, and 0.24, respectively).

Within the landfill, COPECs were identified in soils and groundwater that could migrate to ecological exposure points in nearby surface water or sediment. No COPECs were identified in surface water. Pesticides and PCBs in sediment, though potentially related to landfill soil, were detected infrequently and at low concentrations in relation to the ESC. Metals in sediment were found at concentrations similar to the background concentrations from the BEE investigation or SI. The wildlife exposure model HQs for this site do not indicate an ecological concern. Based on these considerations and the information provided in this report, it is concluded that constituents at Landfill 8 are unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments at Landfill 8 (FTMM-8) are not warranted or recommended.

4.2.6 LANDFILL 12 (FTMM-12)

Near surface soil, groundwater, surface water, and sediment data were evaluated. Ecological receptors are not directly exposed to near surface soils or groundwater, but ecological receptors may be exposed to surface water or sediment. This evaluation identified several pesticides, SVOCs, and metals as COPECs in near surface soil. Several metals were identified as COPECs in groundwater. Though there are no direct ecological exposures to near surface soils or groundwater, the COPECs in soil and groundwater may have the potential to migrate towards environmentally sensitive habitats where ecological receptors could be exposed to contaminants. No COPECs were identified as COPECs in surface water; however, given that the surface water MDL for copper was greater than the applicable ESC and copper was identified as a COPEC in other site media, copper is considered a possible COPEC in surface water. Three pesticides, one PCB, several PAHs and several metals were identified as COPECs in sediment. **Table 4-21** and **Table 4-22** provide a summary of the COPECs in surface water and sediment at Landfill 12 (FTMM-12) as well as background and ambient levels of those constituents. Though PCBs in sediment were detected in only one sample at a concentration above the ESCs, this detected concentration was above background. The maximum sediment DDD, DDE, DDT, acenaphthene, and anthracene concentrations also exceeded BEE background concentrations. A summary of the wildlife HQs for these COPECs is presented in **Table 4-23**. This table addresses both Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14), which are located on opposite sides of Husky Brook.

GIS digital data available through the NJDEP indicate the presence of deciduous wooded (**Figure 4-1**) wetlands along both banks of Husky Brook in the western half of Landfill 12 (FTMM-12). Based on site observations, these wetlands are less extensive than indicated through the NJDEP data.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland areas along Husky Brook and the small tributary are habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species. To the east of Landfill 12 (FTMM-12), on the opposite side of Wallington Avenue-Murphy Drive, the emergent wetland areas are habitat Rank 4 for the Least Tern; this rank indicates at least one or more occurrences of a state endangered species. Husky Brook, as well as the wetlands and forested areas of Landfill 12 (FTMM-12), is listed as Conservation Rank 4 as potential bald eagle foraging habitat (**Figure 4-3**), indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. The presence of bald eagles has not been documented for this site.

The potential for ecological effects from COPECs at Landfill 12 (FTMM-12) is judged to be minimal for the following reasons:

- Ecological receptors are not frequently exposed to subsurface soils; COPECs are in near surface soils under a clean soil cover and ecological exposure is unlikely though contaminants may migrate to potential exposure points.

- Most of the SVOCs and pesticides in soil were detected infrequently at concentrations exceeding the ESC.
- Ecological receptors are not exposed directly to contaminants in groundwater, though groundwater may flow to potential exposure points.
- Several metals were identified as COPECs in groundwater that may flow to potential exposure points in Husky Brook.
- No VOCs were identified as a COPEC in surface water or sediment.
- Though copper was identified as a potential COPEC in surface water, copper concentrations in sediment were similar to those in background samples (**Table 3-4**).
- Several pesticides were identified as COPECs in near surface soil. Of these, only three (4,4′-DDD, 4,4′-DDE, and 4,4′-DDT) were detected at concentrations exceeding the criteria in sediment. 4,4′-DDD, 4,4′-DDE, and 4,4′-DDT were generally only marginally above the saltwater sediment ESC (0.001 to 0.0022 mg/kg).
- Though one PCB was identified as a COPEC in sediment, PCBs were not identified as COPECs in near surface soil and their presence in sediment may not be related to the landfill.
- PAHs have many anthropogenic sources and are ubiquitous in environmental media. The detected concentrations of PAHs identified as COPECs were at low concentrations and most were similar to those in background samples (**Table 3-3** and **Table 3-4**); the highest concentrations were west of Landfill 12 (FTMM-12) near Malterer Avenue and are more likely due to runoff from roads and parking surfaces than from the landfill. Though above the ER-Ls used for screening, all concentrations were well below the ER-Ms.
- No COPECs were identified in surface water.
- The concentrations of metals in sediment were similar to those found in background samples (**Table 3-4**).
- Conservative wildlife, assuming foraging only at the point of maximum concentration, HQs for PCBs, DDD, DDE, DDT, and PAHs are less than one.

Within the landfill, COPECs were identified in soils and groundwater that could migrate to ecological exposure points in nearby surface water or sediment. No COPECs were identified in surface water. The concentrations of metals in sediment, though potentially related to landfill soil or groundwater COPECs indicating a potential migration pathway, are at low concentrations in relation to the ESC and similar to background concentrations. Conservative wildlife HQs are less than one indicating no ecological concern. Based on these considerations and the information provided in this report, it is concluded that constituents at Landfill 12 (FTMM-12) are unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments at Landfill 12 (FTMM-12) are not warranted or recommended.

4.2.7 LANDFILL 14 (FTMM-14)

Near surface soil, groundwater, surface water, and sediment data were evaluated. Ecological receptors are not directly exposed to near surface soils or groundwater, but ecological receptors may be exposed to surface water or sediment. This evaluation identified several pesticides, SVOCs, and metals as COPECs in near surface soil. Several metals were identified as COPECs in groundwater. Though there are no direct ecological exposures to near surface soils or groundwater, the COPECs in soil and groundwater may have the potential to migrate towards environmentally sensitive habitats where ecological receptors could be exposed to contaminants. No COPECs were identified as COPECs in surface water; however, given that the surface water MDL for copper exceeded the applicable ESC and copper was identified as a COPEC in other site media, copper is considered a possible COPEC in surface water. Three pesticides, one PCB, several PAHs and several metals were identified as COPECs in sediment. **Table 4-24** and **Table 4-25** provide a summary of the COPECs in surface water and

sediment at Landfill 14 (FTMM-14) as well as background and ambient levels of those constituents. Though PCBs in sediment were detected in only one sample at a concentration above the ESCs, this detected concentration was above background. The maximum sediment DDD, DDE, DDT, acenaphthene, and anthracene concentrations also exceeded BEE background concentrations. A summary of the wildlife HQs for these COPECs is presented in **Table 4-23**. This table addresses both Landfill 12 (FTMM-12) and Landfill 14 (FTMM-14) since they are located on opposite banks of Husky Brook.

GIS digital data available through the NJDEP indicate the presence of deciduous wooded wetlands (**Figure 4-1**) along both banks of Husky Brook in the western half of Landfill 14 (FTMM-14) as well as along the small tributary that divides Landfill 12 (FTMM-12). Based on site observations, these wetlands are less extensive than indicated through the NJDEP data.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland areas along Husky Brook and the small tributary are habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species. To the east of Landfill 14 (FTMM-14), on the opposite side of Wallington Avenue-Murphy Drive, the emergent wetland areas are habitat Rank 4 for the Least Tern; this rank indicates at least one or more occurrences of a state endangered species. Husky Brook, as well as the wetlands and forested areas of Landfill 14 (FTMM-14), is listed as Conservation Rank 4 as potential bald eagle foraging habitat (**Figure 4-3**), indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. The presence of bald eagles has not been documented for this site.

The potential for ecological effects from COPECs at Landfill 14 (FTMM-14) is judged to be minimal for the following reasons:

- Ecological receptors are not frequently exposed to subsurface soils; COPECs are in near surface soils under a clean soil cover and ecological exposure is unlikely though contaminants may migrate to potential exposure points.
- Most SVOCs and pesticides in soil were detected infrequently at concentrations exceeding the ESC.
- Ecological receptors are not exposed directly to contaminants in groundwater, though groundwater may flow to potential exposure points.
- Several metals were identified as COPECs in groundwater that may flow to potential exposure points.
- No VOCs were identified as COPECs in groundwater, surface water, or sediment.
- No COPECs were identified in surface water.
- Though copper was identified as a potential COPEC in surface water, copper concentrations in sediment were similar to those in background samples (**Table 3-4**).
- Several pesticides were identified as COPECs in near surface soil. Of these, only three (4,4′-DDD, 4,4′-DDE, and 4,4′-DDT) were detected at concentrations exceeding the criteria in sediment. 4,4′-DDD, 4,4′-DDE, and 4,4′-DDT were generally only marginally above the saltwater sediment ESC (0.001 to 0.0022 mg/kg).
- Though one PCB was identified as a COPEC in sediment, PCBs were not identified as COPECs in near surface soil and their presence in sediment may not be related to the landfill.
- PAHs have many anthropogenic sources and are ubiquitous in environmental media. The detected concentrations of PAHs identified as COPECs were at low concentrations and similar to those identified in background samples (**Table 3-3** and **Table 3-4**); the highest concentrations were west of Landfill 14 (FTMM-14) near Malterer Avenue and are more likely due to runoff from roads and parking surfaces than from the landfill. Though above the ER-Ls used for screening, all concentrations were well below the ER-Ms.

- The concentrations of metals were similar to those found in background samples (**Table 3-4**).
- Conservative wildlife HQs, assuming foraging only at the point of maximum concentration, for PCBs, DDD, DDE, DDT, and PAHs are less than one.

Within the landfill, COPECs were identified in soils and groundwater that could migrate to ecological exposure points in nearby surface water or sediment. No COPECs were identified in surface water. The concentrations of metals in sediment, though potentially related to landfill soil or groundwater COPECs indicating a potential migration pathway, are at low concentrations in relation to the ESC and similar to background concentrations. Conservative wildlife HQs are less than one indicating no ecological concern. Based on these considerations and the information provided in this report, it is concluded that constituents at Landfill 14 (FTMM-14) are unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments at Landfill 14 (FTMM-14) are not warranted or recommended.

4.2.8 WATER TANK (FTMM-15)

Surface water and sediment data were evaluated. Ecological receptors may be exposed to surface water or sediment. No COPECs were identified in surface water. One pesticide and several metals were identified as COPECs in sediment. **Table 4-26** provides a summary of the COPECs in sediment at Site FTMM-15 as well as background and ambient levels of those constituents. No COPECs in surface water or sediment were detected at concentrations above BEE background levels.

No significant habitats in the vicinity of FTMM-15 are identified within GIS digital data available through the NJDEP.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that Parkers Creek is listed as Conservation Rank 4 as potential bald eagle foraging habitat (**Figure 4-3**), indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. The presence of bald eagles has not been documented for this site.

The potential for ecological effects from COPECs at Site FTMM-15 is judged to be minimal for the following reasons:

- No VOCs, SVOCs, or PCBs were identified as COPECs in surface water or sediment where ecological exposures could occur.
- No pesticides or metals were identified as COPECs in surface water.
- The detected concentration (0.0041 mg/kg) of one pesticide, 4,4-DDT, identified as a COPEC in sediment exceeded the saltwater ER-L (0.001 mg/kg) but less than the ER-M (0.007 mg/kg).
- The concentrations of metals were not above concentrations found in background samples (**Table 3-4**).

No COPECs were identified in surface water. Only one pesticide, in one sample at a low concentration, and metals were identified as COPECs in sediment. Metals were similar to background. Based on these considerations and the information provided in this report, it is concluded that constituents at Site FTMM-15 are unlikely to have a significant effect on sensitive ecological receptors or habitats, and additional ecological assessments at Site M-15 are not warranted or recommended.

4.2.9 PESTICIDE STORAGE, BUILDING 498 (FTMM-16)

Surface water and sediment data were evaluated. Ecological receptors may be exposed to surface water or sediment. No COPECs were identified as COPECs in surface water; however, given that the surface water MDL for copper was greater than the applicable ESC and copper was identified as a COPEC in other site media, copper is considered a possible COPEC in surface water. One SVOC and several metals were identified as COPECs in sediment. **Table 4-27** and **Table 4-28** provide a summary of the COPECs in surface water and sediment at Site FTMM-16 as well as background and ambient levels of those constituents. Although hexachlorobutadiene in sediment was detected in only one sample at a concentration above the ESC, this detected concentration was above background. The maximum

sediment chromium, mercury, and zinc concentrations also exceeded BEE background concentrations. A summary of the wildlife HQs for these COPECs is presented in **Table 4-29**.

GIS digital data available through the NJDEP indicate the presence of low marsh saline wetlands west of the marina and east of Oceanport Avenue (**Figure 4-2**).

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that wetland area along Oceanport Creek is habitat Rank 4 for the Least Tern; this rank indicates at least one or more occurrences of a state endangered species. Oceanport Creek, as well as the wetlands, is listed as Conservation Rank 4 as potential bald eagle foraging habitat (**Figure 4-3**), indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. The presence of bald eagles has not been documented for this site.

The potential for ecological effects from COPECs at Site FTMM-16 is judged to be minimal for the following reasons:

- No VOCs, pesticides, or PCBs were identified as COPECs in surface water or sediment where ecological exposures could occur.
- No PCBs or metals were identified as COPECs in surface water.
- The only SVOC identified as a COPEC in sediment, hexachlorobutadiene, was only detected in one sample and the concentration (0.008 mg/kg) was within an order of magnitude of the saltwater ESC (0.0013 mg/kg).
- The concentrations of two metals were found in sediment at concentrations above those in background samples (**Table 3-4**): chromium and zinc. Site FTMM-16 is a concern due to the presence of pesticides that were detected to have migrated from the site (a soil removal action was completed in 1999). Chromium, lead, and zinc are not expected to be found related to the operations of the Pesticide Storage Area. These concentrations were detected in sediments collected from an active marina and are more likely due to marina activities rather than those related to pesticide storage at Site FTMM-16 or to natural geology or regional anthropogenic deposition; chromium concentrations were similar to those reported for ambient soils in the urban coastal plain (BEM Systems, Inc., 1998), similar to the range of background soil reported for the SI (Weston, 1995), and less than that reported for glauconitic soils (median concentration of 348 mg/kg) by Dooley (2001).
- Conservative wildlife HQs, assuming foraging only at the point of maximum concentration, for hexachlorobutadiene, mercury, and zinc are less than one. Though the NOAEL-based Great Blue Heron HQ for chromium based on foraging only at the maximum detected concentration is greater than one, the HQ based on the size of the potential foraging area is well less than one (0.27).

No COPECs were identified in surface water. Only one SVOC, in one sample at a low concentration, and metals were identified as COPECs in sediment. Though most metals were similar to background, chromium and zinc showed some elevated levels but these are more likely due to marina activities rather than those related to pesticide storage at Site FTMM-16 or natural geology and regional anthropogenic deposition. The wildlife exposure model HQs for this site do not indicate an ecological concern. Based on these considerations and the information provided in this report, constituents related to Site FTMM-16 are unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments at Site FTMM-16 are not warranted or recommended.

4.2.10 FORMER TRAINING AREA/LANDFILL (FTMM-18)

Near surface soil, groundwater, surface water, and sediment data were evaluated. Ecological receptors are not directly exposed to near surface soils or groundwater, but ecological receptors may be exposed to surface water or sediment. This evaluation identified two pesticides, two SVOCs, and several metals as COPECs in near surface soil. A few metals were identified as COPECs in groundwater. Though there are no direct ecological exposures to near surface soils or groundwater, the COPECs in soil and groundwater may have the potential to migrate towards environmentally sensitive habitats where ecological receptors could be exposed to contaminants. No COPECs were identified as COPECs in

surface water; however, given that the surface water MDL for copper was greater than the applicable ESC and copper was identified as a COPEC in other site media, copper is considered a possible COPEC in surface water. Several metals were identified as COPECs in sediment. **Table 4-30** and **Table 4-31** provide a summary of the COPECs in surface water and sediment at Site FTMM-18 as well as background and ambient levels of those constituents. The maximum sediment chromium, cobalt, and mercury concentrations exceeded BEE background concentrations. A summary of the wildlife HQs for these COPECs is presented in **Table 4-32**.

GIS digital data available through the NJDEP indicate the presence of Phragmites dominated coastal wetlands and high marsh saline wetlands adjacent to Parkers Creek (**Figure 4-2**); based on on-site observations, there is also an area of deciduous wetlands between the maintained lawns and the emergent wetlands and there are small emergent wetlands within the area of maintained lawn.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland areas along Parkers Creek are habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species. Parkers Creek as well as the associated wetlands are listed as Conservation Rank 4 as potential bald eagle foraging habitat (**Figure 4-3**), indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. The presence of bald eagles has not been documented for this site.

The potential for ecological effects from COPECs at Site FTMM-18 is judged to be minimal for the following reasons:

- Ecological receptors are not frequently exposed to subsurface soils; COPECs are in subsurface soils and ecological exposure is unlikely though contaminants may migrate to potential exposure points.
- The pesticide and PCB COPECs identified in soils were detected infrequently at concentrations exceeding the ESC.
- Ecological receptors are not exposed directly to contaminants in groundwater, though groundwater may flow to potential exposure points.
- A few metals were identified as COPECs in groundwater that may flow to potential exposure points.
- Though copper was identified as a potential COPEC in surface water, copper concentrations in sediment were similar to those in background samples (**Table 3-4**).
- Though a pesticide and a PAH were identified as COPECs in near surface soils, they were not identified as COPECs in surface water or sediment where ecological exposures may occur.
- With the exception of the concentrations of silver in two sediment samples, the concentrations of metals were similar to those found in background samples from the BEE investigation (**Table 3-3** and **Table 3-4**) or SI (Weston, 1995). Siler was identified as a COPEC in near surface soil but not in groundwater or surface water.
- Conservative wildlife HQs, assuming foraging only at the point of maximum concentration, for mercury are less than one. Though the NOAEL-based Great Blue Heron HQs for chromium and cobalt based on foraging only at the maximum detected concentrations are greater than one, HQs based on the size of the potential foraging area and average concentrations (0.85 and 0.13, respectively), or based on LOAELs (0.60 and 0.50, respectively), are well less than one.

Within the landfill, COPECs were identified in soils and groundwater that could migrate to ecological exposure points in nearby surface water or sediment. No COPECs were identified in surface water. Only metals were identified as COPECs in sediment. Though most metals in sediment were found at concentrations similar to background, silver was detected at concentrations above background. Potential risks due to exposure to elevated silver are limited in area around Site FTMM-18. The wildlife

exposure model HQs for this site do not indicate an ecological concern. Based on these considerations and the information provided in this report, constituents related to Site FTMM-18 are unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments at Site FTMM-18 are not warranted or recommended.

4.2.11 PRE-1941 FORMER SANITARY SEWAGE TREATMENT PLANT (FTMM-20)

Surface water and sediment data were evaluated. Ecological receptors may be exposed to surface water or sediment. No COPECs were identified as COPECs in surface water; however, given that the surface water MDL for copper was greater than the applicable ESC and copper was identified as a COPEC in sediment, copper is considered a possible COPEC in surface water. Several metals were identified as COPECs in sediment. **Table 4-33** and **Table 4-34** provide a summary of the COPECs in surface water and sediment at Site FTMM-20 as well as background and ambient levels of those constituents. No COPECs in surface water or sediment were detected at concentrations above BEE background levels.

No significant habitats in the vicinity of Site FTMM-20 are identified within GIS digital data available through the NJDEP.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that Parkers Creek is listed as Conservation Rank 4 as potential bald eagle foraging habitat (**Figure 4-3**), indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. The presence of bald eagles has not been documented for this site.

The potential for ecological effects from COPECs at Site FTMM-20 is judged to be minimal for the following reasons:

- No VOCs, SVOCs, pesticides, or PCBs were identified as COPECs in surface water or sediment where ecological exposures may occur.
- No metals were identified as COPECs in surface water.
- Though copper was identified as a potential COPEC in surface water, copper concentrations in sediment were similar to those in background samples (**Table 3-4**).
- The concentrations of metals in sediment were not above those found in background samples (**Table 3-4**). Additionally, though Parkers Creek is tidal in the area of Site FTMM-20, the greatest concentrations were found in the upstream samples.

No COPECs were identified in surface water. Only metals were identified as COPECs in sediment. The concentrations of metals in sediment were not above those in background, consistent with the findings of the SI report (Weston, 1995). Based on these considerations and the information provided in this report, it is concluded that constituents at Site FTMM-20 are unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments at Site FTMM-20 are not warranted or recommended.

4.2.12 BUILDING 1122, FTMM-59 (ECP PARCEL 43)

Groundwater, surface water, and sediment data were evaluated. Ecological receptors are not directly exposed to groundwater, but ecological receptors may be exposed to surface water or sediment. No COPECs were identified in groundwater. Only three PAHs and lead were identified as COPECs in surface water. Several PAHs and metals were identified as COPECs in sediment. Though cadmium was not detected in surface water, its MDLs were greater than the freshwater ESC and cadmium was identified as a COPEC in sediment; therefore, cadmium is considered a potential COPEC in surface water. **Table 4-35** and **Table 4-36** provide a summary of the COPECs in surface water and sediment at Parcel 43 as well as background and ambient levels of those constituents. The maximum sediment chromium and mercury concentrations and the maximum surface water benzo(a)anthracene and benzo(a)pyrene concentrations exceeded BEE background concentrations. A summary of the wildlife HQs for these COPECs is presented in **Table 4-37**.

GIS digital data available through the NJDEP indicate the presence of deciduous wetlands along Mill Creek in the area of Building 1122 (FTMM-59) and Parcel 43.

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species.

The potential for ecological effects from COPECs at Building 1122 (FTMM-59) and Parcel 43 is judged to be minimal for the following reasons:

- Ecological receptors are not exposed directly to contaminants in groundwater, though groundwater may flow to potential exposure points.
- No COPECs were identified in groundwater that may flow to potential exposure points.
- Pesticides, PCBs, and VOCs were not identified as COPECs in surface water or sediment where ecological exposures may occur.
- Lead in surface water was found at concentrations similar to those in background samples (**Table 3-3**).
- Though cadmium was identified as a potential COPEC in surface water, cadmium concentrations in sediment were similar to those in background samples (**Table 3-4**).
- PAHs have many anthropogenic sources and are ubiquitous in environmental media. The detected concentrations of PAHs in surface water and sediment identified as COPECs were at low concentrations and most were similar to those in background samples (**Table 3-3** and **Table 3-4**).
- With the exception of chromium, the concentrations of metals were similar to those found in background samples from the BEE investigation (**Table 3-4**) or SI (Weston, 1995). Chromium concentrations were within the range of ambient soil levels determined for the urban coastal region (BEM Systems, Inc., 1998), the range of background soil concentrations reported for the SI (Weston, 1995), and the range of concentrations reported for glauconitic soils (Dooley, 2001); thus, chromium may be related to natural geology or regional deposition.
- Conservative wildlife HQs, assuming foraging only at the point of maximum concentration, for mercury and SVOCs are less than one. Though the NOAEL-based Great Blue Heron HQ for chromium based on foraging only at the maximum detected concentrations is greater than one, the HQ based on the size of the potential foraging area is well less than one (0.21).

No COPECs were identified in groundwater. The only metal identified as a COPEC in surface water was lead, which was found at concentrations similar to background. PAHs identified as COPECs in surface water and sediment were identified at concentrations similar to background and are likely related to general runoff from road surfaces in the area. Though most metals in sediment were found at concentrations similar to background sediment, chromium was detected at concentrations above sediment background but within the range of ambient soil concentrations and below median concentrations for glauconitic soils. The wildlife exposure model HQs for this site do not indicate an ecological concern. Based on these considerations and the information provided in this report, it is concluded that constituents at Building 1122 (FTMM-59) and Parcel 43 are unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments at Building 1122 (FTMM-59) and Parcel 43 are not warranted or recommended.

4.2.13 BUILDING 1150 (ECP PARCEL 39)

Surface soil, surface water, and sediment data were evaluated. Ecological receptors have limited potential for exposure to soils in the area, but ecological receptors may be exposed to surface water or sediment. Several metals were identified as COPECs in soil. Only two PAHs and lead were identified as COPECs in surface water. One PCB, five PAHs, and several metals were identified as COPECs in sediment. Though cadmium was not detected in surface water, its MDLs were greater than the freshwater ESC and cadmium was identified as a COPEC in soil and sediment; therefore, cadmium is considered a potential COPEC in surface water. **Table 4-38** and **Table 4-39** provide a summary of the COPECs in surface water and sediment at Parcel 39 as well as background and ambient levels of those

constituents. The maximum sediment chromium and mercury concentrations exceeded BEE background concentrations. A summary of the wildlife HQs for this COPEC is presented in **Table 4-40**.

GIS digital data available through the NJDEP indicate the presence of deciduous wetlands and herbaceous wetlands along Mill Creek in the area of Parcel 39 (**Figure 4-1** and **Figure 4-2**).

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the forested wetland area along Mill Creek adjacent to Parcel 39 is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species.

The potential for ecological effects from COPECs at Parcel 39 is judged to be minimal for the following reasons:

- Soil samples represent concentrations near the buildings and operations of Parcel 39 and are limited in area. Ecological receptors are not frequently exposed to these soils, though contaminants may migrate to potential exposure points.
- No VOCs, PCBs, or SVOCs were identified as COPECs in soil.
- Though one PCB was identified as a COPEC in sediments, it was not identified as a COPEC in other site media. PCBs were not identified as COPECs in surface water or soil and may not be related to Parcel 39. The concentration of PCBs was marginally above the ESC.
- Lead in surface water was found at concentrations similar to those in background samples (**Table 3-3**).
- Though copper was identified as a potential COPEC in surface water, copper concentrations in sediment were similar to those in background samples (**Table 3-4**).
- PAHs have many anthropogenic sources and are ubiquitous in environmental media. The detected concentrations of PAHs identified as COPECs in surface water and sediment were at low concentrations and were similar to those in background samples (**Table 3-3** and **Table 3-4**).
- The concentrations of metals in sediment were similar to those found in background samples (**Table 3-4**).
- Conservative wildlife HQs, assuming foraging only at the point of maximum concentration, for mercury are less than one. Though the NOAEL-based Great Blue Heron HQ for chromium based on foraging only at the maximum detected concentrations is greater than one, the HQ based on the size of the potential foraging area is well less than one (0.03).

In soil at Parcel 39, only metals were identified as COPECs. These soils are limited in area and are located near buildings and active areas where the potential for ecological exposures is limited. Metals and PAHs in surface water or sediment were at concentrations similar to background. The wildlife exposure model HQs for this site do not indicate an ecological concern. Based on these considerations and the information provided in this report, it is concluded that constituents at Parcel 39 are unlikely to have a deleterious effect on sensitive ecological receptors or habitats and the potential for ecological risk is considered low, and additional ecological assessments at Parcel 39 are not warranted or recommended.

4.2.14 BUILDINGS 283, 288, 291, 293, 295 (FTMM-61 AND ECP PARCEL 49)

Surface soil, groundwater, surface water, and sediment data were evaluated. Ecological receptors are not directly exposed groundwater and have limited potential for exposure to soils in the area, but ecological receptors may be exposed to surface water or sediment. One PCB, several PAHs, and metals were identified as COPECs in soil. No VOCs were identified as COPECs in groundwater. No COPECs were identified as COPECs in surface water; however, given that the surface water MDL for copper exceeded the applicable ESC and copper was identified as a COPEC in other site media, copper is considered a possible COPEC in surface water. Several metals were identified as COPECs in sediment. Though pyrene and 2-methylnaphthalene were not detected in sediment, their detection limits

were greater than the freshwater sediment ESC and they were identified as COPECs in soil; therefore, pyrene and 2-methylnaphthalene are considered potential COPECs in sediment. **Table 4-41** and **Table 4-42** provide a summary of the COPECs in surface water and sediment at FTMM-61 and Parcel 49 as well as background and ambient levels of those constituents. The maximum sediment chromium, cobalt, mercury, nickel, and zinc concentrations exceeded BEE background concentrations. A summary of the wildlife HQs for these COPECs is presented in **Table 4-43**.

GIS digital data available through the NJDEP indicate the presence of mixed high marsh saline wetlands and Phragmites dominated wetlands along Parkers Creek on the western portion of Parcel 49 (**Figure 4-2**).

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species, and that Parkers Creek is listed as Conservation Rank 4 as potential bald eagle foraging habitat (**Figure 4-3**), indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. The presence of bald eagles has not been documented for this site.

The potential for ecological effects from COPECs at FTMM-61 and Parcel 49 is judged to be minimal for the following reasons:

- Soil samples represent concentrations near the buildings and operations of FTMM-61 and Parcel 49 and are limited in area. Ecological receptors are not frequently exposed to these soils, though contaminants may migrate to potential exposure points.
- Though PAHs were identified as COPECs in soil, they were not identified as COPECs in other site media where ecological exposures may occur, suggesting limited migration of these constituents.
- Though one PCB was identified as a COPEC in soil, it was not identified as a COPEC in other site media where ecological exposures may occur.
- VOCs and pesticides were not identified as COPECs in environmental media.
- Ecological receptors are not exposed directly to contaminants in groundwater, though groundwater may flow to potential exposure points.
- Zinc was the only COPEC identified in groundwater that may flow to potential exposure points.
- No COPECs were identified in surface water where ecological exposures may occur.
- With the exception of chromium and zinc, the concentrations of metals in sediment were similar to those found in background samples from the BEE investigation (**Table 3-4**) or the SI (Weston, 1995). Concentrations of chromium were greater than the background concentrations but well within the range expected for glauconitic soils (Dooley, 2001); though concentrations were greater than the ER-L they were less than the ER-M. The concentration of zinc in one of two samples and its duplicate sample (1,320 and 2,090 mg/kg) exceeded the ER-M (410 mg/kg).
- Conservative wildlife HQs, assuming foraging only at the point of maximum concentration, for cobalt and mercury are less than one. Though the NOAEL-based Great Blue Heron HQs for chromium, nickel, and zinc based on foraging only at the maximum detected concentrations are greater than one, HQs for nickel and zinc based on the size of the potential foraging area and average concentrations (0.16 and 0.27, respectively), or based on LOAELs, are well less than one, and HQs for chromium based on the size of the potential foraging area are less than one based on LOAELs (0.30) and only slightly greater than one based on NOAELs (1.79).

In FTMM-61 and Parcel 49 soil, PAHs and PCBs were identified as COPECs but were not identified as COPECs in surface water or sediment where ecological exposures may occur, suggesting limited migration. Several metals in soil and zinc in groundwater were identified as COPECs that could

migrate to ecological exposure points in nearby surface water or sediment. No COPECs were identified in surface water. Though most metals in sediment were found at concentrations similar to background, a few (chromium and zinc) were detected at concentrations above background; though chromium concentrations are similar to those in glauconitic soils. The wildlife exposure model HQs for this site do not indicate an ecological concern. Based on these considerations and the information provided in this report, it is concluded that there is a potential for some ecological risk due to elevated metals zinc in sediment in a limited area around FTMM-61 and Parcel 49, though these concentrations may be related to other anthropogenic sources. Additional ecological assessments at FTMM-61 and Parcel 49 are not warranted or recommended. It is unlikely to have a significant deleterious effect on sensitive ecological receptors or habitats and the potential for significant ecological risk is considered minimal.

4.2.15 BUILDING 1075 (ECP PARCEL 61)

Surface soil, surface water, and sediment data were evaluated. Ecological receptors have limited potential for exposure to soils within the area, but ecological receptors may be exposed to surface water or sediment. Three PAHs and several metals were identified as COPECs in soil. No COPECs were identified as COPECs in surface water; however, given that the surface water MDL for copper was greater than the applicable ESC and copper was identified as a COPEC in soil, copper is considered a possible COPEC in surface water. Several PAHs and two metals were identified as COPECs in sediment. **Table 4-44** and **Table 4-45** provide a summary of the COPECs in surface water and sediment at Parcel 61 as well as background and ambient levels of those constituents. The maximum sediment acenaphthene concentration exceeded BEE background concentrations. A summary of the wildlife HQs for this COPEC is presented in **Table 4-46**.

GIS digital data available through the NJDEP indicate the presence of deciduous shrub/scrub wetlands along the tributary to Husky Brook (**Figure 4-1**).

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species, and that Husky Brook is listed as Conservation Rank 4 as potential bald eagle foraging habitat (**Figure 4-3**), indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. The presence of bald eagles has not been documented for this site.

The potential for ecological effects from COPECs at Parcel 61 is judged to be minimal for the following reasons:

- Soil samples represent concentrations near the buildings and operations of Parcel 61 and are limited in area. Ecological receptors are not frequently exposed to these soils, though contaminants may migrate to potential exposure points.
- PAHs, as well as metals, were identified as COPECs in soil that could migrate to surface water or sediment.
- VOCs, pesticides, and PCBs were not identified as COPECs in environmental media.
- Though copper was identified as a potential COPEC in surface water, copper concentrations in sediment were similar to those in background samples (**Table 3-4**).
- Though PAHs have many anthropogenic sources and are ubiquitous in environmental media, elevated concentrations in soil at Parcel 61 may indicate a site-related source of PAHs to surface water and sediment. The detected concentrations of PAHs identified as COPECs were at low concentrations and most were similar to those in background samples (**Table 3-3** and **Table 3-4**). Though concentrations in sediment exceeded the ER-Ls used for screening, all concentrations were less than the ER-Ms.
- The concentrations of metals in sediment were similar to those found in background samples (**Table 3-4**).
- Conservative wildlife HQs, assuming foraging only at the point of maximum concentration, for acenaphthene are less than one.

In soil at Parcel 61, PAHs were identified as COPECs. These were also identified as COPECs in sediment of the small tributary to Husky Brook. Metals in sediment were found at concentrations similar to background. Conservative wildlife HQs are less than one. Based on these considerations and the information provided in this report, it is concluded that there is a potential for some ecological risk due to elevated PAHs in sediment. These exposures are limited in area in the small tributary to Husky Brook around Parcel 61, and may also be related to other anthropogenic sources; all PAH concentrations were well below the ER-M values, and additional ecological assessments at Parcel 61 are not warranted or recommended.

4.2.16 BUILDING 900 (ECP PARCEL 69)

Surface soil, groundwater, surface water, and sediment data were evaluated. Ecological receptors are not directly exposed groundwater and have limited potential for exposure to soils in the area, but ecological receptors may be exposed to surface water or sediment. Several metals were identified as COPECs in soil. No COPECs were identified in groundwater. No COPECs were identified as COPECs in surface water; however, given that the surface water MDL for copper was greater than the applicable ESC and copper was identified as a COPEC in other site media, copper is considered a possible COPEC in surface water. Several PAHs and metals were identified as COPECs in sediment. **Table 4-47** and **Table 4-48** provide a summary of the COPECs in surface water and sediment at Parcel 69 as well as background and ambient levels of those constituents. The maximum sediment acenaphthene, chromium, cobalt, copper, mercury, and zinc concentrations exceeded BEE background concentrations. A summary of the wildlife HQs for these COPECs is presented in **Table 4-49**.

GIS digital data available through the NJDEP indicate the presence of Phragmites dominated coastal wetlands (**Figure 4-2**).

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the emergent wetland area along Oceanport Creek is habitat Rank 4, which is assigned to patches with one or more occurrences of a state endangered species, in this case the Least Tern. Oceanport Creek and the adjacent wetlands are also listed as Conservation Rank 4 as potential bald eagle foraging habitat (**Figure 4-3**), indicating that open water and adjacent emergent wetlands could be used for foraging by bald eagles. The presence of bald eagles has not been documented for this site.

The potential for ecological effects from COPECs at Parcel 69 is judged to be minimal for the following reasons:

- Soil samples represent concentrations near the buildings and operations of Parcel 69 and are limited in area. Ecological receptors are not frequently exposed to these soils, though contaminants may migrate to potential exposure points.
- Only metals were identified as COPECs in soil.
- Ecological receptors are not exposed directly to contaminants in groundwater, though groundwater may flow to potential exposure points.
- No COPECs were identified in groundwater that may flow to potential exposure points.
- VOCs, pesticides, and PCBs were not identified as COPECs in environmental media.
- No COPECs were identified in surface water where ecological exposures may occur.
- Though PAHs were identified as COPECs in sediment, they were not identified as COPECs in other site media; PAHs may not be related to Parcel 69 and at concentrations similar to background (**Table 3-4**).
- With the exception of chromium and zinc, the concentrations of metals in sediment were similar to those found in background samples from the BEE investigation (**Table 3-4**) or the SI (Weston, 1995). Chromium concentrations were similar to those found in glauconitic soils (Dooley, 2001).
- Conservative wildlife HQs, assuming foraging only at the point of maximum concentration, for acenaphthene, cobalt, mercury, and zinc are less than one. Though the NOAEL-based

Mallard or Great Blue Heron HQs for chromium and copper based on foraging only at the maximum detected concentrations are greater than one, the HQs for copper based on the size of the potential foraging area are well less than one (0.52 for Great Blue Heron and less than 0.01 for Mallard), and the Great Blue Heron HQs for chromium based on the size of the potential foraging area are less than one based on LOAELs (0.30) and only slightly greater than one based on NOAELs (1.75).

The wildlife exposure model HQs for this site do not indicate an ecological concern. Based on these considerations and the information provided in this report, it is concluded that though there is a potential for some ecological risk due to elevated metals (including zinc), these exposures are limited in area around Parcel 69 and may be related to regional anthropogenic inputs based on the proximity of the locations to areas of heavy vehicular traffic, and additional ecological assessments at Parcel 69 are not warranted or recommended.

4.3 CHARLES WOOD AREA

In the CWA, two IRP Sites and three ECP Parcels were addressed in this BEE.

4.3.1 LANDFILL, SITE CW-3A (FTMM-25)

Near surface soil, groundwater, surface water, and sediment data were evaluated. Ecological receptors are not directly exposed to near surface soils or groundwater, but ecological receptors may be exposed to surface water or sediment. This evaluation identified four pesticides, one PCB, one PAH, and several metals as COPECs in near surface soil. Six metals were identified as COPECs in groundwater. Though there are no direct ecological exposures to near surface soils or groundwater, the COPECs in soil and groundwater may have the potential to migrate towards environmentally sensitive habitats where ecological receptors could be exposed to contaminants. Two PAHs, cadmium, and zinc were identified as COPECs in surface water. One pesticide, several SVOC, and several metals were identified as COPECs in sediment. Given that the surface water MDL for silver exceeded the applicable ESC and silver was identified as a COPEC in soil, silver is considered a possible COPEC in surface water. **Table 4-50** and **Table 4-51** provide a summary of the COPECs in surface water and sediment at Landfill CW-3A (FTMM-25) as well as background and ambient levels of those constituents. The maximum sediment concentrations of DDD, several PAHs, and chromium exceeded BEE background concentrations; the maximum surface water concentration of benzo(a)anthracene exceeded the BEE background concentrations. A summary of the wildlife HQs for these COPECs is presented in **Table 4-52**.

GIS digital data available through the NJDEP indicate the presence of deciduous wooded wetlands along Shrewsbury Creek (**Figure 4-4**).

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species.

The potential for ecological effects from COPECs at Landfill CW-3A (FTMM-25) is judged to be minimal for the following reasons:

- Ecological receptors are not frequently exposed to subsurface soils; COPECs are in subsurface soils and ecological exposure is unlikely though contaminants may migrate to potential exposure points.
- One PCB was detected in a soil sample at a concentration exceeding the ESC, but PCBs were not identified as COPECs in surface water or sediment where ecological exposures may occur.
- Though two pesticides (4,4′-DDT and dieldrin) were found in soil at concentrations exceeding the ESC, only one pesticide (4,4′-DDD) was identified as a COPEC in sediment and the concentration was low, within a factor of two of the freshwater sediment ESC.
- Ecological receptors are not exposed directly to contaminants in groundwater, though groundwater may flow to potential exposure points.

- Several metals were identified as COPECs in groundwater.
- VOCs were not identified as COPECs in environmental media.
- PAHs have many anthropogenic sources and are ubiquitous in environmental media. With the exception of the most upstream sediment sample, the detected concentrations of PAHs identified as COPECs in surface water and sediment were at low concentrations and most were similar to those in background samples (**Table 3-5** and **Table 3-6**); the highest concentrations were immediately downgradient of Pearl Harbor Avenue at the westernmost extreme of the Landfill boundary. Given that PAHs were not identified as COPECs on the landfill (soil or groundwater), it is likely that the PAHs are not related to the landfill.
- The concentrations of metals in surface water were similar to those found in background samples (**Table 3-5**).
- The concentrations of a few metals exceeded the ESC and the concentrations in CWA background samples (arsenic, cadmium, chromium, copper, mercury) (**Table 3-5** and **Table 3-6**), though concentrations were similar to those measured in background samples at the MP (**Table 3-3** and **Table 3-4**), similar to those measure in background samples in the SI (Weston, 1995), or within the range of background soil levels in the region (BEM Systems, Inc., 1998).
- Conservative wildlife HQs, assuming foraging only at the point of maximum concentration, for DDD and most PAHs are less than one. Though the NOAEL-based Great Blue Heron HQs for pyrene and chromium based on foraging only at the maximum detected concentrations are greater than one, the HQs based on the size of the potential foraging area are well less than one (0.07 and 0.12, respectively).

Within the landfill, COPECs were identified in soils and groundwater that could migrate to ecological exposure points in nearby surface water or sediment. COPECs in surface water were limited to two PAHs, cadmium and zinc. Several PAHs and metals were identified as COPECs in sediment. PAHs are most likely not due to the landfill since they were only identified as COPECs at the upgradient extent of the landfill near Pearl Harbor Avenue, and PAHs were not identified as COPECs in landfill soil. Most metals were identified at concentrations similar to background. Though chromium concentrations in sediment were greater than measured background concentrations, they were similar to soil concentrations from the region. The wildlife exposure model HQs for this site do not indicate an ecological concern. Based on these considerations and the information provided in this report, it is concluded that constituents at Landfill CW-3A (FTMM-25) are unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments at Landfill CW-3A (FTMM-25) are not warranted or recommended.

4.3.2 FORMER PESTICIDE STORAGE AREA, SITE CW-6 (FTMM-28)

Surface soil, groundwater, surface water, and wetland sediment data were evaluated. Ecological receptors are not directly exposed to groundwater and have limited exposure to soils in the area, but ecological receptors may be exposed to surface water or sediment. This evaluation identified two pesticides, one PAH, and several metals as COPECs in surface soil. Four metals were identified as COPECs in groundwater. Though there are no direct ecological exposures to groundwater and limited potential for exposure to soil in the area, the COPECs in soil and groundwater have the potential to migrate towards environmentally sensitive habitats where ecological receptors could be exposed to contaminants. One PCB, cadmium and lead were identified as COPECs in surface water. One PCB, one pesticide, one SVOC, and several metals were identified as COPECs in sediment. Given that the surface water MDLs for 4,4′-DDE and silver exceeded the applicable ESC and 4,4′-DDE and silver were identified as COPECs in other site media, 4,4′-DDE and silver are considered possible COPECs in surface water. **Table 4-53** and **Table 4-54** provide a summary of the COPECs in surface water and sediment at Site CW-6 (FTMM-28) as well as background and ambient levels of those constituents. The maximum wetland sediment and soil concentrations of DDT and its metabolites, Dieldrin, PCBs, 2-4-dinitrophenol, chromium, mercury, and silver exceeded BEE background concentrations. A summary of the wildlife HQs for these COPECs is presented in **Table 4-55**.

GIS digital data available through the NJDEP indicate that the area west and south of Site CW-6 (FTMM-28) is deciduous wooded wetlands (**Figure 4-4**).

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 2, which is assigned to patches with one or more occurrences of a species of special concern, in this case the Wood Thrush.

The potential for ecological effects from COPECs at Site CW-6 (FTMM-28) is judged to be minimal for the following reasons:

- Soil samples represent concentrations in a small wooded area west of the buildings and operations of Site CW-6 (FTMM-28) and within an active golf course. Ecological receptors are not frequently exposed to these soils.
- Concentrations of pesticides in surface soil, though exceeding the soil ESC, were at low concentrations. The affected area is of limited size and located within an active golf course limiting the potential for ecological exposures.
- Ecological receptors are not exposed directly to contaminants in groundwater, though groundwater may flow to potential exposure points.
- A few metals were identified as COPECs in groundwater.
- VOCs were not identified as COPECs in environmental media.
- One concentration of a pesticide, 4,4′-DDE, was detected at a concentration exceeding the freshwater sediment ESC in the wetlands. The potential pathways of exposure in the wetlands are more appropriate to those of soil exposures; the concentration is less than the soil ESC.
- COPECs identified in surface water (Aroclor 1242, cadmium, and lead) were found at greater or similar concentrations in Wampum Brook upgradient of Site CW-6 then downgradient of Site CW-6 (FTMM-28) and metals concentrations were similar to background concentrations.
- PAHs have many anthropogenic sources and are ubiquitous in environmental media. With the exception of the most upstream sediment sample, the detected concentrations of PAHs identified as COPECs were at concentrations similar to those in background samples (**Table 3-3** and **Table 3-4**). The greatest concentrations upstream are likely related to other sources and not Site CW-6 (FTMM-28).
- The concentrations of several metals in sediment exceeded the ESC and the concentrations in CWA background samples (**Table 3-5** and **Table 3-6**), though concentrations for most were similar to those measured in background samples at the MP (**Table 3-3** and **Table 3-4**). Only mercury was detected at concentrations that also exceeded the SELs. The greatest concentrations of mercury were found within the wetland area and not in Wampum Brook, and are similar to the range of ambient mercury soil concentrations reported for the urban coastal plain (BEM Systems, Inc., 1998).
- Conservative wildlife HQs, assuming foraging only at the point of maximum concentration, for DDD, DDE, Dieldrin, PCBs and 2,4-dinitrophenol are less than one. Though the NOAEL-based American Robin HQs for chromium, silver, mercury, and DDT based on the maximum detected concentrations are greater than one, the HQs based on the size of the potential foraging area and average concentrations are well less than one (0.64, 0.23, 0.76, and 0.17, respectively).

COPECs were identified in soils representing a small area but ecological exposures are limited due to the size and its location within an active golf course. Though some metals were identified as COPECS in surface water or sediment as well as soil or groundwater indicating a potential pathway may exist, the COPECs in surface water and sediment of Wampum Brook, south of CW-6 (FTMM-28), were found at greater concentrations at the upstream boundary of the site and are most likely not related to Site CW-6 (FTMM-28). Most metals in wetland sediment were found at concentrations similar to

background, though a few were at elevated concentrations they were within the range of ambient soil concentrations reported for the urban coastal plain (BEM Systems, Inc., 1998). The wildlife exposure model HQs for this site do not indicate an ecological concern. Based on these considerations and the information provided in this report, it is concluded that constituents at Site CW-6 (FTMM-28) are unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments at Site CW-6 (FTMM-28) are not warranted or recommended.

4.3.3 BUILDING 2700 (ECP PARCEL 15)

Groundwater, surface water, and sediment data were evaluated. Ecological receptors are not directly exposed to groundwater, but ecological receptors may be exposed to surface water or sediment. No VOCs, but several metals, were identified as COPECs in groundwater. Though there are no direct ecological exposures to groundwater and limited potential for exposure to soil in the area, the COPECs in groundwater may have the potential to migrate towards environmentally sensitive habitats where ecological receptors could be exposed to contaminants. Only lead was identified as a COPEC in surface water; however, given that the surface water MDL for cadmium was greater than the applicable ESC cadmium was identified as a COPEC in groundwater, cadmium is considered a possible COPEC in surface water. Only chromium was identified as a COPEC in sediment. **Table 4-56** and **Table 4-57** provide a summary of the COPECs in surface water and sediment at Parcel 15 as well as background and ambient levels of those constituents. No COPEC concentrations at Parcel 15 were above BEE background concentrations.

GIS digital data available through the NJDEP indicate the presence of deciduous scrub/shrub wetlands along the narrow corridor of Shrewsbury Creek (**Figure 4-4**).

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species.

The potential for ecological effects from COPECs at Parcel 15 is judged to be minimal for the following reasons:

- Ecological receptors are not exposed directly to contaminants in groundwater, though groundwater may flow to potential exposure points.
- Several metals were identified as COPECs in groundwater that may flow to potential exposure points.
- No VOCs, PCBs, pesticides, or SVOCs were identified as COPECs in environmental media.
- Only lead in surface water and chromium in sediment were identified as COPECs where ecological exposures could occur.
- Lead in surface water was found at concentrations similar to those in background samples (**Table 3-3**) and slightly greater than the freshwater ESC.
- Though cadmium was identified as a potential COPEC in surface water, cadmium concentrations in sediment were similar to those in background samples (**Table 3-4**).
- Chromium in sediment was found at concentrations similar to those in background samples (**Table 3-4**) and slightly greater than the freshwater sediment ESC.

Several metals were identified as COPECs in groundwater that could migrate to ecological exposure points in nearby surface water or sediment. COPECs in surface water were limited to lead and COPECs in sediment were limited to chromium. Both were found at concentrations similar to those in background samples and only slightly greater than the freshwater ESC. Based on these considerations and the information provided in this report, it is concluded that constituents at Parcel 15 are unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments at Parcel 15 are not warranted or recommended.

4.3.4 BUILDINGS 2507 AND 2704 (ECP PARCEL 27)

Surface soil, surface water, and sediment data were evaluated. Ecological receptors have limited potential for exposure to surface soils within the area, but ecological receptors may be exposed to surface water or sediment. Several metals were identified as COPECs in surface soil. Cadmium, chromium, and lead were identified as COPECs in surface water. Six metals were identified as COPECs in sediment. **Table 4-58** and **Table 4-59** provide a summary of the COPECs in surface water and sediment at Parcel 27 as well as background and ambient levels of those constituents. The maximum surface water copper concentration and sediment chromium concentration exceeded BEE background concentrations. A summary of the wildlife HQs for these COPECs is presented in **Table 4-60**.

GIS digital data available through the NJDEP indicate the presence of deciduous wooded wetlands along Shrewsbury Creek (**Figure 4-4**).

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species.

The potential for ecological effects from COPECs at Parcel 27 is judged to be minimal for the following reasons:

- Soil samples represent concentrations near the buildings and operations of Parcel 27 and are limited in area. Ecological receptors are not frequently exposed to these soils, though contaminants may migrate to potential exposure points.
- Only metals were identified as COPECs in soil.
- No VOCs, PCBs, pesticides, or SVOCs were identified as COPECs in environmental media.
- Cadmium, chromium, and lead in surface water were found at concentrations similar to those in background samples (**Table 3-3**).
- The concentrations of a few metals in sediment exceeded the ESC and the concentrations in CWA background samples (arsenic, cadmium, copper, lead, and zinc) (**Table 3-6**), though concentrations were similar to those measured in background samples at the MP (**Table 3-4**).
- Though the conservative NOAEL-based Mallard or Great Blue Heron HQs for chromium and copper based on foraging only at the maximum detected concentrations are greater than one, the HQs for copper based on the size of the potential foraging area are well less than one (0.04 for Great Blue Heron and less than 0.01 for Mallard), and the Great Blue Heron HQ for chromium based on the size of the potential foraging area is less than (0.02).

Several metals were identified as COPECs in soil that could migrate to ecological exposure points in nearby surface water or sediment. Metals in surface water and sediment were found at concentrations similar to those in the area-wide background. The wildlife exposure model HQs for this site do not indicate an ecological concern. Based on these considerations and the information provided in this report, it is concluded that constituents at Parcel 27 are unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments at Parcel 27 are not warranted or recommended.

4.3.5 BUILDING 2525 (ECP PARCEL 28)

Surface soil, groundwater, surface water, and sediment data were evaluated. Ecological receptors are not directly exposed to groundwater and have limited potential for exposures to soils within the area, but ecological receptors may be exposed to surface water or sediment. Several metals were identified as COPECs in surface soil. No VOCs or SVOCs, but one metal, cadmium, were identified as COPECs in groundwater. Though there are no direct ecological exposures to groundwater and limited potential for exposure to soil in the area, the COPECs in groundwater may have the potential to migrate towards environmentally sensitive habitats where ecological receptors could be exposed to contaminants. Only lead was identified as a COPEC in surface water; however, given that the surface water MDL for cadmium was greater than the applicable ESC, cadmium was identified as a COPEC in groundwater, cadmium is considered a possible COPEC in surface water. Only chromium was identified as a COPEC

in sediment. **Table 4-61** and **Table 4-62** provide a summary of the COPECs in surface water and sediment at Parcel 28 as well as background and ambient levels of those constituents. No COPEC concentrations at Parcel 28 were above BEE background concentrations.

GIS digital data available through the NJDEP indicate the presence of deciduous scrub/shrub wetlands along the narrow corridor of Shrewsbury Creek (**Figure 4-4**) as well as a strip of emergent wetlands located south of Parcel 28 (**Figure 4-5**).

The NJDEP Landscape Project Critical Wildlife Habitat database indicates that the wetland area is habitat Rank 1, which is assigned to patches that meet suitability requirements for endangered, threatened, or priority wildlife species but do not have confirmed occurrences of such species.

The potential for ecological effects from COPECs at Parcel 28 is judged to be minimal for the following reasons:

- Soil samples represent concentrations near the buildings and operations of Parcel 28 and are limited in area. Ecological receptors are not frequently exposed to these soils, though contaminants may migrate to potential exposure points.
- A few metals were identified as COPECs in soil at Parcel 28.
- Ecological receptors are not exposed directly to contaminants in groundwater, though groundwater may flow to potential exposure points.
- Only one metal, cadmium, was identified as COPECs in groundwater that may flow to potential exposure points. It was not identified as a COPEC in surface water or sediment.
- Though cadmium was identified as a potential COPEC in surface water, cadmium concentrations in sediment were similar to those in background samples (**Table 3-4**).
- No VOCs, PCBs, pesticides, or SVOCs were identified as COPECs in environmental media. Only lead in surface water and chromium in sediment were identified as COPECs where ecological exposures could occur.
- Lead in surface water was found at concentrations similar to those in background samples (**Table 3-3**) and slightly greater than the freshwater ESC.
- Chromium in sediment was found at concentrations similar to those in background samples (**Table 3-4**) and slightly greater than the freshwater sediment ESC.

A few metals were identified as COPECs in soil that could migrate to ecological exposure points in nearby surface water or sediment. Only cadmium was identified as a COPEC in groundwater, but it was not identified as a COPEC in surface water or sediment where ecological exposures may occur. Metals in surface water and sediment were found at concentrations similar to those in background. Based on these considerations and the information provided in this report, it is concluded that constituents at Parcel 28 are unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments at Parcel 28 are not warranted or recommended.

Table 4-1
Foodchain Model Target Species Life History Parameters

Common Name	Scientific Name	Foraging Area (HA)	Body Weight (kg wet weight)	Water Intake (L/day)	Food Intake (kg/day)	Food Intake (kg/day)	Incidental Soil Ingestion (kg dry/day)	Dietary Fractions
American Robin	*Turdus migratorius*	0.48[1,a]	0.0773[1,b]	0.0108[1,c]	0.011[1,d] (dry)	0.067[e] (wet)	0.00128[f]	0.93 invertivores[1,j] 0.07 fruit
Mallard	*Anas platyrhynchos*	580[1,k]	1.043[1,l]	0.0605[1,c]	0.0598[1,d] (dry)	0.362[e] (wet)	0.0012[m]	1.00 aquatic vegetation[1,n]
Great Blue Heron	*Ardea herodias*	4.5[1,o]	2.2[1,p]	0.099[1,c]	0.097[1,d] (dry)	0.396[1,q]	0.0019[r]	0.96 fish[s] 0.04 other

Notes:

1 *USEPA, 1993b*
a *Weatherhead and McRae (1990), average data for adults feeding fledglings or nestlings in deciduous forests of Ontario*
b *Clench and Leberman (1978), data for males and females in Pennsylvania*
c *Estimated based on allometic equation of Calder and Braun (1983): IR (L/day) = 0.059 $BW^{0.67}$ (kg)*
d *Estimated based on allometic equation of Nagy (1987): IR (kg dry/day) = 0.0582 $BW^{0.651}$ (kg)*
e *Based on percent moistures of eathworms (84%) and fruit (77%) from USEPA (1993b)*
f *Assumes invertebrate component of diet is 50% earthworms and 50% arthropods, earthworms contain 25% soil by dry weight (Beyer et al., 1993), additional soil ingestion is 2% soil by dry weight of other foods*
j *Wheelwright (1986), adults feeding in the spring in eastern United States*
k *Kirby et al., 1985, average data for adult males and females in Minnesota wetland and river system*
l *Nelson and Martin (1953), average for adult females throughout North America*
m *Assumes 2%, data in USEPA (1993b) list it as <2%.*
n *Dillon (1959), data for mallards in a Louisiana coastal marsh consume 90-99% vegetation; 100% is assumed.*
o *Bayer (1978), average feeding territory size for adults spring and winter in an oregon freshwater marsh and estuary*
p *Quinney (1982) average adult body size in eastern North America*
q *Estimated based on allometric equation of Kushlan (1988) for wading birds.*
r *Assumes 2%*
s *Alexander (1977) for lower Michigan lakes and rivers*

Table 4-2
Soil-to-Invertebrate Bioaccumulation Factors

COPEC	BAF (kg/kg dry)	BAF (kg/kg wet)	Source	
Inorganics				
Chromium	0.31	0.05	USEPA, 2008	Ecological Soil Screening Levels for Chromium
Mercury	1.70	0.28	Sample et al., 1998	
Silver	2.05	0.34	USEPA, 2006b	Ecological Soil Screening Levels for Silver
Pesticides				
DDD	11.20	1.87	USEPA, 2007a	Ecological Soil Screening Levels for DDT and Metabolites
DDE	11.20	1.87	USEPA, 2007a	Ecological Soil Screening Levels for DDT and Metabolites
DDT	11.20	1.87	USEPA, 2007a	Ecological Soil Screening Levels for DDT and Metabolites
Dieldrin	14.7	2.45	USEPA, 2007b	Ecological Soil Screening Levels for Dieldrin
PCBs				
Aroclor 1242	6.77	1.13	USEPA, 1999	*Screening Level Ecological Risk Assessment Protocol for hazardous Waste Combustion Facilities*
Aroclor 1260	6.77	1.13	USEPA, 1999	*Screening Level Ecological Risk Assessment Protocol for hazardous Waste Combustion Facilities*
SVOCs				
2,4-Dinitrophenol	0.70	0.12	WAC 173	Dry weight for non-chlorinated organics with log K_{OW}<5

Note:
Conversion of literature dry or wet weight BAFs converted assumed 83.3% moisture

Table 4-3
Sediment-to-Aquatic Plant Bioaccumulation Factors

COPEC	BAF (kg/kg dry)	BAF (kg/kg wet)	Source
Inorganics			
Arsenic	0.036	0.0072	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for hazardous Waste Combustion Facilities*
Barium	0.15	0.03	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for hazardous Waste Combustion Facilities*
Chromium	0.0075	0.0015	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for hazardous Waste Combustion Facilities*
Cobalt	0.01	0.002	Geometric Mean of all inorganic BCFs from USEPA, 1999
Copper	0.4	0.08	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for hazardous Waste Combustion Facilities*
Lead	0.045	0.009	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for hazardous Waste Combustion Facilities*
Mercury	0.0375	0.0075	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for hazardous Waste Combustion Facilities*
Nickel	0.032	0.0064	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for hazardous Waste Combustion Facilities*
Silver	0.4	0.08	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for hazardous Waste Combustion Facilities*
Vanadium	0.01	0.002	Geometric Mean of all inorganic BCFs from USEPA, 1999
Zinc	1.2E-12	2.4E-13	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for hazardous Waste Combustion Facilities*
Pesticides			
DDD	0.0165	0.0033	BAF for DDE used as surrogate
DDE	0.00937	0.001874	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for hazardous Waste Combustion Facilities*
DDT	0.008	0.0016	BAF for DDE used as surrogate
PCBs			
Aroclor 1232	0.01	0.002	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for hazardous Waste Combustion Facilities*
Aroclor 1242	0.01	0.002	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for hazardous Waste Combustion Facilities*
Aroclor 1254	0.01	0.002	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for hazardous Waste Combustion Facilities*
Aroclor 1260	0.01	0.002	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for hazardous Waste Combustion Facilities*
SVOCs			
Acenaphthene	0.21	0.042	Equation of Travis and Arms (1988) Log K_{OW} = 3.92
Anthracene	0.105	0.021	Equation of Travis and Arms (1988) Log K_{OW} = 4.44
Benzo(a)anthracene	0.0202	0.00404	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for hazardous Waste Combustion Facilities*
Benzo(a)pyrene	0.011	0.0022	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for hazardous Waste Combustion Facilities*
Benzo(g,h,i)perylene	0.0068	0.00136	Equation of Travis and Arms (1988) Log K_{OW} = 6.50
Benzo(k)fluoranthene	0.0101	0.00202	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for hazardous Waste Combustion Facilities*
Chrysene	0.0187	0.00374	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for hazardous Waste Combustion Facilities*
Dibenzo(a,h)anthracene	0.0064	0.00128	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for hazardous Waste Combustion Facilities*
2,4-Dinitrophenol	0.642	0.1284	Equation of Travis and Arms (1988) Log K_{OW} = 3.08
Flouranthene	0.042	0.0084	Equation of Travis and Arms (1988) Log K_{OW} = 5.12
Flourene	0.143	0.0286	Equation of Travis and Arms (1988) Log K_{OW} = 4.21
Hexachlorobutadiene	0.0714	0.01428	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for hazardous Waste Combustion Facilities*
Indeno(1,2,3-c,d)pyrene	0.0039	0.00078	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for hazardous Waste Combustion Facilities*
Phenanthrene	0.0908	0.01816	Equation of Travis and Arms (1988) Log K_{OW} = 4.55
Pyrene	0.043	0.0086	Equation of Travis and Arms (1988) Log K_{OW} = 5.11

Note:
Conversion of literature dry or wet weight BAFs converted assumed 80% moisture

Table 4-4

Sediment-to-Invertebrate/Fish Bioaccumulation Factors

COPEC	BAF (kg/kg dry)	BAF (kg/kg wet)	Source
Inorganics			
Arsenic	5.4	0.9	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities*
Barium	5.4	0.9	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities*
Chromium	2.3	0.39	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities*
Cobalt	5.4	0.9	Geometric Mean of all inorganic BCFs from USEPA, 1999
Copper	1.8	0.3	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities*
Lead	3.8	0.63	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities*
Mercury	0.4	0.068	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities*
Nickel	5.4	0.9	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities*
Silver	5.4	0.9	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities*
Vanadium	5.4	0.9	Geometric Mean of all inorganic BCFs from USEPA, 1999
Zinc	3.4	0.57	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities*
Pesticides			
DDD	0.0165	0.0033	BAF for DDE used as surrogate
DDE	0.00937	0.001874	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities*
DDT	0.008	0.0016	BAF for DDE used as surrogate
PCBs			
Aroclor 1232	3.2	0.53	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities*
Aroclor 1242	3.2	0.53	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities*
Aroclor 1254	3.2	0.53	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities*
Aroclor 1260	3.2	0.53	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities*
SVOCs			
Acenaphthene	9.0	1.5	USEPA, 2004 National Sediment Quality Survey for Chemical Class and 10.3% lipid and 2% OC
Anthracene	9.0	1.5	USEPA, 2004 National Sediment Quality Survey for Chemical Class and 10.3% lipid and 2% OC
Benzo(a)anthracene	8.7	1.45	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities*
Benzo(a)pyrene	9.5	1.59	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities*
Benzo(g,h,i)perylene	9.0	1.5	USEPA, 2004 National Sediment Quality Survey for Chemical Class and 10.3% lipid and 2% OC
Benzo(k)fluoranthene	9.6	1.61	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities*
Chrysene	8.3	1.38	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities*
Dibenzo(a,h)anthracene	9.6	1.61	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities*
2,4-Dinitrophenol	9.0	1.5	USEPA, 2004 National Sediment Quality Survey for Chemical Class and 10.3% lipid and 2% OC
Flouranthene	9.0	1.5	USEPA, 2004 National Sediment Quality Survey for Chemical Class and 10.3% lipid and 2% OC
Flourene	9.0	1.5	USEPA, 2004 National Sediment Quality Survey for Chemical Class and 10.3% lipid and 2% OC
Hexachlorobutadiene	2.6	0.44	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities*
Indeno(1,2,3-c,d)pyrene	9.6	1.61	USEPA, 1999 *Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities*
Phenanthrene	9.0	1.5	USEPA, 2004 National Sediment Quality Survey for Chemical Class and 10.3% lipid and 2% OC
Pyrene	9.0	1.5	USEPA, 2004 National Sediment Quality Survey for Chemical Class and 10.3% lipid and 2% OC

Note:

Conversion of literature dry or wet weight BAFs converted assumed 83.3% moisture

Table 4-5
Avian Toxicity Reference Values

	NOAEL	LOAEL		
Inorganics				
Arsenic	2.24		USEPA, 2005b	Ecological Soil Screening Levels for Arsenic
Barium	20.8	41.7	USEPA, 1999	*Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities*
Chromium	2.66	15.6	USEPA, 2008	Ecological Soil Screening Levels for Chromium
Cobalt	7.61	18.3	USEPA, 2005c	Ecological Soil Screening Levels for Cobalt
Copper	4.05	12.1	USEPA, 2007c	Ecological Soil Screening Levels for Copper
Lead	1.63		USEPA, 2005d	Ecological Soil Screening Levels for Lead
Mercury	0.45	0.9	Sample et al., 1996	
Nickel	6.71	18.6	USEPA, 2007d	Ecological Soil Screening Levels for Nickel
Silver	2.02		USEPA, 2006b	Ecological Soil Screening Levels for Silver
Vanadium	0.344		USEPA, 2005e	Ecological Soil Screening Levels for Vanadium
Zinc	66.1	154	USEPA, 2007e	Ecological Soil Screening Levels for Zinc
Pesticides				
DDD	0.227	2.27	USEPA, 2007a	Ecological Soil Screening Levels for DDT and Metabolites
DDE	0.227	2.27	USEPA, 2007a	Ecological Soil Screening Levels for DDT and Metabolites
DDT	0.227	2.27	USEPA, 2007a	Ecological Soil Screening Levels for DDT and Metabolites
Dieldrin	0.0709	0.223	USEPA, 2007b	Ecological Soil Screening Levels for Dieldrin
PCBs				
Aroclor 1232	0.18	1.8	NOAEL and LOAEL from Aroclor 1254 used as surrogate	
Aroclor 1242	0.18	1.8	NOAEL and LOAEL from Aroclor 1254 used as surrogate	
Aroclor 1254	0.18	1.8	Sample et al., 1996	
Aroclor 1260	0.18	1.8	NOAEL and LOAEL from Aroclor 1254 used as surrogate	
SVOCs				
Acenaphthene	22.9	229	Eisler, 1987	From Patton and Dieter, 1980
Anthracene	22.9	229	Eisler, 1987	From Patton and Dieter, 1980
Benzo(a)anthracene	2.0	20	Lowest NOAEL/LOAEL for High Molecular Weight PAHs from USEPA (2007f)	
Benzo(a)pyrene	2.0	20	Lowest NOAEL/LOAEL for High Molecular Weight PAHs from USEPA (2007f)	
Benzo(g,h,i)perylene	2.0	20	Lowest NOAEL/LOAEL for High Molecular Weight PAHs from USEPA (2007f)	
Benzo(k)fluoranthene	2.0	20	Lowest NOAEL/LOAEL for High Molecular Weight PAHs from USEPA (2007f)	
Chrysene	2.0	20	Lowest NOAEL/LOAEL for High Molecular Weight PAHs from USEPA (2007f)	
Dibenzo(a,h)anthracene	2.0	20	Lowest NOAEL/LOAEL for High Molecular Weight PAHs from USEPA (2007f)	
2,4-Dinitrophenol	0.336	0.561	ATSDR, 1995	Dominguez et al., 1993 applying an uncertainty factor of 0.01
Flouranthene	22.9	229	Eisler, 1987	From Patton and Dieter, 1980
Flourene	22.9	229	Eisler, 1987	From Patton and Dieter, 1980
Hexachlorobutadiene	3.185		USEPA, 1999	*Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities*
Indeno(1,2,3-c,d)pyrene	2.0	20	Lowest NOAEL/LOAEL for High Molecular Weight PAHs from USEPA (2007f)	
Phenanthrene	22.9	229	Eisler, 1987	From Patton and Dieter, 1980
Pyrene	2	20	Lowest NOAEL/LOAEL for High Molecular Weight PAHs from USEPA (2007f)	

Table 4-6
Summary of Surface Water COPECs and Background Concentrations at Landfill 2 (FTMM-2)

			BEE Background					SI Bkgd	SI Bkgd	Mo. Cty	Site COPEC Summary		
COPEC	FW ESC (ug/L)	SW ESC (ug/L)	Maximum Detected (ug/L)	Minimum Detected (ug/L)	Frequency of Detection	Mean (ug/L)	95% UCL of Mean (ug/L)	Maximum Surface Water (ug/L)	Maximum Ground Water (ug/L)	Bkgd Ground Water (ug/L)	Maximum Detected (ug/L)	Number Detected Above ESC	Average Concentration (ug/L)
Inorganics													
Lead	5.4	24	18.8	5.79	10 / 11	8.93	11.56	65.9	22.7	<100	10.1	(2 of 2)	8.98
Possible COPECs													
DDE	4.51E-09	NAV	ND	ND	0 / 11	NA	NA	NR	NR	NR	NA	NA	NA
Cadmium	0.14	8.8	0.8	0.8	1 / 11	0.3	NA	ND	9.5	6	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.
SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-7
Summary of Sediment COPECs and Background Concentrations at Landfill 2 (FTMM-2)

COPEC	FW ESC (mg/kg)	SW ESC (mg/kg)	BEE Background Maximum Detected (mg/kg)	BEE Background Minimum Detected (mg/kg)	BEE Background Frequency of Detection	BEE Background Mean (mg/kg)	BEE Background 95% UCL of Mean (mg/kg)	SI Bkgd Maximum Sediment (mg/kg)	SI Bkgd Maximum Soil (mg/kg)	Mo. Cty Bkgd Soil (mg/kg)	Ambient Soil Levels Maximum Ambient (mg/kg)	Ambient Soil Levels 90th Percentile (mg/kg)	Site COPEC Summary Maximum Detected (mg/kg)	Site COPEC Summary No Detected Above ESC	Site COPEC Summary Average Concentration (mg/kg)
PCBs															
Aroclor 1242	0.07	0.023	0.064	0.064	1 / 12	0.007	NA	NR	NR	NR	NR	NR	**0.12**	(1 of 13)	0.0289
Aroclor 1254	0.06	0.06	0.086	0.021	2 / 12	0.0264	0.0396	NR	NR	NR	NR	NR	0.064	(1 of 13)	0.0282
Aroclor 1260	0.005	0.005	ND	ND	0 / 12	NA	NA	NR	NR	NR	NR	NR	**0.040**	(2 of 13)	0.0123
SVOCs															
Chrysene	0.34	0.384	1.9	0.064	6 / 12	0.526	0.89	0.37	0.65	3	1.78	0.47	0.37	(1 of 13)	0.152
Dibenzo(a,h)anthracene	0.06	0.063	0.088	0.088	1 / 12	0.023	NA	0.12	0.079	ND	0.29	0.02	**0.10**	(1 of 13)	0.030
2,4-Dinitrophenol	0.00621	NAV	ND	ND	0 / 12	NA	NA	NR	NR	NR	NR	NR	**1.1**	(1 of 13)	0.17
Pyrene	0.49	0.665	3.3	0.12	6 / 12	0.987	1.652	2	1.5	ND	NR	NR	0.71	(1 of 13)	0.211
Inorganics															
Arsenic	6	8.2	61.6	0.68	12 / 12	14.38	28.33	14.5	31.6	4.56	83.1	13.6	8.09	(1 of 13)	4.51
Barium	NAV	48	196	4.41	12 / 12	74.56	108.5	87.6	32.3	NR	154	65.8	**356**	(8 of 13)	80.2
Cadmium	0.6	1.2	17.2	0.38	12 / 12	4.252	8.021	NR	ND	0.116	2.7	0.32	2.76	(13 of 13)	1.90
Chromium	26	81	125	9.24	12 / 12	68.52	86.5	88.1	269	0.104	171	34.7	125	(13 of 13)	56.8
Copper	16	34	165	1.88	9 / 12	24.01	84.56	48.4	8	6.05	93	33.3	22.5	(1 of 13)	3.16
Lead	31	47	945	5.61	12 / 12	106	439.5	142	19.5	25.9	344	144	52.8	(4 of 13)	22.5
Mercury	0.2	0.15	0.424	0.02	11 / 12	0.0909	0.247	1.7	ND	NR	6.1	0.21	0.21	(1 of 13)	0.104
Nickel	16	21	56.2	2.55	12 / 12	22.57	37.42	131	8.4	3.2	16.9	12.3	29.2	(1 of 13)	13.0

Note: Bold and Highlighted COPEC and maximum detected COPEC site concentration indicates that maximum detected site concentration is greater than maximum detected background concentration measured during BEE investigation

FW = Freshwater

SW = Saltwater

ESC = Ecological Screening Criteria

BEE = Baseline Ecological Evaluation data

95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.

SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)

Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)

Ambient Soil Levels from BEM Systems, Inc. (1998)

COPEC = Constituent of Potential Ecological Concern

NA = Not applicable

ND = Not detected

NR = Not reported

NAV = Not available

Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-8
Summary of Wildlife Hazard Quotients for Sediment COPECs at Landfill 2 (FTMM-2)

	Sediment Concentrations		Surface Water Concentrations		NOAEL-Based Hazard Quotients (AUF = 1)			
					Mallard		Great Blue Heron	
	Maximum (mg/kg)	Average (mg/kg)	Maximum (mg/L)	Average (mg/L)	Based on Maximum Sediment Concentration	Based on Average Sediment Concentration	Based on Maximum Sediment Concentration	Based on Average Sediment Concentration
PCBs								
Aroclor 1242	0.12	0.0289	ND	ND	0.00	0.00	0.06	0.02
Aroclor 1254	0.064	0.0282	ND	ND	0.00	0.00	0.03	0.02
Aroclor 1260	0.04	0.0123	ND	ND	0.00	0.00	0.02	0.01
SVOCs								
Dibenzo(a,h)anthracene	0.1	0.03	ND	ND	0.00	0.00	0.01	0.00
2,4-Dinitrophenol	1.1	0.17	ND	ND	0.15	0.02	0.89	0.14
Inorganics								
Barium	356	80.2	62.2	61.7	0.20	0.04	2.79	0.63
Barium	NOAEL-Based (AUF = 0.12)						0.33	0.08
Barium	LOAEL-Based (AUF = 1)						1.40	0.32
Barium	LOAEL-Based (AUF = 0.12)						0.17	0.04

Notes:
AUF - Area Use Factor
ND - Not Detected
NOAEL - No Observeable Adverse Effect Level
LOAEL - Lowest Observeable Adverse Effect Level

Table 4-9
Summary of Surface Water COPECs and Background Concentrations at Landfill 3 (FTMM-3)

			BEE Background								Site COPEC Summary		
COPEC	FW ESC (ug/L)	SW ESC (ug/L)	Maximum Detected (ug/L)	Minimum Detected (ug/L)	Frequency of Detection	Mean (ug/L)	95% UCL of Mean (ug/L)	Sl Bkgd Maximum Surface Water (ug/L)	Sl Bkgd Maximum Ground Water (ug/L)	Mo. Cty Bkgd Ground Water (ug/L)	Maximum Detected (ug/L)	Number Detected Above ESC	Average Concentration (ug/L)
Possible COPECs													
Copper	6.5	3.1	ND	ND	0 / 11	NA	NA	10.2	65.6	730	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.
Sl Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-10
Summary of Sediment COPECs and Background Concentrations at Landfill 3 (FTMM-3)

COPEC	FW ESC (mg/kg)	SW ESC (mg/kg)	BEE Background Maximum Detected (mg/kg)	BEE Background Minimum Detected (mg/kg)	BEE Background Frequency of Detection	BEE Background Mean (mg/kg)	BEE Background 95% UCL of Mean (mg/kg)	SI Bkgd Maximum Sediment (mg/kg)	SI Bkgd Maximum Soil (mg/kg)	Mo. Cty Bkgd Soil (mg/kg)	Ambient Soil Levels Maximum Ambient (mg/kg)	Ambient Soil Levels 90th Percentile (mg/kg)	Site COPEC Summary Maximum Detected (mg/kg)	Site COPEC Summary No Detected Above ESC	Site COPEC Summary Average Concentration (mg/kg)
Pesticides															
DDD	0.008	0.002	0.0047	0.0022	4 / 12	0.00248	0.00291	0.015	0.0096	NR	NR	NR	**0.0095**	(1 of 12)	0.00263
DDT	0.008	0.001	ND	ND	0 / 12	NA	NA	0.11	0.11	NR	NR	NR	**0.18**	(1 of 12)	0.015
Inorganics															
Arsenic	6	8.2	61.6	0.68	12 / 12	14.38	28.33	14.5	31.6	4.56	83.1	13.6	22	(12 of 12)	18.1
Barium	NAV	48	196	4.41	12 / 12	74.56	108.5	87.6	32.3	NR	154	65.8	164	(11 of 12)	78.8
Cadmium	0.6	1.2	17.2	0.38	12 / 12	4.252	8.021	NR	ND	0.116	2.7	0.32	4.78	(12 of 12)	2.87
Chromium	26	81	125	9.24	12 / 12	68.52	86.5	88.1	269	0.104	171	34.7	106	(4 of 12)	67.4
Cobalt	50	10	16.8	1.05	12 / 12	7.253	9.891	119	4.5	NR	32	3.2	12.5	(3 of 12)	6.75
Copper	16	34	165	1.88	9 / 12	24.01	84.56	48.4	8	6.05	93	33.3	**370**	(2 of 12)	41.0
Lead	31	47	945	5.61	12 / 12	106	439.5	142	19.5	25.9	344	144	154	(5 of 12)	66.0
Mercury	0.2	0.15	0.424	0.02	11 / 12	0.0909	0.247	1.7	ND	NR	6.1	0.21	0.295	(4 of 12)	0.125
Nickel	16	21	56.2	2.55	12 / 12	22.57	37.42	131	8.4	3.2	16.9	12.3	30	(3 of 12)	16.0
Selenium	NAV	1	19	0.95	12 / 12	6.645	9.337	1.7	1.9	0.11	ND	ND	8.85	(12 of 12)	6.87
Silver	1	1	11.2	11.2	1 / 12	1.03	NA	NR	1.1	0.21	6.3	0.65	2.14	(3 of 12)	0.64
Vanadium	NAV	57	218	6.82	12 / 12	53.18	91.47	49.1	94.1	1.3	202	35.5	90.2	(6 of 12)	56.4
Zinc	120	150	423	15.3	12 / 12	135.1	215.4	162	81.4	44.6	259	106	352	(6 of 12)	194

Note: Bold and Highlighted COPEC and maximum detected COPEC site concentration indicates that maximum detected site concentration is greater than maximum detected background concentration measured during BEE investigation

FW = Freshwater

SW = Saltwater

ESC = Ecological Screening Criteria

BEE = Baseline Ecological Evaluation data

95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.

SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)

Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)

Ambient Soil Levels from BEM Systems, Inc. (1998)

COPEC = Constituent of Potential Ecological Concern

NA = Not applicable

ND = Not detected

NR = Not reported

NAV = Not available

Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-11
Summary of Wildlife Hazard Quotients for Sediment COPECs at Landfill 3 (FTMM-3)

	Sediment Concentrations		Surface Water Concentrations		NOAEL-Based Hazard Quotients (AUF = 1)			
					Mallard		Great Blue Heron	
	Maximum (mg/kg)	Average (mg/kg)	Maximum (mg/L)	Average (mg/L)	Based on Maximum Sediment Concentration	Based on Average Sediment Concentration	Based on Maximum Sediment Concentration	Based on Average Sediment Concentration
Pesticides								
DDD	0.0095	0.00263	ND	ND	0.00	0.00	0.01	0.00
DDT	0.18	0.015	ND	ND	0.00	0.00	0.14	0.01
Inorganics								
Copper	370	41	ND	ND	2.64	0.29	5.00	0.55
Copper	NOAEL-Based (AUF = 0.012)						0.06	0.01
Copper	LOAEL-Based (AUF = 1)						1.67	0.19
Copper	LOAEL-Based (AUF = 0.012)						0.02	0.00
Copper	NOAEL-Based (AUF = 0.00009)				0.00	0.00		
Copper	LOAEL-Based (AUF = 1)				0.89	0.10		
Copper	LOAEL-Based (AUF = 0.00009)				0.00	0.00		

Notes:

AUF - Area Use Factor

ND - Not Detected

NOAEL - No Observeable Adverse Effect Level

LOAEL - Lowest Observeable Adverse Effect Level

Table 4-12
Summary of Surface Water COPECs and Background Concentrations at Landfill 4 (FTMM-4)

			BEE Background								Site COPEC Summary		
COPEC	FW ESC (ug/L)	SW ESC (ug/L)	Maximum Detected (ug/L)	Minimum Detected (ug/L)	Frequency of Detection	Mean (ug/L)	95% UCL of Mean (ug/L)	SI Bkgd Maximum Surface Water (ug/L)	SI Bkgd Maximum Ground Water (ug/L)	Mo. Cty Bkgd Ground Water (ug/L)	Maximum Detected (ug/L)	Number Detected Above ESC	Average Concentration (ug/L)
Possible COPECs													
Copper	6.5	3.1	ND	ND	0 / 11	NA	NA	10.2	65.6	730	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.
SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-13

Summary of Sediment COPECs and Background Concentrations at Landfill 4 (FTMM-4)

			BEE Background					SI Bkgd	SI Bkgd	Mo. Cty	Ambient Soil Levels		Site COPEC Summary		
COPEC	FW ESC (mg/kg)	SW ESC (mg/kg)	Maximum Detected (mg/kg)	Minimum Detected (mg/kg)	Frequency of Detection	Mean (mg/kg)	95% UCL of Mean (mg/kg)	Maximum Sediment (mg/kg)	Maximum Soil (mg/kg)	Bkgd Soil (mg/kg)	Maximum Ambient (mg/kg)	90th Percentile (mg/kg)	Maximum Detected (mg/kg)	No Detected Above ESC	Average Concentration (mg/kg)
Pesticides															
DDD	0.008	0.002	0.0047	0.0022	4 / 12	0.00248	0.00291	0.015	0.0096	NR	NR	NR	**0.0062**	(2 of 6)	0.00278
DDT	0.008	0.001	ND	ND	0 / 12	NA	NA	0.11	0.11	NR	NR	NR	**0.0016**	(1 of 6)	0.00034
PCBs															
Aroclor 1232	0.07	0.023	ND	ND	0 / 12	NA	NA	NR	NR	NR	NR	NR	**0.093**	(1 of 6)	0.018
Aroclor 1242	0.07	0.023	0.064	0.064	1 / 12	0.007	NA	NR	NR	NR	NR	NR	**0.075**	(2 of 6)	0.037
Aroclor 1260	0.005	0.005	ND	ND	0 / 12	NA	NA	NR	NR	NR	NR	NR	**0.036**	(5 of 6)	0.0195
SVOCs															
Acenaphthene	0.016	0.016	0.47	0.11	3 / 12	0.141	0.204	NR	0.1	ND	NR	NR	0.12	(1 of 6)	0.033
Anthracene	0.22	0.085	0.3	0.011	9 / 12	0.0931	0.15	0.061	0.1	ND	NR	NR	0.15	(1 of 6)	0.0472
Benzo(a)anthracene	0.32	0.261	1.2	0.018	9 / 12	0.342	0.564	1.3	0.65	ND	1.82	0.43	0.31	(1 of 6)	0.131
Fluoranthene	0.75	0.6	4.9	0.064	7 / 12	1.42	2.454	1.5	0.46	ND	NR	NR	0.7	(1 of 6)	0.221
Fluorene	0.19	0.019	0.82	0.13	3 / 12	0.203	0.326	NR	0.074	ND	NR	NR	0.097	(1 of 6)	0.034
Phenanthrene	0.56	0.24	8.3	0.15	6 / 12	1.359	2.655	0.39	0.39	ND	NR	NR	0.62	(1 of 6)	0.245
Inorganics															
Arsenic	6	8.2	61.6	0.68	12 / 12	14.38	28.33	14.5	31.6	4.56	83.1	13.6	10.2	(1 of 6)	4.96
Cadmium	0.6	1.2	17.2	0.38	12 / 12	4.252	8.021	NR	ND	0.116	2.7	0.32	1.49	(3 of 6)	1.22
Cobalt	50	10	16.8	1.05	12 / 12	7.253	9.891	119	4.5	NR	32	3.2	24.6	(4 of 6)	15.1
Lead	31	47	945	5.61	12 / 12	106	439.5	142	19.5	25.9	344	144	65.1	(2 of 6)	42.3
Mercury	0.2	0.15	0.424	0.02	11 / 12	0.0909	0.247	1.7	ND	NR	6.1	0.21	0.257	(3 of 6)	0.149
Selenium	NAV	1	19	0.95	12 / 12	6.645	9.337	1.7	1.9	0.11	ND	ND	3.67	(6 of 6)	2.62

Note: Bold and Highlighted COPEC and maximum detected COPEC site concentration indicates that maximum detected site concentration is greater than maximum detected background concentration measured during BEE investigation

FW = Freshwater

SW = Saltwater

ESC = Ecological Screening Criteria

BEE = Baseline Ecological Evaluation data

95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.

SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)

Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)

Ambient Soil Levels from BEM Systems, Inc. (1998)

COPEC = Constituent of Potential Ecological Concern

NA = Not applicable

ND = Not detected

NR = Not reported

NAV = Not available

Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-14
Summary of Wildlife Hazard Quotients for Sediment COPECs at Landfill 4 (FTMM-4)

	Sediment Concentrations		Surface Water Concentrations		NOAEL-Based Hazard Quotients (AUF = 1)			
					Mallard		Great Blue Heron	
	Maximum (mg/kg)	Average (mg/kg)	Maximum (mg/L)	Average (mg/L)	Based on Maximum Sediment Concentration	Based on Average Sediment Concentration	Based on Maximum Sediment Concentration	Based on Average Sediment Concentration
PCBs								
Aroclor 1232	0.093	0.018	ND	ND	0.00	0.00	0.05	0.01
Aroclor 1242	0.075	0.037	ND	ND	0.00	0.00	0.04	0.02
Aroclor 1260	0.036	0.0195	ND	ND	0.00	0.00	0.02	0.01
Pesticides								
DDD	0.0062	0.00278	ND	ND	0.00	0.00	0.00	0.00
DDT	0.0016	0.00034	ND	ND	0.00	0.00	0.00	0.00

Notes:

AUF - Area Use Factor

ND - Not Detected

NOAEL - No Observeable Adverse Effect Level

Table 4-15
Summary of Surface Water COPECs and Background Concentrations at Landfill 5 (FTMM-5)

			BEE Background					SI Bkgd	SI Bkgd	Mo. Cty	Site COPEC Summary		
COPEC	FW ESC (ug/L)	SW ESC (ug/L)	Maximum Detected (ug/L)	Minimum Detected (ug/L)	Frequency of Detection	Mean (ug/L)	95% UCL of Mean (ug/L)	Maximum Surface Water (ug/L)	Maximum Ground Water (ug/L)	Bkgd Ground Water (ug/L)	Maximum Detected (ug/L)	Number Detected Above ESC	Average Concentration (ug/L)
Possible COPECs													
Copper	6.5	3.1	ND	ND	0 / 11	NA	NA	10.2	65.6	730	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.
SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-16

Summary of Sediment COPECs and Background Concentrations at Landfill 5 (FTMM-5)

			BEE Background					SI Bkgd	SI Bkgd	Mo. Cty	Ambient Soil Levels		Site COPEC Summary		
COPEC	FW ESC (mg/kg)	SW ESC (mg/kg)	Maximum Detected (mg/kg)	Minimum Detected (mg/kg)	Frequency of Detection	Mean (mg/kg)	95% UCL of Mean (mg/kg)	Maximum Sediment (mg/kg)	Maximum Soil (mg/kg)	Bkgd Soil (mg/kg)	Maximum Ambient (mg/kg)	90th Percentile (mg/kg)	Maximum Detected (mg/kg)	No Detected Above ESC	Average Concentration (mg/kg)
Pesticides															
DDD	0.008	0.002	0.0047	0.0022	4 / 12	0.00248	0.00291	0.015	0.0096	NR	NR	NR	**0.016**	(3 of 7)	0.00463
DDE	0.005	0.0022	0.0034	0.0017	2 / 12	0.00184	0.00219	0.096	0.071	NR	NR	NR	**0.0072**	(3 of 7)	0.00306
DDT	0.008	0.001	ND	ND	0 / 12	NA	NA	0.11	0.11	NR	NR	NR	**0.0021**	(4 of 7)	0.0014
SVOCs															
Acenaphthylene	0.044	0.044	1.6	0.089	2 / 12	0.215	0.958	NR	0.041	ND	NR	NR	0.15	(1 of 7)	0.033
Anthracene	0.22	0.085	0.3	0.011	9 / 12	0.0931	0.15	0.061	0.1	ND	NR	NR	0.23	(3 of 7)	0.104
Benzo(a)anthracene	0.32	0.261	1.2	0.018	9 / 12	0.342	0.564	1.3	0.65	ND	1.82	0.43	0.34	(1 of 7)	0.147
Fluoranthene	0.75	0.6	4.9	0.064	7 / 12	1.42	2.454	1.5	0.46	ND	NR	NR	0.67	(1 of 7)	0.444
Fluorene	0.19	0.019	0.82	0.13	3 / 12	0.203	0.326	NR	0.074	ND	NR	NR	0.27	(1 of 7)	0.056
2-Methylnaphthalene	0.07	0.07	1.3	1.3	1 / 12	0.12	NA	NR	NR	NR	NR	NR	0.4	(1 of 7)	0.079
Naphthalene	0.16	0.16	4.4	4.4	1 / 12	0.383	NA	NR	NR	NR	NR	NR	0.26	(1 of 7)	0.053
Phenanthrene	0.56	0.24	8.3	0.15	6 / 12	1.359	2.655	0.39	0.39	ND	NR	NR	0.96	(2 of 7)	0.284
Pyrene	0.49	0.665	3.3	0.12	6 / 12	0.987	1.652	2	1.5	ND	NR	NR	0.7	(1 of 7)	0.431
Inorganics															
Arsenic	6	8.2	61.6	0.68	12 / 12	14.38	28.33	14.5	31.6	4.56	83.1	13.6	43.5	(3 of 7)	11.5
Barium	NAV	48	196	4.41	12 / 12	74.56	108.5	87.6	32.3	NR	154	65.8	50.7	(1 of 7)	26.8
Cadmium	0.6	1.2	17.2	0.38	12 / 12	4.252	8.021	NR	ND	0.116	2.7	0.32	6.65	(3 of 7)	2.13
Chromium	26	81	125	9.24	12 / 12	68.52	86.5	88.1	269	0.104	171	34.7	119	(1 of 7)	47.3
Cobalt	50	10	16.8	1.05	12 / 12	7.253	9.891	119	4.5	NR	32	3.2	13.3	(1 of 7)	7.8
Lead	31	47	945	5.61	12 / 12	106	439.5	142	19.5	25.9	344	144	62.4	(1 of 7)	29.6
Mercury	0.2	0.15	0.424	0.02	11 / 12	0.0909	0.247	1.7	ND	NR	6.1	0.21	0.155	(1 of 7)	0.08
Nickel	16	21	56.2	2.55	12 / 12	22.57	37.42	131	8.4	3.2	16.9	12.3	27.6	(1 of 7)	13.9
Selenium	NAV	1	19	0.95	12 / 12	6.645	9.337	1.7	1.9	0.11	ND	ND	13.2	(7 of 7)	4.81
Silver	1	1	11.2	11.2	1 / 12	1.03	NA	NR	1.1	0.21	6.3	0.65	1.29	(1 of 7)	0.413
Vanadium	NAV	57	218	6.82	12 / 12	53.18	91.47	49.1	94.1	1.3	202	35.5	71.6	(1 of 7)	31.0
Zinc	120	150	423	15.3	12 / 12	135.1	215.4	162	81.4	44.6	259	106	203	(2 of 7)	109

Note: Bold and Highlighted COPEC and maximum detected COPEC site concentration indicates that maximum detected site concentration is greater than maximum detected background concentration measured during BEE investigation

FW = Freshwater

SW = Saltwater

ESC = Ecological Screening Criteria

BEE = Baseline Ecological Evaluation data

95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.

SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)

Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)

Ambient Soil Levels from BEM Systems, Inc. (1998)

COPEC = Constituent of Potential Ecological Concern

NA = Not applicable

ND = Not detected

NR = Not reported

NAV = Not available

Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-17
Summary of Wildlife Hazard Quotients for Sediment COPECs at Landfill 5 (FTMM-5)

	Sediment Concentrations		Surface Water Concentrations		NOAEL-Based Hazard Quotients (AUF = 1)			
					Mallard		Great Blue Heron	
	Maximum (mg/kg)	Average (mg/kg)	Maximum (mg/L)	Average (mg/L)	Based on Maximum Sediment Concentration	Based on Average Sediment Concentration	Based on Maximum Sediment Concentration	Based on Average Sediment Concentration
Pesticides								
DDD	0.016	0.00463	ND	ND	0.00	0.00	0.01	0.00
DDE	0.0072	0.00306	ND	ND	0.00	0.00	0.01	0.00
DDT	0.0021	0.0014	ND	ND	0.00	0.00	0.00	0.00

Notes:

AUF - Area Use Factor

ND - Not Detected

NOAEL - No Observeable Adverse Effect Level

Table 4-18
Summary of Surface Water COPECs and Background Concentrations at Landfill 8 (FTMM-8)

			BEE Background					SI Bkgd	SI Bkgd	Mo. Cty	Site COPEC Summary		
COPEC	FW ESC (ug/L)	SW ESC (ug/L)	Maximum Detected (ug/L)	Minimum Detected (ug/L)	Frequency of Detection	Mean (ug/L)	95% UCL of Mean (ug/L)	Maximum Surface Water (ug/L)	Maximum Ground Water (ug/L)	Bkgd Ground Water (ug/L)	Maximum Detected (ug/L)	Number Detected Above ESC	Average Concentration (ug/L)
Possible COPECs													
Copper	6.5	3.1	ND	ND	0 / 11	NA	NA	10.2	65.6	730	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.
SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-19
Summary of Sediment COPECs and Background Concentrations at Landfill 8 (FTMM-8)

			BEE Background					SI Bkgd	SI Bkgd	Mo. Cty	Ambient Soil Levels		Site COPEC Summary		
COPEC	FW ESC (mg/kg)	SW ESC (mg/kg)	Maximum Detected (mg/kg)	Minimum Detected (mg/kg)	Frequency of Detection	Mean (mg/kg)	95% UCL of Mean (mg/kg)	Maximum Sediment (mg/kg)	Maximum Soil (mg/kg)	Bkgd Soil (mg/kg)	Maximum Ambient (mg/kg)	90th Percentile (mg/kg)	Maximum Detected (mg/kg)	No Detected Above ESC	Average Concentration (mg/kg)
Pesticides															
DDD	0.008	0.002	0.0047	0.0022	4 / 12	0.00248	0.00291	0.015	0.0096	NR	NR	NR	0.0033	(3 of 12)	0.0022
PCBs															
Aroclor 1242	0.07	0.023	0.064	0.064	1 / 12	0.007	NA	NR	NR	NR	NR	NR	**0.17**	(2 of 12)	0.06
Aroclor 1260	0.005	0.005	ND	ND	0 / 12	NA	NA	NR	NR	NR	NR	NR	**0.011**	(1 of 12)	0.0038
Inorganics															
Arsenic	6	8.2	61.6	0.68	12 / 12	14.38	28.33	14.5	31.6	4.56	83.1	13.6	18.9	(6 of 12)	18.9
Barium	NAV	48	196	4.41	12 / 12	74.56	108.5	87.6	32.3	NR	154	65.8	103	(6 of 12)	49.3
Cadmium	0.6	1.2	17.2	0.38	12 / 12	4.252	8.021	NR	ND	0.116	2.7	0.32	6.85	(11 of 12)	3.70
Chromium	26	81	125	9.24	12 / 12	68.52	86.5	88.1	269	0.104	171	34.7	**131**	(4 of 12)	69.6
Cobalt	50	10	16.8	1.05	12 / 12	7.253	9.891	119	4.5	NR	32	3.2	**116**	(10 of 12)	39.6
Copper	16	34	165	1.88	9 / 12	24.01	84.56	48.4	8	6.05	93	33.3	64.5	(4 of 12)	25.57
Lead	31	47	945	5.61	12 / 12	106	439.5	142	19.5	25.9	344	144	179	(7 of 12)	82.3
Manganese	630	260	551	4.36	12 / 12	105.6	218.2	70.2	90.7	59	1030	206	364	(1 of 12)	76.8
Mercury	0.2	0.15	0.424	0.02	11 / 12	0.0909	0.247	1.7	ND	NR	6.1	0.21	**0.853**	(9 of 12)	0.365
Nickel	16	21	56.2	2.55	12 / 12	22.57	37.42	131	8.4	3.2	16.9	12.3	**60.5**	(7 of 12)	24.8
Selenium	NAV	1	19	0.95	12 / 12	6.645	9.337	1.7	1.9	0.11	ND	ND	13.8	(12 of 12)	6.47
Silver	1	1	11.2	11.2	1 / 12	1.03	NA	NR	1.1	0.21	6.3	0.65	5.85	(3 of 12)	2.29
Vanadium	NAV	57	218	6.82	12 / 12	53.18	91.47	49.1	94.1	1.3	202	35.5	99.1	(4 of 12)	46.9
Zinc	120	150	423	15.3	12 / 12	135.1	215.4	162	81.4	44.6	259	106	415	(7 of 12)	195

Note: Bold and Highlighted COPEC and maximum detected COPEC site concentration indicates that maximum detected site concentration is greater than maximum detected background concentration measured during BEE investigation

FW = Freshwater

SW = Saltwater

ESC = Ecological Screening Criteria

BEE = Baseline Ecological Evaluation data

95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.

SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)

Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)

Ambient Soil Levels from BEM Systems, Inc. (1998)

COPEC = Constituent of Potential Ecological Concern

NA = Not applicable

ND = Not detected

NR = Not reported

NAV = Not available

Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-20
Summary of Wildlife Hazard Quotients for Sediment COPECs at Landfill 8 (FTMM-8)

	Sediment Concentrations		Surface Water Concentrations		NOAEL-Based Hazard Quotients (AUF = 1)			
					Mallard		Great Blue Heron	
	Maximum (mg/kg)	Average (mg/kg)	Maximum (mg/L)	Average (mg/L)	Based on Maximum Sediment Concentration	Based on Average Sediment Concentration	Based on Maximum Sediment Concentration	Based on Average Sediment Concentration
PCBs								
Aroclor 1242	0.17	0.06	ND	ND	0.00	0.00	0.09	0.03
Aroclor 1260	0.011	0.0038	ND	ND	0.00	0.00	0.01	0.00
Inorganics								
Chromium	131	69.6	ND	ND	0.08	0.04	3.50	1.86
Cobalt	116	39.6	ND	ND	0.03	0.01	2.48	0.85
Mercury	0.853	0.365	0.0001	0.000063	0.01	0.00	0.02	0.01
Nickel	60.5	24.8	0.00825	0.00772	0.03	0.01	1.47	0.60

Chromium	NOAEL-Based (AUF = 0.16)	0.56	0.30
Chromium	LOAEL-Based (AUF = 1)	0.59	0.32
Chromium	LOAEL-Based (AUF = 0.16)	0.10	0.05
Cobalt	NOAEL-Based (AUF = 0.16)	0.40	0.14
Cobalt	LOAEL-Based (AUF = 1)	0.42	0.14
Cobalt	LOAEL-Based (AUF = 0.16)	0.07	0.02
Nickel	NOAEL-Based (AUF = 0.16)	0.24	0.10
Nickel	LOAEL-Based (AUF = 1)	0.53	0.22
Nickel	LOAEL-Based (AUF = 0.16)	0.08	0.03

Notes:
AUF - Area Use Factor
ND - Not Detected
NOAEL - No Observeable Adverse Effect Level
LOAEL - Lowest Observeable Adverse Effect Level

Table 4-21
Summary of Surface Water COPECs and Background Concentrations at Landfill 12 (FTMM-12)

COPEC	FW ESC (ug/L)	SW ESC (ug/L)	BEE Background Maximum Detected (ug/L)	BEE Background Minimum Detected (ug/L)	BEE Background Frequency of Detection	BEE Background Mean (ug/L)	BEE Background 95% UCL of Mean (ug/L)	SI Bkgd Maximum Surface Water (ug/L)	SI Bkgd Maximum Ground Water (ug/L)	Mo. Cty Bkgd Ground Water (ug/L)	Site COPEC Summary Maximum Detected (ug/L)	Site COPEC Summary Number Detected Above ESC	Site COPEC Summary Average Concentration (ug/L)
Possible COPECs													
Copper	6.5	3.1	ND	ND	0 / 11	NA	NA	10.2	65.6	730	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.
SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-22
Summary of Sediment COPECs and Background Concentrations at Landfill 12 (FTMM-12)

COPEC	FW ESC (mg/kg)	SW ESC (mg/kg)	BEE Background Maximum Detected (mg/kg)	BEE Background Minimum Detected (mg/kg)	BEE Background Frequency of Detection	BEE Background Mean (mg/kg)	BEE Background 95% UCL of Mean (mg/kg)	SI Bkgd Maximum Sediment (mg/kg)	SI Bkgd Maximum Soil (mg/kg)	Mo. Cty Bkgd Soil (mg/kg)	Ambient Soil Levels Maximum Ambient (mg/kg)	Ambient Soil Levels 90th Percentile (mg/kg)	Site COPEC Summary Maximum Detected (mg/kg)	Site COPEC Summary No Detected Above ESC	Site COPEC Summary Average Concentration (mg/kg)
Pesticides															
DDD	0.008	0.002	0.0047	0.0022	4 / 12	0.00248	0.00291	0.015	0.0096	NR	NR	NR	**0.0091**	(9 of 13)	0.0046
DDE	0.005	0.0022	0.0034	0.0017	2 / 12	0.00184	0.00219	0.096	0.071	NR	NR	NR	**0.0071**	(8 of 13)	0.0029
DDT	0.008	0.001	ND	ND	0 / 12	NA	NA	0.11	0.11	NR	NR	NR	**0.013**	(4 of 13)	0.0025
PCBs															
Aroclor 1254	0.06	0.06	0.086	0.021	2 / 12	0.0264	0.0396	NR	NR	NR	NR	NR	**0.23**	(1 of 13)	0.022
SVOCs															
Acenaphthene	0.016	0.016	0.47	0.11	3 / 12	0.141	0.204	NR	0.1	ND	NR	NR	**0.64**	(1 of 13)	0.076
Anthracene	0.22	0.085	0.3	0.011	9 / 12	0.0931	0.15	0.061	0.1	ND	NR	NR	**0.6**	(3 of 13)	0.083
Benzo(a)anthracene	0.32	0.261	1.2	0.018	9 / 12	0.342	0.564	1.3	0.65	ND	1.82	0.43	0.83	(6 of 13)	0.265
Benzo(a)pyrene	0.37	0.43	1.2	0.025	10 / 12	0.333	0.901	1.2	0.6	ND	1.8	0.42	0.68	(3 of 13)	0.231
Benzo(g,h,i)perylene	0.17	0.17	0.89	0.38	4 / 12	0.466	0.577	0.67	0.64	ND	NR	NR	0.36	(2 of 13)	0.323
Benzo(k)fluroanthene	0.24	0.24	0.74	0.13	5 / 12	0.248	0.368	0.58	0.43	ND	4.1	0.66	0.31	(2 of 13)	0.273
Chrysene	0.34	0.384	1.9	0.064	6 / 12	0.526	0.89	0.37	0.65	3	1.78	0.47	0.83	(6 of 13)	0.465
Fluoranthene	0.75	0.6	4.9	0.064	7 / 12	1.42	2.454	1.5	0.46	ND	NR	NR	2.2	(6 of 13)	0.702
Fluorene	0.19	0.019	0.82	0.13	3 / 12	0.203	0.326	NR	0.074	ND	NR	NR	0.32	(1 of 13)	0.061
Indeno(1,2,3-c,d)pyrene	0.2	0.2	0.98	0.095	5 / 12	0.275	0.45	0.7	0.46	ND	0.57	0.23	0.36	(2 of 13)	0.342
Phenanthrene	0.56	0.24	8.3	0.15	6 / 12	1.359	2.655	0.39	0.39	ND	NR	NR	1.9	(5 of 13)	0.534
Pyrene	0.49	0.665	3.3	0.12	6 / 12	0.987	1.652	2	1.5	ND	NR	NR	1.5	(5 of 13)	0.815
Inorganics															
Arsenic	6	8.2	61.6	0.68	12 / 12	14.38	28.33	14.5	31.6	4.56	83.1	13.6	18.6	(1 of 13)	3.37
Barium	NAV	48	196	4.41	12 / 12	74.56	108.5	87.6	32.3	NR	154	65.8	54	(1 of 13)	9.83
Cadmium	0.6	1.2	17.2	0.38	12 / 12	4.252	8.021	NR	ND	0.116	2.7	0.32	14	(2 of 13)	1.69
Chromium	26	81	125	9.24	12 / 12	68.52	86.5	88.1	269	0.104	171	34.7	101	(1 of 13)	28.1
Cobalt	50	10	16.8	1.05	12 / 12	7.253	9.891	119	4.5	NR	32	3.2	13.7	(1 of 13)	2.62
Copper	16	34	165	1.88	9 / 12	24.01	84.56	48.4	8	6.05	93	33.3	77.3	(2 of 13)	16.7
Lead	31	47	945	5.61	12 / 12	106	439.5	142	19.5	25.9	344	144	171	(1 of 13)	24.2
Nickel	16	21	56.2	2.55	12 / 12	22.57	37.42	131	8.4	3.2	16.9	12.3	29.2	(1 of 13)	5.72
Selenium	NAV	1	19	0.95	12 / 12	6.645	9.337	1.7	1.9	0.11	ND	ND	5.99	(10 of 13)	1.83
Silver	1	1	11.2	11.2	1 / 12	1.03	NA	NR	1.1	0.21	6.3	0.65	3.54	(1 of 13)	0.49
Vanadium	NAV	57	218	6.82	12 / 12	53.18	91.47	49.1	94.1	1.3	202	35.5	61.1	(1 of 13)	16.7
Zinc	120	150	423	15.3	12 / 12	135.1	215.4	162	81.4	44.6	259	106	218	(1 of 13)	58.8

Note: Bold and Highlighted COPEC and maximum detected COPEC site concentration indicates that maximum detected site concentration is greater than maximum detected background concentration measured during BEE investigation

FW = Freshwater

SW = Saltwater

ESC = Ecological Screening Criteria

BEE = Baseline Ecological Evaluation data

95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.

SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)

Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)

Ambient Soil Levels from BEM Systems, Inc. (1998)

COPEC = Constituent of Potential Ecological Concern

NA = Not applicable

ND = Not detected

NR = Not reported

NAV = Not available

Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-23

Summary of Wildlife Hazard Quotients for Sediment COPECs at Landfills 12 and 14 (FTMM-12 and FTMM-14)

	Sediment Concentrations		Surface Water Concentrations		NOAEL-Based Hazard Quotients (AUF = 1)			
					Mallard		Great Blue Heron	
	Maximum (mg/kg)	Average (mg/kg)	Maximum (mg/L)	Average (mg/L)	Based on Maximum Sediment Concentration	Based on Average Sediment Concentration	Based on Maximum Sediment Concentration	Based on Average Sediment Concentration
PCBs								
Aroclor 1254	0.23	0.022	ND	ND	0.00	0.00	0.12	0.01
Pesticides								
DDD	0.0091	0.0046	ND	ND	0.00	0.00	0.01	0.00
DDE	0.0071	0.0029	ND	ND	0.00	0.00	0.01	0.00
DDT	0.013	0.0025	ND	ND	0.00	0.00	0.01	0.00
SVOCs								
Acenaphthene	0.64	0.076	ND	ND	0.00	0.00	0.01	0.00
Anthracene	0.60	0.083	0.00013	0.000073	0.00	0.00	0.01	0.00

Notes:

AUF - Area Use Factor

ND - Not Detected

NOAEL - No Observeable Adverse Effect Level

Table 4-24
Summary of Surface Water COPECs and Background Concentrations at Landfill 14 (FTMM-14)

			BEE Background					SI Bkgd	SI Bkgd	Mo. Cty	Site COPEC Summary		
COPEC	FW ESC (ug/L)	SW ESC (ug/L)	Maximum Detected (ug/L)	Minimum Detected (ug/L)	Frequency of Detection	Mean (ug/L)	95% UCL of Mean (ug/L)	Maximum Surface Water (ug/L)	Maximum Ground Water (ug/L)	Bkgd Ground Water (ug/L)	Maximum Detected (ug/L)	Number Detected Above ESC	Average Concentration (ug/L)
Possible COPECs													
Copper	6.5	3.1	ND	ND	0 / 11	NA	NA	10.2	65.6	730	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.
SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-25
Summary of Sediment COPECs and Background Concentrations at Landfill 14 (FTMM-14)

COPEC	FW ESC (mg/kg)	SW ESC (mg/kg)	BEE Background Maximum Detected (mg/kg)	BEE Background Minimum Detected (mg/kg)	BEE Background Frequency of Detection	BEE Background Mean (mg/kg)	BEE Background 95% UCL of Mean (mg/kg)	SI Bkgd Maximum Sediment (mg/kg)	SI Bkgd Maximum Soil (mg/kg)	Mo. Cty Bkgd Soil (mg/kg)	Ambient Soil Levels Maximum Ambient (mg/kg)	Ambient Soil Levels 90th Percentile (mg/kg)	Site COPEC Summary Maximum Detected (mg/kg)	Site COPEC Summary No Detected Above ESC	Site COPEC Summary Average Concentration (mg/kg)
Pesticides															
DDD	0.008	0.002	0.0047	0.0022	4 / 12	0.00248	0.00291	0.015	0.0096	NR	NR	NR	**0.0091**	(9 of 13)	0.0046
DDE	0.005	0.0022	0.0034	0.0017	2 / 12	0.00184	0.00219	0.096	0.071	NR	NR	NR	**0.0071**	(8 of 13)	0.0029
DDT	0.008	0.001	ND	ND	0 / 12	NA	NA	0.11	0.11	NR	NR	NR	**0.013**	(4 of 13)	0.0025
PCBs															
Aroclor 1254	0.06	0.06	0.086	0.021	2 / 12	0.0264	0.0396	NR	NR	NR	NR	NR	**0.23**	(1 of 13)	0.022
SVOCs															
Acenaphthene	0.016	0.016	0.47	0.11	3 / 12	0.141	0.204	NR	0.1	ND	NR	NR	**0.64**	(1 of 13)	0.076
Anthracene	0.22	0.085	0.3	0.011	9 / 12	0.0931	0.15	0.061	0.1	ND	NR	NR	**0.6**	(3 of 13)	0.083
Benzo(a)anthracene	0.32	0.261	1.2	0.018	9 / 12	0.342	0.564	1.3	0.65	ND	1.82	0.43	0.83	(6 of 13)	0.265
Benzo(a)pyrene	0.37	0.43	1.2	0.025	10 / 12	0.333	0.901	1.2	0.6	ND	1.8	0.42	0.68	(3 of 13)	0.231
Benzo(g,h,i)perylene	0.17	0.17	0.89	0.38	4 / 12	0.466	0.577	0.67	0.64	ND	NR	NR	0.36	(2 of 13)	0.323
Benzo(k)fluroanthene	0.24	0.24	0.74	0.13	5 / 12	0.248	0.368	0.58	0.43	ND	4.1	0.66	0.31	(2 of 13)	0.273
Chrysene	0.34	0.384	1.9	0.064	6 / 12	0.526	0.89	0.37	0.65	3	1.78	0.47	0.83	(6 of 13)	0.465
Fluoranthene	0.75	0.6	4.9	0.064	7 / 12	1.42	2.454	1.5	0.46	ND	NR	NR	2.2	(6 of 13)	0.702
Fluorene	0.19	0.019	0.82	0.13	3 / 12	0.203	0.326	NR	0.074	ND	NR	NR	0.32	(1 of 13)	0.061
Indeno(1,2,3-c,d)pyrene	0.2	0.2	0.98	0.095	5 / 12	0.275	0.45	0.7	0.46	ND	0.57	0.23	0.36	(2 of 13)	0.342
Phenanthrene	0.56	0.24	8.3	0.15	6 / 12	1.359	2.655	0.39	0.39	ND	NR	NR	1.9	(5 of 13)	0.534
Pyrene	0.49	0.665	3.3	0.12	6 / 12	0.987	1.652	2	1.5	ND	NR	NR	1.5	(5 of 13)	0.815
Inorganics															
Arsenic	6	8.2	61.6	0.68	12 / 12	14.38	28.33	14.5	31.6	4.56	83.1	13.6	18.6	(1 of 13)	3.37
Barium	NAV	48	196	4.41	12 / 12	74.56	108.5	87.6	32.3	NR	154	65.8	54	(1 of 13)	9.83
Cadmium	0.6	1.2	17.2	0.38	12 / 12	4.252	8.021	NR	ND	0.116	2.7	0.32	14	(2 of 13)	1.69
Chromium	26	81	125	9.24	12 / 12	68.52	86.5	88.1	269	0.104	171	34.7	101	(1 of 13)	28.1
Cobalt	50	10	16.8	1.05	12 / 12	7.253	9.891	119	4.5	NR	32	3.2	13.7	(1 of 13)	2.62
Copper	16	34	165	1.88	9 / 12	24.01	84.56	48.4	8	6.05	93	33.3	77.3	(2 of 13)	16.7
Lead	31	47	945	5.61	12 / 12	106	439.5	142	19.5	25.9	344	144	171	(1 of 13)	24.2
Nickel	16	21	56.2	2.55	12 / 12	22.57	37.42	131	8.4	3.2	16.9	12.3	29.2	(1 of 13)	5.72
Selenium	NAV	1	19	0.95	12 / 12	6.645	9.337	1.7	1.9	0.11	ND	ND	5.99	(10 of 13)	1.83
Silver	1	1	11.2	11.2	1 / 12	1.03	NA	NR	1.1	0.21	6.3	0.65	3.54	(1 of 13)	0.49
Vanadium	NAV	57	218	6.82	12 / 12	53.18	91.47	49.1	94.1	1.3	202	35.5	61.1	(1 of 13)	16.7
Zinc	120	150	423	15.3	12 / 12	135.1	215.4	162	81.4	44.6	259	106	218	(1 of 13)	58.8

Note: Bold and Highlighted COPEC and maximum detected COPEC site concentration indicates that maximum detected site concentration is greater than maximum detected background concentration measured during BEE investigation

FW = Freshwater

SW = Saltwater

ESC = Ecological Screening Criteria

BEE = Baseline Ecological Evaluation data

95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.

SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)

Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)

Ambient Soil Levels from BEM Systems, Inc. (1998)

COPEC = Constituent of Potential Ecological Concern

NA = Not applicable

ND = Not detected

NR = Not reported

NAV = Not available

Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-26
Summary of Sediment COPECs and Background Concentrations Site 15 (FTMM-15)

			BEE Background					SI Bkgd	SI Bkgd	Mo. Cty	Ambient Soil Levels		Site COPEC Summary		
COPEC	FW ESC (mg/kg)	SW ESC (mg/kg)	Maximum Detected (mg/kg)	Minimum Detected (mg/kg)	Frequency of Detection	Mean (mg/kg)	95% UCL of Mean (mg/kg)	Maximum Sediment (mg/kg)	Maximum Soil (mg/kg)	Bkgd Soil (mg/kg)	Maximum Ambient (mg/kg)	90th Percentile (mg/kg)	Maximum Detected (mg/kg)	No Detected Above ESC	Average Concentration (mg/kg)
Pesticides															
DDT	0.008	0.001	ND	ND	0 / 12	NA	NA	0.11	0.11	NR	NR	NR	0.0041	(1 of 4)	0.0011
Inorganics															
Arsenic	6	8.2	61.6	0.68	12 / 12	14.38	28.33	14.5	31.6	4.56	83.1	13.6	14.9	(3 of 4)	11.3
Cadmium	0.6	1.2	17.2	0.38	12 / 12	4.252	8.021	NR	ND	0.116	2.7	0.32	2.97	(4 of 4)	2.28
Chromium	26	81	125	9.24	12 / 12	68.52	86.5	88.1	269	0.104	171	34.7	95.5	(1 of 4)	73.6
Lead	31	47	945	5.61	12 / 12	106	439.5	142	19.5	25.9	344	144	108	(2 of 4)	56.9
Mercury	0.2	0.15	0.424	0.02	11 / 12	0.0909	0.247	1.7	ND	NR	6.1	0.21	0.293	(3 of 4)	0.2
Selenium	NAV	1	19	0.95	12 / 12	6.645	9.337	1.7	1.9	0.11	ND	ND	6.98	(4 of 4)	5.21
Silver	1	1	11.2	11.2	1 / 12	1.03	NA	NR	1.1	0.21	6.3	0.65	1.44	(3 of 4)	1.19
Vanadium	NAV	57	218	6.82	12 / 12	53.18	91.47	49.1	94.1	1.3	202	35.5	83.2	(1 of 4)	50.0
Zinc	120	150	423	15.3	12 / 12	135.1	215.4	162	81.4	44.6	259	106	262	(2 of 4)	165

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.
SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-27
Summary of Surface Water COPECs and Background Concentrations at Site FTMM-16

			BEE Background					SI Bkgd	SI Bkgd	Mo. Cty	Site COPEC Summary		
COPEC	FW ESC (ug/L)	SW ESC (ug/L)	Maximum Detected (ug/L)	Minimum Detected (ug/L)	Frequency of Detection	Mean (ug/L)	95% UCL of Mean (ug/L)	Maximum Surface Water (ug/L)	Maximum Ground Water (ug/L)	Bkgd Ground Water (ug/L)	Maximum Detected (ug/L)	Number Detected Above ESC	Average Concentration (ug/L)
Possible COPECs													
Copper	6.5	3.1	ND	ND	0 / 11	NA	NA	10.2	65.6	730	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.
SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-28
Summary of Sediment COPECs and Background Concentrations at Site FTMM-16

COPEC	FW ESC (mg/kg)	SW ESC (mg/kg)	BEE Background Maximum Detected (mg/kg)	BEE Background Minimum Detected (mg/kg)	BEE Background Frequency of Detection	BEE Background Mean (mg/kg)	BEE Background 95% UCL of Mean (mg/kg)	SI Bkgd Maximum Sediment (mg/kg)	SI Bkgd Maximum Soil (mg/kg)	Mo. Cty Bkgd Soil (mg/kg)	Ambient Soil Levels Maximum Ambient (mg/kg)	Ambient Soil Levels 90th Percentile (mg/kg)	Site COPEC Summary Maximum Detected (mg/kg)	Site COPEC Summary No Detected Above ESC	Site COPEC Summary Average Concentration (mg/kg)
SVOCs															
Hexachlorobutadiene	0.0265	0.0013	ND	ND	0 / 12	NA	NA	NR	NR	NR	NR	NR	**0.008**	(1 of 5)	0.0020
Inorganics															
Arsenic	6	8.2	61.6	0.68	12 / 12	14.38	28.33	14.5	31.6	4.56	83.1	13.6	24.5	(4 of 5)	16.9
Cadmium	0.6	1.2	17.2	0.38	12 / 12	4.252	8.021	NR	ND	0.116	2.7	0.32	12.3	(4 of 5)	8.86
Chromium	26	81	125	9.24	12 / 12	68.52	86.5	88.1	269	0.104	171	34.7	**144**	(4 of 5)	108
Copper	16	34	165	1.88	9 / 12	24.01	84.56	48.4	8	6.05	93	33.3	124	(4 of 5)	82.1
Lead	31	47	945	5.61	12 / 12	106	439.5	142	19.5	25.9	344	144	212	(4 of 5)	133
Mercury	0.2	0.15	0.424	0.02	11 / 12	0.0909	0.247	1.7	ND	NR	6.1	0.21	**0.502**	(3 of 5)	0.317
Nickel	16	21	56.2	2.55	12 / 12	22.57	37.42	131	8.4	3.2	16.9	12.3	35.2	(3 of 5)	22.4
Selenium	NAV	1	19	0.95	12 / 12	6.645	9.337	1.7	1.9	0.11	ND	ND	11	(4 of 5)	7.65
Silver	1	1	11.2	11.2	1 / 12	1.03	NA	NR	1.1	0.21	6.3	0.65	6.44	(4 of 5)	4.35
Vanadium	NAV	57	218	6.82	12 / 12	53.18	91.47	49.1	94.1	1.3	202	35.5	106	(3 of 5)	66.7
Zinc	120	150	423	15.3	12 / 12	135.1	215.4	162	81.4	44.6	259	106	**500**	(4 of 5)	324

Note: Bold and Highlighted COPEC and maximum detected COPEC site concentration indicates that maximum detected site concentration is greater than maximum detected background concentration measured during BEE investigation

FW = Freshwater

SW = Saltwater

ESC = Ecological Screening Criteria

BEE = Baseline Ecological Evaluation data

95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.

SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)

Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)

Ambient Soil Levels from BEM Systems, Inc. (1998)

COPEC = Constituent of Potential Ecological Concern

NA = Not applicable

ND = Not detected

NR = Not reported

NAV = Not available

Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-29
Summary of Wildlife Hazard Quotients for Sediment COPECs at Site FTMM-16

	Sediment Concentrations		Surface Water Concentrations		NOAEL-Based Hazard Quotients (AUF = 1)			
					Mallard		Great Blue Heron	
	Maximum (mg/kg)	Average (mg/kg)	Maximum (mg/L)	Average (mg/L)	Based on Maximum Sediment Concentration	Based on Average Sediment Concentration	Based on Maximum Sediment Concentration	Based on Average Sediment Concentration
SVOCs								
Hexachlorobutadiene	0.008	0.002	ND	ND	0.00	0.00	0.00	0.00
Inorganics								
Chromium	144	108	ND	ND	0.09	0.07	3.84	2.88
Mercury	0.502	0.317	ND	ND	0.00	0.00	0.01	0.01
Zinc	500	324	0.0471	0.0408	0.01	0.01	0.79	0.51

Chromium	NOAEL-Based (AUF = 0.07)	0.27	0.20
Chromium	LOAEL-Based (AUF = 1)	0.65	0.49
Chromium	LOAEL-Based (AUF = 0.07)	0.05	0.03

Notes:

AUF - Area Use Factor

ND - Not Detected

NOAEL - No Observeable Adverse Effect Level

LOAEL - Lowest Observeable Adverse Effect Level

Table 4-30
Summary of Surface Water COPECs and Background Concentrations at Site FTMM-18

COPEC	FW ESC (ug/L)	SW ESC (ug/L)	BEE Background Maximum Detected (ug/L)	BEE Background Minimum Detected (ug/L)	BEE Background Frequency of Detection	BEE Background Mean (ug/L)	BEE Background 95% UCL of Mean (ug/L)	SI Bkgd Maximum Surface Water (ug/L)	SI Bkgd Maximum Ground Water (ug/L)	Mo. Cty Bkgd Ground Water (ug/L)	Site COPEC Summary Maximum Detected (ug/L)	Site COPEC Summary Number Detected Above ESC	Site COPEC Summary Average Concentration (ug/L)
Possible COPECs													
Copper	6.5	3.1	ND	ND	0 / 11	NA	NA	10.2	65.6	730	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.
SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-31
Summary of Sediment COPECs and Background Concentrations at Site FTMM-18

COPEC	FW ESC (mg/kg)	SW ESC (mg/kg)	BEE Background Maximum Detected (mg/kg)	BEE Background Minimum Detected (mg/kg)	BEE Background Frequency of Detection	BEE Background Mean (mg/kg)	BEE Background 95% UCL of Mean (mg/kg)	SI Bkgd Maximum Sediment (mg/kg)	SI Bkgd Maximum Soil (mg/kg)	Mo. Cty Bkgd Soil (mg/kg)	Ambient Soil Levels Maximum Ambient (mg/kg)	Ambient Soil Levels 90th Percentile (mg/kg)	Site COPEC Summary Maximum Detected (mg/kg)	Site COPEC Summary No Detected Above ESC	Site COPEC Summary Average Concentration (mg/kg)
Inorganics															
Arsenic	6	8.2	61.6	0.68	12 / 12	14.38	28.33	14.5	31.6	4.56	83.1	13.6	22.8	(2 of 5)	9.748
Cadmium	0.6	1.2	17.2	0.38	12 / 12	4.252	8.021	NR	ND	0.116	2.7	0.32	5.65	(4 of 5)	3.462
Chromium	26	81	125	9.24	12 / 12	68.52	86.5	88.1	269	0.104	171	34.7	**132**	(3 of 5)	86.02
Cobalt	50	10	16.8	1.05	12 / 12	7.253	9.891	119	4.5	NR	32	3.2	**56**	(2 of 5)	16.36
Copper	16	34	165	1.88	9 / 12	24.01	84.56	48.4	8	6.05	93	33.3	82.9	(1 of 5)	25.8
Lead	31	47	945	5.61	12 / 12	106	439.5	142	19.5	25.9	344	144	166	(2 of 5)	56.93
Mercury	0.2	0.15	0.424	0.02	11 / 12	0.0909	0.247	1.7	ND	NR	6.1	0.21	**0.669**	(3 of 5)	0.389
Nickel	16	21	56.2	2.55	12 / 12	22.57	37.42	131	8.4	3.2	16.9	12.3	45.1	(2 of 5)	18.7
Selenium	NAV	1	19	0.95	12 / 12	6.645	9.337	1.7	1.9	0.11	ND	ND	12.3	(5 of 5)	7.116
Silver	1	1	11.2	11.2	1 / 12	1.03	NA	NR	1.1	0.21	6.3	0.65	27.9	(2 of 5)	10.9
Vanadium	NAV	57	218	6.82	12 / 12	53.18	91.47	49.1	94.1	1.3	202	35.5	63	(1 of 5)	41.54
Zinc	120	150	423	15.3	12 / 12	135.1	215.4	162	81.4	44.6	259	106	358	(3 of 5)	175.3

Note: Bold and Highlighted COPEC and maximum detected COPEC site concentration indicates that maximum detected site concentration is greater than maximum detected background concentration measured during BEE investigation

FW = Freshwater

SW = Saltwater

ESC = Ecological Screening Criteria

BEE = Baseline Ecological Evaluation data

95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.

SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)

Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)

Ambient Soil Levels from BEM Systems, Inc. (1998)

COPEC = Constituent of Potential Ecological Concern

NA = Not applicable

ND = Not detected

NR = Not reported

NAV = Not available

Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-32
Summary of Wildlife Hazard Quotients for Sediment COPECs at Site FTMM-18

	Sediment Concentrations		Surface Water Concentrations		NOAEL-Based Hazard Quotients (AUF = 1)			
					Mallard		Great Blue Heron	
	Maximum (mg/kg)	Average (mg/kg)	Maximum (mg/L)	Average (mg/L)	Based on Maximum Sediment Concentration	Based on Average Sediment Concentration	Based on Maximum Sediment Concentration	Based on Average Sediment Concentration
Inorganics								
Chromium	132	86	ND	ND	0.08	0.05	3.52	2.30
Cobalt	56	16.4	ND	ND	0.01	0.00	1.20	0.35
Mercury	0.669	0.389	0.0001	0.000073	0.01	0.00	0.02	0.01
Chromium	NOAEL-Based (AUF = 0.37)						1.30	0.85
Chromium	LOAEL-Based (AUF = 1)						0.60	0.39
Chromium	LOAEL-Based (AUF = 0.37)						0.22	0.14
Cobalt	NOAEL-Based (AUF = 0.37)						0.44	0.13
Cobalt	LOAEL-Based (AUF = 1)						0.50	0.15
Cobalt	LOAEL-Based (AUF = 0.37)						0.18	0.05

Notes:

AUF - Area Use Factor

ND - Not Detected

NOAEL - No Observeable Adverse Effect Level

LOAEL - Lowest Observeable Adverse Effect Level

Table 4-33
Summary of Surface Water COPECs and Background Concentrations at Site FTMM-20

COPEC	FW ESC (ug/L)	SW ESC (ug/L)	BEE Background Maximum Detected (ug/L)	BEE Background Minimum Detected (ug/L)	BEE Background Frequency of Detection	BEE Background Mean (ug/L)	BEE Background 95% UCL of Mean (ug/L)	SI Bkgd Maximum Surface Water (ug/L)	SI Bkgd Maximum Ground Water (ug/L)	Mo. Cty Bkgd Ground Water (ug/L)	Site COPEC Summary Maximum Detected (ug/L)	Site COPEC Summary Number Detected Above ESC	Site COPEC Summary Average Concentration (ug/L)
Possible COPECs													
Copper	6.5	3.1	ND	ND	0 / 11	NA	NA	10.2	65.6	730	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.
SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-34
Summary of Sediment COPECs and Background Concentrations at Site FTMM-20

COPEC	FW ESC (mg/kg)	SW ESC (mg/kg)	BEE Background Maximum Detected (mg/kg)	BEE Background Minimum Detected (mg/kg)	BEE Background Frequency of Detection	BEE Background Mean (mg/kg)	BEE Background 95% UCL of Mean (mg/kg)	SI Bkgd Maximum Sediment (mg/kg)	SI Bkgd Maximum Soil (mg/kg)	Mo. Cty Bkgd Soil (mg/kg)	Ambient Soil Levels Maximum Ambient (mg/kg)	Ambient Soil Levels 90th Percentile (mg/kg)	Site COPEC Summary Maximum Detected (mg/kg)	Site COPEC Summary No Detected Above ESC	Site COPEC Summary Average Concentration (mg/kg)
Inorganics															
Arsenic	6	8.2	61.6	0.68	12 / 12	14.38	28.33	14.5	31.6	4.56	83.1	13.6	23.8	(2 of 2)	16.6
Cadmium	0.6	1.2	17.2	0.38	12 / 12	4.252	8.021	NR	ND	0.116	2.7	0.32	2.87	(2 of 2)	2.09
Chromium	26	81	125	9.24	12 / 12	68.52	86.5	88.1	269	0.104	171	34.7	99.4	(1 of 2)	83.5
Copper	16	34	165	1.88	9 / 12	24.01	84.56	48.4	8	6.05	93	33.3	71.2	(1 of 2)	41.6
Lead	31	47	945	5.61	12 / 12	106	439.5	142	19.5	25.9	344	144	59.4	(1 of 2)	46.4
Mercury	0.2	0.15	0.424	0.02	11 / 12	0.0909	0.247	1.7	ND	NR	6.1	0.21	0.322	(1 of 2)	0.215
Nickel	16	21	56.2	2.55	12 / 12	22.57	37.42	131	8.4	3.2	16.9	12.3	21.6	(1 of 2)	15.7
Selenium	NAV	1	19	0.95	12 / 12	6.645	9.337	1.7	1.9	0.11	ND	ND	6.86	(2 of 2)	5.45
Silver	1	1	11.2	11.2	1 / 12	1.03	NA	NR	1.1	0.21	6.3	0.65	8.07	(2 of 2)	4.71
Vanadium	NAV	57	218	6.82	12 / 12	53.18	91.47	49.1	94.1	1.3	202	35.5	60.9	(1 of 2)	48.3
Zinc	120	150	423	15.3	12 / 12	135.1	215.4	162	81.4	44.6	259	106	184	(1 of 2)	132

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.
SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-35
Summary of Surface Water COPECs and Background Concentrations at Building 1122, Site FTMM-59, Parcel 43

COPEC	FW ESC (ug/L)	SW ESC (ug/L)	BEE Background Maximum Detected (ug/L)	BEE Background Minimum Detected (ug/L)	BEE Background Frequency of Detection	BEE Background Mean (ug/L)	BEE Background 95% UCL of Mean (ug/L)	SI Bkgd Maximum Surface Water (ug/L)	SI Bkgd Maximum Ground Water (ug/L)	Mo. Cty Bkgd Ground Water (ug/L)	Site COPEC Summary Maximum Detected (ug/L)	Site COPEC Summary Number Detected Above ESC	Site COPEC Summary Average Concentration (ug/L)
SVOCs													
Anthracene	0.035	NAV	0.12	0.052	3 / 11	0.0635	0.0798	NR	NR	NR	0.12	(2 of 2)	0.12
Benzo(a)anthracene	0.025	NAV	0.23	0.23	2 / 11	0.049	NA	NR	NR	NR	**0.24**	(2 of 2)	0.24
Benzo(a)pyrene	0.014	NAV	ND	ND	0 / 11	NA	NA	NR	NR	NR	**0.31**	(1 of 2)	0.16
Inorganics													
Lead	5.4	24	18.8	5.79	10 / 11	8.93	11.56	65.9	22.7	<100	11.5	(2 of 2)	9.4
Possible COPECs													
Cadmium	0.14	8.8	0.8	0.8	1 / 11	0.3	NA	ND	9.5	6	NA	NA	NA

Note: Bold and Highlighted COPEC and maximum detected COPEC site concentration indicates that maximum detected site concentration is greater than maximum detected background concentration measured during BEE investigation

FW = Freshwater

SW = Saltwater

ESC = Ecological Screening Criteria

BEE = Baseline Ecological Evaluation data

95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.

SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)

Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)

Ambient Soil Levels from BEM Systems, Inc. (1998)

COPEC = Constituent of Potential Ecological Concern

NA = Not applicable

ND = Not detected

NR = Not reported

NAV = Not available

Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-36
Summary of Sediment COPECs and Background Concentrations at Building 1122, Site FTMM-59, Parcel 43

COPEC	FW ESC (mg/kg)	SW ESC (mg/kg)	BEE Background Maximum Detected (mg/kg)	BEE Background Minimum Detected (mg/kg)	BEE Background Frequency of Detection	BEE Background Mean (mg/kg)	BEE Background 95% UCL of Mean (mg/kg)	SI Bkgd Maximum Sediment (mg/kg)	SI Bkgd Maximum Soil (mg/kg)	Mo. Cty Bkgd Soil (mg/kg)	Ambient Soil Levels Maximum Ambient (mg/kg)	Ambient Soil Levels 90th Percentile (mg/kg)	Site COPEC Summary Maximum Detected (mg/kg)	Site COPEC Summary No Detected Above ESC	Site COPEC Summary Average Concentration (mg/kg)
SVOCs															
Benzo(a)anthracene	0.32	0.261	1.2	0.018	9 / 12	0.342	0.564	1.3	0.65	ND	1.82	0.43	0.61	(2 of 3)	0.44
Benzo(a)pyrene	0.37	0.43	1.2	0.025	10 / 12	0.333	0.901	1.2	0.6	ND	1.8	0.42	0.61	(2 of 3)	0.44
Benzo(k)fluroanthene	0.24	0.24	0.74	0.13	5 / 12	0.248	0.368	0.58	0.43	ND	4.1	0.66	0.39	(2 of 3)	0.30
Chrysene	0.34	0.384	1.9	0.064	6 / 12	0.526	0.89	0.37	0.65	3	1.78	0.47	0.88	(2 of 3)	0.66
Fluoranthene	0.75	0.6	4.9	0.064	7 / 12	1.42	2.454	1.5	0.46	ND	NR	NR	1.4	(2 of 3)	1.03
Phenanthrene	0.56	0.24	8.3	0.15	6 / 12	1.359	2.655	0.39	0.39	ND	NR	NR	0.7	(1 of 3)	0.48
Pyrene	0.49	0.665	3.3	0.12	6 / 12	0.987	1.652	2	1.5	ND	NR	NR	1.6	(2 of 3)	1.15
Inorganics															
Arsenic	6	8.2	61.6	0.68	12 / 12	14.38	28.33	14.5	31.6	4.56	83.1	13.6	10.2	(3 of 3)	8.6
Cadmium	0.6	1.2	17.2	0.38	12 / 12	4.252	8.021	NR	ND	0.116	2.7	0.32	1.86	(2 of 3)	1.3
Chromium	26	81	125	9.24	12 / 12	68.52	86.5	88.1	269	0.104	171	34.7	**161**	(3 of 3)	157
Copper	16	34	165	1.88	9 / 12	24.01	84.56	48.4	8	6.05	93	33.3	53.6	(3 of 3)	40.7
Lead	31	47	945	5.61	12 / 12	106	439.5	142	19.5	25.9	344	144	116	(3 of 3)	78.5
Mercury	0.2	0.15	0.424	0.02	11 / 12	0.0909	0.247	1.7	ND	NR	6.1	0.21	**0.47**	(3 of 3)	0.33
Nickel	16	21	56.2	2.55	12 / 12	22.57	37.42	131	8.4	3.2	16.9	12.3	36.4	(3 of 3)	29.5
Zinc	120	150	423	15.3	12 / 12	135.1	215.4	162	81.4	44.6	259	106	286	(2 of 3)	215
Possible COPECs															
Anthracene	0.22	0.085	0.3	0.011	9 / 12	0.0931	0.15	0.061	0.1	ND	NR	NR	NA	NA	NA

Note: Bold and Highlighted COPEC and maximum detected COPEC site concentration indicates that maximum detected site concentration is greater than maximum detected background concentration measured during BEE investigation

FW = Freshwater

SW = Saltwater

ESC = Ecological Screening Criteria

BEE = Baseline Ecological Evaluation data

95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.

SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)

Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)

Ambient Soil Levels from BEM Systems, Inc. (1998)

COPEC = Constituent of Potential Ecological Concern

NA = Not applicable

ND = Not detected

NR = Not reported

NAV = Not available

Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-37
Summary of Wildlife Hazard Quotients for Sediment COPECs at Building 1122, Site FTMM-59, Parcel 43

	Sediment Concentrations		Surface Water Concentrations		NOAEL-Based Hazard Quotients (AUF = 1)			
					Mallard		Great Blue Heron	
	Maximum (mg/kg)	Average (mg/kg)	Maximum (mg/L)	Average (mg/L)	Based on Maximum Surface Water and Sediment Concentration	Based on Average Surface Water and Sediment Concentration	Based on Maximum Surface Water and Sediment Concentration	Based on Average Surface Water and Sediment Concentration
SVOCs								
Benzo(a)anthracene	0.61	0.44	0.24	0.24	0.00	0.00	0.08	0.06
Benzo(a)pyrene	0.61	0.44	0.31	0.16	0.00	0.00	0.09	0.06
Inorganics								
Chromium	161	157	ND	ND	0.10	0.10	4.30	4.19
Mercury	0.47	0.33	ND	ND	0.00	0.00	0.01	0.01

Chromium	NOAEL-Based (AUF = 0.05)	0.21	0.21
Chromium	LOAEL-Based (AUF = 1)	0.73	0.71
Chromium	LOAEL-Based (AUF = 0.05)	0.04	0.04

Notes:

AUF - Area Use Factor

ND - Not Detected

NOAEL - No Observeable Adverse Effect Level

LOAEL - Lowest Observeable Adverse Effect Level

Table 4-38
Summary of Surface Water COPECs and Background Concentrations at Building 1150, Parcel 39

COPEC	FW ESC (ug/L)	SW ESC (ug/L)	BEE Background Maximum Detected (ug/L)	BEE Background Minimum Detected (ug/L)	BEE Background Frequency of Detection	BEE Background Mean (ug/L)	BEE Background 95% UCL of Mean (ug/L)	SI Bkgd Maximum Surface Water (ug/L)	SI Bkgd Maximum Ground Water (ug/L)	Mo. Cty Bkgd Ground Water (ug/L)	Site COPEC Summary Maximum Detected (ug/L)	Site COPEC Summary Number Detected Above ESC	Site COPEC Summary Average Concentration (ug/L)
SVOCs													
Anthracene	0.035	NAV	0.12	0.052	3 / 11	0.0635	0.0798	NR	NR	NR	0.11	(1 of 1)	0.11
Benzo(a)anthracene	0.025	NAV	0.23	0.23	2 / 11	0.049	NA	NR	NR	NR	0.22	(1 of 1)	0.22
Inorganics													
Lead	5.4	24	18.8	5.79	10 / 11	8.93	11.56	65.9	22.7	<100	10.1	(1 of 1)	10.1
Possible COPECs													
Cadmium	0.14	8.8	0.8	0.8	1 / 11	0.3	NA	ND	9.5	6	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.
SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-39
Summary of Sediment COPECs and Background Concentrations at Building 1150, Parcel 39

COPEC	FW ESC (mg/kg)	SW ESC (mg/kg)	BEE Background Maximum Detected (mg/kg)	BEE Background Minimum Detected (mg/kg)	BEE Background Frequency of Detection	BEE Background Mean (mg/kg)	BEE Background 95% UCL of Mean (mg/kg)	SI Bkgd Maximum Sediment (mg/kg)	SI Bkgd Maximum Soil (mg/kg)	Mo. Cty Bkgd Soil (mg/kg)	Ambient Soil Levels Maximum Ambient (mg/kg)	Ambient Soil Levels 90th Percentile (mg/kg)	Site COPEC Summary Maximum Detected (mg/kg)	Site COPEC Summary No Detected Above ESC	Site COPEC Summary Average Concentration (mg/kg)
PCBs															
Aroclor 1254	0.06	0.06	0.086	0.021	2 / 12	0.0264	0.0396	NR	NR	NR	NR	NR	0.064	(1 of 4)	0.027
SVOCs															
Benzo(a)anthracene	0.32	0.261	1.2	0.018	9 / 12	0.342	0.564	1.3	0.65	ND	1.82	0.43	0.54	(1 of 6)	0.23
Chrysene	0.34	0.384	1.9	0.064	6 / 12	0.526	0.89	0.37	0.65	3	1.78	0.47	0.71	(3 of 6)	0.29
Fluoranthene	0.75	0.6	4.9	0.064	7 / 12	1.42	2.454	1.5	0.46	ND	NR	NR	0.99	(2 of 6)	0.53
Phenanthrene	0.56	0.24	8.3	0.15	6 / 12	1.359	2.655	0.39	0.39	ND	NR	NR	0.67	(1 of 6)	0.21
Pyrene	0.49	0.665	3.3	0.12	6 / 12	0.987	1.652	2	1.5	ND	NR	NR	2	(3 of 6)	0.72
Inorganics															
Arsenic	6	8.2	61.6	0.68	12 / 12	14.38	28.33	14.5	31.6	4.56	83.1	13.6	8.89	(2 of 6)	4.49
Cadmium	0.6	1.2	17.2	0.38	12 / 12	4.252	8.021	NR	ND	0.116	2.7	0.32	2.09	(6 of 6)	1.52
Chromium	26	81	125	9.24	12 / 12	68.52	86.5	88.1	269	0.104	171	34.7	**131**	(6 of 6)	68.2
Copper	16	34	165	1.88	9 / 12	24.01	84.56	48.4	8	6.05	93	33.3	41	(2 of 6)	11.9
Lead	31	47	945	5.61	12 / 12	106	439.5	142	19.5	25.9	344	144	61.7	(1 of 6)	26.0
Mercury	0.2	0.15	0.424	0.02	11 / 12	0.0909	0.247	1.7	ND	NR	6.1	0.21	**0.67**	(1 of 6)	0.17
Nickel	16	21	56.2	2.55	12 / 12	22.57	37.42	131	8.4	3.2	16.9	12.3	32.4	(1 of 6)	14.4
Zinc	120	150	423	15.3	12 / 12	135.1	215.4	162	81.4	44.6	259	106	210	(1 of 6)	103

Note: Bold and Highlighted COPEC and maximum detected COPEC site concentration indicates that maximum detected site concentration is greater than maximum detected background concentration measured during BEE investigation

FW = Freshwater

SW = Saltwater

ESC = Ecological Screening Criteria

BEE = Baseline Ecological Evaluation data

95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.

SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)

Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)

Ambient Soil Levels from BEM Systems, Inc. (1998)

COPEC = Constituent of Potential Ecological Concern

NA = Not applicable

ND = Not detected

NR = Not reported

NAV = Not available

Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-40
Summary of Wildlife Hazard Quotients for Sediment COPECs at Building 1150, Parcel 39

	Sediment Concentrations		Surface Water Concentrations		NOAEL-Based Hazard Quotients (AUF = 1)			
					Mallard		Great Blue Heron	
	Maximum (mg/kg)	Average (mg/kg)	Maximum (mg/L)	Average (mg/L)	Based on Maximum Sediment Concentration	Based on Average Sediment Concentration	Based on Maximum Sediment Concentration	Based on Average Sediment Concentration
Inorganics								
Chromium	131	68.2	ND	ND	0.08	0.04	3.50	1.82
Mercury	0.67	0.17	ND	ND	0.01	0.00	0.02	0.00

Chromium	NOAEL-Based (AUF = 0.01)	0.03	0.02
Chromium	LOAEL-Based (AUF = 1)	0.59	0.31
Chromium	LOAEL-Based (AUF = 0.01)	0.01	0.00

Notes:

AUF - Area Use Factor

ND - Not Detected

NOAEL - No Observeable Adverse Effect Level

LOAEL - Lowest Observeable Adverse Effect Level

Table 4-41
Summary of Surface Water COPECs and Background Concentrations at Buildings 283 (FTMM-61), 288, 291, 293, 295, Parcel 49

			BEE Background					SI Bkgd	SI Bkgd	Mo. Cty	Site COPEC Summary		
COPEC	FW ESC (ug/L)	SW ESC (ug/L)	Maximum Detected (ug/L)	Minimum Detected (ug/L)	Frequency of Detection	Mean (ug/L)	95% UCL of Mean (ug/L)	Maximum Surface Water (ug/L)	Maximum Ground Water (ug/L)	Bkgd Ground Water (ug/L)	Maximum Detected (ug/L)	Number Detected Above ESC	Average Concentration (ug/L)
Possible COPECs													
Copper	6.5	3.1	ND	ND	0 / 11	NA	NA	10.2	65.6	730	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.
SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-42
Summary of Sediment COPECs and Background Concentrations at Buildings 283 (FTMM-61), 288, 291, 293, 295, Parcel 49

COPEC	FW ESC (mg/kg)	SW ESC (mg/kg)	BEE Background Maximum Detected (mg/kg)	BEE Background Minimum Detected (mg/kg)	BEE Background Frequency of Detection	BEE Background Mean (mg/kg)	BEE Background 95% UCL of Mean (mg/kg)	SI Bkgd Maximum Sediment (mg/kg)	SI Bkgd Maximum Soil (mg/kg)	Mo. Cty Bkgd Soil (mg/kg)	Ambient Soil Levels Maximum Ambient (mg/kg)	Ambient Soil Levels 90th Percentile (mg/kg)	Site COPEC Summary Maximum Detected (mg/kg)	Site COPEC Summary No Detected Above ESC	Site COPEC Summary Average Concentration (mg/kg)
Inorganics															
Arsenic	6	8.2	61.6	0.68	12 / 12	14.38	28.33	14.5	31.6	4.56	83.1	13.6	29.7	(4 of 4)	10.5
Barium	NAV	48	196	4.41	12 / 12	74.56	108.5	87.6	32.3	NR	154	65.8	96.4	(4 of 4)	81.1
Cadmium	0.6	1.2	17.2	0.38	12 / 12	4.252	8.021	NR	ND	0.116	2.7	0.32	5.5	(3 of 4)	3.29
Chromium	**26**	81	125	9.24	12 / 12	68.52	86.5	88.1	269	0.104	171	34.7	**353**	(4 of 4)	230
Cobalt	**50**	10	16.8	1.05	12 / 12	7.253	9.891	119	4.5	NR	32	3.2	**29.3**	(2 of 4)	13.9
Copper	16	34	165	1.88	9 / 12	24.01	84.56	48.4	8	6.05	93	33.3	111	(3 of 4)	72.2
Lead	31	47	945	5.61	12 / 12	106	439.5	142	19.5	25.9	344	144	148	(1 of 4)	58.9
Mercury	**0.2**	0.15	0.424	0.02	11 / 12	0.0909	0.247	1.7	ND	NR	6.1	0.21	**0.53**	(3 of 4)	0.33
Nickel	**16**	21	56.2	2.55	12 / 12	22.57	37.42	131	8.4	3.2	16.9	12.3	**68.5**	(2 of 4)	34.2
Silver	1	1	11.2	11.2	1 / 12	1.03	NA	NR	1.1	0.21	6.3	0.65	1.4	(1 of 4)	NA
Vanadium	NAV	57	218	6.82	12 / 12	53.18	91.47	49.1	94.1	1.3	202	35.5	125	(4 of 4)	101
Zinc	**120**	150	423	15.3	12 / 12	135.1	215.4	162	81.4	44.6	259	106	**2090**	(3 of 4)	917
Possible COPECs															
2-Methylnaphthalene	0.07	0.07	1.3	1.3	1 / 12	0.12	NA	NR	NR	NR	NR	NR	NA	NA	NA
Pyrene	0.49	0.665	3.3	0.12	6 / 12	0.987	1.652	2	1.5	ND	NR	NR	NA	NA	NA

Note: Bold and Highlighted COPEC and maximum detected COPEC site concentration indicates that maximum detected site concentration is greater than maximum detected background concentration measured during BEE investigation

FW = Freshwater

SW = Saltwater

ESC = Ecological Screening Criteria

BEE = Baseline Ecological Evaluation data

95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.

SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)

Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)

Ambient Soil Levels from BEM Systems, Inc. (1998)

COPEC = Constituent of Potential Ecological Concern

NA = Not applicable

ND = Not detected

NR = Not reported

NAV = Not available

Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-43

Summary of Wildlife Hazard Quotients for Sediment COPECs at Buildings 283 (FTMM-61), 288, 291, 293, 295, Parcel 49

	Sediment Concentrations		Surface Water Concentrations		NOAEL-Based Hazard Quotients (AUF = 1)			
					Mallard		Great Blue Heron	
	Maximum (mg/kg)	Average (mg/kg)	Maximum (mg/L)	Average (mg/L)	Based on Maximum Sediment Concentration	Based on Average Sediment Concentration	Based on Maximum Sediment Concentration	Based on Average Sediment Concentration
Inorganics								
Chromium	353	230	ND	ND	0.22	0.14	9.43	6.14
Cobalt	29.3	13.9	ND	ND	0.01	0.00	0.63	0.30
Mercury	0.53	0.33	ND	ND	0.00	0.00	0.02	0.01
Nickel	68.5	34.2	0.0076	0.00485	0.03	0.02	1.66	0.83
Zinc	2090	917	0.0464	0.04455	0.04	0.02	3.28	1.44
Chromium	NOAEL-Based (AUF = 0.19)						1.79	1.17
Chromium	LOAEL-Based (AUF = 1)						1.60	1.04
Chromium	LOAEL-Based (AUF = 0.19)						0.30	0.20
Nickel	NOAEL-Based (AUF = 0.19)						0.32	0.16
Nickel	LOAEL-Based (AUF = 1)						0.60	0.30
Nickel	LOAEL-Based (AUF = 0.19)						0.11	0.06
Zinc	NOAEL-Based (AUF = 0.19)						0.62	0.27
Zinc	LOAEL-Based (AUF = 1)						1.41	0.62
Zinc	LOAEL-Based (AUF = 0.19)						0.27	0.12

Notes:

AUF - Area Use Factor

ND - Not Detected

NOAEL - No Observeable Adverse Effect Level

LOAEL - Lowest Observeable Adverse Effect Level

Table 4-44
Summary of Surface Water COPECs and Background Concentrations at Building 1075, Parcel 61

COPEC	FW ESC (ug/L)	SW ESC (ug/L)	BEE Background Maximum Detected (ug/L)	BEE Background Minimum Detected (ug/L)	BEE Background Frequency of Detection	BEE Background Mean (ug/L)	BEE Background 95% UCL of Mean (ug/L)	SI Bkgd Maximum Surface Water (ug/L)	SI Bkgd Maximum Ground Water (ug/L)	Mo. Cty Bkgd Ground Water (ug/L)	Site COPEC Summary Maximum Detected (ug/L)	Site COPEC Summary Number Detected Above ESC	Site COPEC Summary Average Concentration (ug/L)
Possible COPECs													
Copper	6.5	3.1	ND	ND	0 / 11	NA	NA	10.2	65.6	730	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.
SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-45
Summary of Sediment COPECs and Background Concentrations at Building 1075, Parcel 61

COPEC	FW ESC (mg/kg)	SW ESC (mg/kg)	BEE Background Maximum Detected (mg/kg)	BEE Background Minimum Detected (mg/kg)	BEE Background Frequency of Detection	BEE Background Mean (mg/kg)	BEE Background 95% UCL of Mean (mg/kg)	SI Bkgd Maximum Sediment (mg/kg)	SI Bkgd Maximum Soil (mg/kg)	Mo. Cty Bkgd Soil (mg/kg)	Ambient Soil Levels Maximum Ambient (mg/kg)	Ambient Soil Levels 90th Percentile (mg/kg)	Site COPEC Summary Maximum Detected (mg/kg)	Site COPEC Summary No Detected Above ESC	Site COPEC Summary Average Concentration (mg/kg)
SVOCs															
Acenaphthene	0.016	0.016	0.47	0.11	3 / 12	0.141	0.204	NR	0.1	ND	NR	NR	**1.6**	(1 of 2)	0.83
Anthracene	0.22	0.085	0.3	0.011	9 / 12	0.0931	0.15	0.061	0.1	ND	NR	NR	0.29	(2 of 2)	0.23
Benzo(a)anthracene	0.32	0.261	1.2	0.018	9 / 12	0.342	0.564	1.3	0.65	ND	1.82	0.43	0.74	(2 of 2)	0.62
Benzo(a)pyrene	0.37	0.43	1.2	0.025	10 / 12	0.333	0.901	1.2	0.6	ND	1.8	0.42	0.65	(2 of 2)	0.54
Benzo(k)fluroanthene	0.24	0.24	0.74	0.13	5 / 12	0.248	0.368	0.58	0.43	ND	4.1	0.66	0.38	(1 of 2)	0.22
Chrysene	0.34	0.384	1.9	0.064	6 / 12	0.526	0.89	0.37	0.65	3	1.78	0.47	0.92	(2 of 2)	0.82
Fluoranthene	0.75	0.6	4.9	0.064	7 / 12	1.42	2.454	1.5	0.46	ND	NR	NR	1.7	(2 of 2)	1.5
Fluorene	0.19	0.019	0.82	0.13	3 / 12	0.203	0.326	NR	0.074	ND	NR	NR	0.14	(1 of 2)	0.10
Phenanthrene	0.56	0.24	8.3	0.15	6 / 12	1.359	2.655	0.39	0.39	ND	NR	NR	1.2	(2 of 2)	0.94
Pyrene	0.49	0.665	3.3	0.12	6 / 12	0.987	1.652	2	1.5	ND	NR	NR	2.2	(2 of 2)	1.9
Inorganics															
Arsenic	6	8.2	61.6	0.68	12 / 12	14.38	28.33	14.5	31.6	4.56	83.1	13.6	13.3	(1 of 2)	7.5
Chromium	26	81	125	9.24	12 / 12	68.52	86.5	88.1	269	0.104	171	34.7	86	(1 of 2)	63

Note: Bold and Highlighted COPEC and maximum detected COPEC site concentration indicates that maximum detected site concentration is greater than maximum detected background concentration measured during BEE investigation

FW = Freshwater

SW = Saltwater

ESC = Ecological Screening Criteria

BEE = Baseline Ecological Evaluation data

95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.

SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)

Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)

Ambient Soil Levels from BEM Systems, Inc. (1998)

COPEC = Constituent of Potential Ecological Concern

NA = Not applicable

ND = Not detected

NR = Not reported

NAV = Not available

Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-46
Summary of Wildlife Hazard Quotients for Sediment COPECs at Building 1075, Parcel 61

	Sediment Concentrations		Surface Water Concentrations		NOAEL-Based Hazard Quotients (AUF = 1)			
					Mallard		Great Blue Heron	
	Maximum (mg/kg)	Average (mg/kg)	Maximum (mg/L)	Average (mg/L)	Based on Maximum Sediment Concentration	Based on Average Sediment Concentration	Based on Maximum Sediment Concentration	Based on Average Sediment Concentration
Semivolatile Organics								
Acenaphthene	1.60	0.83	ND	ND	0.00	0.00	0.02	0.01

Notes:

AUF - Area Use Factor

ND - Not Detected

NOAEL - No Observeable Adverse Effect Level

Table 4-47
Summary of Surface Water COPECs and Background Concentrations at Building 900, Parcel 69

COPEC	FW ESC (ug/L)	SW ESC (ug/L)	BEE Background Maximum Detected (ug/L)	BEE Background Minimum Detected (ug/L)	BEE Background Frequency of Detection	BEE Background Mean (ug/L)	BEE Background 95% UCL of Mean (ug/L)	SI Bkgd Maximum Surface Water (ug/L)	SI Bkgd Maximum Ground Water (ug/L)	Mo. Cty Bkgd Ground Water (ug/L)	Site COPEC Summary Maximum Detected (ug/L)	Site COPEC Summary Number Detected Above ESC	Site COPEC Summary Average Concentration (ug/L)
Possible COPECs													
Copper	6.5	3.1	ND	ND	0 / 11	NA	NA	10.2	65.6	730	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.
SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-48
Summary of Sediment COPECs and Background Concentrations at Building 900, Parcel 69

COPEC	FW ESC (mg/kg)	SW ESC (mg/kg)	BEE Background Maximum Detected (mg/kg)	BEE Background Minimum Detected (mg/kg)	BEE Background Frequency of Detection	BEE Background Mean (mg/kg)	BEE Background 95% UCL of Mean (mg/kg)	SI Bkgd Maximum Sediment (mg/kg)	SI Bkgd Maximum Soil (mg/kg)	Mo. Cty Bkgd Soil (mg/kg)	Ambient Soil Levels Maximum Ambient (mg/kg)	Ambient Soil Levels 90th Percentile (mg/kg)	Site COPEC Summary Maximum Detected (mg/kg)	Site COPEC Summary No Detected Above ESC	Site COPEC Summary Average Concentration (mg/kg)
SVOCs															
Acenaphthene	0.016	0.016	0.47	0.11	3 / 12	0.141	0.204	NR	0.1	ND	NR	NR	**1.2**	(2 of 2)	0.85
Fluoranthene	0.75	0.6	4.9	0.064	7 / 12	1.42	2.454	1.5	0.46	ND	NR	NR	2.8	(2 of 2)	1.8
Pyrene	0.49	0.665	3.3	0.12	6 / 12	0.987	1.652	2	1.5	ND	NR	NR	3.1	(2 of 2)	2.1
Inorganics															
Arsenic	6	8.2	61.6	0.68	12 / 12	14.38	28.33	14.5	31.6	4.56	83.1	13.6	36.2	(1 of 2)	19.4
Barium	NAV	48	196	4.41	12 / 12	74.56	108.5	87.6	32.3	NR	154	65.8	89.6	(1 of 2)	52.2
Cadmium	0.6	1.2	17.2	0.38	12 / 12	4.252	8.021	NR	ND	0.116	2.7	0.32	14.1	(1 of 2)	7.1
Chromium	26	81	125	9.24	12 / 12	68.52	86.5	88.1	269	0.104	171	34.7	**345**	(1 of 2)	210
Cobalt	50	10	16.8	1.05	12 / 12	7.253	9.891	119	4.5	NR	32	3.2	**20.3**	(1 of 2)	11.2
Copper	16	34	165	1.88	9 / 12	24.01	84.56	48.4	8	6.05	93	33.3	**203**	(2 of 2)	117
Lead	31	47	945	5.61	12 / 12	106	439.5	142	19.5	25.9	344	144	410	(1 of 2)	223
Manganese	630	260	551	4.36	12 / 12	105.6	218.2	70.2	90.7	59	1030	206	339	(1 of 2)	197
Mercury	0.2	0.15	0.424	0.02	11 / 12	0.0909	0.247	1.7	ND	NR	6.1	0.21	**0.83**	(1 of 2)	0.45
Nickel	16	21	56.2	2.55	12 / 12	22.57	37.42	131	8.4	3.2	16.9	12.3	53.1	(1 of 2)	31.2
Silver	1	1	11.2	11.2	1 / 12	1.03	NA	NR	1.1	0.21	6.3	0.65	9.9	(1 of 2)	5.1
Vanadium	NAV	57	218	6.82	12 / 12	53.18	91.47	49.1	94.1	1.3	202	35.5	185	(1 of 2)	115
Zinc	120	150	423	15.3	12 / 12	135.1	215.4	162	81.4	44.6	259	106	**515**	(2 of 2)	321

Note: Bold and Highlighted COPEC and maximum detected COPEC site concentration indicates that maximum detected site concentration is greater than maximum detected background concentration measured during BEE investigation

FW = Freshwater

SW = Saltwater

ESC = Ecological Screening Criteria

BEE = Baseline Ecological Evaluation data

95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.

SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)

Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)

Ambient Soil Levels from BEM Systems, Inc. (1998)

COPEC = Constituent of Potential Ecological Concern

NA = Not applicable

ND = Not detected

NR = Not reported

NAV = Not available

Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-49
Summary of Wildlife Hazard Quotients for Sediment COPECs at Building 900, Parcel 69

	Sediment Concentrations		Surface Water Concentrations		NOAEL-Based Hazard Quotients (AUF = 1)			
					Mallard		Great Blue Heron	
	Maximum (mg/kg)	Average (mg/kg)	Maximum (mg/L)	Average (mg/L)	Based on Maximum Sediment Concentration	Based on Average Sediment Concentration	Based on Maximum Sediment Concentration	Based on Average Sediment Concentration
SVOCs								
Acenaphthene	1.2	0.06	ND	ND	0.01	0.00	0.01	0.00
Inorganics								
Chromium	345	210	ND	ND	0.22	0.13	9.21	5.61
Cobalt	20.3	11.2	ND	ND	0.00	0.00	0.43	0.24
Copper	203	117	ND	ND	1.45	0.84	2.74	1.58
Mercury	0.83	0.45	ND	ND	0.01	0.00	0.02	0.01
Zinc	515	321	0.0535	0.0535	0.01	0.01	0.81	0.50
Chromium	NOAEL-Based (AUF = 0.19)						1.75	1.07
Chromium	LOAEL-Based (AUF = 1)						1.57	0.95
Chromium	LOAEL-Based (AUF = 0.19)						0.30	0.18
Copper	NOAEL-Based (AUF = 0.19)						0.52	0.30
Copper	LOAEL-Based (AUF = 1)						0.92	0.53
Copper	LOAEL-Based (AUF = 0.19)						0.17	0.10
Copper	NOAEL-Based (AUF = 0.0014)				0.00	0.00		
Copper	LOAEL-Based (AUF = 1)				0.49	0.28		
Copper	LOAEL-Based (AUF = 0.0014)				0.00	0.00		

Notes:
AUF - Area Use Factor
ND - Not Detected
NOAEL - No Observeable Adverse Effect Level
LOAEL - Lowest Observeable Adverse Effect Level

Table 4-50
Summary of Surface Water COPECs and Background Concentrations at Landfill CW-3A (FTMM-25)

			BEE Background					SI Bkgd	SI Bkgd	Mo. Cty	Site COPEC Summary		
COPEC	FW ESC (ug/L)	SW ESC (ug/L)	Maximum Detected (ug/L)	Minimum Detected (ug/L)	Frequency of Detection	Mean (ug/L)	95% UCL of Mean (ug/L)	Maximum Surface Water (ug/L)	Maximum Ground Water (ug/L)	Bkgd Ground Water (ug/L)	Maximum Detected (ug/L)	Number Detected Above ESC	Average Concentration (ug/L)
SVOCs													
Anthracene	0.035	NAV	0.12	0.052	3 / 11	0.0635	0.0798	NR	NR	NR	0.11	(2 of 2)	0.11
Benzo(a)anthracene	0.025	NAV	0.23	0.23	2 / 11	0.049	NA	NR	NR	NR	**0.31**	(1 of 2)	0.16
Inorganics													
Cadmium	0.14-0.17	8.8	0.8	0.8	1 / 11	0.3	NA	NR	9.5	6	0.79	(1 of 2)	0.52
Zinc	88-108	81	79.9	38.1	11 / 11	48.45	54.55	215	233	60	99.8	(1 of 2)	77.6
Possible COPECs													
Silver	0.12	1.9	ND	ND	0 / 11	NA	NA	NR	ND	<10	NA	NA	NA

Note: Bold and Highlighted COPEC and maximum detected COPEC site concentration indicates that maximum detected site concentration is greater than maximum detected background concentration measured during BEE investigation

FW = Freshwater

SW = Saltwater

ESC = Ecological Screening Criteria

BEE = Baseline Ecological Evaluation data

95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.

SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)

Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)

Ambient Soil Levels from BEM Systems, Inc. (1998)

COPEC = Constituent of Potential Ecological Concern

NA = Not applicable

ND = Not detected

NR = Not reported

NAV = Not available

Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-51
Summary of Sediment COPECs and Background Concentrations at Landfill CW-3A (FTMM-25)

COPEC	FW ESC (mg/kg)	SW ESC (mg/kg)	BEE Background Maximum Detected (mg/kg)	BEE Background Minimum Detected (mg/kg)	BEE Background Frequency of Detection	BEE Background Mean (mg/kg)	BEE Background 95% UCL of Mean (mg/kg)	SI Bkgd Maximum Sediment (mg/kg)	SI Bkgd Maximum Soil (mg/kg)	Mo. Cty Bkgd Soil (mg/kg)	Ambient Soil Levels Maximum Ambient (mg/kg)	Ambient Soil Levels 90th Percentile (mg/kg)	Site COPEC Summary Maximum Detected (mg/kg)	Site COPEC Summary No Detected Above ESC	Site COPEC Summary Average Concentration (mg/kg)
Pesticides															
DDD	0.008	0.002	0.0047	0.0022	4 / 12	0.00248	0.00291	0.015	0.0096	NR	NR	NR	**0.013**	(1 of 6)	0.004
SVOCs															
Acenaphthene	0.016	0.016	0.47	0.11	3 / 12	0.141	0.204	NR	0.1	ND	NR	NR	**0.78**	(1 of 6)	0.144
Anthracene	0.22	0.085	0.3	0.011	9 / 12	0.0931	0.15	0.061	0.1	ND	NR	NR	**4.1**	(1 of 6)	0.69
Benzo(a)anthracene	0.32	0.261	1.2	0.018	9 / 12	0.342	0.564	1.3	0.65	ND	1.82	0.43	**7.0**	(1 of 6)	1.19
Benzo(a)pyrene	0.37	0.43	1.2	0.025	10 / 12	0.333	0.901	1.2	0.6	ND	1.8	0.42	**4.6**	(1 of 6)	0.78
Benzo(g,h,i)perylene	0.17	0.17	0.89	0.38	4 / 12	0.466	0.577	0.67	0.64	ND	NR	NR	**2**	(1 of 6)	0.353
Benzo(k)fluroanthene	0.24	0.24	0.74	0.13	5 / 12	0.248	0.368	0.58	0.43	ND	4.1	0.66	**2.3**	(1 of 6)	0.406
Chrysene	0.34	0.384	1.9	0.064	6 / 12	0.526	0.89	0.37	0.65	3	1.78	0.47	**5.6**	(1 of 6)	0.956
Fluoranthene	0.75	0.6	4.9	0.064	7 / 12	1.42	2.454	1.5	0.46	ND	NR	NR	**17**	(1 of 6)	2.84
Fluorene	0.19	0.019	0.82	0.13	3 / 12	0.203	0.326	NR	0.074	ND	NR	NR	**1.4**	(1 of 6)	0.252
Indeno(1,2,3-c,d)pyrene	0.2	0.2	0.98	0.095	5 / 12	0.275	0.45	0.7	0.46	ND	0.57	0.23	**2**	(1 of 6)	0.35
Phenanthrene	0.56	0.24	8.3	0.15	6 / 12	1.359	2.655	0.39	0.39	ND	NR	NR	**15**	(1 of 6)	2.51
Pyrene	0.49	0.665	3.3	0.12	6 / 12	0.987	1.652	2	1.5	ND	NR	NR	**13**	(1 of 6)	2.23
Inorganics															
Arsenic	6	8.2	61.6	0.68	12 / 12	14.38	28.33	14.5	31.6	4.56	83.1	13.6	6.59	(1 of 6)	1.99
Cadmium	0.6	1.2	17.2	0.38	12 / 12	4.252	8.021	NR	ND	0.116	2.7	0.32	3.38	(3 of 6)	1.19
Chromium	26	81	125	9.24	12 / 12	68.52	86.5	88.1	269	0.104	171	34.7	**145**	(5 of 6)	82.6
Copper	16	34	165	1.88	9 / 12	24.01	84.56	48.4	8	6.05	93	33.3	31.6	(2 of 6)	13.3
Lead	31	47	945	5.61	12 / 12	106	439.5	142	19.5	25.9	344	144	31.2	(1 of 6)	14.4

Note: Bold and Highlighted COPEC and maximum detected COPEC site concentration indicates that maximum detected site concentration is greater than maximum detected background concentration measured during BEE investigation

FW = Freshwater

SW = Saltwater

ESC = Ecological Screening Criteria

BEE = Baseline Ecological Evaluation data

95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.

SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)

Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)

Ambient Soil Levels from BEM Systems, Inc. (1998)

COPEC = Constituent of Potential Ecological Concern

NA = Not applicable

ND = Not detected

NR = Not reported

NAV = Not available

Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-52

Summary of Wildlife Hazard Quotients for Surface Water and Sediment COPECs at Landfill CW-3A (FTMM-25)

	Sediment Concentrations		Surface Water Concentrations		NOAEL-Based Hazard Quotients (AUF = 1)			
					Mallard		Great Blue Heron	
	Maximum (mg/kg)	Average (mg/kg)	Maximum (mg/L)	Average (mg/L)	Based on Maximum Surface Water and Sediment Concentration	Based on Average Surface Water and Sediment Concentration	Based on Maximum Surface Water and Sediment Concentration	Based on Average Surface Water and Sediment Concentration
Pesticides								
DDD	0.013	0.004	ND	ND	0.00	0.00	0.01	0.00
SVOCs								
Acenaphthene	0.78	0.144	ND	ND	0.00	0.00	0.01	0.00
Anthracene	4.1	0.69	0.00011	0.00011	0.00	0.00	0.05	0.01
Benzo(a)anthracene	7	1.19	ND	ND	0.01	0.00	0.92	0.16
Benzo(a)pyrene	4.6	0.78	0.00031	0.00016	0.00	0.00	0.66	0.11
Benzo(g,h,i)perylene	2	0.353	ND	ND	0.00	0.00	0.27	0.05
Benzo(k)fluoranthene	2.3	0.406	ND	ND	0.00	0.00	0.33	0.06
Chrysene	5.6	0.956	ND	ND	0.01	0.00	0.70	0.12
Fluoranthene	17	2.84	ND	ND	0.00	0.00	0.20	0.03
Fluorene	1.4	0.252	ND	ND	0.00	0.00	0.02	0.00
Indeno(1,2,3-c,d)pyrene	2	0.35	ND	ND	0.00	0.00	0.29	0.05
Phenanthrene	15	2.51	ND	ND	0.00	0.00	0.18	0.03
Pyrene	13	2.23	ND	ND	0.00	0.00	1.76	0.30
Inorganics								
Chromium	145	82.6	0.00443	0.00328	0.09	0.05	3.10	1.77
Chromium	NOAEL-Based (AUF = 0.04)						0.12	0.07
Chromium	LOAEL-Based (AUF = 1)						0.53	0.30
Chromium	LOAEL-Based (AUF = 0.04)						0.02	0.01
Pyrene	NOAEL-Based (AUF = 0.04)						0.07	0.01
Pyrene	LOAEL-Based (AUF = 1)						0.18	0.03
Pyrene	LOAEL-Based (AUF = 0.04)						0.01	0.00

Notes:

AUF - Area Use Factor

ND - Not Detected

NOAEL - No Observeable Adverse Effect Level

LOAEL - Lowest Observeable Adverse Effect Level

Table 4-53
Summary of Surface Water COPECs and Background Concentrations at Site CW-6 (FTMM-28)

COPEC	FW ESC (ug/L)	SW ESC (ug/L)	BEE Background Maximum Detected (ug/L)	BEE Background Minimum Detected (ug/L)	BEE Background Frequency of Detection	BEE Background Mean (ug/L)	BEE Background 95% UCL of Mean (ug/L)	SI Bkgd Maximum Surface Water (ug/L)	SI Bkgd Maximum Ground Water (ug/L)	Mo. Cty Bkgd Ground Water (ug/L)	Site COPEC Summary Maximum Detected (ug/L)	Site COPEC Summary Number Detected Above ESC	Site COPEC Summary Average Concentration (ug/L)
PCBs													
Aroclor-1242	0.014	0.03	0.3	0.3	1 / 11	0.0307	NA	NR	NR	NR	0.3	(2 of 2)	0.215
Inorganics													
Cadmium	0.14-0.17	8.8	0.8	0.8	1 / 11	0.3	NA	NR	9.5	6	0.8	(1 of 2)	0.53
Lead	5.4	24	18.8	5.79	10 / 11	8.93	11.56	65.9	22.7	<100	8.79	(2 of 2)	7.56
Possible COPECs													
DDE	4.51E-09	NAV	ND	ND	0 / 11	NA	NA	NR	NR	NR	NA	NA	NA
Silver	0.12	1.9	ND	ND	0 / 11	NA	NA	NR	ND	<10	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.
SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-54
Summary of Sediment COPECs and Background Concentrations at Site CW-6 (FTMM-28)

COPEC	FW ESC (mg/kg)	SW ESC (mg/kg)	BEE Background Maximum Detected (mg/kg)	BEE Background Minimum Detected (mg/kg)	BEE Background Frequency of Detection	BEE Background Mean (mg/kg)	BEE Background 95% UCL of Mean (mg/kg)	SI Bkgd Maximum Sediment (mg/kg)	SI Bkgd Maximum Soil (mg/kg)	Mo. Cty Bkgd Soil (mg/kg)	Ambient Soil Levels Maximum Ambient (mg/kg)	Ambient Soil Levels 90th Percentile (mg/kg)	Site COPEC Summary Maximum Detected (mg/kg)	Site COPEC Summary No Detected Above ESC	Site COPEC Summary Average Concentration (mg/kg)
Pesticides															
DDE	0.005	0.0022	0.0034	0.0017	2 / 12	0.00184	0.00219	0.096	0.071	NR	NR	NR	**0.006**	(1 of 6)	0.0013
PCBs															
Aroclor 1260	0.005	0.005	ND	ND	0 / 12	NA	NA	NR	NR	NR	NR	NR	**0.1**	(1 of 6)	0.0212
SVOCs															
Acenaphthene	0.016	0.016	0.47	0.11	3 / 12	0.141	0.204	NR	0.1	ND	NR	NR	0.47	(1 of 6)	0.0928
Acenaphthylene	0.044	0.044	1.6	0.089	2 / 12	0.215	0.958	NR	0.041	ND	NR	NR	1.6	(1 of 6)	0.28
Anthracene	0.22	0.085	0.3	0.011	9 / 12	0.0931	0.15	0.061	0.1	ND	NR	NR	0.3	(1 of 6)	0.055
Benzo(a)anthracene	0.32	0.261	1.2	0.018	9 / 12	0.342	0.564	1.3	0.65	ND	1.82	0.43	1	(1 of 6)	0.196
Benzo(a)pyrene	0.37	0.43	1.2	0.025	10 / 12	0.333	0.901	1.2	0.6	ND	1.8	0.42	1.2	(1 of 6)	0.292
Benzo(g,h,i)perylene	0.17	0.17	0.89	0.38	4 / 12	0.466	0.577	0.67	0.64	ND	NR	NR	0.89	(1 of 6)	0.169
Benzo(k)fluroanthene	0.24	0.24	0.74	0.13	5 / 12	0.248	0.368	0.58	0.43	ND	4.1	0.66	0.74	(1 of 6)	0.148
Chrysene	0.34	0.384	1.9	0.064	6 / 12	0.526	0.89	0.37	0.65	3	1.78	0.47	1.9	(1 of 6)	0.34
2,4-Dinitrophenol	0.00621	NAV	ND	ND	0 / 12	NA	NA	NR	NR	NR	NR	NR	1.7	(2 of 6)	1.28
Fluoranthene	0.75	0.6	4.9	0.064	7 / 12	1.42	2.454	1.5	0.46	ND	NR	NR	4.9	(1 of 6)	0.92
Fluorene	0.19	0.019	0.82	0.13	3 / 12	0.203	0.326	NR	0.074	ND	NR	NR	0.82	(1 of 6)	0.156
Indeno(1,2,3-c,d)pyrene	0.2	0.2	0.98	0.095	5 / 12	0.275	0.45	0.7	0.46	ND	0.57	0.23	0.98	(1 of 6)	0.18
2-Methylnaphthalene	0.07	0.07	1.3	1.3	1 / 12	0.12	NA	NR	NR	NR	NR	NR	1.3	(1 of 6)	0.23
Naphthalene	0.16	0.16	4.4	4.4	1 / 12	0.383	NA	NR	NR	NR	NR	NR	4.4	(1 of 6)	0.751
Phenanthrene	0.56	0.24	8.3	0.15	6 / 12	1.359	2.655	0.39	0.39	ND	NR	NR	8.3	(1 of 6)	1.4
Pyrene	0.49	0.665	3.3	0.12	6 / 12	0.987	1.652	2	1.5	ND	NR	NR	3.3	(1 of 6)	0.63
Inorganics															
Arsenic	6	8.2	61.6	0.68	12 / 12	14.38	28.33	14.5	31.6	4.56	83.1	13.6	13.1	(2 of 6)	5.45
Cadmium	0.6	1.2	17.2	0.38	12 / 12	4.252	8.021	NR	ND	0.116	2.7	0.32	5.56	(5 of 6)	2.00
Chromium	26	81	125	9.24	12 / 12	68.52	86.5	88.1	269	0.104	171	34.7	150	(6 of 6)	71.8
Copper	16	34	165	1.88	9 / 12	24.01	84.56	48.4	8	6.05	93	33.3	56.2	(4 of 6)	26.2
Lead	31	47	945	5.61	12 / 12	106	439.5	142	19.5	25.9	344	144	218	(4 of 6)	105
Mercury	0.2	0.15	0.424	0.02	11 / 12	0.0909	0.247	1.7	ND	NR	6.1	0.21	6.6	(3 of 6)	1.60
Nickel	16	21	56.2	2.55	12 / 12	22.57	37.42	131	8.4	3.2	16.9	12.3	56.2	(3 of 6)	22.3
Silver	1	1	11.2	11.2	1 / 12	1.03	NA	NR	1.1	0.21	6.3	0.65	12.1	(4 of 6)	3.72
Zinc	120	150	423	15.3	12 / 12	135.1	215.4	162	81.4	44.6	259	106	168	(1 of 6)	87.2

Note: Bold and Highlighted COPEC and maximum detected COPEC site concentration indicates that maximum detected site concentration is greater than maximum detected background concentration measured during BEE investigation

FW = Freshwater

SW = Saltwater

ESC = Ecological Screening Criteria

BEE = Baseline Ecological Evaluation data

95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.

SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)

Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)

Ambient Soil Levels from BEM Systems, Inc. (1998)

COPEC = Constituent of Potential Ecological Concern

NA = Not applicable

ND = Not detected

NR = Not reported

NAV = Not available

Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-55

Summary of Wildlife Hazard Quotients for Soils and Wetland Sediment COPECs at Site CW-6 (FTMM-28)

	Sediment Concentrations		Surface Water Concentrations		NOAEL-Based Hazard Quotients (AUF = 1) American Robin	
	Maximum (mg/kg)	Average (mg/kg)	Maximum (mg/L)	Average (mg/L)	Based on Maximum Sediment Concentration	Based on Average Sediment Concentration
Pesticides						
DDD	0.02	0.00476	ND	ND	0.14	0.03
DDE	0.006	0.0013	ND	ND	0.04	0.01
DDT	0.23	0.0465	ND	ND	1.66	0.34
Dieldrin	0.0092	0.00133	ND	ND	0.28	0.04
PCBs						
Aroclor 1242	ND	ND	0.0003	0.000215	0.00	0.00
Aroclor 1260	0.1	0.02	ND	ND	0.55	0.11
SVOCs						
2,4-Dinitrophenol	1.7	0.43	ND	ND	0.60	0.15
Inorganics						
Chromium	150	54.3	ND	ND	3.38	1.22
Mercury	6.6	2.58	ND	ND	3.74	1.46
Silver	12.1	2.9	ND	ND	1.86	0.45

Chromium	NOAEL-Based (AUF = 0.52)	1.76	0.64
Chromium	LOAEL-Based (AUF = 1)	0.57	0.21
Chromium	LOAEL-Based (AUF = 0.52)	0.30	0.11
Silver	NOAEL-Based (AUF = 0.52)	0.97	0.23
Silver	LOAEL-Based (AUF = 1)	0.32	0.08
Silver	LOAEL-Based (AUF = 0.52)	0.16	0.04
Mercury	NOAEL-Based (AUF = 0.52)	1.95	0.76
Mercury	LOAEL-Based (AUF = 1)	0.64	0.25
Mercury	LOAEL-Based (AUF = 0.52)	0.33	0.13
DDT	NOAEL-Based (AUF = 0.52)	0.86	0.17
DDT	LOAEL-Based (AUF = 1)	0.28	0.06
DDT	LOAEL-Based (AUF = 0.52)	0.15	0.03

Notes:

AUF - Area Use Factor

ND - Not Detected

NOAEL - No Observeable Adverse Effect Level

LOAEL - Lowest Observeable Adverse Effect Level

Table 4-56
Summary of Surface Water COPECs and Background Concentrations at Building 2700, Parcel 15

COPEC	FW ESC (ug/L)	SW ESC (ug/L)	BEE Background Maximum Detected (ug/L)	BEE Background Minimum Detected (ug/L)	BEE Background Frequency of Detection	BEE Background Mean (ug/L)	BEE Background 95% UCL of Mean (ug/L)	SI Bkgd Maximum Surface Water (ug/L)	SI Bkgd Maximum Ground Water (ug/L)	Mo. Cty Bkgd Ground Water (ug/L)	Site COPEC Summary Maximum Detected (ug/L)	Site COPEC Summary Number Detected Above ESC	Site COPEC Summary Average Concentration (ug/L)
Inorganics													
Lead	5.4	24	18.8	5.79	10 / 11	8.93	11.56	65.9	22.7	<100	8.27	(1 of 2)	6.3
Possible COPECs													
Cadmium	0.14	8.8	0.8	0.8	1 / 11	0.3	NA	ND	9.5	6	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.
SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-57
Summary of Sediment COPECs and Background Concentrations at Building 2700, Parcel 15

COPEC	FW ESC (mg/kg)	SW ESC (mg/kg)	BEE Background Maximum Detected (mg/kg)	BEE Background Minimum Detected (mg/kg)	BEE Background Frequency of Detection	BEE Background Mean (mg/kg)	BEE Background 95% UCL of Mean (mg/kg)	SI Bkgd Maximum Sediment (mg/kg)	SI Bkgd Maximum Soil (mg/kg)	Mo. Cty Bkgd Soil (mg/kg)	Ambient Soil Levels Maximum Ambient (mg/kg)	Ambient Soil Levels 90th Percentile (mg/kg)	Site COPEC Summary Maximum Detected (mg/kg)	Site COPEC Summary No Detected Above ESC	Site COPEC Summary Average Concentration (mg/kg)
Inorganics															
Chromium	26	81	125	9.24	12 / 12	68.52	86.5	88.1	269	0.104	171	34.7	37	(3 of 3)	32.5

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.
SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-58
Summary of Surface Water COPECs and Background Concentrations at Buildings 2507 and 2704, Parcel 27

			BEE Background								Site COPEC Summary		
COPEC	FW ESC (ug/L)	SW ESC (ug/L)	Maximum Detected (ug/L)	Minimum Detected (ug/L)	Frequency of Detection	Mean (ug/L)	95% UCL of Mean (ug/L)	SI Bkgd Maximum Surface Water (ug/L)	SI Bkgd Maximum Ground Water (ug/L)	Mo. Cty Bkgd Ground Water (ug/L)	Maximum Detected (ug/L)	Number Detected Above ESC	Average Concentration (ug/L)
Inorganics													
Cadmium	0.14-0.17	8.8	0.8	0.8	1 / 11	0.3	NA	NR	9.5	6	0.69	(2 of 2)	0.61
Chromium	19-23	50	2.55	2.55	1 / 11	0.732	NA	ND	191	<50	**28.5**	(1 of 2)	14.5
Lead	5.4	24	18.8	5.79	10 / 11	8.93	11.56	65.9	22.7	<100	8.18	(2 of 2)	7.00

Note: Bold and Highlighted COPEC and maximum detected COPEC site concentration indicates that maximum detected site concentration is greater than maximum detected background concentration measured during BEE investigation

FW = Freshwater

SW = Saltwater

ESC = Ecological Screening Criteria

BEE = Baseline Ecological Evaluation data

95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.

SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)

Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)

Ambient Soil Levels from BEM Systems, Inc. (1998)

COPEC = Constituent of Potential Ecological Concern

NA = Not applicable

ND = Not detected

NR = Not reported

NAV = Not available

Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-59
Summary of Sediment COPECs and Background Concentrations at Buildings 2507 and 2704, Parcel 27

			BEE Background					SI Bkgd	SI Bkgd	Mo. Cty	Ambient Soil Levels		Site COPEC Summary		
COPEC	FW ESC (mg/kg)	SW ESC (mg/kg)	Maximum Detected (mg/kg)	Minimum Detected (mg/kg)	Frequency of Detection	Mean (mg/kg)	95% UCL of Mean (mg/kg)	Maximum Sediment (mg/kg)	Maximum Soil (mg/kg)	Bkgd Soil (mg/kg)	Maximum Ambient (mg/kg)	90th Percentile (mg/kg)	Maximum Detected (mg/kg)	No Detected Above ESC	Average Concentration (mg/kg)
Inorganics															
Arsenic	6	8.2	61.6	0.68	12 / 12	14.38	28.33	14.5	31.6	4.56	83.1	13.6	6.11	(1 of 2)	4.7
Cadmium	0.6	1.2	17.2	0.38	12 / 12	4.252	8.021	NR	ND	0.116	2.7	0.32	1.76	(2 of 2)	1.24
Chromium	26	81	125	9.24	12 / 12	68.52	86.5	88.1	269	0.104	171	34.7	49.8	(2 of 2)	49.7
Copper	16	34	165	1.88	9 / 12	24.01	84.56	48.4	8	6.05	93	33.3	**187**	(1 of 2)	101
Lead	31	47	945	5.61	12 / 12	106	439.5	142	19.5	25.9	344	144	84.9	(1 of 2)	53.4
Zinc	120	150	423	15.3	12 / 12	135.1	215.4	162	81.4	44.6	259	106	264	(1 of 2)	172

Note: Bold and Highlighted COPEC and maximum detected COPEC site concentration indicates that maximum detected site concentration is greater than maximum detected background concentration measured during BEE investigation

FW = Freshwater

SW = Saltwater

ESC = Ecological Screening Criteria

BEE = Baseline Ecological Evaluation data

95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.

SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)

Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)

Ambient Soil Levels from BEM Systems, Inc. (1998)

COPEC = Constituent of Potential Ecological Concern

NA = Not applicable

ND = Not detected

NR = Not reported

NAV = Not available

Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-60

Summary of Wildlife Hazard Quotients for Surface Water and Sediment COPECs at Buildings 2507 and 2704, Parcel 27

	Sediment Concentrations		Surface Water Concentrations		NOAEL-Based Hazard Quotients (AUF = 1)			
					Mallard		Great Blue Heron	
	Maximum (mg/kg)	Average (mg/kg)	Maximum (mg/L)	Average (mg/L)	Based on Maximum Surface Water and Sediment Concentration	Based on Average Surface Water and Sediment Concentration	Based on Maximum Surface Water and Sediment Concentration	Based on Average Surface Water and Sediment Concentration
Inorganics								
Chromium	49.8	49.7	0.0285	0.0145	0.03	0.03	1.33	1.33
Copper	187	101	ND	ND	1.34	0.72	2.53	1.37
Chromium	NOAEL-Based (AUF = 0.017)						0.02	0.02
Chromium	LOAEL-Based (AUF = 1)						0.23	0.23
Chromium	LOAEL-Based (AUF = 0.017)						0.00	0.00
Copper	NOAEL-Based (AUF = 0.00013)				0.00	0.00		
Copper	LOAEL-Based (AUF = 1)				0.45	0.24		
Copper	LOAEL-Based (AUF = 0.00013)				0.00	0.00		
Copper	NOAEL-Based (AUF = 0.017)						0.04	0.02
Copper	LOAEL-Based (AUF = 1)						0.85	0.46
Copper	LOAEL-Based (AUF = 0.017)						0.01	0.01

Notes:

AUF - Area Use Factor

ND - Not Detected

NOAEL - No Observeable Adverse Effect Level

LOAEL - Lowest Observeable Adverse Effect Level

Table 4-61
Summary of Surface Water COPECs and Background Concentrations at Building 2525, Parcel 28

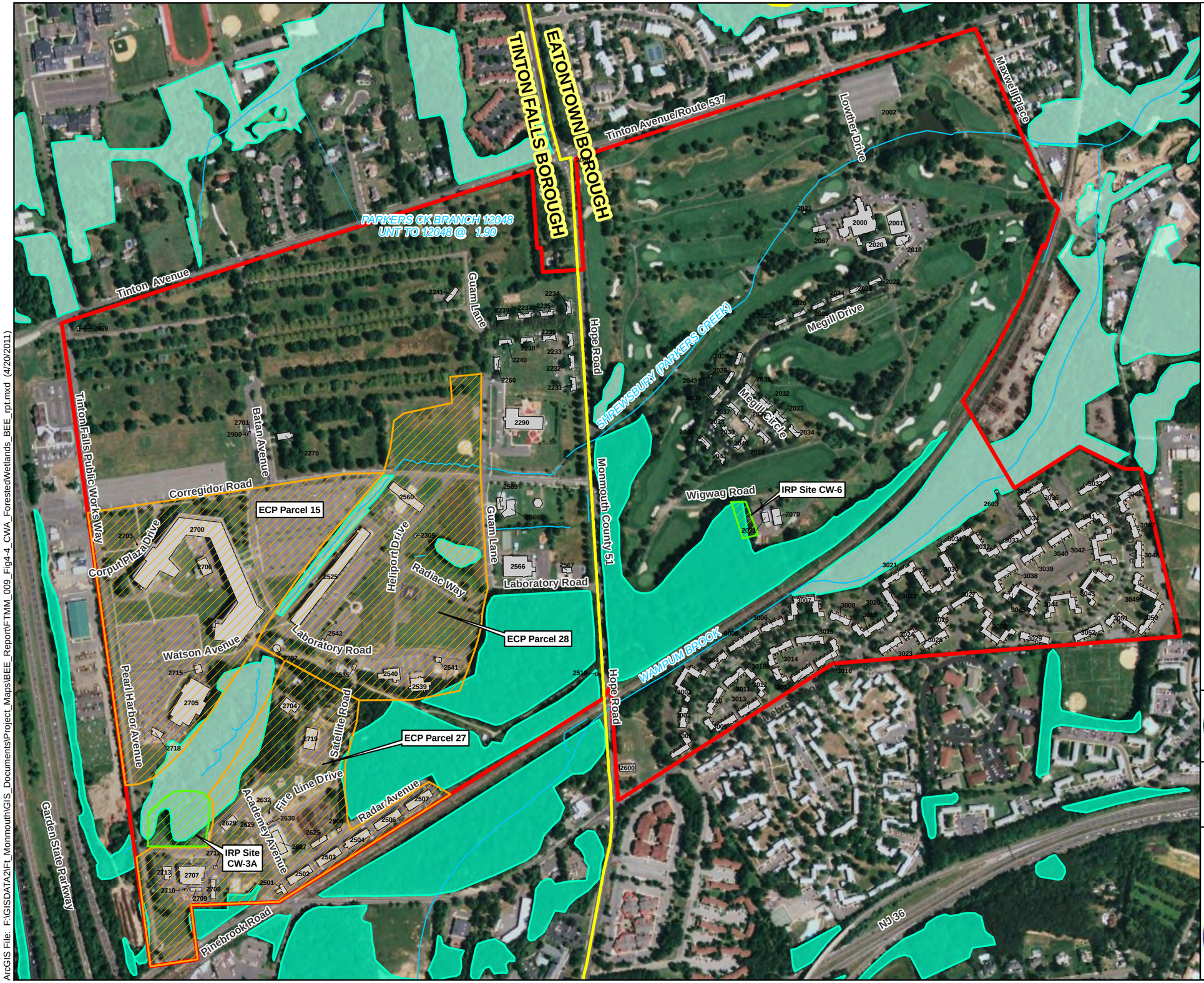
COPEC	FW ESC (ug/L)	SW ESC (ug/L)	BEE Background Maximum Detected (ug/L)	BEE Background Minimum Detected (ug/L)	BEE Background Frequency of Detection	BEE Background Mean (ug/L)	BEE Background 95% UCL of Mean (ug/L)	SI Bkgd Maximum Surface Water (ug/L)	SI Bkgd Maximum Ground Water (ug/L)	Mo. Cty Bkgd Ground Water (ug/L)	Site COPEC Summary Maximum Detected (ug/L)	Site COPEC Summary Number Detected Above ESC	Site COPEC Summary Average Concentration (ug/L)
Inorganics													
Lead	5.4	24	18.8	5.79	10 / 11	8.93	11.56	65.9	22.7	<100	7.14	(2 of 2)	6.44
Possible COPECs													
Cadmium	0.14	8.8	0.8	0.8	1 / 11	0.3	NA	ND	9.5	6	NA	NA	NA

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.
SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.

Table 4-62
Summary of Sediment COPECs and Background Concentrations at Building 2525, Parcel 28

COPEC	FW ESC (mg/kg)	SW ESC (mg/kg)	BEE Background Maximum Detected (mg/kg)	BEE Background Minimum Detected (mg/kg)	BEE Background Frequency of Detection	BEE Background Mean (mg/kg)	BEE Background 95% UCL of Mean (mg/kg)	SI Bkgd Maximum Sediment (mg/kg)	SI Bkgd Maximum Soil (mg/kg)	Mo. Cty Bkgd Soil (mg/kg)	Ambient Soil Levels Maximum Ambient (mg/kg)	Ambient Soil Levels 90th Percentile (mg/kg)	Site COPEC Summary Maximum Detected (mg/kg)	Site COPEC Summary No Detected Above ESC	Site COPEC Summary Average Concentration (mg/kg)
Inorganics															
Chromium	26	81	125	9.24	12 / 12	68.52	86.5	88.1	269	0.104	171	34.7	43	(2 of 2)	39.9

FW = Freshwater
SW = Saltwater
ESC = Ecological Screening Criteria
BEE = Baseline Ecological Evaluation data
95% UCL = 95% Upper Confidence Limit of Mean from ProUCL Ver. 4.00.05.
SI Bkgd= Background Data as presented in the Site Investigation Report (Weston, 1995)
Mo. Cty Bkgd = Monmouth County Background Concentration as reported in Weston (1995)
Ambient Soil Levels from BEM Systems, Inc. (1998)
COPEC = Constituent of Potential Ecological Concern
NA = Not applicable
ND = Not detected
NR = Not reported
NAV = Not available
Average Concentrations from ProUCL Ver. 4.00.05 - 1/2 detection limit or Kaplan-Meir Method used when non-detects present.



LEGEND

- Water Feature
- Building
- IRP Site
- ECP Parcel
- Installation Boundary
- Municipal Boundary

Forested Wetland

- Suitable (1)
- Priority Species (2)

Notes:
1) Aerial photography (0.5-meter resolution) was obtained from ESRI ArcOnline USA Imagery Map Services.
2) Forested wetlands data was obtained from New Jersey Department of Environmental Protection (NJDEP), Division of Fish, Wildlife, and Endangered Nongame Species Program (ENSP), Lanscape Project GIS Data, Version 2.1, November 2007.

N

Scale:

0 290 580 1,160 Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw® Shaw Environmental, Inc.

FIGURE 4-4

FORT MONMOUTH BASELINE ECOLOGICAL EVALUATION REPORT

CHARLES WOOD AREA - FORESTED WETLANDS

FORT MONMOUTH
NEW JERSEY

ArcGIS File: F:\GISDATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_009_Fig4-4_CWA_ForestedWetlands_BEE_rpt.mxd (4/20/2011)

LEGEND

- Water Feature
- Building
- IRP Site
- ECP Parcel
- Installation Boundary
- Municipal Boundary
- Bald Eagle Foraging Area

Notes:
1) Aerial photography (0.5-meter resolution) was obtained from ESRI ArcOnline USA Imagery Map Services.
2) Bald Eagle foraging data was obtained from New Jersey Department of Environmental Protection (NJDEP), Division of Fish, Wildlife, and Endangered Nongame Species Program (ENSP), Lanscape Project GIS Data, Version 2.1, November 2007.

N

Scale:

0 450 900 1,800 Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

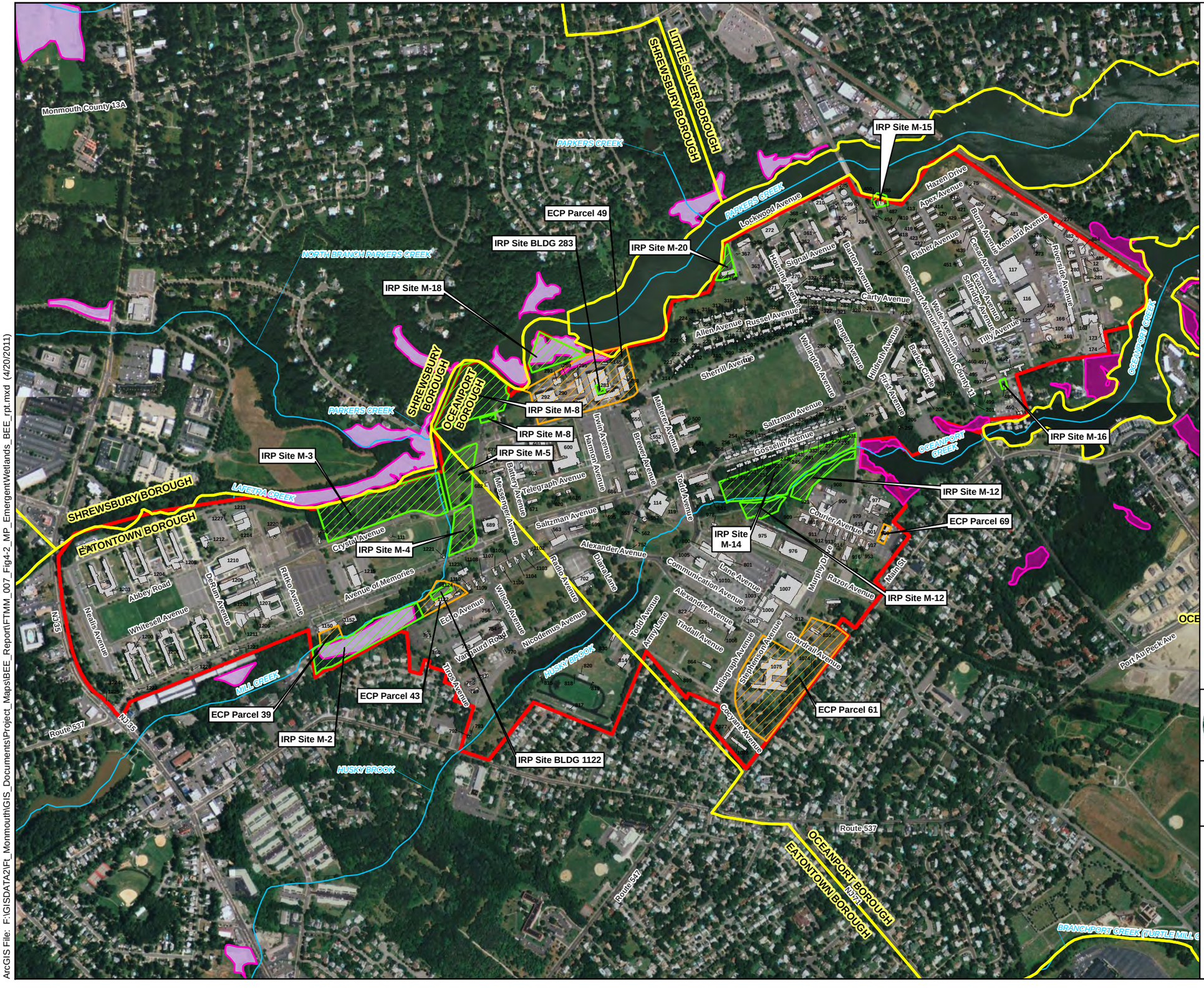
Shaw® Shaw Environmental, Inc.

FIGURE 4-3
FORT MONMOUTH BASELINE ECOLOGICAL EVALUATION REPORT
MAIN POST - BALD EAGLE FORAGING AREAS

FORT MONMOUTH
NEW JERSEY

ArcGIS File: F:\GISDATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_008_Fig4-3_MP_BaldEagleForaging_BEE_rpt.mxd (4/20/2011)

ArcGIS File: F:\GISDATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_007_Fig4-2_MP_EmergentWetlands_BEE_rpt.mxd (4/20/2011)



LEGEND

- Water Feature
- Building
- IRP Site
- ECP Parcel
- Installation Boundary
- Municipal Boundary

Emergent Wetland

- Suitable Habitat (1)
- State Endangered (4)

Notes:
1) Aerial photography (0.5-meter resolution) was obtained from ESRI ArcOnline USA Imagery Map Services.
2) Emergent wetlands data was obtained from New Jersey Department of Environmental Protection (NJDEP), Division of Fish, Wildlife, and Endangered Nongame Species Program (ENSP), Lanscape Project GIS Data, Version 2.1, November 2007.

N

Scale:

0 450 900 1,800 Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw® Shaw Environmental, Inc.

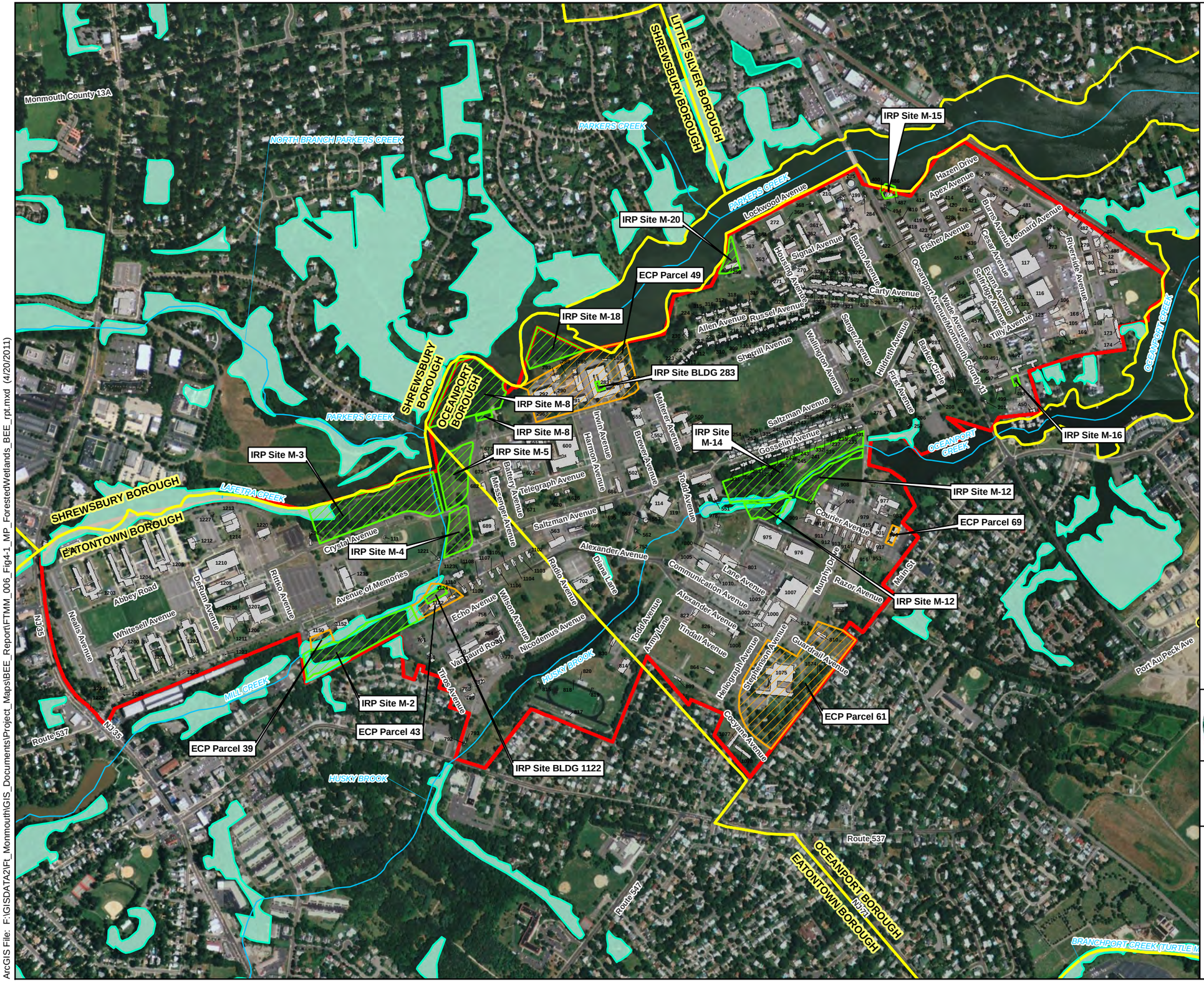
FIGURE 4-2

FORT MONMOUTH BASELINE ECOLOGICAL EVALUATION REPORT

MAIN POST - EMERGENT WETLANDS

FORT MONMOUTH
NEW JERSEY

ArcGIS File: F:\GISDATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_006_Fig4-1_MP_ForestedWetlands_BEE_rpt.mxd (4/20/2011)



LEGEND

- Water Feature
- Building
- IRP Site
- ECP Parcel
- Installation Boundary
- Municipal Boundary

Forested Wetland

- Suitable (1)
- Priority Species (2)

Notes:
1) Aerial photography (0.5-meter resolution) was obtained from ESRI ArcOnline USA Imagery Map Services.
2) Forested wetlands data was obtained from New Jersey Department of Environmental Protection (NJDEP), Division of Fish, Wildlife, and Endangered Nongame Species Program (ENSP), Lanscape Project GIS Data, Version 2.1, November 2007.

N

Scale:

0 450 900 1,800 Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

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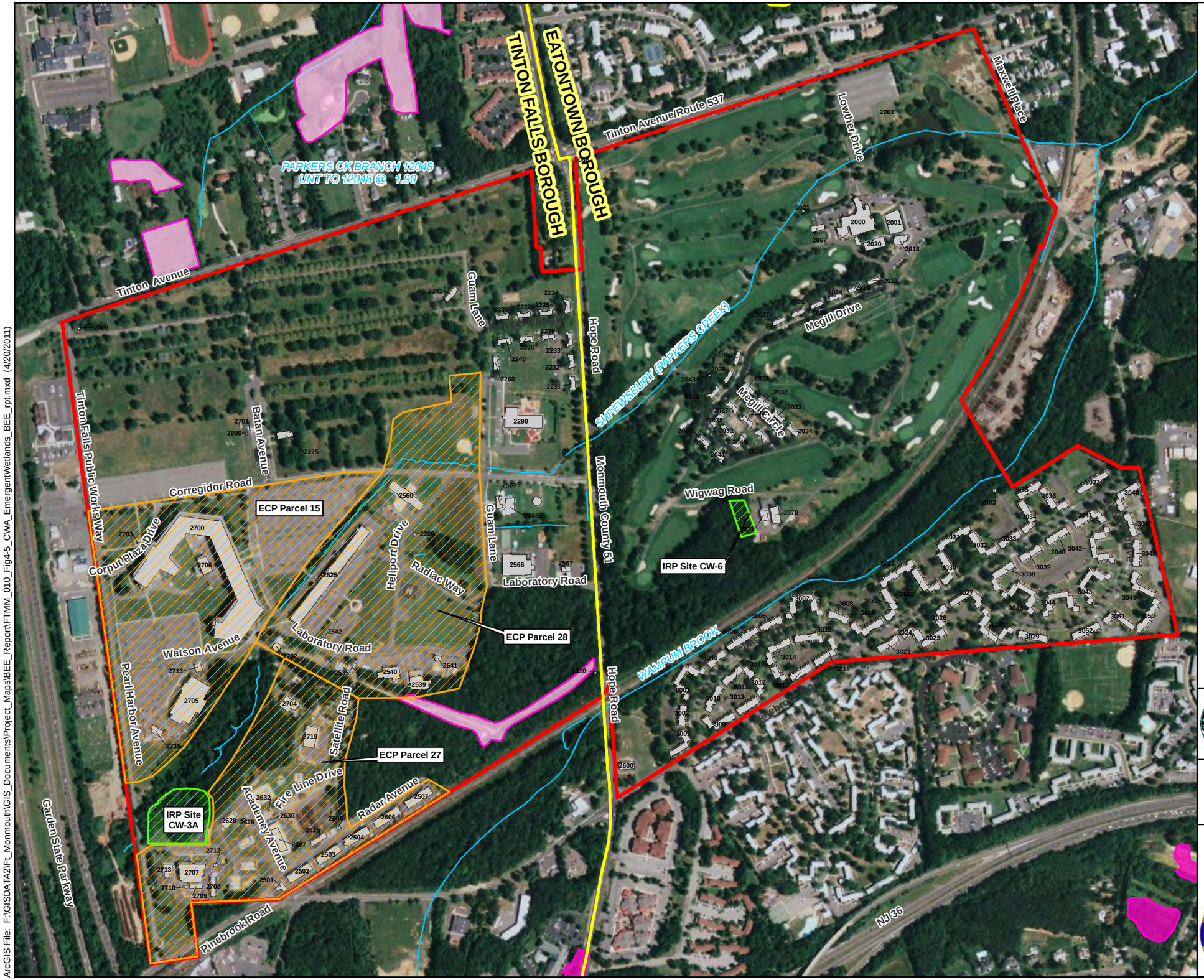
FIGURE 4-1

FORT MONMOUTH BASELINE ECOLOGICAL EVALUATION REPORT

MAIN POST - FORESTED WETLANDS

FORT MONMOUTH
NEW JERSEY



ArcGIS File: F:\GISDATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_010_Fig4-5_CWA_EmergentWetlands_BEE_rpt.mxd (4/20/2011)

LEGEND

- Water Feature
- Building
- IRP Site
- ECP Parcel
- Installation Boundary
- Municipal Boundary

Emergent Wetland

- Suitable Habitat (1)
- Priority Species (2)

Notes:
1) Aerial photography (0.5-meter resolution) was obtained from ESRI ArcOnline USA Imagery Map Services.
2) Emergent wetlands data was obtained from New Jersey Department of Environmental Protection (NJDEP), Division of Fish, Wildlife, and Endangered Nongame Species Program (ENSP), Lanscape Project GIS Data, Version 2.1, November 2007.

N

Scale:

0 290 580 1,160 Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw Environmental, Inc.

FIGURE 4-5

FORT MONMOUTH BASELINE ECOLOGICAL EVALUATION REPORT

CHARLES WOOD AREA - EMERGENT WETLANDS

FORT MONMOUTH
NEW JERSEY

5.0 SUMMARY AND CONCLUSIONS

Within the FTMM MP and CWA are 27 active/open IRP Sites. Fourteen of the 27 IRP Sites were considered to require additional evaluation through the BEE process. In addition to these IRP Sites, it was determined that a BEE should also be conducted related to one other IRP site (FTMM-20), which had been listed as Response Complete in the 2007 Installation Action Plan for FTMM (Fort Monmouth, 2007). Additionally, eight parcels identified through the FTMM ECP SI were deemed to require additional evaluation through the BEE process to fully evaluate the environmental condition of the property; NJDEP concurred with the determination that a BEE is required for these eight ECP sites in correspondence dated October 28, 2008. The BEE and supporting sampling and analyses were performed based on the Scope of Work dated June 3, 2008, and information obtained through consultation with FTMM, U.S. Army Environmental Command, USACE, and NJDEP personnel and in accordance with the final BEE WP (Shaw, 2010). A draft final WP, dated July 2009, was submitted to the NJDEP for review. NJDEP comments (dated September 1, 2009) were addressed and a conference call was held on November 13, 2009, to finalize the WP. The final WP was submitted to the NJDEP for review and approval prior to implementation of the work and an approval letter was obtained from the NJDEP on April 28, 2010 (**Appendix I**).

The objective of the BEE at FTMM is to assess whether the presence of constituents of concern in sediments, surface water, soil, and groundwater on the MP and CWA has the potential for adverse effects to biological receptors. This assessment is determined by examining information on each of the sites and the sample results from sediment, surface water, soil, and groundwater at the sites for the co-occurrence of 1) COPECs, 2) environmentally sensitive natural resources, and 3) a chemical migration pathway to these sensitive natural resources. This objective was accomplished based on the results of a data and literature review, a qualitative site visit, field sampling, data analysis and ecological hazard characterization (including conservative wildlife exposure models), and an evaluation of the general background characteristics of surface water and sediment in the FTMM area.

The occurrence of COPECs is determined through a comparison of existing site data with ecological screening levels. The occurrence of environmentally sensitive natural resources and potential chemical migration pathways is determined from existing literature for the site, a qualitative site visit, and other available information such as the NJDEP Natural Heritage database, NJDEP tidal and freshwater wetland maps, the USGS topographic maps, and the USDA Soil Conservation Service soil survey maps.

In order to evaluate the nature of contaminants detected at the FTMM sites and to identify the COPECs, several steps were followed. The first step was a review of the analytical data collected from the environmental media with regards to the sites and selection of the data appropriate for use in the BEE. The second step was the identification of the most appropriate and applicable criteria or benchmarks for comparison to data. The third step was the identification of the COPECs at the sites and an evaluation of these COPECs in terms of potential ecological impact.

Site data addressed in this BEE is comprised of data previously collected for RIs (e.g., near surface soil data for former landfills), ECP SIs, and routine environmental monitoring (e.g., groundwater data) and data collected specifically to fill data gaps for the BEE.

Exposure of ecological receptors to contaminants in soil predominantly occurs within the surface soils. Ecological receptors are not frequently exposed to subsurface soils; therefore, surface soils at 2 feet bgs or below are not evaluated in this BEE. Soil data evaluated in this BEE were from various RI reports (**Appendix A**), the ECP SI report (**Appendix B**), and the BEE investigation samples (**Appendix D**). Though ecological receptors are not exposed directly to contaminants in groundwater, pathways may exist by which groundwater may flow to potential exposure points (e.g., discharge of groundwater into surface water bodies). Where applicable, the most recent 2-year period of readily available groundwater data from routine environmental monitoring were evaluated in this BEE to best represent current conditions (**Appendix C**; **Appendix B**). Though groundwater may discharge to surface water bodies, groundwater contaminant concentrations are not meant to represent potential surface water concentrations. Ecological receptors may be exposed directly to contaminants in surface water and sediment of the various creeks and ponds that drain the sites. As with soils, ecological receptors are not frequently exposed to contaminants in subsurface sediments. The top 6 inches of sediment is usually

considered to be the biotic zone, and only data from the top 6 inches of sediments is evaluated in this BEE. Though sediment data from the ECP SI (**Appendix B**) was evaluated in this BEE, the majority of the surface water and sediment data were from the extensive sampling conducted during the BEE investigation (**Appendix D**). Sampling and analyses were performed in accordance with the final BEE WP (Shaw, 2010), which was approved by the NJDEP on April 28, 2010 (**Appendix I**).

COPECs are defined for the purposes of this BEE as those constituents that were detected at concentrations exceeding the appropriate screening benchmarks in any of the samples from a given medium from a site. These ESC are intentionally conservative values and exceedances of these concentrations are not meant to imply ecological risks. A qualitative determination of the potential for adverse effects from site constituents was made based on the COPECs, the presence of environmentally sensitive areas, and the potential migration pathways of site constituents, as well as site history, natural geology, and other potential sources.

The character of the land use surrounding the FTMM properties typifies mixed use, small town development in New Jersey. Commercial services and shopping centers populate main roads interspersed with residential structures, apartments and office buildings. Business and light industrial parks are found along highways, streams and railroad tracks. Surrounding properties include NPL, SHWS, LUST, and VCP sites. These, as well as general small urban development activities lend to an increase in general anthropogenic inputs in the area.

Elevated concentrations of many metals, in relation to the conservatively low ESC, are naturally found within the urban coastal plain region in which FTMM is located. In particular, glauconitic soils which are prevalent at FTMM and have been reported in the creek sediments are naturally high in arsenic, beryllium, chromium, nickel and vanadium as well as other metals.

COPECs identified in soils generally represent limited potential for direct ecological exposure being either from subsurface (e.g., landfill near surface samples) or not within ecological habitats (e.g., near buildings, roads, and parking areas). COPECs identified in groundwater are not representative of direct ecological exposures. COPECs in both soil and groundwater, however, may migrate to nearby surface water or sediment where ecological exposures may occur.

Many organic COPECs identified in soil or groundwater were not identified as COPECs in surface water or sediment, suggesting limited organic contaminant migration to sensitive ecological receptors. Most of these were detected infrequently in soil or groundwater or at low concentrations in relation to the ESC.

Many organic COPECs identified in surface water or sediment were not identified as COPECs in soil or groundwater, suggesting the sources are unrelated to the sites under investigation, or were at low concentrations in relation to the ESC, which are intentionally conservative values. PAHs, in particular, though identified as COPECs, were found in sediments and surface water at concentrations similar to background sample concentrations or at locations indicative of other sources (e.g., at the upstream extent of the site and downstream of active roads or parking areas).

In surface water, lead was most often identified as a COPEC; however, it was found at similar concentrations at most of the sites and in the background samples. Most of the sediment metals identified as COPECs were at concentrations similar to background. Some metals (chromium, copper, lead, mercury, silver, and zinc) were detected at a few locations exceeding background concentrations measured during the BEE investigation, but many of these are similar to those reported for ambient soil in the region (BEM Systems, Inc., 1998) or, in particular, glauconitic soils (Dooley, 2001). Though there may be a potential for some ecological risk due to elevated metals in these limited areas, it is likely that these metals are related to natural geology or other anthropogenic sources.

Figure 5-1 depicts the concentration distribution of chromium in sediment throughout the MP, based on samples evaluated in this BEE. Samples where chromium was not detected are shown as clear symbols. Those samples where chromium is detected at concentrations below both the freshwater sediment and saltwater sediment ESC are shown in gray. Those samples where chromium concentrations are between the freshwater sediment and saltwater sediment ESC are shown in green. Those samples where chromium concentrations are above both the freshwater sediment and saltwater sediment ESC but within the range of most background (represented by the lower 75th percent of all

background concentrations from both the MP and CWA areas) are shown in yellow, and those samples where chromium concentrations are above both the freshwater sediment and saltwater sediment ESC and above all background concentrations measured as part of the 2010 BEE are shown in red. Similar figures are presented for copper (**Figure 5-2**), lead (**Figure 5-3**), mercury (**Figure 5-4**), silver (**Figure 5-5**), and zinc (**Figure 5-6**) for the MP and for chromium (**Figure 5-7**), copper (**Figure 5-8**), mercury (**Figure 5-9**), and silver (**Figure 5-10**) for the CWA.

The potential wildlife risks associated with COPECs present at concentrations above background was assessed through conservative food chain models as well as conservative TRVs. **Table 5-1** indicates the sites and COPECs where maximum COPEC concentrations were greater than the background concentrations measured during the BEE investigation; wildlife exposure models were evaluated for these sites and COPECs. The potential wildlife risk for three representative target species (the Great Blue Heron which would be exposed to contaminants in surface water, sediment, aquatic invertebrates, and forage fish; the Mallard Duck which would be exposed to contaminants in surface water, sediment, and aquatic vegetation; and the American Robin which would be exposed to contaminants in surface water, soils and wetland sediments, and terrestrial invertebrates such as earthworms) was assessed through HQs. These HQs compare the conservatively modeled ADD of COPECs to the conservative TRVs. Since the HQs in a screening level assessment are conservative, HQs less than one (indicating ADDs less than TRVs), it can be assumed that there is no risk; since the HQs are conservative measures, HQs greater than one do not necessarily indicate that a risk is present. **Table 5-2** summarizes the conservative HQs for each site that were greater than one, and **Table 5-3** summarizes those HQs based on realistic foraging areas and average detected concentrations (though based on biased sampling).

The conservative wildlife food chain model screening level HQs were less than or only marginally greater than one for most sites. With the exception of chromium, conservative HQs for other COPECs in sediment (barium, copper, nickel, cobalt, zinc and pyrene) were greater than one at only one or two sites; these HQs are based on the overly conservative assumption that the target species forage only at the contaminated site at the point of maximum concentration. When more realistic foraging areas were used, resulting HQs were almost all less than one. Although the conservative chromium HQs, assuming foraging only at the point of maximum concentration, are greater than one at several sites, most sediment concentrations are similar to background (**Figure 5-1** and **Figure 5-7**). With the exception of one chromium concentration in Oceanport Creek (345 mg/kg) and one chromium concentration in Parkers Creek (353 mg/kg), the maximum concentrations in MP sediment (176 mg/kg) and CWA (187 mg/kg) were not much greater than the maximum background concentration (125 mg/kg) and all concentrations were well within the range expected for glauconitic soils (Dooley, 2001). Additionally, HQs for chromium were mostly less than one, or marginally greater than one, when more realistic foraging areas and concentration assumptions are used.

Screening level food chain models are intended to be overly conservative estimators of exposure and risk to wildlife; they use conservative TRV values, assume bioavailability of contaminants in environmental media, and assume preferential feeding at sites that may not provide adequate habitat needs. Based on the conservative nature of the models as well as the BEE investigation sampling design which targeted worst-case conditions, it is unlikely that site conditions provide any significant risk to wildlife from food chain exposure.

Although metals may be present at concentrations greater than the background concentrations measured in limited areas during the 2010 BEE, many of these concentrations may be related to natural or general anthropogenic sources and the differences in site concentrations from the measured background concentrations can be a function of the greater number of site samples collected compared to background samples. Regardless, **Figure 5-1 through Figure 5-10** show that the area of metal concentrations greater than the measured background concentrations is limited in extent, with no definitive spatial distribution that would suggest the source of metals are related to site activities addressed in the BEE. Based on wildlife exposure models for these sites, the HQs do not indicate an ecological concern. It is concluded that constituents at FTMM are unlikely to have a deleterious effect on sensitive ecological receptors or habitats, and additional ecological assessments at FTMM are not warranted or recommended.

Table 5-1
Summary of Sites with COPECs Above Background in Sediment or Surface Water

Site	COPECs																														
	Aroclor-1232	Aroclor-1242	Aroclor-1254	Aroclor-1260	DDD	DDE	DDT	Dieldrin	Acenaphthene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenzo(a,h)anthracene	2,4-Dinitrophenol	Flouranthene	Fluorene	Hexachlorobutadiene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene	Barium	Chromium	Cobalt	Copper	Mercury	Nickel	Silver	Zinc
Main Post																															
Landfill 2 (FTMM-2)		●		●												●	●							●							
Landfill 3 (FTMM-3)					●		●																				●				
Landfill 4 (FTMM-4)	●	●		●	●		●																								
Landfill 5 (FTMM-5)					●	●	●																								
Landfill 8 (FTMM-8)		●		●																					●	●		●	●		
Landfill 12 (FTMM-12)			●		●	●	●		●	●																					
Landfill 14 (FTMM-14)			●		●	●	●		●	●																					
Site FTMM-16																				●					●			●			●
Site FTMM-18																									●	●		●			
Site FTMM-20																															
Building 1122, Site FTMM-59, Parcel 43											●	●													●			●			
Building 1150, Parcel 39																									●			●			
Buildings 283 (FTMM-61), 288, 291, 293, 295, Parcel 49																									●	●		●	●		●
Building 1075, Parcel 61									●																						
Building 900, Parcel 69									●																●	●	●	●			●
Charles Wood Area																															
Landfill CW-3A (FTMM-25)					●				●	●	●	●	●	●	●			●	●		●	●	●		●						
Site CW-6 (FTMM-28)		●		●	●	●	●	●									●								●			●		●	
Building 2700, Parcel 15																															
Building 2704, Parcel 27																									●		●				
Building 2525, Parcel 28																															

Note:

● indicates that maximum detected COPEC concentration at site was above background concentrations measured during BEE investigation; Wildlife exposure was evaluated for these COPECs.

Table 5-2

Summary of Screening Level Hazard Quotients for COPECs Above Background in Sediment or Surface Water

Site	COPECs											
	Barium	Cobalt	Copper	Chromium	Nickel	Zinc	Pyrene	Copper	Chromium	Mercury	Silver	DDT
	Great Blue Heron HQs							Mallard Duck HQs	American Robin HQs			
Main Post												
Landfill 2 (FTMM-2)	2.8											
Landfill 3 (FTMM-3)			5.0					2.6				
Landfill 4 (FTMM-4)												
Landfill 5 (FTMM-5)												
Landfill 8 (FTMM-8)		2.5		3.5	1.5							
Landfill 12 (FTMM-12)												
Landfill 14 (FTMM-14)												
Site FTMM-16				3.8								
Site FTMM-18		1.2		3.5								
Site FTMM-20												
Building 1122, Site FTMM-59, Parcel 43				4.3								
Building 1150, Parcel 39				3.5								
Buildings 283 (FTMM-61), 288, 291, 293, 295, Parcel 49				9.4	1.7	3.2						
Building 1075, Parcel 61												
Building 900, Parcel 69			2.7	9.2				1.5				
Charles Wood Area												
Landfill CW-3A (FTMM-25)				3.1			1.8					
Site CW-6 (FTMM-28)									3.4	3.7	1.9	1.7
Building 2700, Parcel 15												
Building 2704, Parcel 27			2.5	1.3				1.3				
Building 2525, Parcel 28												

Note:

Screening Level HQs are based on NOAELs, maximum detected concentrations, and Area Use Factors of 1 (i.e., Species forages only at point of maximum concentration).

Blanks indicate that HQs are less than one.

Table 5-3

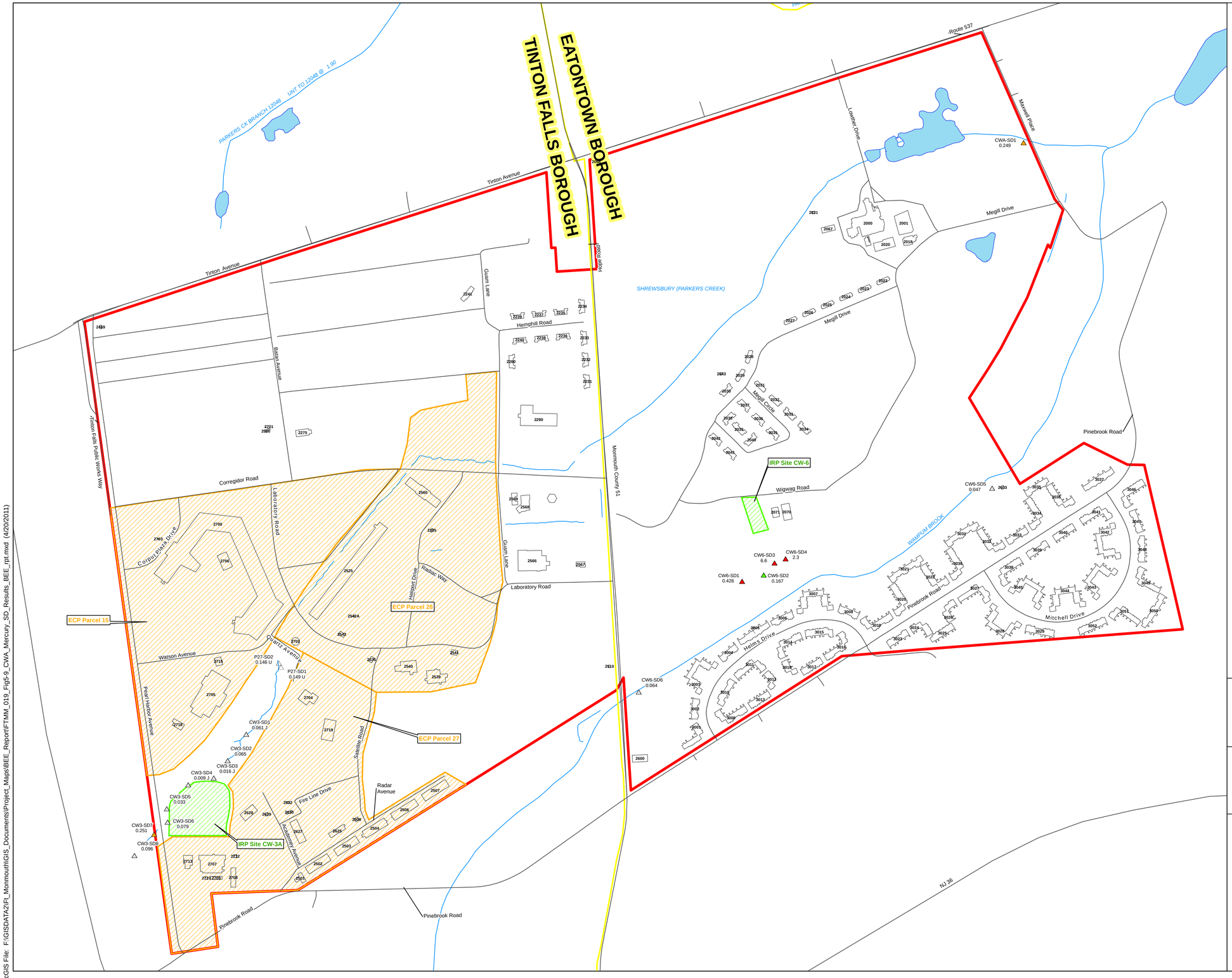
Summary of Average-Concentrations Based Screening Level Hazard Quotients for COPECs Above Background in Sediment or Surface Water

Site	COPECs											
	Barium	Cobalt	Copper	Chromium	Nickel	Zinc	Pyrene	Copper	Chromium	Mercury	Silver	DDT
	Great Blue Heron HQs							Mallard Duck HQs	American Robin HQs			
Main Post												
Landfill 2 (FTMM-2)	<0.1											
Landfill 3 (FTMM-3)			<0.1					<0.1				
Landfill 4 (FTMM-4)												
Landfill 5 (FTMM-5)												
Landfill 8 (FTMM-8)		0.1		0.3	0.1							
Landfill 12 (FTMM-12)												
Landfill 14 (FTMM-14)												
Site FTMM-16				0.2								
Site FTMM-18		0.13		0.9								
Site FTMM-20												
Building 1122, Site FTMM-59, Parcel 43				0.2								
Building 1150, Parcel 39				<0.1								
Buildings 283 (FTMM-61), 288, 291, 293, 295, Parcel 49				1.2	0.2	0.3						
Building 1075, Parcel 61												
Building 900, Parcel 69			0.3	1.1				<0.1				
Charles Wood Area												
Landfill CW-3A (FTMM-25)				<0.1			<0.1					
Site CW-6 (FTMM-28)									0.6	0.8	0.2	0.2
Building 2700, Parcel 15												
Building 2704, Parcel 27			<0.1	<0.1				<0.1				
Building 2525, Parcel 28												

Note:

Screening Level HQs are based on NOAELs, average detected concentrations, and Site-Specific Area Use Factors .

Blanks indicate that HQs are less than one when using NOAELs, maximum detected concentrations and Area Use Factos of 1 (see Table 5-1).



LEGEND

Mercury in Sediment (mg/kg)

- Non-Detect
- 0 - 0.15 (Below ESCs)
- 0.15 - 0.20 (Between Freshwater and Saltwater Sediment ESCs)
- 0.20 - 0.212 (Above ESCs and Below 1/2 Maximum Background)
- 0.212 - 0.424 (Above ESCs and Above 1/2 Maximum Background)
- > 0.424 (Above Background)
- Road Centerline
- Water Feature
- Building
- Water Body
- IRP Site
- ECP Parcel
- Installation Boundary
- Municipal Boundary

Notes:
1) Results include samples collected in 2007 for the Environmental Condition of Property (ECP) Site Investigation (SI) and the 2010 Baseline Ecological Evaluation (BEE).
2) ESC = Ecological Screening Value

N

Scale:

0 300 600 1,200 Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw® Shaw Environmental, Inc.

FIGURE 5-9

FORT MONMOUTH BASELINE ECOLOGICAL EVALUATION REPORT

MERCURY RESULTS IN SEDIMENT

CHARLES WOOD AREA
FORT MONMOUTH
NEW JERSEY

ArcGIS File: F:\GISDATA2\FL_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_019_Fig5-9_CWA_Mercury_SD_Results_BEE_rpt.mxd (4/20/2011)

TINTON FALLS BOROUGH

EATONTOWN BOROUGH

PARKERS CK BRANCH 12046 UNT TO 12046 @ 1.90

Tinton Avenue

Route 537

Hope Road

Guam Lane

Hemphill Road

Ralston Avenue

Tinton Falls Public Works Way

Corregidor Road

Laboratory Road

Corpus Christi Drive

Harbor Drive

Radiac Way

Quartz Avenue

Watson Avenue

Pearl Harbor Avenue

Satellite Road

Fire Line Drive

Radar Avenue

Pinebrook Road

Monmouth County 51

SHREWSBURY (PARKERS CREEK)

Lowther Drive

Maxwell Place

Megill Drive

Megill Circle

Wigwag Road

WAMPUM BROOK

Pinebrook Road

Helms Drive

Mitchell Drive

NJ 36

ECP Parcel 15

ECP Parcel 28

ECP Parcel 27

IRP Site CW-6

IRP Site CW-3A

P28SD-2 11.5 B

P28SD-1 5.92 B

15SD-2 10.7 B

15SD-3 13 B

15SD-1 8.23 B

P27-SD2 15.1 B

P27-SD1 187 B

CW3-SD1 11.1

CW3-SD2 7.65

CW3-SD3 31.6

CW3-SD4 23.3

CW3-SD5 1719 J

CW3-SD6 4.75

CW3-SD7 7.02

CW3-SD8 7.09

CWA-SD1 15.6

CW6-SD1 26.2

CW6-SD2 39.5

CW6-SD3 28.2

CW6-SD4 56.2

CW6-SD5 4.63

CW6-SD6 2.49

LEGEND

Copper in Sediment (mg/kg)

- Non-Detect
- 0 - 16 (Below ESCs)
- 16 - 34 (Between Freshwater and Saltwater Sediment ESCs)
- 34 - 41 (Above ESCs and Within Lower 75% of Background)
- 41 - 165 (Above ESCs and Within Top 25% of Background)
- > 165 (Above Background)
- Road Centerline
- Water Feature
- Building
- Water Body
- IRP Site
- ECP Parcel
- Installation Boundary
- Municipal Boundary

Notes:
1) Results include samples collected in 2007 for the Environmental Condition of Property (ECP) Site Investigation (SI) and the 2010 Baseline Ecological Evaulation (BEE).
2) ESC = Ecological Screening Value

N

Scale:

0 300 600 1,200 Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw® Shaw Environmental, Inc.

FIGURE 5-8

FORT MONMOUTH
BASELINE ECOLOGICAL
EVALUATION REPORT

COPPER RESULTS IN SEDIMENT

CHARLES WOOD AREA
FORT MONMOUTH
NEW JERSEY

ArcGIS File: F:\GISDATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_018_Fig5-8_CWA_Copper_SD_Results_BEE_rpt.mxd (4/20/2011)

TINTON FALLS BOROUGH

EATONTOWN BOROUGH

PARKERS CK BRANCH 12046

UNT TO 12046 @ 1.90

SHREWSBURY (PARKERS CREEK)

WAMPUM BROOK

Tinton Avenue

Route 537

Hope Road

Guam Lane

Hemphill Road

Baldy Avenue

Corregidor Road

Laboratory Road

Corpus Hara Drive

Heliport Drive

Radiac Way

Quartz Avenue

Watson Avenue

Pearl Harbor Avenue

Satellite Road

Fire Line Drive

Radar Avenue

Accelerometry Avenue

Monmouth County 51

Lowther Drive

Maxwell Place

Megill Drive

Megill Circle

Wigwag Road

Pinebrook Road

Helms Drive

Mitchell Drive

NJ 36

Tinton Falls Public Works Way

ECP Parcel 15

ECP Parcel 26

ECP Parcel 27

IRP Site CW-3A

IRP Site CW-6

CW3-SD1 145

CW3-SD2 129

CW3-SD3 29.3

CW3-SD4 18.1

CW3-SD5 53.3

CW3-SD6 121

CW3-SD7 60.7

CW3-SD8 97.3

P27-SD1 49.8 B

P27-SD2 49.6 B

P28SD-1 43

P28SD-2 36.8

15SD-1 29.4

15SD-2 31.1

15SD-3 37

CW6-SD1 35.3

CW6-SD2 64.2

CW6-SD3 55.4

CW6-SD4 150

CW6-SD5 50.2

CW6-SD6 75.8

CWA-SD1 32.8

LEGEND

Chromium in Sediment (mg/kg)

- Non-Detect
- 0 - 26 (Below ESCs)
- 26 - 81 (Between Freshwater and Saltwater Sediment ESCs)
- 81 - 106.65 (Above ESCs and Within Lower 75% of Background)
- 106.65 - 125 (Above ESCs and Within Top 25% of Background)
- > 125 (Above Background)
- Road Centerline
- Water Feature
- Building
- Water Body
- IRP Site
- ECP Parcel
- Installation Boundary
- Municipal Boundary

Notes:
1) Results include samples collected in 2007 for the Environmental Condition of Property (ECP) Site Investigation (SI) and the 2010 Baseline Ecological Evaluation (BEE).
2) ESC = Ecological Screening Value

N

Scale:

0 300 600 1,200 Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw® Shaw Environmental, Inc.

FIGURE 5-7

FORT MONMOUTH BASELINE ECOLOGICAL EVALUATION REPORT

CHROMIUM RESULTS IN SEDIMENT

CHARLES WOOD AREA
FORT MONMOUTH
NEW JERSEY

ArcGIS File: F:\GISDATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_017_Fig5-7_CWA_Chrom_SD_Results_BEE_rpt.mxd (4/20/2011)

LEGEND

Zinc in Sediment (mg/kg)

- Non-Detect
- 0 - 81 (Below ESCs)
- 81 - 86 (Between Freshwater and Saltwater Sediment ESCs)
- 86 - 162.5 (Above ESCs and Within Lower 75% of Background)
- 162.5 - 423 (Above ESCs and Within Top 25% of Background)
- > 423 (Above Background)
- Road Centerline
- Water Feature
- Building
- Water Body
- IRP Site
- ECP Parcel
- Installation Boundary
- Municipal Boundary

Notes:
1) Results include samples collected in 2007 for the Environmental Condition of Property (ECP) Site Investigation (SI) and the 2010 Baseline Ecological Evaluation (BEE).
2) ESC = Ecological Screening Value

N

Scale:
0 450 900 1,800
Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

Shaw® Shaw Environmental, Inc.

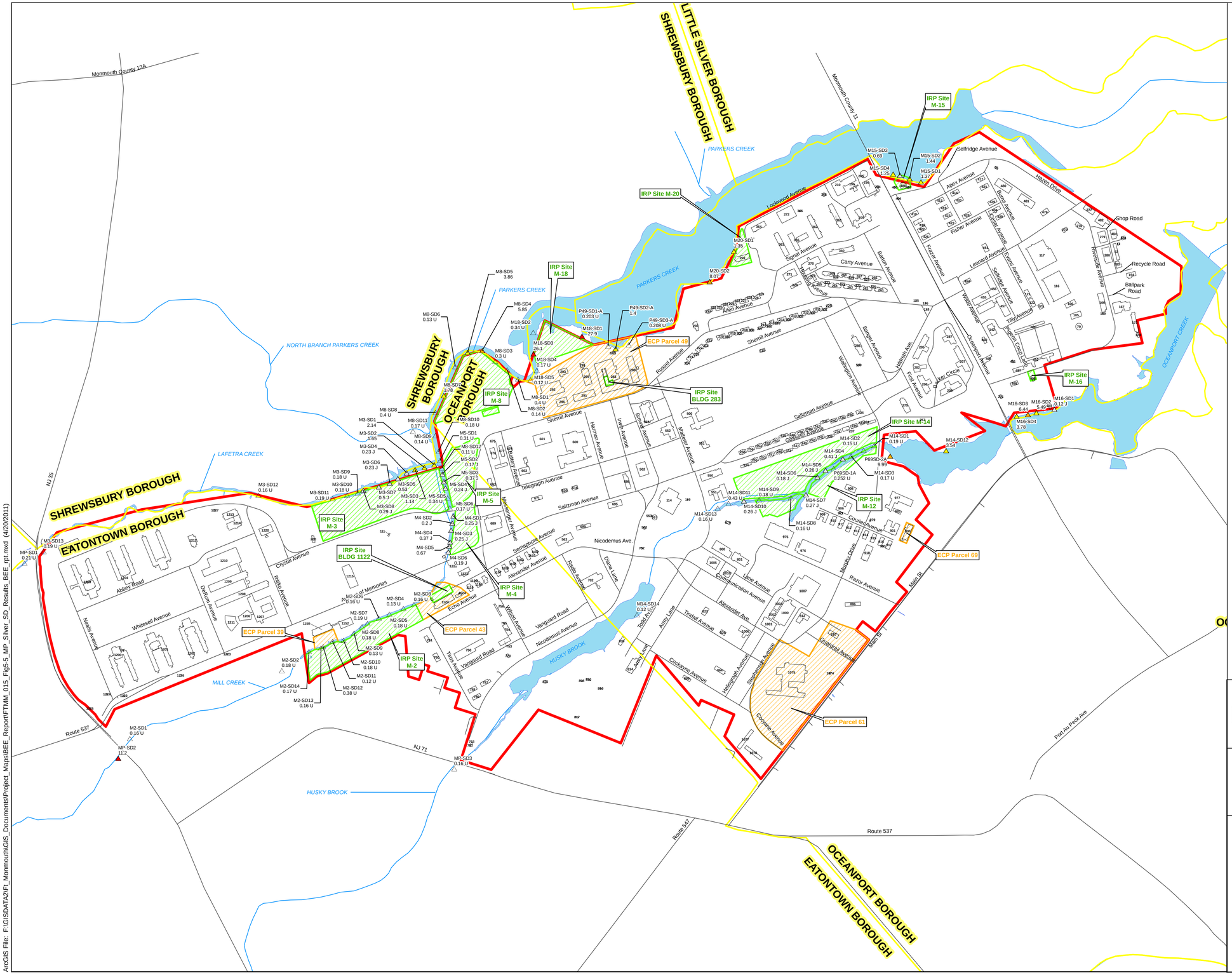
FIGURE 5-6

FORT MONMOUTH BASELINE ECOLOGICAL EVALUATION REPORT

ZINC RESULTS IN SEDIMENT

MAIN POST
FORT MONMOUTH
NEW JERSEY

ArcGIS File: F:\GIS\DATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_016_Fig5-6_MP_Zinc_SD_Results_BEE_rpt.mxd (4/20/2011)



LEGEND

Silver in Sediment (mg/kg)

- Non-Detect
- 0 - 1 (Below ESCs)
- 1 - 5.6 (Above ESCs and Within Range of Most Background)
- 2.6 - 11.2 (Above ESCs and Above 1/2 Maximum Background)
- > 11.2 (Above Background)
- Road Centerline
- Water Feature
- Building
- Water Body
- IRP Site
- ECP Parcel
- Installation Boundary
- Municipal Boundary

Notes:
1) Results include samples collected in 2007 for the Environmental Condition of Property (ECP) Site Investigation (SI) and the 2010 Baseline Ecological Evaluation (BEE).
2) ESC = Ecological Screening Value

N

Scale:

0 450 900 1,800 Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

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FIGURE 5-5

FORT MONMOUTH BASELINE ECOLOGICAL EVALUATION REPORT

SILVER RESULTS IN SEDIMENT

MAIN POST
FORT MONMOUTH
NEW JERSEY

ArcGIS File: F:\GISDATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_015_Fig5-5_MP_Silver_SD_Results_BEE_rpt.mxd (4/20/2011)

LEGEND

Mercury in Sediment (mg/kg)

- Non-Detect
- 0 - 0.15 (Below ESCs)
- 0.15 - 0.20 (Between Freshwater and Saltwater Sediment ESCs)
- 0.20 - 0.212 (Above ESCs and Below 1/2 Maximum Background)
- 0.212 - 0.424 (Above ESCs and Above 1/2 Maximum Background)
- > 0.424 (Above Background)
- Road Centerline
- Water Feature
- Building
- Water Body
- IRP Site
- ECP Parcel
- Installation Boundary
- Municipal Boundary

Notes:
1) Results include samples collected in 2007 for the Environmental Condition of Property (ECP) Site Investigation (SI) and the 2010 Baseline Ecological Evaluation (BEE).
2) ESC = Ecological Screening Value

N

Scale:

0 450 900 1,800 Feet

Base Realignment and Closure 2005

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FIGURE 5-4

FORT MONMOUTH BASELINE ECOLOGICAL EVALUATION REPORT

MERCURY RESULTS IN SEDIMENT

MAIN POST
FORT MONMOUTH
NEW JERSEY

ArcGIS File: F:\GISDATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_014_Fig5-4_MP_Mercury_SD_Results_BEE_rpt.mxd (4/20/2011)

LEGEND

Lead in Sediment (mg/kg)

- Non-Detect
- 0 - 31 (Below ESCs)
- 31 - 47 (Between Freshwater and Saltwater Sediment ESCs)
- 47 - 63.9 (Above ESCs and Within Lower 75% of Background)
- 63.9 - 945 (Above ESCs and Within Top 25% of Background)
- > 945 (Above Background)
- Road Centerline
- Water Feature
- Building
- Water Body
- IRP Site
- ECP Parcel
- Installation Boundary
- Municipal Boundary

Notes:
1) Results include samples collected in 2007 for the Environmental Condition of Property (ECP) Site Investigation (SI) and the 2010 Baseline Ecological Evaluation (BEE).
2) ESC = Ecological Screening Value

N

Scale:
0 450 900 1,800
Feet

Base Realignment and Closure 2005

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FIGURE 5-3

FORT MONMOUTH BASELINE ECOLOGICAL EVALUATION REPORT

LEAD RESULTS IN SEDIMENT

MAIN POST
FORT MONMOUTH
NEW JERSEY

ArcGIS File: F:\GIS\DATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_013_Fig5-3_MP_Lead_SD_Results_BEE_rpt.mxd (4/20/2011)

LEGEND

Copper in Sediment (mg/kg)

- Non-Detect
- 0 - 16 (Below ESCs)
- 16 - 34 (Between Freshwater and Saltwater Sediment ESCs)
- 34 - 41 (Above ESCs and Within Lower 75% of Background)
- 41 - 165 (Above ESCs and Within Top 25% of Background)
- > 165 (Above Background)
- Road Centerline
- Water Feature
- Building
- Water Body
- IRP Site
- ECP Parcel
- Installation Boundary
- Municipal Boundary

Notes:
1) Results include samples collected in 2007 for the Environmental Condition of Property (ECP) Site Investigation (SI) and the 2010 Baseline Ecological Evaluation (BEE).
2) ESC = Ecological Screening Value

N

Scale:
0 450 900 1,800 Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

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FIGURE 5-2

FORT MONMOUTH BASELINE ECOLOGICAL EVALUATION REPORT

COPPER RESULTS IN SEDIMENT

MAIN POST
FORT MONMOUTH
NEW JERSEY

ArcGIS File: F:\GISDATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_012_Fig5-2_MP_Copper_SD_Results_BEE_rpt.mxd (4/20/2011)

LEGEND

Chromium in Sediment (mg/kg)

- Non-Detect
- 0 - 26 (Below ESCs)
- 26 - 81 (Between Freshwater and Saltwater Sediment ESCs)
- 81 - 106.65 (Above ESCs and Within Lower 75% of Background)
- 106.65 - 125 (Above ESCs and Within Top 25% of Background)
- > 125 (Above Background)
- Road Centerline
- Water Feature
- Building
- Water Body
- IRP Site
- ECP Parcel
- Installation Boundary
- Municipal Boundary

Notes:
1) Results include samples collected in 2007 for the Environmental Condition of Property (ECP) Site Investigation (SI) and the 2010 Baseline Ecological Evaluation (BEE).
2) ESC = Ecological Screening Value

N

Scale:
0 450 900 1,800
Feet

Base Realignment and Closure 2005

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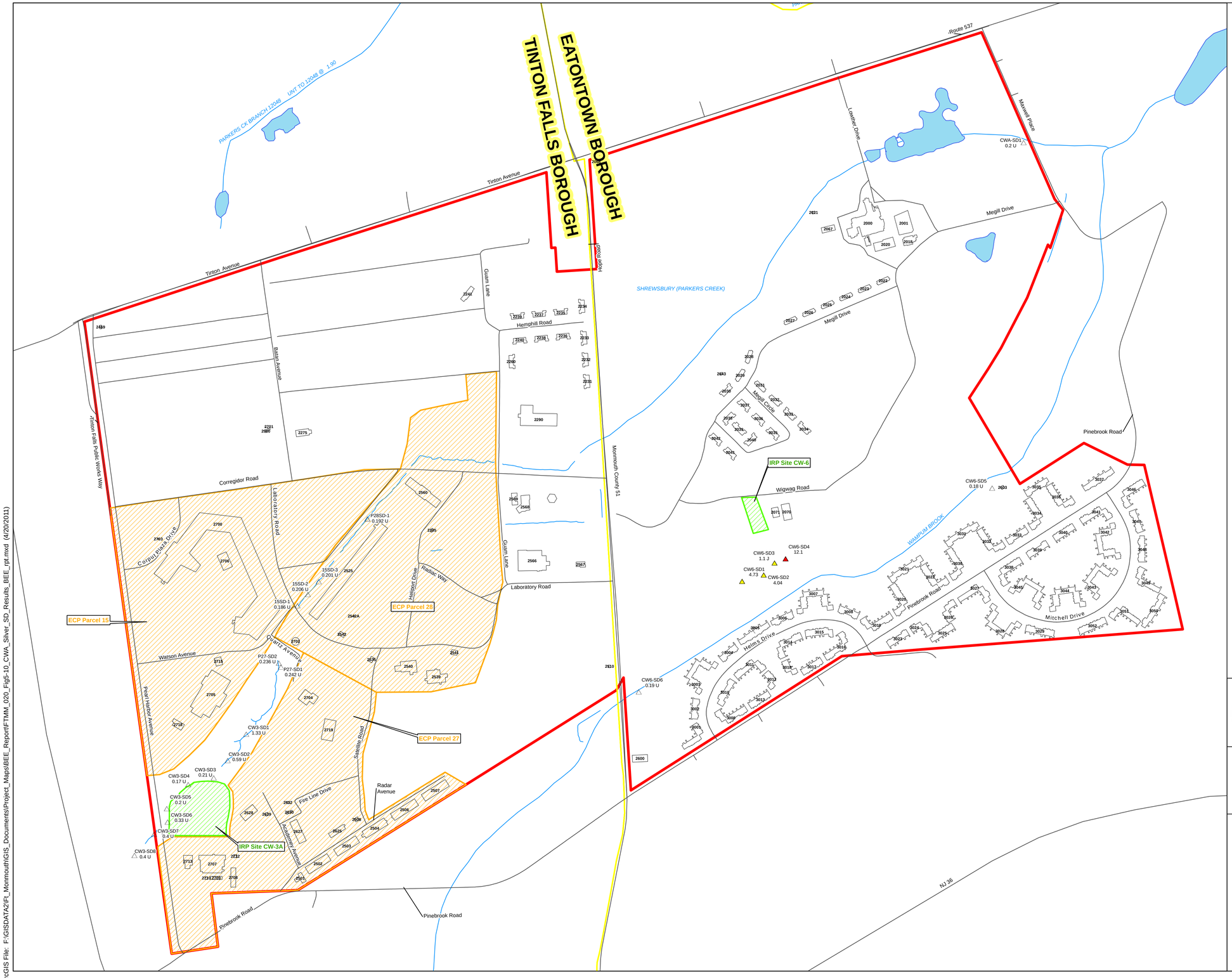
FIGURE 5-1

FORT MONMOUTH BASELINE ECOLOGICAL EVALUATION REPORT

CHROMIUM RESULTS IN SEDIMENT

MAIN POST
FORT MONMOUTH
NEW JERSEY

ArcGIS File: F:\GISDATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_011_Fig5-1_MP_Chrom_SD_Results_BEE_rpt.mxd (4/20/2011)



LEGEND

Silver in Sediment (mg/kg)

- Non-Detect
- 0 - 1 (Below ESCs)
- 1 - 5.6 (Above ESCs and Within Range of Most Background)
- 2.6 - 11.2 (Above ESCs and Above 1/2 Maximum Background)
- > 11.2 (Above Background)
- Road Centerline
- Water Feature
- Building
- Water Body
- IRP Site
- ECP Parcel
- Installation Boundary
- Municipal Boundary

Notes:
1) Results include samples collected in 2007 for the Environmental Condition of Property (ECP) Site Investigation (SI) and the 2010 Baseline Ecological Evaluation (BEE).
2) ESC = Ecological Screening Value

N

Scale:

0 300 600 1,200 Feet

Base Realignment and Closure 2005

U.S. Army Corps of Engineers

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FIGURE 5-10

FORT MONMOUTH BASELINE ECOLOGICAL EVALUATION REPORT

SILVER RESULTS IN SEDIMENT

CHARLES WOOD AREA
FORT MONMOUTH
NEW JERSEY

ArcGIS File: F:\GISDATA2\Ft_Monmouth\GIS_Documents\Project_Maps\BEE_Report\FTMM_020_Fig5-10_CWA_Silver_SD_Results_BEE_rpt.mxd (4/20/2011)

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APPENDIX A
Remedial Investigation Data Evaluated in the BEE

APPENDIX B
Site Investigation Data Evaluated in the BEE

APPENDIX C
Groundwater Monitoring Data Evaluated in the BEE

APPENDIX D
Baseline Ecological Evaluation Investigation Data Evaluated in the BEE

APPENDIX E
New Jersey Department of Environmental Protection Ecological Screening Criteria

APPENDIX F
Laboratory Data Packages

See Included DVD

APPENDIX G
Field Documentation and Field Measured Parameters

APPENDIX H
Fort Monmouth Maximum Background Concentrations from the 1995 SI Report

APPENDIX I
NJDEP Correspondence

APPENDIX J
Fort Monmouth Surface Water Salinity Data for Main Post (2004-2009)

APPENDIX K
Fort Monmouth Utility Maps

APPENDIX L
Sediment Quality Investigation Data

Fort Monmouth Reuse and Redevelopment Plan
Final Plan

Prepared for:
Fort Monmouth Economic Revitalization Planning Authority

Prepared by:
EDAW, Inc.

22 August, 2008

(Incorporates Technical Corrections Adopted by FMERPA Board on October 15, 2008)

August 22, 2008

Mr. Frank C. Cosentino, Executive Director
Fort Monmouth Economic Revitalization Planning Authority
2-12 Corbett Way, Suite C
Eatontown, New Jersey 07724

Dear Mr. Cosentino,

On April 28, 2006 the Fort Monmouth Economic Revitalization Planning Authority (FMERPA) was formed to develop a reuse and redevelopment plan that meets State, Monmouth County, community, societal, and land owner needs and create a flexible framework for sustainable redevelopment of the post. During the ensuing months, FMERPA and its consulting team has coalesced the Reuse Plan around a vision for a Sustainable Technology Community at Fort Monmouth.

The vision presented herein first and foremost sets a framework for the attraction of technology driven companies that will provide the greatest opportunity for the replacement of highly skilled jobs left behind by the mission's move to Aberdeen, Maryland. Attracting these companies who specialize in biotechnology, nanotechnology, stem cell research, information technology, communication technology, and renewable/ alternative energy research and development will require a multifaceted strategy. The emerging technology economy will seek sustainable environments with diverse housing to meet their workforce needs; a location capable of delivering support infrastructure; competitive business operational costs; a location supported by university research; and the provision of a high quality of life.

The framework presented herein proposes the development of a technology community that provides an integrated lifestyle where residents can choose to work, live, learn, and take their leisure at Fort Monmouth. The plan proposes the development of five mixed-use development clusters set within a greenbelt network of nearly 500-acres. Sustainability is promoted through the adaptive reuse of existing buildings, the protection of ecological resources, the provision of mobility options, and the recommendation that renewable and alternative energy fuel the redevelopment of Fort Monmouth.

This report documents the redevelopment planning work undertaken to date by EDAW, Inc. and our consulting team. We view the plan as a "living and learning" document that has grown more comprehensive and garnered broader support from project stakeholders with each presentation and review. We look forward to working with the Fort Monmouth Economic Revitalization Planning Authority (FMERPA), the communities of Tinton Falls, Eatontown, and Oceanport, Monmouth County, the State, and many more interested stakeholders in shaping the future of one of the State of New Jersey's most valuable economic resources.

Sincerely,

Timothy N. Delorm, ASLA
Vice President
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Fort Monmouth Reuse and Redevelopment Plan

was created by

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Contents

Section / Contents

1.0 Introduction
2.0 Planning Methodology and Community Outreach Process
3.0 Land Use and Circulation Plan
4.0 Key Area Site Plans and Sustainability
5.0 Infrastructure Plan
6.0 Environmental Remediation Guidelines
7.0 Historic Preservation Guidelines
8.0 Community Impacts
9.0 Zoning/Land Use Impacts
10.0 Next Steps: Implementing the Vision
11.0 Existing Buildings Index and Plan

APPENDICES (PROVIDED UNDER SEPARATE COVER)
Technical Memoranda: Existing Conditions
Technical Memoranda: Transportation and Traffic
Technical Memoranda: Historic Resources
Technical Memoranda: Economic Revitalization Strategy

List of Exhibits

Exhibit Index
Planning Principles
1. Density Transect 2-5
2. Link Centers & Enhance Transit Mobility 2-6
3. Enhance Vehicular Mobility 2-7
4. Blue / Greenbelt 2-8
5. Enhance Bicycle & Pedestrian Mobility 2-9
6. Blur Boundaries / Extend Land Use 2-10
7. Leverage Existing Fort Assets 2-11
2028 Land Use Plan (20-year plan) 3-5
2018 Land Use Plan (10-year plan) 3-6
2028 Plan (20 year plan) 3-7 / 4-2
2018 Plan (10 year plan) 3-8
Artistic Rendering - Tinton Falls 3-9
Artistic Rendering - Eatontown 3-10
Artistic Rendering - Oceanport 3-11
Master Plan Reuse and Redevelopment Program 3-12
Existing Non Residential Building Reuse Index 3-13
Existing Residential Building Reuse Index 3-13
2028 Street Phasing Plan 3-17
Street Typology Map 3-18
Street Cross Sections 3-19
Street Cross Sections 3-20
Street Cross Sections 3-21
Transit Plan 3-22
Pedestrian Network Plan 3-23
Recreation Plan 3-24
Tinton Falls Area Plan Enlargement 4-4
Artistic Rendering: Tinton Falls Town Center 4-5
Eatontown Howard Commons Area Plan Enlargement 4-7
Eatontown Route 35 Plan Enlargement 4-8
Artistic Rendering: Eatontown Lifestyle Center 4-9
Artistic Rendering: Oceanport Avenue 4-12
Oceanport Main Post Plan Enlargement 4-11
Sustainable Strategies Matrix 4-14
Environmental Condition of Concern
1. Environmental Conditions of the Property 6-3
2. Charles Wood Area Environmental Conditions 6-4
3. Main Post Environmental Conditions 6-5
Historic and Cultural Constraints 7-2
Eatontown Borough: Howard Commons Preferred Redevelopment Plan 9-2
Oceanport Borough: Preferred Redevelopment Plan 9-3
Tinton Falls Borough: Preferred Redevelopment Plan 9-4
Existing Housing Summary 9-11
Affordable Housing (COAH) Rules 9-12
Existing Fort Monmouth Buildings Key Plan 11-1
1. Charles Woods Area Buildings Key Plan 11-1
2. Main Post Buildings Key Plan 11-2
Existing Fort Monmouth Buildings Index 11-3

1.0 INTRODUCTION

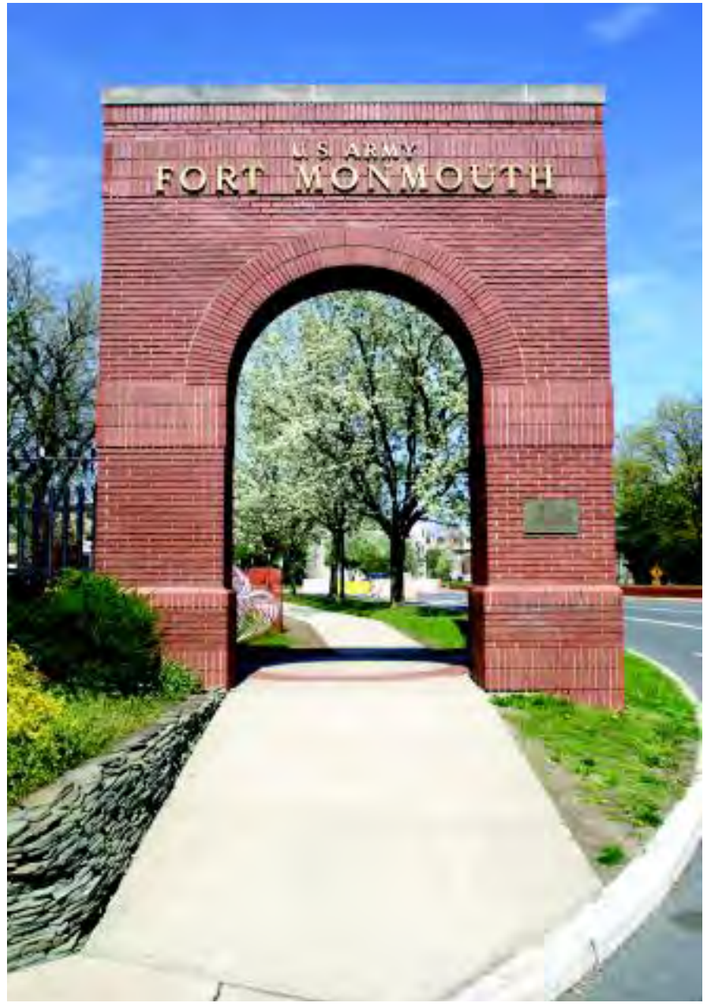
1.0 Introduction to the Plan

1.1 Introduction

Fort Monmouth is located near the eastern shore of New Jersey, within the Coastal Region of Monmouth County. With its location between Manhattan, New York (to the north) and Philadelphia, Pennsylvania (to the southwest), Fort Monmouth is afforded easy access to two major metropolitan areas as well as the State's capital, Trenton, New Jersey (to the west). The installation occupies approximately 1,127 acres of land and is contained within three municipalities, the Boroughs of Tinton Falls, Eatontown, and Oceanport, and is located adjacent to the Boroughs of Shrewsbury and Little Silver.

Fort Monmouth has been a significant presence in Monmouth County, New Jersey since its establishment in 1917. Prior to this time, the site was home to Monmouth Park Race Track from 1870 to 1917. After being abandoned due to New Jersey's ban on horse betting, the Army began leasing the land from a private owner in 1917 and purchased the land in 1919. The original name of Fort Monmouth was Camp Little Silver in 1917, then renamed Camp Alfred Vail. The Fort was originally established as a temporary facility for training the 1st and 2nd Reserve Signal Battalions, in anticipation of the United States' involvement in World War I. The Chief Signal Officer authorized the purchase of Camp Alfred Vail in 1919 when the Signal Corps School relocated to Camp Vail from Fort Leavenworth that year. In 1925, the installation was granted permanent status and renamed Fort Monmouth, in honor of the soldiers of the American Revolution who died in the Battle of Monmouth.

The primary mission of Fort Monmouth is to provide command, administrative, and logistical support for Headquarters, United States Army, Communications - Electronics Command (CECOM). CECOM is a major subordinate command of the United States Army Material Command (AMC) and is the host activity. Fort Monmouth currently serves as the center for the development of the Army's Command and Control, Communications, Computers, Intelligence, Sensors and Reconnaissance (C4ISR) systems, the primary tenants of the Fort. Much of the Army's research and development of high-tech systems is done at Fort Monmouth, thus various specialized technical facilities are located throughout the Fort. Additional tenant



activities that occur on the Fort include the performance of research, development, procurement, and production of electronic material for use by the United States Armed Forces. Other missions include the provision of administrative training and logistical and related support necessary to transition selected reserve component units into the active force structure in the event of a national emergency.

Fort Monmouth is separated into two distinct areas, the Main Post (637 acres) and Charles Wood (489 acres). The Main Post is contained within the Boroughs of Oceanport (419 acres) and Eatontown (219 acres), and the Charles Wood Area is contained within the Boroughs of Tinton Falls (254 acres) and Eatontown (235 acres). The Fort's acreage by borough is summarized below:

Tinton Falls	454 acres
Eatontown	419 acres
Oceanport	254 acres
Total	1,127 acres

There are a total of 434 buildings and 663 housing units located on Fort Monmouth. An additional 251 lodging units and 71 dormitory rooms (United States Military Academy Preparatory) are located at Fort Monmouth.

The Main Post currently contains a variety of uses within approximately five million square feet of building space. The major land uses identified on Fort Monmouth include seven major use groups: Administration/Research Development, Test, and Evaluation (Admin/RDT&E); Commercial; Housing; Medical; Open Space/Natural Areas; Public Works/Supply/Utilities; and Recreation/Community Facilities. The facilities at Fort Monmouth serve the families and service members at Fort Monmouth as well as those from Naval Weapons Station Earle in Colts Neck, NJ and the Coast Guard at Sandy Hook, NJ with the commissary, Post Exchange, and Patterson Army Health Clinic. Additional information and associated graphics are provided in the Technical Memoranda: Existing Conditions (September 2007).

1.2 From "Fort Monmouth" to A "Reuse Area"

The Fort Monmouth military installation is scheduled to be closed as a result of the 2005 Base Realignment and Closure (BRAC) decision and the land would be disposed of in coordination with the Local Redevelopment Authority, Fort Monmouth Economic Revitalization Planning Authority (FMERPA), and its adopted zoning, as of September 15, 2011. FMERPA was created in response to this BRAC decision and for the purpose of preparing for the Fort's closure and planning for its reuse.

The Fort Monmouth Reuse and Redevelopment Plan (the Plan) was the second written piece produced as part of the planning effort, following the Technical Memoranda: Existing Conditions (September 2007). The Technical Memoranda described the current conditions of the Reuse Area and adjacent communities. The Memoranda were prepared for the purpose of informing the planning team and FMERPA of the opportunities and challenges associated with the reuse of the property. Understanding the existing conditions of Fort Monmouth is a critical first step in laying the framework for planning the reuse components.

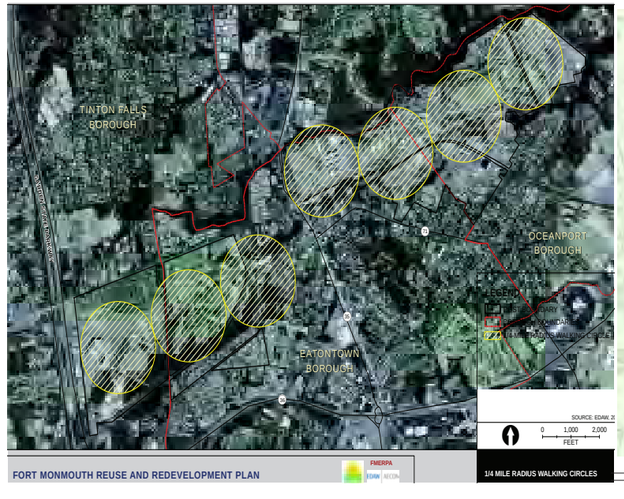
This Plan begins by summarizing the Planning Methodology and Community Outreach Process, previously discussed in the Technical Memoranda (September 2007). The planning process began in May 2007, with the community and stakeholder engagement process beginning simultaneously.

A major piece of any plan is the Land Use Elements. The analysis of Land Use Elements sets a baseline for the remaining pieces of the Plan; Chapter 3 of this document illustrates and describes this component. A second significant piece outlined in Chapter 3 is the proposed circulation and access plan. In order to function properly, a community must accommodate and manage economic growth and vitality with proper access and circulation plans. Chapter 3: Land Use and Circulation Plan discusses the plan for land use and facilities plan as well as the transportation and circulation plan that supports it.

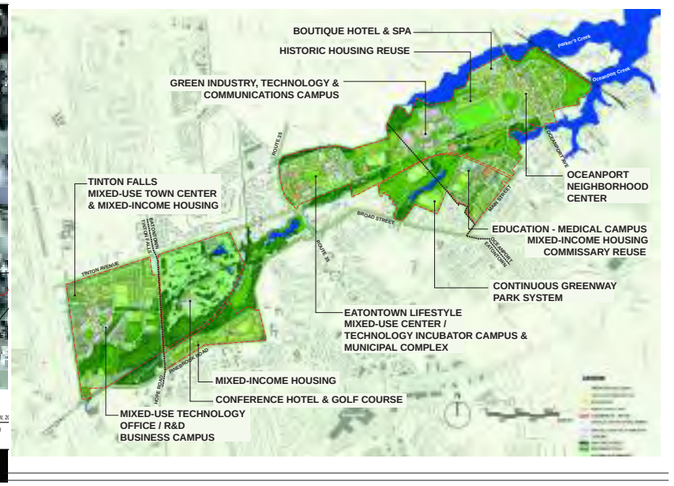
Additional detail on the redevelopment of Fort Monmouth is provided in Chapter 4: Key Area Plans and Sustainability. Redevelopment of the site includes a variety of uses such as reuse of existing facilities for high-tech office, research and development functions, and mixed-use and mixed-income communities that would take advantage of, and expand upon, the historic character of particular areas of the Fort.

An Infrastructure Plan is provided in Chapter 5 and identifies the potential need for improvements necessary to support the redevelopment of the site. Environmental Remediation Guidelines and Historic Preservation Guidelines are presented in Chapter 6 and 7, respectively. Chapter 8 identifies fiscal impacts and economic opportunities that help support and explain the rationale for the proposed redevelopment program.

Chapter 9: Zoning and Land Use Impacts identifies existing policies that have helped guide the planning process as well as provides zoning approach recommendations. A housing strategy is also presented in this chapter, an important part of which is the strategy for providing homeless and low income housing to meet the Council on Affordable Housing (COAH) requirements. Finally, the suggested Next Steps are presented in Chapter 10.



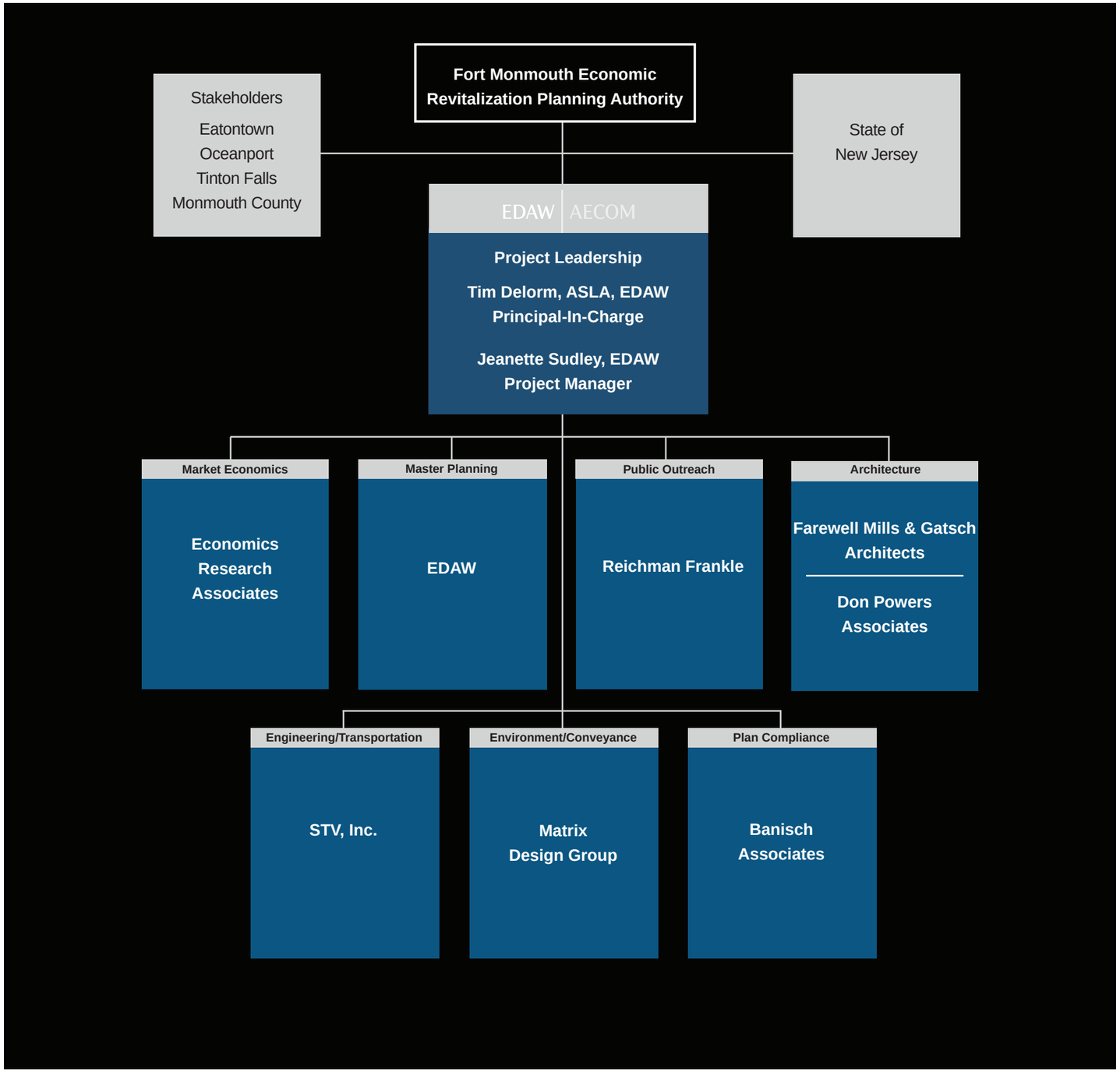
Walking Circles - a consideration in the planning analysis and process



The 20 Year Plan

1.3 The Planning Team

This Plan was prepared by a multi-disciplinary team of professionals, including planners, landscape architects, architects, environmental scientists and engineers, economic analysts, cultural resource specialists, and transportation planners and engineers. Guidance was provided to the planning team by FMERPA, FMERPA's advisory committees, Monmouth County, Municipal representatives and members of the State of New Jersey's Interagency Team (IAT). Valuable input was obtained from Army representatives, the local municipalities, and the public.



The Planning Team

2.0 PLANNING METHODOLOGY & COMMUNITY OUTREACH

2.0 Planning Methodology & Community Outreach

2.1 Introduction

Although a very simplified explanation of the planning process, the methodology implemented to create this Plan involved the following major steps:

1. Project Initiation

2. Regional Economic Profiles and Market Analysis

3. Site Inventory and Analysis

4. Development of Planning Principles and Alternatives

5. Completion of Preliminary, Draft, and Final Reuse Plans

Project Initiation

The Project Initiation stage involved the project kick-off and data gathering and documentation for the purposes of understanding existing site conditions. The project was initiated with a formal kick-off meeting involving FMERPA, State representatives, and the EDAW planning team. The main purpose of this meeting was to define the scope and purpose of the project: to create a redevelopment and Reuse Plan that is economically sustainable and provides new and exciting opportunities for the host communities, the region, and the State.

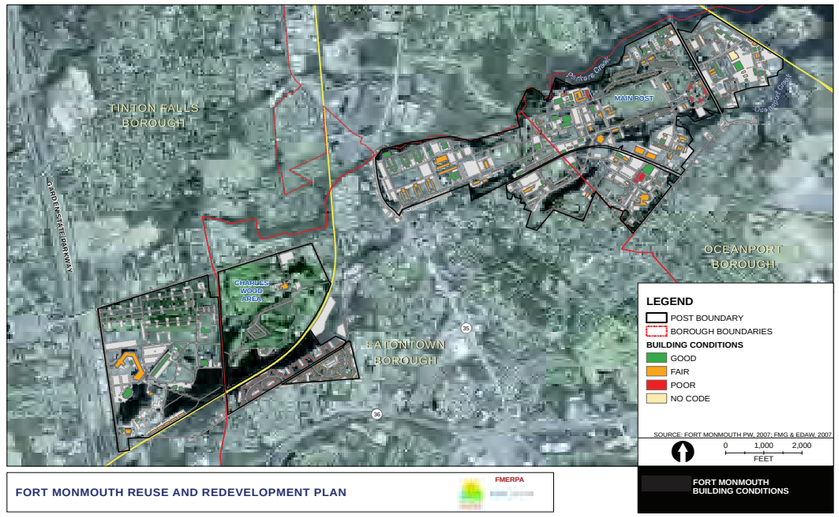
Project Initiation also involved a tour of the 1,127 acre post followed by stakeholder meetings with local municipalities, the Boroughs of Tinton Falls, Eatontown and Oceanport, and Monmouth County; the Army Garrison; and the local BRAC office. The overall planning approach and process is documented in the Technical Memorandum: Project Schedule and Methodology (September 2007).

Regional Economic Profiles and Market Analysis

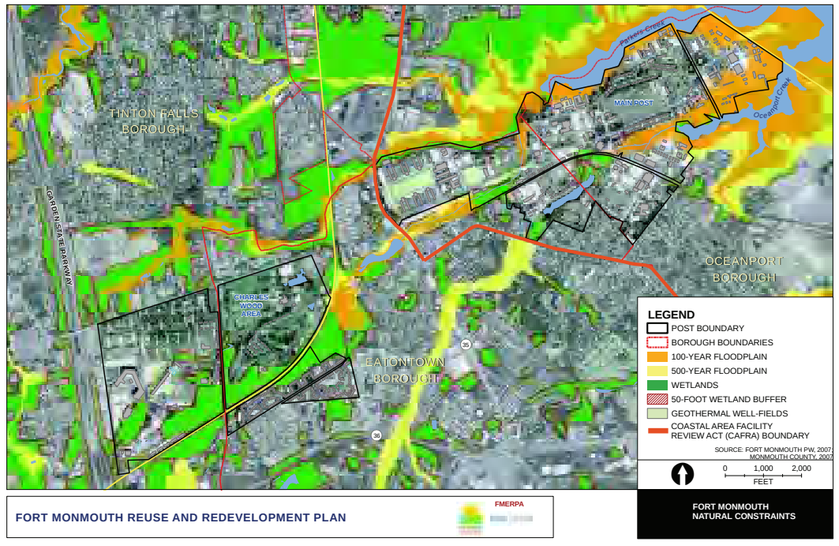
The purpose of providing Regional Economic Profiles and a Market Analysis was to obtain an initial understanding of market trends, both past and present. Analyses included in this report include a Demographic/Socio-Economic Analysis, Market Analysis, Institutional and Government Uses Analysis, and Short Term and Enhanced Use Leasing Analysis. In addition, a market conditions report was submitted to FMERPA in September 2007, with the Existing Conditions Technical Memorandum.

June 12th Public Presentation

Public Workshop



Facilities and Conditions **Source: EDAW, 2007**



Environmental Conditions **Source: EDAW, 2007**

Site Inventory and Analysis

The Site Inventory and Analysis stage included a review of existing technical reports, architectural and utility infrastructure plans, and environmental issues. Primary and secondary research supplemented by field reconnaissance and interviews with fort personnel were the tools employed to complete this task. Various components reviewed include facilities and existing land use patterns and cultural and historic resources.

The existing conditions of the transportation resources were documented within the Technical Memoranda (September 2007). An understanding of these baseline conditions was necessary to determine a Transportation Plan, as exhibited in this document.

Overview

The business recruitment strategy identifies target industry clusters within Governor Corzine's strategic focus on biotechnology, nanotechnology, information and communications, and "clean tech" that best fit the strengths of the Fort Monmouth region, and identifies specific marketing, regulatory, and development initiatives that can be undertaken in order to attract new businesses to the Fort Monmouth site. In the long-run, the strategic plan aims to create a diverse and robust technology center at Fort Monmouth that creates jobs in high-growth industries within a mixed-use campus that serves both employees and new residents. This report is summarized in Chapter 8 of this Plan and is available separately as the full report "Fort Monmouth Economic Revitalization Strategy", dated August 12, 2008.

Methodology

The business recruitment strategy was informed by stakeholder interviews, analysis of economic and business trends in the region, and prior studies conducted by the State. Several key areas received specific focus and attention to a few key categories that support industry development.

Investment Capital

New Jersey venture capital investment was concentrated predominantly in Information Communications Technologies (ICT) and Bioscience companies. Venture capital investment in New Jersey was split amongst 19 deals, with 63 percent of the deals and 40 percent of the funding allocated to ICT companies, primarily represented by software and IT services companies. Bioscience companies, which include biotechnology and medical device and equipment companies, represented 32 percent of the deals and 56 percent of the venture capital funding distributed within New Jersey during 2Q 08.

Human Capital

Labor data identified industry sectors for which New Jersey's labor force displays a comparative advantage relative to the US. The ICT sectors have a significant concentration of employees and capture a large share of venture capital investment. As such, ICT companies would form a strong basis for a tech park at Fort Monmouth. Ancillary sectors such as biotechnology, medical devices and equipment, and industrial/ energy companies could support the ICT core.

Institutional Capital

Institutional capital refers to the key research institutions and the geographic dispersion of venture capital investment to identify potential opportunities for the redevelopment of Fort Monmouth to complement strengths of existing clusters. Investment capital for target industries and state research institutions are clustered around New Brunswick, NYC, and Philadelphia/Camden. The Garden State Parkway is an important corridor for Fort Monmouth, providing connections to New Brunswick to the west and the Federal Aviation Administration's William Hughes Technology Center to the south.

Strategy

A Tech Center at Fort Monmouth should have ICT at its core with ancillary bioscience and energy companies that specialize in applications that cross-over with ICT. The ICT sector includes software, telecommunications, networking equipment, IT services, media / entertainment, and computers / peripherals companies. Moreover, in order to build a technology center that encompasses a diverse range of industry sectors, Fort Monmouth should attract companies within ancillary industries that converge with ICT. For example:

- Bioscience companies that converge with ICT could include biomedical informatics, systems biology, biomedical imaging, and online health services.

- Energy companies that converge with ICT would primarily focus on improving efficiency of energy use, as opposed to energy production, and could include environmental modeling and software, environmental control systems, power grid management, and more energy-efficient ICT systems.

Site Requirements

Stakeholder interviews and industry research suggests that, in order to develop a ICT-focused technology park at Fort Monmouth, conditions must be met, including broadband or fiber telecom infrastructure, flexible office and common spaces, networking and educational sessions (i.e. lunch and learns), sophisticated labs (including wetlab), 24-hour access and security. Additionally, the following amenities are provided by some of the leading technology parks: mixed-uses on-site, cultural and educational amenities, space for post-incubator companies, clean room, alternative energy source, and strong public transportation options.

Recommendations

Seven principles will help guide the strategic business recruitment initiatives at Fort Monmouth, with supporting short, medium, and long-term suggested actions:

- Cultivate cross-industry collaboration -- Target a diversity of ICT-convergent companies while building scale so that in the future the region can have the capacity to become an ICT cluster.

- Short term: Identify and reach out to early-stage companies at intersection of ICT, bioscience and energy.

- Mid-term: Coordinate with geothermal and biomass energy experts locally to create university-private sector energy partnership.

- Long-term: Create mixed-use tech center with office, retail, housing, and hospitality; build-out geothermal and biomass R&D and generation capabilities.

- State-level Commitment: The State should support development with a Governor's office-level commitment and support all components of the ICT industry life-cycle, including higher education, incubation facilities, and companies of all sizes.

- Short-term: Make Fort Monmouth ICT Center part of the Governor's Economic Growth Strategy.

- Mid-term: Establish "Governors Action Team" that acts as a sales force for New Jersey; Ensure ICT Center director reports directly to Governors office.

- Long-term: Increase state investment in higher education, especially in programs that support core and target sectors.

- Streamline Regulations: Development permits should be reviewed and approved within a prioritized and consistent time frame.

- Short-term: Implement process that allows for concurrent as opposed to sequential permitting at Fort Monmouth.

- Mid-term: Guarantee permit approval within as little as 30 days for high value targeted companies

- Long-term: Create statewide plan for expediting permitting process that builds on Fort Monmouth model.

- Marketing: Tech center leadership should include individuals that are skilled in industry research, business strategy, networking, and political strategy.

- Short-term: Be active in ICT-related professional societies; Engage ICT anchors to recruit small firms.

- Mid-term: Program university tech transfer and commercialization offices on-site.

- Long-term: Work with universities to develop relationships with international universities with strong technical programs in targeted industries.

- Strategic Business Recruitment: Target companies at all scales and include the largest companies that are easy to identify yet hard to move, to start-ups that are more nimble but hard to find.

- Short-term: Track VC investment trends (VenturXpert, Venture Source) & meet regularly with investors.

- Mid-term: Designate Tech Center leadership with strong political, business, networking, and research skills.

- Long-term: Monitor VC investment trends in and around New Jersey on on-going basis; Adjust business recruitment strategy to take into account investment trends.

- Sustainability: The Tech Park should strive to achieve efficiencies in materials re-use, energy use, water management, and operations.

- Short-term: Incorporate sustainability into urban design plan for Fort Monmouth.

- Mid-term: Recycle construction waste, building and road materials.

- Long-term: Require LEED-certification for new buildings; Create renewable energy sources on site (potentially geothermal).

- Incentives: Incentives need to be strong enough to overcome regulatory challenges and should assist companies of all sizes, from start-up to multi-national.

- Short-term: Hold focus groups with targeted companies; Use applications of targeted companies in public sector operations.

- Mid-term: Tax credits for angel investors; Structured financing for strategic projects; Refundable or transferable investment tax credits.

- Long-term: Designate Fort Monmouth an Innovation Zone; Create discretionary budget allocation for business recruitment.

The business recruitment strategy identifies target industry clusters within Governor Corzine's strategic focus on biotechnology, nanotechnology, information and communications, and "clean tech" that best fit the strengths of the Fort Monmouth region, and identifies specific marketing, regulatory, and development initiatives that can be undertaken in order to attract new businesses to the Fort Monmouth site. In the long-run, the strategic plan aims to create a diverse and robust technology center at Fort Monmouth that creates jobs in high-growth industries within a mixed-use campus that serves both employees and new residents. This report is summarized in the Chapter 8 of this Plan and available separately as the full report "Fort Monmouth Economic Revitalization Strategy", dated August 12, 2008.

Development of Alternatives

After the planning team had the opportunity to listen and learn from the public, four Land Use Concepts were produced and presented to FMERPA in September 2007. These concepts were then formulated into two Preliminary Concepts that were presented to FMERPA in November 2007. After much feedback and discussion, the Preliminary Plan was completed and presented to the public in May 2008 and the Draft Plan was released and presented to the public in July 2007.

Public Outreach

The public outreach process is a continuous and iterative process that started with the initiation of the project and does not end until 2011, when the Army vacates Fort Monmouth and the land is transferred to FMERPA or another entity. Although continuous and ever evolving, the major steps of the public outreach process included the various public meetings held throughout the planning effort. The first public meeting occurred on June 12, 2007, where the planning team and overall planning process and purpose were presented. The second public outreach milestone involved a series of meetings held in each of the host communities, Tinton Falls, Eatontown, Oceanport, and Monmouth County. These meetings were led by A. Nelessen and Associates, who implemented their Visual Preference Survey (VPS) and led interactive charrettes where the public used a hands-on approach to providing their input on what they would like to see happen at Fort Monmouth. After all of the data was compiled and synthesized, the VPS results were presented to the public in October 2007.

The results of this process are detailed in the Fort Monmouth Visioning Report.

An additional public meeting was held after the Draft Final Plan was released. The Final Plan will be announced and presented at the August 27 FMERPA Board meeting. A final public presentation is also being contemplated.

2.2 Community Engagement Process

The Community Engagement Process was guided by a Public Participation and Public Outreach Strategy developed by the EDAW planning team. The public outreach strategy for Fort Monmouth comprises four main topics, including the following:

- Branding/ Image Development
- Media Relations
- Public Meetings and Outreach
- FMERPA Website

The overall intent of the public outreach strategy is three-fold: (1) to maximize public exposure to the Fort Monmouth redevelopment planning effort, (2) to encourage input at all levels and throughout the planning process, and (3) to enhance both internal and external communication in an open and transparent process that meets all State and local regulations for public input and participation for community-based planning projects in the State of New Jersey.

Branding/Image Development

To establish consistency in communication and to promote and enhance public awareness about Fort Monmouth, a logo (at right) and tag line were developed that could be used on all documents and materials associated with the Redevelopment Plan.

Media Relations

Involvement by local, state and national media in the reuse planning effort is critical to furthering exposure of the Fort, its considerable assets and the long-term potential for reuse. Media involvement included: editors at local (Monmouth County) and state (New Jersey, New York, Pennsylvania) newspapers, TV (commercial and cable) and radio stations.

A press briefing was held in order to capture media attendance at the outset of the project and engage specific editors to follow and report on the project over its lifetime. This briefing was held as a breakfast event at Gibbs Hall on June 4, 2007 from 9:00 to 11:00 A.M. During this event, FMERPA and EDAW presented project specifics including qualifications of the EDAW team, goals and objectives, and schedule and emphasized the importance of obtaining input from the public.

Public Meetings and Outreach

A third critical aspect of the public relations strategy for the Plan is the opportunity through community meetings and workshops for the planning team to share planning information and to allow public input as the Plan develops. This public input process was established initially in the proposal process by the EDAW team and subsequently refined by FMERPA, Reichman Frankle, Inc., and other key stakeholders at the early stages of the project. Formal public meetings were conducted at Plan milestone completion and included: a formal Kick-Off meeting (June 12, 2007), community charrettes (June 18, 19, 21, and 25, 2007), VPS results presentation (October 16, 2007), Existing Conditions and Preliminary Plan presentation (March 2008), Community Planning Board Presentations (April 21, 23, and 30, 2008), Draft Plan presentations to each Tinton Falls, Eatontown, and Oceanport (July 21, 23, and 29, 2008), FMERPA Board Briefing (August 20, 2008) and a Final Plan presentation (August 27, 2008).

VPS and Visioning Process

Significant public input was obtained early in the planning process through a unique visioning process led by A. Nelessen Associates. Over the course of four meetings in June 2007, a series of community workshops/charettes were held in Eatontown, Oceanport, Tinton Falls, and Freehold. A variety of information was collected using Visual Preference Surveys (VPS), questionnaires, and "hands on" drawing exercises.

The results of the visioning process were analyzed by (1) studying the highest rated images of the VPS, (2) synthesizing the Vision Translation exercises into a series of maps, and (3) highlighting responses to critical questions asked in the survey across municipalities. The results of the visioning process served a central role in moving the planning process forward with public input providing the key information for formulating a baseline Plan.

Additional Public Meetings

In addition to the public meetings held to convey results of the Plan as developed, FMERPA has held monthly board meetings open to the public to discuss the other ongoing planning and redevelopment issues as they arise throughout the redevelopment process. In addition, a number of Advisory Committees have been formed to address specific planning and redevelopment subjects through and continuing beyond the planning timeframe. These regularly scheduled committee meetings are also open to the public and allow for comment and public input in the planning project on a specific topic-by-topic basis.

The Advisory Committees established by FMERPA include:

- Commercial Industry
- Education Consortium
- Emergency Services
- Environmental
- Historical
- Infrastructure
- Planning/Development
- Public Input
- Social Services
- Transportation
- Veteran Affairs

Eatontown Charrette

June 12 public meeting

FMERPA Website

A particularly important aspect of a public outreach strategy in today's digital age is the project website. This website provides a number of helpful outreach features including:

- descriptive information on the project in general;
- advertisements and public notices of all project meetings and events;
- access to survey forms, questionnaires, comment forms and other information solicited from the public during the planning period;
- a repository for all planning products and reports, presentations, or other documentation developed over the course of the project by FMERPA, the consultant team, and other key stakeholders involved; and
- an easily accessible forum that allows the public to ask questions and allows FMERPA to post responses for others to view.

2.3 Plan Objectives and Planning Principles

The objective of the planning process is to create a framework model for a Reuse and Redevelopment Plan that creates a sustainable technology community and promotes Governor Corzine's Economic Initiatives (GEI). Seven criteria that must be met in order to promote this objective have been identified. As such, it has been determined that the Reuse Plan must:

- Promote the Technology Corridor Initiative;
- Be consistent with State, County, and Municipal planning policies;
- Focus on business retention and attraction, job replacement, and employee training;
- Be founded on market and economic analysis;
- Address homeless, COAH, and workforce housing needs;
- Leverage Fort assets (people, infrastructure, location); and
- Be a green community model.

After obtaining the bulk of community input via workshops and charrettes and conducting the majority of stakeholder interviews and site conditions research and analysis, seven basic planning principles were identified and implemented to guide the development of the Reuse Plan.

The Planning Principles from which the Preliminary Concepts were developed are:

Principle # 1:
Decreasing Density West to East & Create Mixed-Use Live/Work/Leisure Centers

Principle # 2:
Link centers & increase mobility with connected transit infrastructure serving the region and the Fort

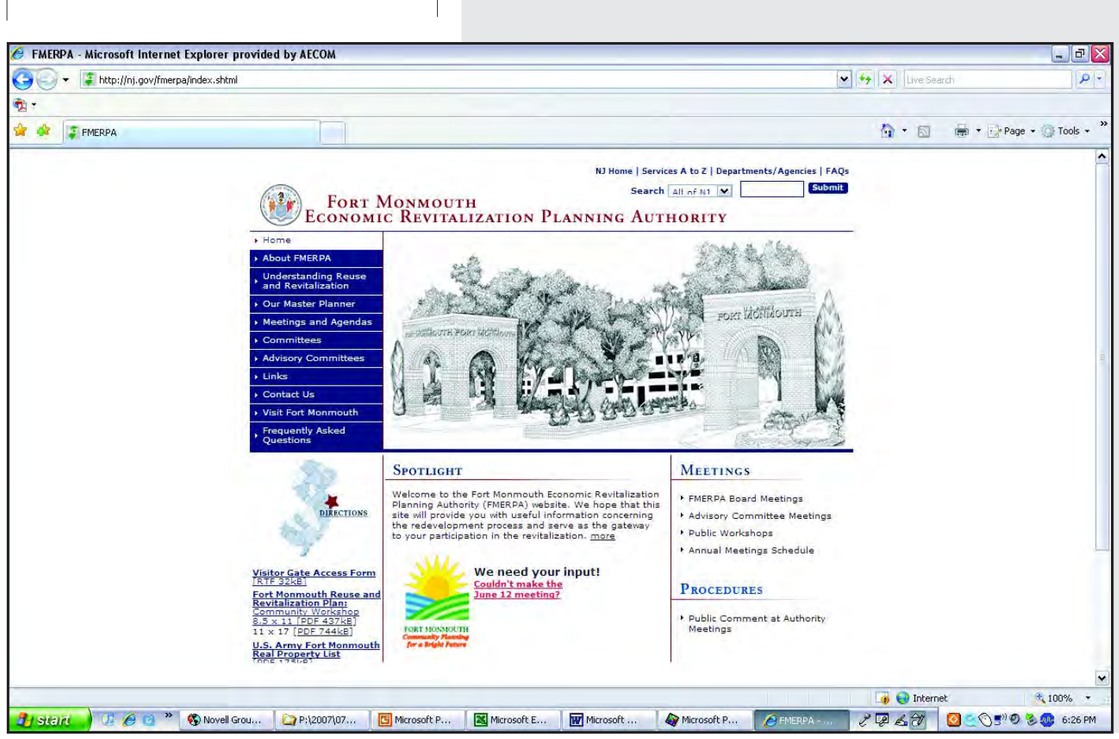
Principle # 3:
Enhance auto mobility and redevelopment capacity with targeted roadway infrastructure improvements

Principle # 4:
Combine open space, habitat, and water resources to establish a continuous Blue – Green belt

Principle # 5:
Utilize the Blue – Green belt as an armature for enhanced bicycle and pedestrian mobility throughout the Fort

Principle # 6:
Remove Fort boundaries & extend existing land uses to reconnect the Fort to the communities

Principle # 7:
Leverage existing Fort Monmouth assets (People, Buildings, Technology, and Infrastructure)



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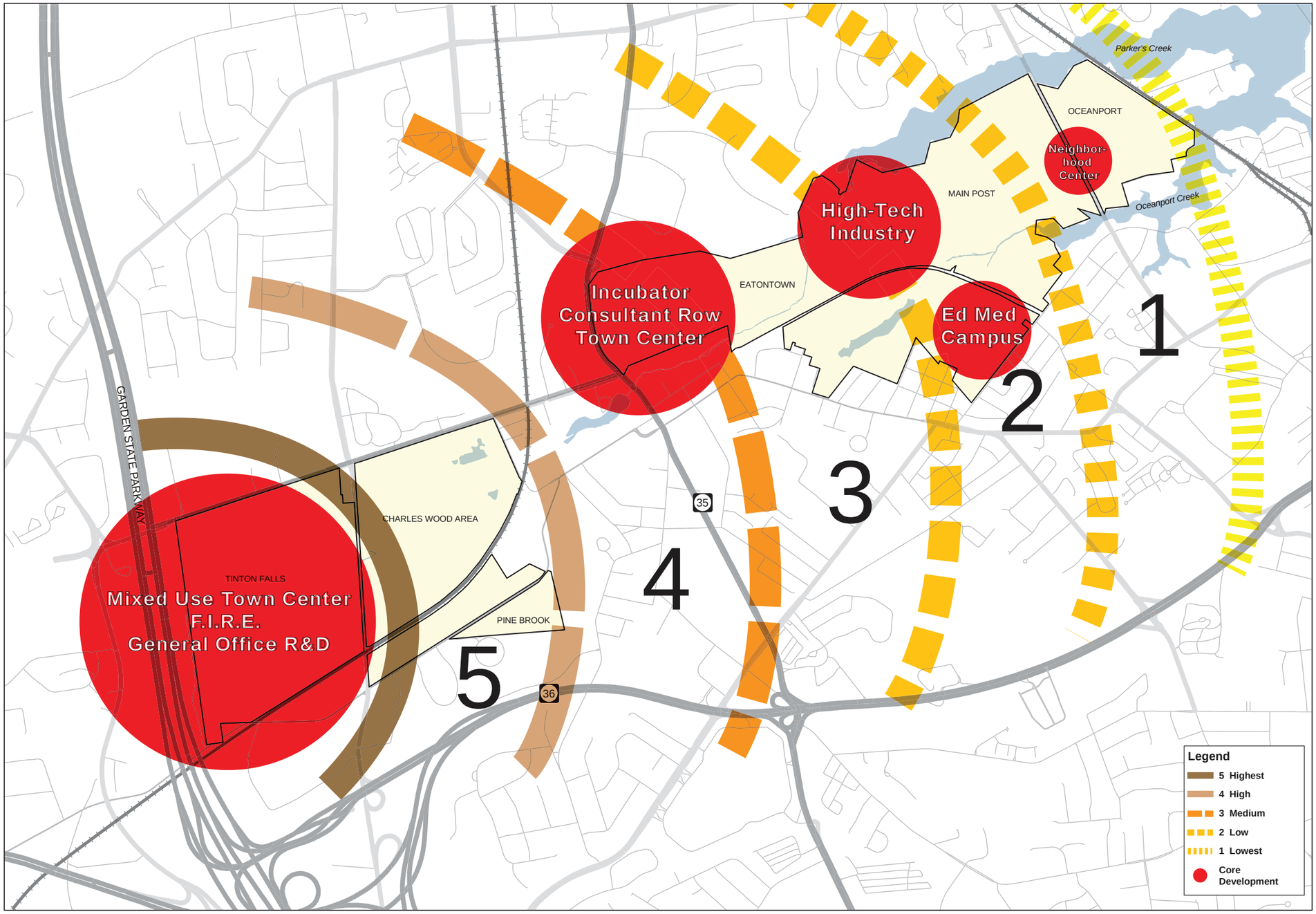


FORT MONMOUTH CONCEPT DIAGRAM : DENSITY TRANSECT

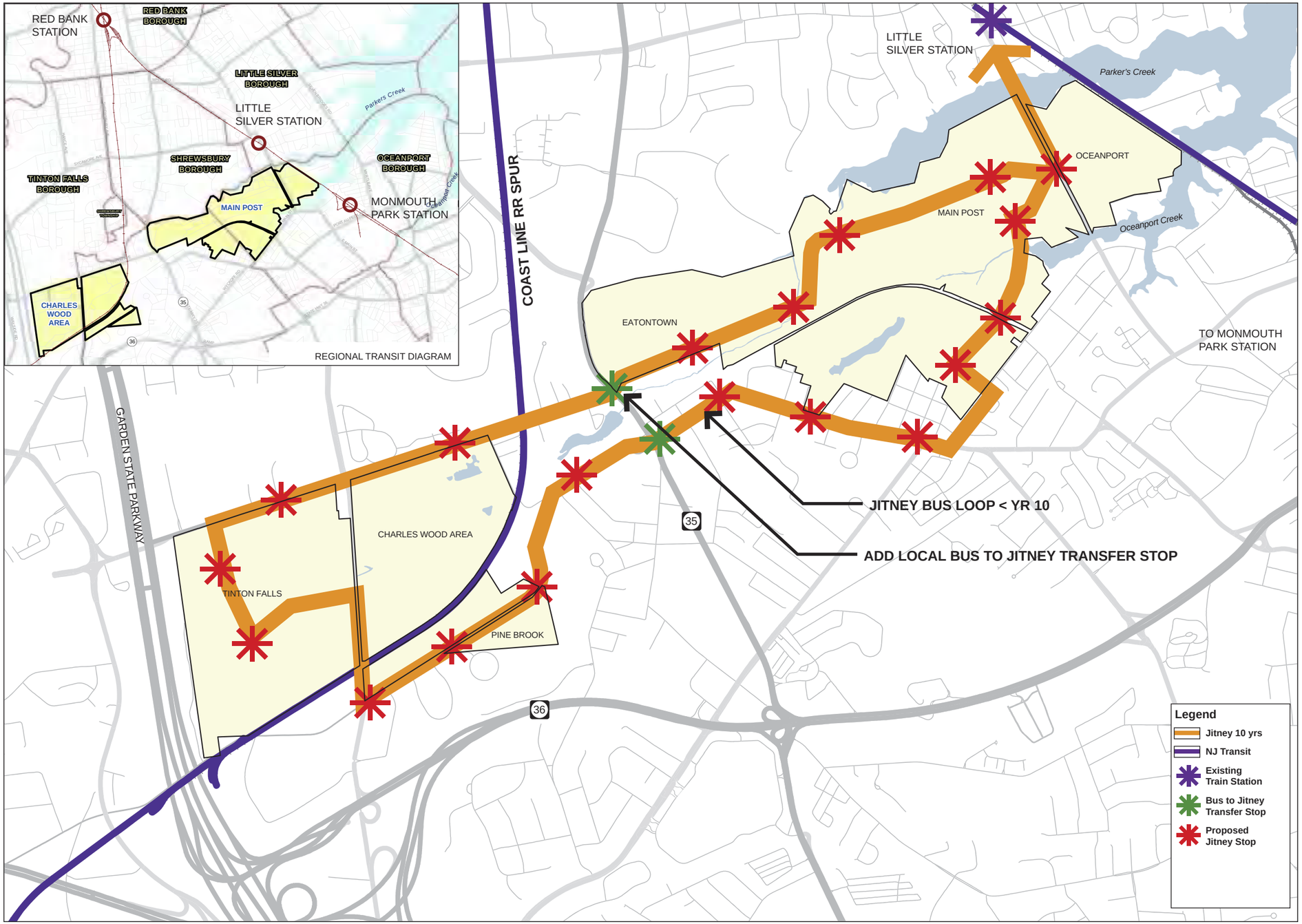
Principle # 1: Decreasing Density West to East & Create Mixed-Use Live/Work/ Leisure Centers

A review of the current support network revealed that existing roadway capacity and infrastructure best support higher density reuse and redevelopment adjacent to the Garden State Parkway (GSP). Taken in conjunction with the increasing sensitivity of environmental resources progressing eastward from the Charles Wood Area to the Main Post, a reduction in overall net density from the west to the east was deemed most appropriate.

Analysis of the property, existing structures, susceptibility to change, and the real estate market further suggest that up to five "centers" decreasing in density from west to east are appropriate. Each of the five centers is recommended to contain a mix of uses and be configured as clusters with higher density than conventional development that currently exists around the Fort. The highest density development, likely to include a major employment and mixed-use center, is most appropriate adjacent to the GSP in Tinton Falls. A medium density regional mixed-use "Municipal Incubator Town Center" located at the intersection of Route 35 and Tinton Avenue in Eatontown provides the opportunity to create the redevelopment's "lifestyle" center.

Located around the reuse of the McAfee Center, a High Technology-Green Industry Cluster is proposed. The "flex-space" should be designed to meet the needs of nano-technology, biotechnology, and emerging renewable and alternative energy companies.

A small mixed-use waterfront, municipal center catering to residents and tourists is an appropriate use for the lowest density node flanking Oceanport Boulevard in Oceanport. The final cluster of development fronts Main Street and is proposed as a mixed-use neighborhood anchored by the reuse of the Patterson Army Health Clinic or construction of a new medical clinic. Approximately 15 acres are reserved for future municipal educational needs.



FORT MONMOUTH CONCEPT DIAGRAM : PROPOSED MASS TRANSIT

FMERPA

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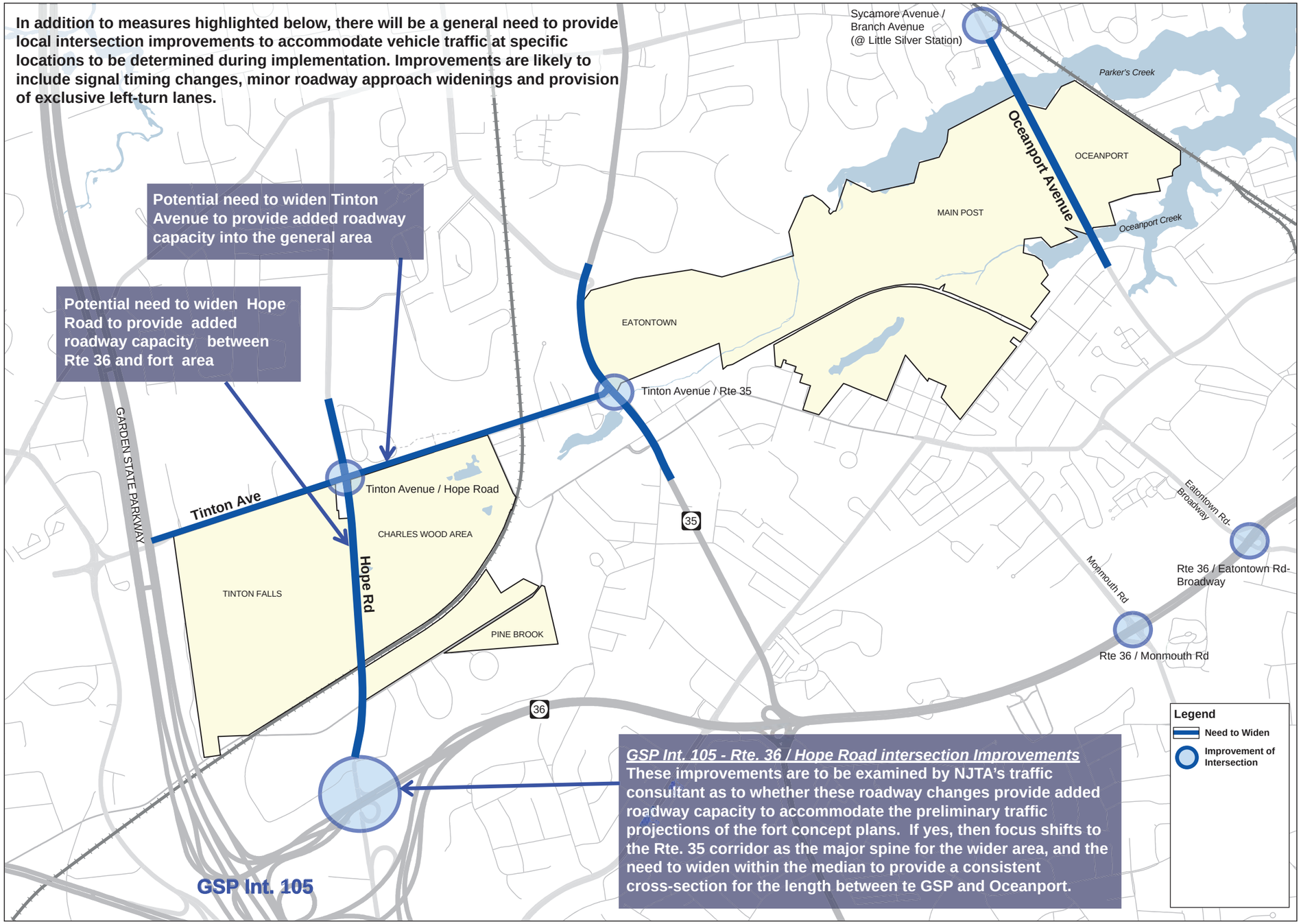
Feet

Principle # 2: Link centers & increase mobility with connected transit infrastructure serving the region and the Fort

The addition of alternative modes of transportation including bus, jitney, bicycle and pedestrian modes are cited as a significant enhancement to redevelopment by developers and the public during the Visual Preference Survey. The provision of alternative modes of transportation is a basic principle of Smart Growth and Transit Oriented Development (TOD). A transit loop for jitney buses or bus rapid transit would provide a valuable connection to both the proposed redevelopment "centers" and adjacent existing municipal centers, further stimulating the redevelopment area's vitality. A redevelopment pattern that promotes live, learn, work and play should be supplemented by an extensive system of bikeways, pedestrian trails, and sidewalks to enhance walkability and reduce automobile dependence for short trips.



FORT MONMOUTH CONCEPT DIAGRAM : PRELIMINARY TRAFFIC IMPROVEMENT

FMERPA

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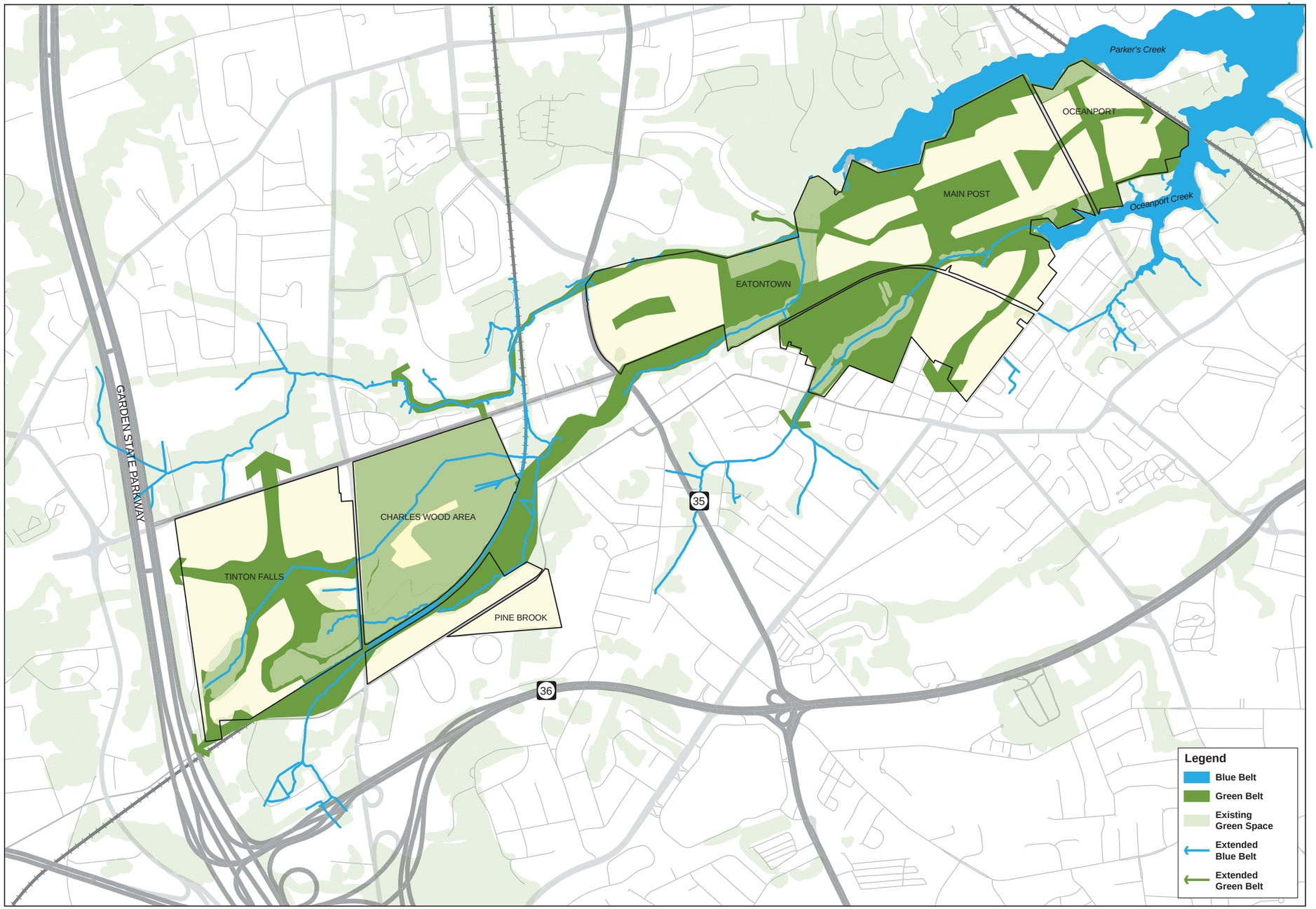
Feet

Principle # 3: Enhance auto mobility and redevelopment capacity with targeted roadway infrastructure improvements

The current internal roadway system is sufficient for its current purpose, to support the on-base population; however, once the base is opened to the public and new uses and communities are introduced, the roadway system would require improvement to support the proposed redevelopment.

Auto mobility can be enhanced through the improvement of roadways and better roadway connections. A simple and necessary improvement includes taking down the gates and security barriers, which would immediately open up streets that dead end at the Fort's perimeter. Not only would this provide internal roadway improvement, but it would improve external movement as well.

Offsite roadways currently operate at poor levels of service during the morning and evening peak hours. Significant intersection improvements, including at Hope Road and Route 36, would be required to facilitate full redevelopment at Fort Monmouth. Refer to Section 3.5 for additional information.



FORT MONMOUTH CONCEPT DIAGRAM : BLUE / GREEN BELT

FMERPA

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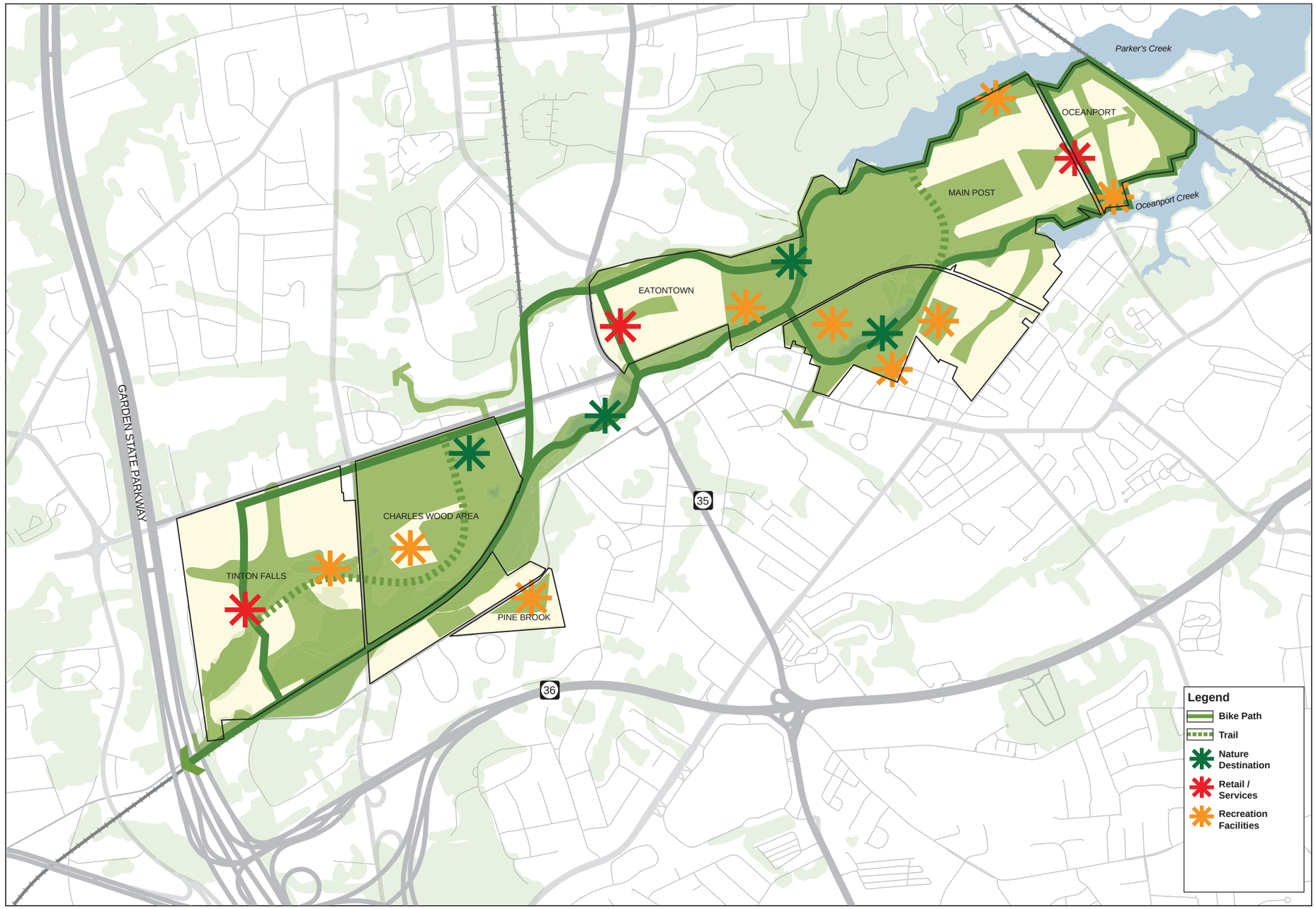
Principle # 4: Combine open space, habitat, and water resources to establish a continuous Blue-Green Belt

The redevelopment of Fort Monmouth would be undertaken in a manner that establishes the Fort as a model for sustainable development: economic, social, and environmental. Essential to this outcome is the protection and enhancement of environmentally sensitive areas of the site including wetlands, watercourses, and habitats. A "Blue-Green" Belt is proposed to establish regulatory buffers; interconnect Parker's Creek and Oceanport Creek hydrology and habitats; provide for green infrastructure; and establish a system of interconnected bicycle/pedestrian trails linking all open space, recreation areas, and development centers.



FORT MONMOUTH CONCEPT DIAGRAM : BIKE AND PEDESTRIAN PATH

FMERPA

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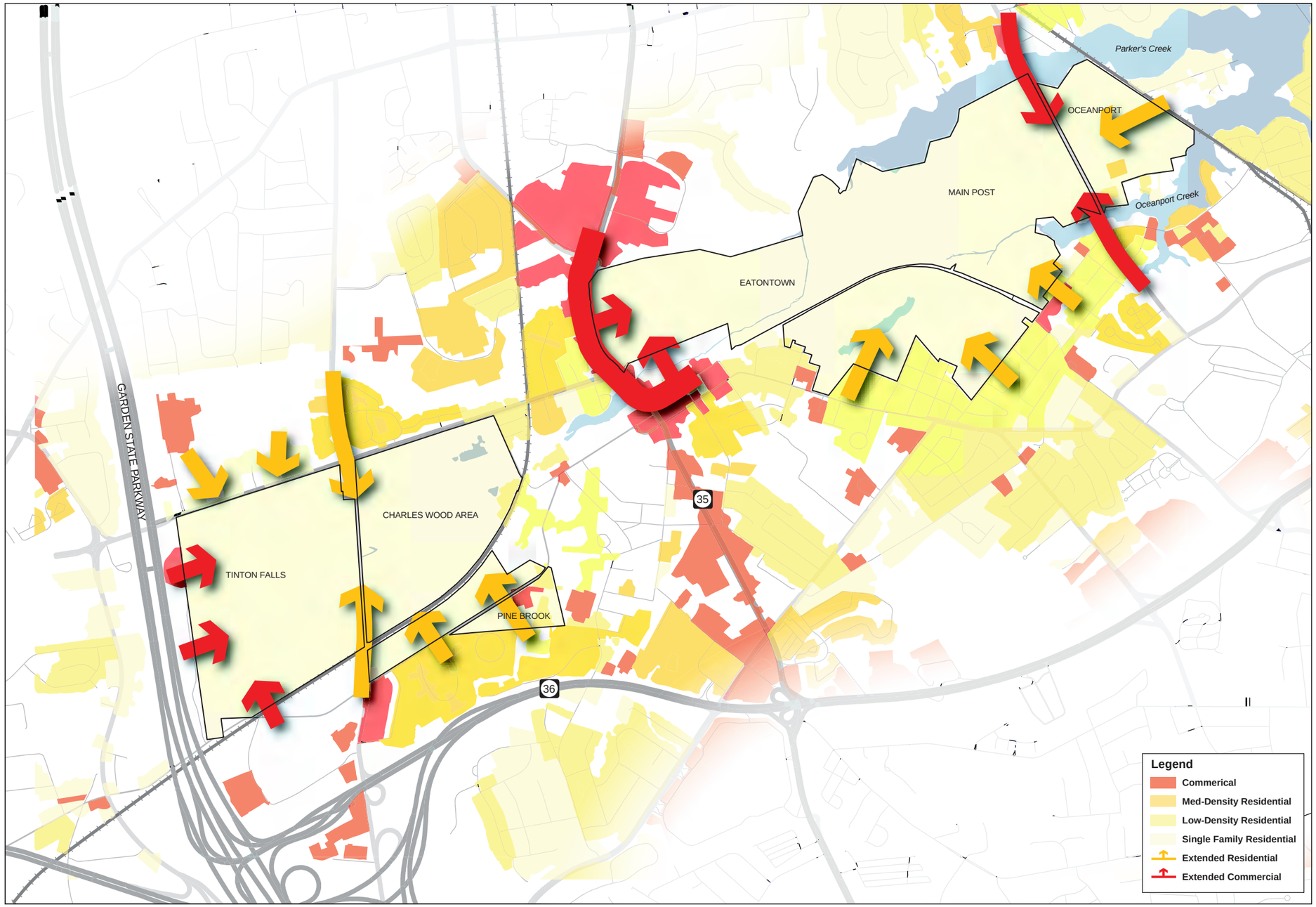
Feet

Principle # 5: Utilize the Blue-Green Belt as an armature for enhanced bicycle and pedestrian mobility throughout the Fort

Essential to any community founded on sustainable development principles is the integration of environmental resources into everyday life, making them readily accessible to the public. Building on and improving the Blue-Green belt concept, this system should include trails and open areas for use by the public as both a commuting option and an everyday amenity.

Although several trails are located throughout Fort Monmouth, they are not connected, both internally and externally. Providing proper connections and access points would enable both residents and employees of the area to use this resource as a transportation alternative, significantly enhancing mobility and promoting the live-work-play way of life. Redevelopment of Fort Monmouth should be exemplary in regard to creating vibrant neighborhoods where residents and visitors are encouraged to walk or bicycle between home and work and work and entertainment.



FORT MONMOUTH CONCEPT DIAGRAM : BLUR BOUNDARY/ EXTEND LAND USE

FMERPA AECOM

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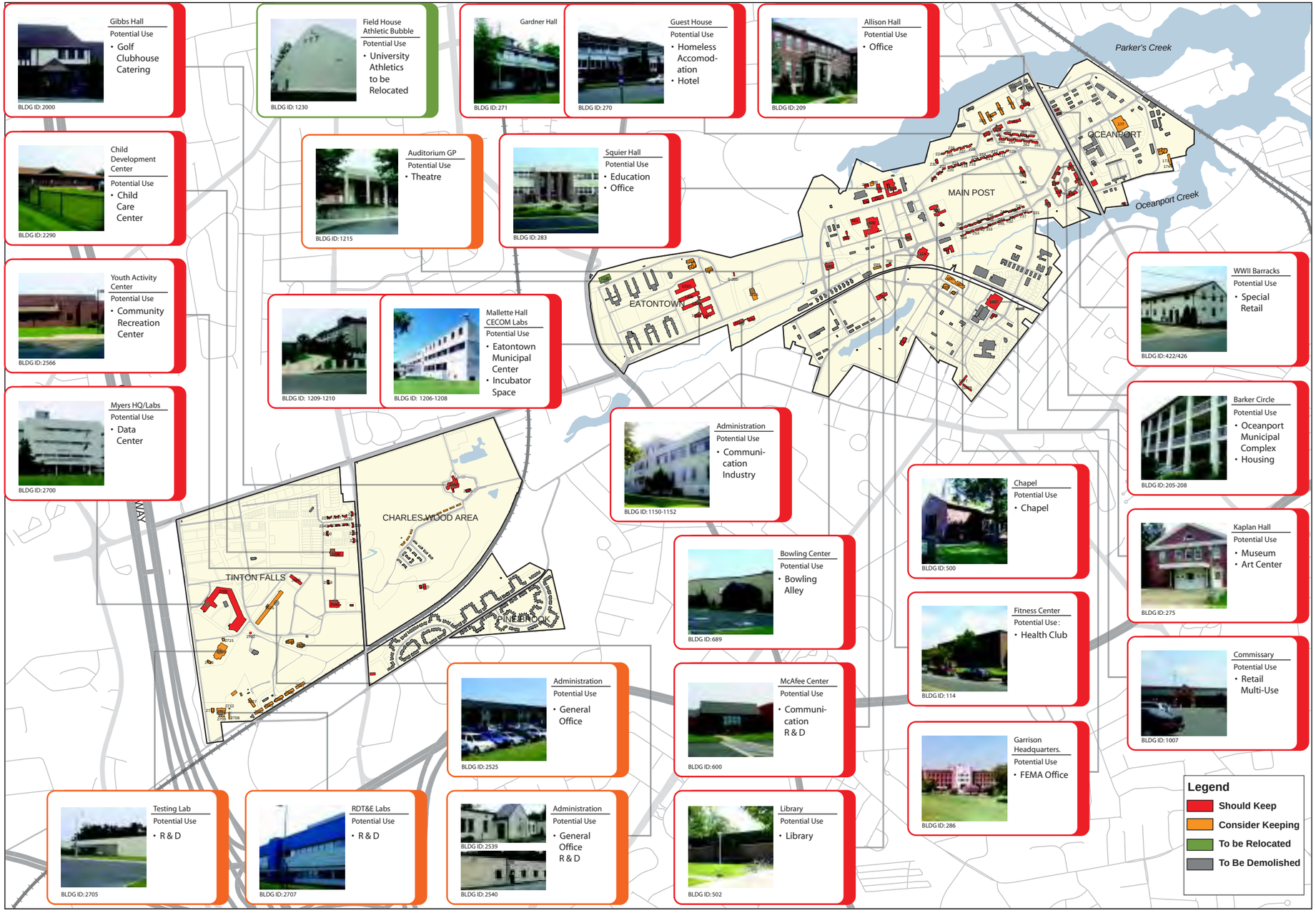
Feet

Principle # 6: Remove Fort boundaries & extend existing land uses to reconnect the Fort to the communities

The gated and fenced Fort has presented barriers to movement in all directions. All gates and fences should be removed and the Fort opened to the public. Early in the redevelopment process, existing streets and adjacent land uses should be extended into the Fort to reconnect the host communities of Tinton Falls, Eatontown, and Oceanport and the adjacent communities of Shrewsbury and Little Silver.

Creating a seamless land use integration between the community and the Fort is of primary importance. The proposed extension of adjacent land uses and existing streets into the Fort would improve mobility while providing public access to the Fort's amenities.



FORT MONMOUTH CONCEPT DIAGRAM : BUILDING RE-USE PLAN

FMERPA

Principle # 7: Leverage existing Fort Monmouth assets (People, Buildings, Technology, and Infrastructure)

Many valuable assets already exist at Fort Monmouth and their retention and enhancement should be leveraged to promote successful redevelopment. Many existing facilities possess cultural value, such as historic structures and memorials, or physical value, such as high-tech systems that should be retained. Several buildings and housing areas show a unique historic character and, although not all historic facilities are suitable for reuse. Their significance should be retold in some form of mitigation such as educational showpieces.

As a result of Fort Monmouth's communications mission, many of the facilities contain high tech infrastructure and spaces that are too valuable to simply dispose of them. These facilities possess great value to the redevelopment market, specifically high tech industry, research and development companies, or flexible incubator space that provides excellent connectivity. Additionally, the skilled workforce that powered Fort Monmouth should be leveraged to the greatest extent possible. Although many would move with the mission to Aberdeen, many would stay behind as a result of retirement or personal choice.

Extensive infrastructure extends throughout the reuse areas, including typical utility connections as well as fiber and valuable geothermal wellfields and associated connections. Additional assets include the variety of monuments and memorials located throughout the Fort. These structures serve as a reminder of the base's and country's history and have the potential to serve as placemakers and cultural and educational showpieces.

3.0 LAND USE & CIRCULATION

3.0 Land Use and Circulation

3.1 Land Use Element

The Land Use Element presented here promotes a balanced and functional mix of land uses consistent with the State Development and Redevelopment Plan (SDRP), the Principles of Smart Growth, and the community values interpreted from community charrettes and public meetings. The Technical Memoranda (September 2007) provided a discussion of existing land use patterns, constraints, and opportunities; identified existing facilities; their condition and reuse potential; and identified specific resources worthy of preservation or enhancement, such as natural resources including wetlands. The layout of land uses builds on our previous analysis and is based on land use issues identified in the analysis process, as well as constraints and opportunities.

The Land Use groups that are illustrated on figure (page 3-5) are organized by: Low Density Residential; Medium Density Residential; Mixed/Multi-Use; Commercial, Lodging; Office/R&D; Institutional; and Open Space. The organization of these planned uses was determined by a multitude of factors including data obtained through public outreach, stakeholder interviews, existing conditions research, applicable policies, market demand and feasibility, and consideration for the surrounding use patterns. The Land Use map provides a general overview of planned uses; however, the Plan as a whole illustrates more in-depth detail on planned uses and designations. Although some detail regarding planned uses is provided in the following discussions, this Land Use Element is intended to provide a more general overview of the Plan's flexibility. Additional detail such as specific uses and development intensities is provided in the Plan and Key Area Plans discussion presented in Chapter 4.

The land use patterns laid out in the Plan are intended to guide future growth and development of the Reuse Area. As such, land use areas, extents, and intensities are identified but remain flexible. The Land Use Plan anticipates a phased redevelopment over the next 20 years to 2028. Thus two Plans are presented: a 10-year Plan and a 20-year Plan. Applicable policy conformance and recommendations are discussed separately, in Chapter 9: Zoning and Land Use Implications.

3.2 Existing Land Uses

For ease of discussion purposes, land use summaries are organized by Reuse Area, based on the municipal boundaries.

Tinton Falls Reuse Area

The Tinton Falls Reuse Area covers the properties extending from the western-most border of Fort Monmouth to Hope Road. The Reuse Plan for this node envisions a Mixed-Use, High-tech Business Center with a multi-use town center containing store-front retail with the potential for mixed-income housing or professional offices above, institutional uses such as a library, and professional office space. The main corridor of the area extends from the existing Tinton Falls Municipal Complex. Additional civic uses are focused on education and development and include reuse of the existing child development center, teen center, and community center and pool. Open space amenities define the areas and are interspersed throughout in the form of a civic green, small neighborhood parks, connecting trails, and a central park with active recreation linked to the Fort-wide Blue-Greenbelt.

Residential

The Residential component of the Land Use Plan takes advantage of the valuable historic housing units already existing on the base and plans for the reuse of the 22 unit Hemphill Housing units located along Hope Road. The entire northeast corner of the Tinton Falls Reuse Area along Tinton Avenue is planned for mixed income residential use, with a mixture of low and medium density housing. These units are envisioned to become a part of a larger residential area, containing low and medium density units in the form of garden apartments, townhouses, and detached residences. This area was historically a residential zone at Fort Monmouth; however, all of the units have already been removed with the exception of the Hemphill housing along Hope Road.

Moving northwest of this area, a series of large lot detached housing units are planned along the south side of Tinton Avenue, within Tinton Falls. Given the scenic nature of Tinton Avenue, a 30 foot landscape buffer is recommended between the roadway and proposed development. The area of housing units between these two residential sections provides a mix of small lot detached housing, townhouse/rowhouses, and garden apartments. Providing residential units at a slightly higher density in these areas would allow for a more cost effective means of providing mixed-income housing units, introducing housing opportunities to a wide range of income levels. The 22 existing detached housing units, Hemphill Housing, located along Hope Road would be preserved due to their historic preservation value and marketability in the current housing market. A total of 288 residential units are planned for the Tinton Falls Reuse Area of what is now Fort Monmouth.

A notable feature of the Residential pockets in this area is the presence of small community parks interspersed throughout. At the center of the residential neighborhood is a central park with a community center and active recreation amenities. As identified later in this Plan, trails and pathways also encircle the area, promoting an active lifestyle and alternative transportation modes. Additionally, residential areas are co-located with employment centers and services as appropriate to encourage a sustainable live-work-play environment.

Institutional/Civic Use

Several municipal facilities are dispersed throughout the Tinton Falls Reuse Area. These functions include the previously mentioned child and teen development facilities (converted to a community recreation center), as well as the library located in proximity to the Municipal Complex and mixed-use Town Center. The fire training facility located in the southeastern corner of the Tinton Falls Reuse Area is also a proposed Institutional Use. The existing fire station would also be reused.

An area of civic uses, classified as Institutional on the Land Use Plan, is situated to the south of the residential zone near the existing Hope Road gate. The area identified for these civic uses includes the existing community center, child development center, and pool and teen center. This use is appropriately positioned in an easily accessible location, as entrance to the area would be more readily accessible once the dead end roadways are extended and security gates removed in 2011 (or earlier depending on phasing).

The existing fire and police training center is planned for reuse by the local academies. FMERPA's Emergency Services Advisory Committee has determined that the reuse of these facilities is appropriate to provide equipment and technology not currently available to them. The training facilities would allow not only the Tinton Falls emergency services branch to train here but would be shared amongst the other municipalities in the area, the County, and the State.

Mixed/Multi-Use

A mixed-use retail center is planned for the northwest corner of the Tinton Falls Reuse Area. This area is intended to become a Neighborhood Retail Center that includes neighborhood convenience, food and beverage, and specialty retail totaling (80,000 square feet) and a 27,000 square foot municipal library.

Consideration of 2 to 3 story residential development and/or professional office space above ground floor retail warrants additional consideration as the Plan develops. This area containing some civic uses is appropriately located adjacent to and east of the existing Tinton Falls Municipal Complex.

Office/High Tech Research and Development

A mixed-use business campus is proposed for the central portion of the Tinton Falls Reuse Area. The business campus is centered around the reuse of the Myer Center, currently an expansive 670,000 square foot building. The majority of the business center development would occur within the first ten (10) year development phase and would include Fabrication Shops, Administrative Offices, a Data Recovery Center (Myer Center), Testing Labs, and Research and Development Testing and Evaluation facilities. The second phase of development adds additional Class A Office/Research and Development facilities. A total of approximately 839,000 square feet of commercial, R&D space is proposed in Tinton Falls.

Open Space/Recreation

Expansive, interconnected open spaces create a parks framework for the Tinton Falls Reuse Area. Much of the open space areas are characterized by natural resources such as wetlands and forests. The open space system is intended to establish wetland buffers and provide continuous interconnected habitat corridors. Additional areas, primarily located along the wetlands corridor, north of the railroad tracks, are planned for reforestation.

In addition, small community parks are interspersed and Blue-Greenbelt trails meander throughout the development. A continuous linear perimeter park is proposed to provide a multi-purpose trail around the Reuse Area. There are approximately 99 total acres of open space within the Tinton Falls Reuse Area. A 12 acre community park containing a community Field House and ballfields is planned in the area buffering the residential area from the office complex.

A 2.5-acre neighborhood green is proposed at the center of the retail center. The green would serve as a passive recreation area and may host events in a bandshell or support a flexible program of markets, festivals, and art exhibits.

Because of the importance of and emphasis placed on the need for preservation and improvement of Open Space areas, a Recreation Plan, which identifies active and passive recreational areas as well as trail and pathway connections has been developed and follows the Land Use Plans.

Eatontown (Charles Wood) Reuse Area

The Eatontown (Charles Wood) Reuse Area is divided into two development areas, the western section composed of approximately 235 acres in the existing Charles Wood Area, and the eastern section composed of 219 acres in the Main Post Area. The Suneagles Golf Course encompasses the majority of the western development area, with the existing Howard Commons housing area covering the remaining portion. The Suneagles Golf Course is envisioned to remain as a golf course in perpetuity with a potential conference center and resort-style lodging. Although the existing units in the Howard Commons area are not deemed appropriate for reuse, this area is a suitable area for mixed-income housing.

Residential (Medium Density)

Although the former Howard Commons area currently contains housing units, the research and analysis conducted as part of this planning effort determined that reuse of these units is not feasible for a variety of building code and non-market responsive reasons. However, it was determined that this area is ideal for mixed-income housing that would help meet New Jersey Council on Affordable Housing (COAH) requirements. Based on these requirements, a minimum of 20% of the housing units are to be set aside for affordable residences. A total of 275 apartments and townhouses are proposed for this residential development component on Pinebrook Road. In addition, 302 new apartments are proposed adjacent to the Route 35 Lifestyle Center. A total of 577 residential units are planned for the Eatontown Redevelopment Area. Additional detail on this Key Area is provided in Chapter 4: Key Area Site Plans. It is anticipated that the Pinebrook residential development would occur in Phase 1 of the development process, with Route 35 residences developed in Phase 2.

Lodging

The second housing component, in the format of lodging, planned in the Eatontown (Charles Wood) Reuse Area is located in the central portion of the Suneagles Golf Course (proposed to remain a golf course accessible to veterans and the public). These units include townhouse/rowhouse style units (existing Megill housing) as part of an upscale conference hotel. Eighteen of the Megill units are intended to serve corporate, longer stay clientele that are making use of the conference center or visiting the area for business purposes. A number of existing units would require removal to provide ample space for a 150-room hotel development.

Institutional/Civic Use

The Institutional use of this area includes the reuse of Gibbs Halls and its outlying facilities. Gibbs Hall would house the golf clubhouse, lockers, pro-shop, restaurant and grill, administrative offices, and potentially be reused as a venue for catering of special events. The area would continue to provide restaurant service; however, the major change would be opening the Suneagles Golf Course to the public.

Commercial

A small commercial development in the form of a 12,530 square foot convenience retail facility is planned at the intersection of Hope and Pinebrook Road. This convenience retail is situated for easy access by the nearby mixed-income residential community in the former Howard Commons apartments location.

Open Space/Recreation

A large portion of the Eatontown (Charles Wood) Reuse Area is characterized by Open Space and Recreation. The existing Suneagles Golf Course would be opened up to the public; however, it would likely be privately-owned and run in conjunction with the hotel and conference center. As discussed later in this Plan, an easement requiring the continued protection of the area and continuation of the golf course use is recommended. Several linear community parks intersect the residential areas. Although public, they are intended to serve the new residential units with passive recreational space, promoting an active lifestyle and an opportunity to appreciate the natural environment. Additionally, trails extend along the rail line right-of-way, providing greenway connections between the development nodes within the Tinton Falls Reuse Area. A total of 314 acres of public open space is proposed in Eatontown, including the golf course.

Eatontown (Main Post) Reuse Area

The Eatontown (Main Post) Reuse Area contains a variety of development nodes, including a Lifestyle/Town Center with an Incubator office node to the north and Consultant Row to its south, a Municipal Complex, and a Recreation/Civic Use area. A special feature of note in this area is the presence and reuse of geothermal well fields. The proposed Town Center is centered around the well fields, which would be reused for their current purpose as well as remain as an open green space free of built structures, providing both active and passive recreational opportunities.

Commercial

Approximately 345,000 square feet of commercial incubator business and consultant's row space is proposed on the former Main Post portion of the base. The multi-facility commercial development fronting Route 35 is situated to transform this area into a new Eatontown Town Center and gateway to the Fort Monmouth Reuse Area. A Lifestyle Town Center along this main corridor would be served by a jitney bus transfer stop, providing access to all points throughout the Fort Monmouth Reuse Area. The 150,000 square foot Lifestyle Town Center may be developed within the first phase of development, and is anticipated to act as an initial economic stimulant for other components of the Plan to come later in the phasing process

Additional commercial uses located further to the northeast include a theater and bowling center. The existing auditorium (Building 1215) would be reused as a community theater. The new bowling center would also take advantage of the existing facility; however, renovations and improvements would likely be required to meet current market expectations.

Residential

Medium density apartments are planned for the area immediately east of the Lifestyle Town Center. These residential units would afford the benefit of being centered around a large open space area, where the geothermal well fields exist. The 302 units are projected to be developed in the second phase of the Plan, after the economic vitality of the area has had an opportunity to mature and historic housing has been absorbed by the marketplace.

Office

The Office space planned in the central portion of the Eatontown (Main Post) Reuse Area is intended to be used for Incubator and Professional Services space and also as a component for high-tech communications companies. Incubator space provides superior flexibility and connectivity for new businesses in a shared facility. As such, this incubator space is provided with the intent of inviting new innovative, start-up, businesses that do not need large facilities such as that provided at the Myers Center.

Institutional/Civic Use

There is one Institutional use area identified within the Eatontown (Main Post) Reuse Area. This includes the 52,000 square foot Mallette Hall and the amphitheater for use as a new Municipal Complex. The Eatontown Borough government offices have proposed to relocate to this space and thereby reestablish themselves in a new location amidst expansive green space and mixed-uses.

Open Space/Recreation

Open space areas, with both existing forested areas and areas identified for reforestation, outline the perimeter of the Eatontown (Main Post) Reuse Area. The eastern portion of the Eatontown (Main Post) Reuse Area is covered by an expanse of open space, with recreational ballfields in the center. Four

ballfields are identified in the Recreation Plan. A total of 125 acres of Blue-Greenbelt parks space are planned for the Eatontown (Main Post) Reuse Area. As previously identified, an expanse of green space on top of the geothermal well fields would be preserved in the center of the Lifestyle Center. Open space areas that are not proposed for active recreational purposes would be reforested as appropriate. Reforestation would allow for the connection of potential wildlife habitat, reinforcing the goal for creating an ecologically productive area.

Oceanport Reuse Area

The three major nodes proposed within the Oceanport Reuse Area include a High Tech/Green Industry Cluster, Education/ Medical Campus, and Oceanport Neighborhood Center. In addition, a boutique hotel and spa and historic housing area provide two additional character areas. Expansive green space is provided in the center of the Oceanport Reuse Area, where the Parade Ground is to be preserved.

Residential

There are three residential zones planned for the Oceanport Reuse Area. Located to the northeast of Oceanport Avenue are approximately 400 for rent and for sale apartments, just outside of the floodplain and Coastal Area Facility Review Act (CAFRA) required buffers. This medium density residential neighborhood located between Parker's Creek and Oceanport Creek would add vitality to the traditional multi-use main street proposed along Oceanport Avenue. This residential component of the Plan is not expected to be developed until the second phase of the Plan.

A mixed-use area is planned immediately to the west of this residential area, on the west side of which is a medium-density residential district. This district is centered on the valuable historic housing that currently exists at Fort Monmouth. The remainder of the historic housing that flanks the Parade Ground includes single-family housing units at a lower density, also designated to continue as a low density residential area lining the Parade Ground.

Finally, the southern portion of the Oceanport Reuse Area, along Main Street, includes a neighborhood of apartments, townhouses and small lot detached residences. A Residential zone in this area provides an appropriate transition with the existing housing outside of the Fort's gates along Main Street. This Residential area would benefit from the education and medical campus planned for the area. A total of 740 Residential units are planned for the Oceanport Reuse Area.

Mixed-Use/Multi-Use

The stretch of the Oceanport Avenue corridor that extends through the Reuse Area is identified for mixed-use development that could provide services and amenities to the residential developments on either side and the greater community. As shown in the Plan, the Oceanport Neighborhood Center is located amidst the residential development and overlooking the Parade Grounds to the southwest.

Institutional/Civic Use

Several institutional use zones are dispersed throughout the Oceanport Reuse Area. Institutional uses may include a school (educational), institutional, and administrative uses. Three of the buildings located around Barkers Circle, some currently being used as office space, are also identified as Institutional (administrative) space. As noted on the Plan, the Barkers Circle area is designated as a potential Oceanport Municipal Complex and apartments.

The existing museum and library are preserved, with the library continuing to serve in its current function. In addition to its continued use as a museum, many reuse opportunities present themselves. The existing museum is the original base theater and has the potential to be transformed back into a theater and venue for local theatrical arts or alternatively reused as an art gallery where local artists could exhibit their works.

As a result of the BRAC early land transfer process, the Federal Emergency Management Agency (FEMA) would be taking over Russel Hall, currently serving as the Garrison headquarters. This area is represented on the Land Use map and Plan in blue with the facility itself as well as approximately 8 acres of the Parade Ground being transferred to FEMA.

The westernmost area of the Parade Ground is also designated for Institutional use, with the existing chapel and associated facilities expected to remain. Additional Institutional areas and facilities planned include a medical/ educational complex, and several smaller buildings such as Armstrong and Squire Halls, providing potential educational reuse opportunities.

Commercial

There are three areas/facilities identified for Commercial use in the Oceanport Reuse Area. These include existing facilities whose use would remain, the bowling alley, fitness center, and commissary (grocery store). Oceanport Avenue would also be redeveloped as a traditional Main Street with multiple uses including conveniences and specialty retail, food and beverage amenities, and professional offices, with residential units above.

Lodging

The 20 year Land Use Plan identifies an area along Parker's Creek for development of Lodging; a portion of which would provide medium-density housing in the short term (10-year Phase 1). This waterfront area has the potential to provide a serene setting for a boutique spa and hotel, consistent with the Lodging designation.

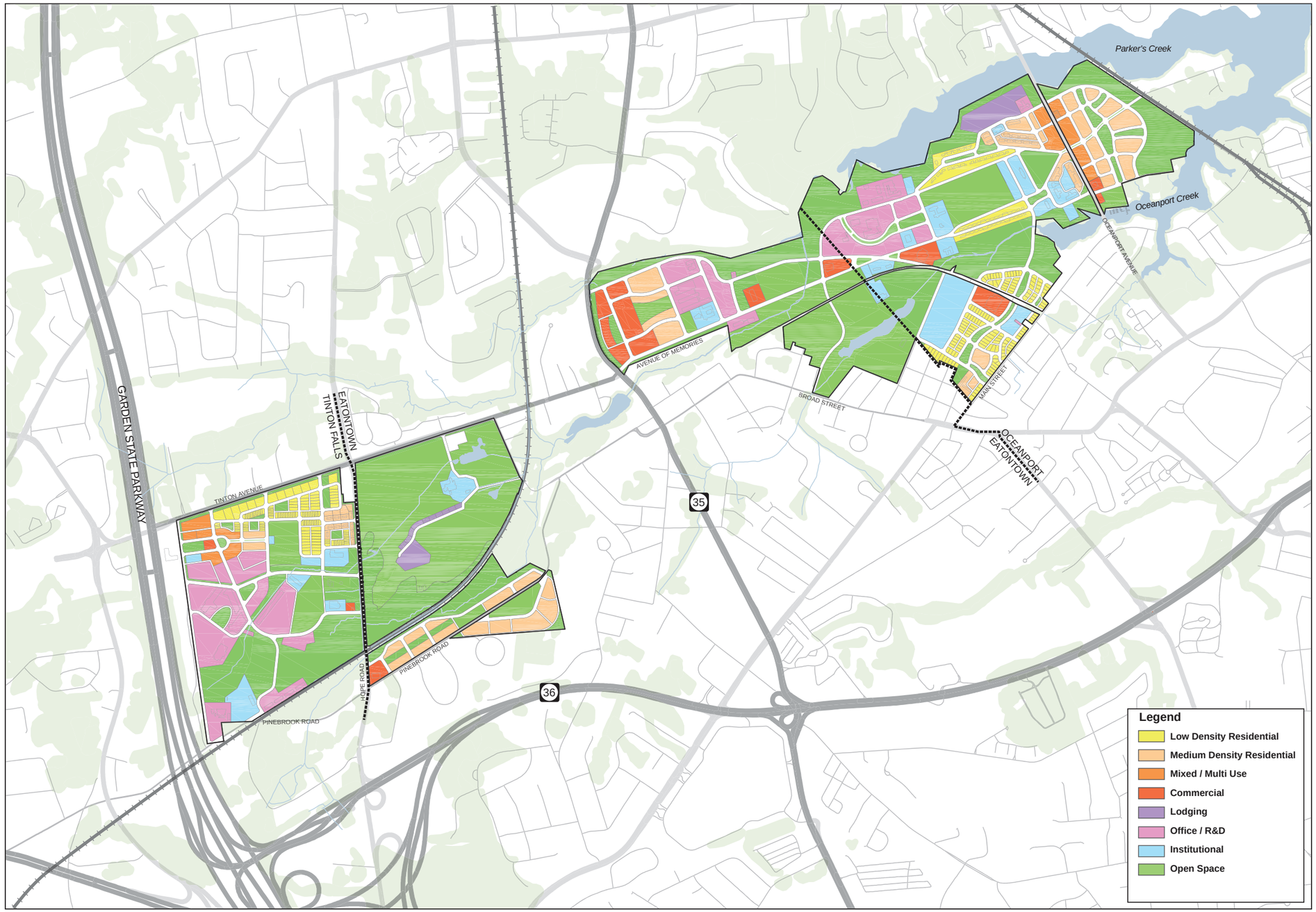
Office

The majority of the Office uses are located in the western portion of the Oceanport Reuse Area. A large 437,119 square foot high-technology office/R&D complex is designated to reuse some of the existing facilities as well as the development of new ones. The highly specialized equipment, including an anachoic chamber, makes the McAfee Center highly attractive for reuse by high-tech companies. Modern "flex" research and development office space would target Nano-Technology and Bio-Technology companies and emerging green industries.

Open Space/Recreation

Much of the Open Space areas designated within the Oceanport Reuse Area includes already forested area along the perimeter of the site and along the waterfront. A notable Open Space area is the Parade Ground, which would be required to remain free of built structures as a result of its historic status. Approximately 229 acres of open space and greenbelt parks are distributed throughout the Oceanport Reuse Area.

A special recreational opportunity is provided along the shores of the Oceanport Creek, a marina with a potential dining option. The existing marina is to be improved and expanded to provide greater public access to the water. A café/restaurant and pedestrian inviting esplanade are also proposed as part of the improvements. Additional detail on these improvements is provided in Chapter 4. Similarly a public esplanade is proposed adjacent to the Hotel Spa on Parker's Creek.



FORT MONMOUTH CONCEPT DIAGRAM : LAND USE PLAN IN 2028 (20 YEAR PLAN)

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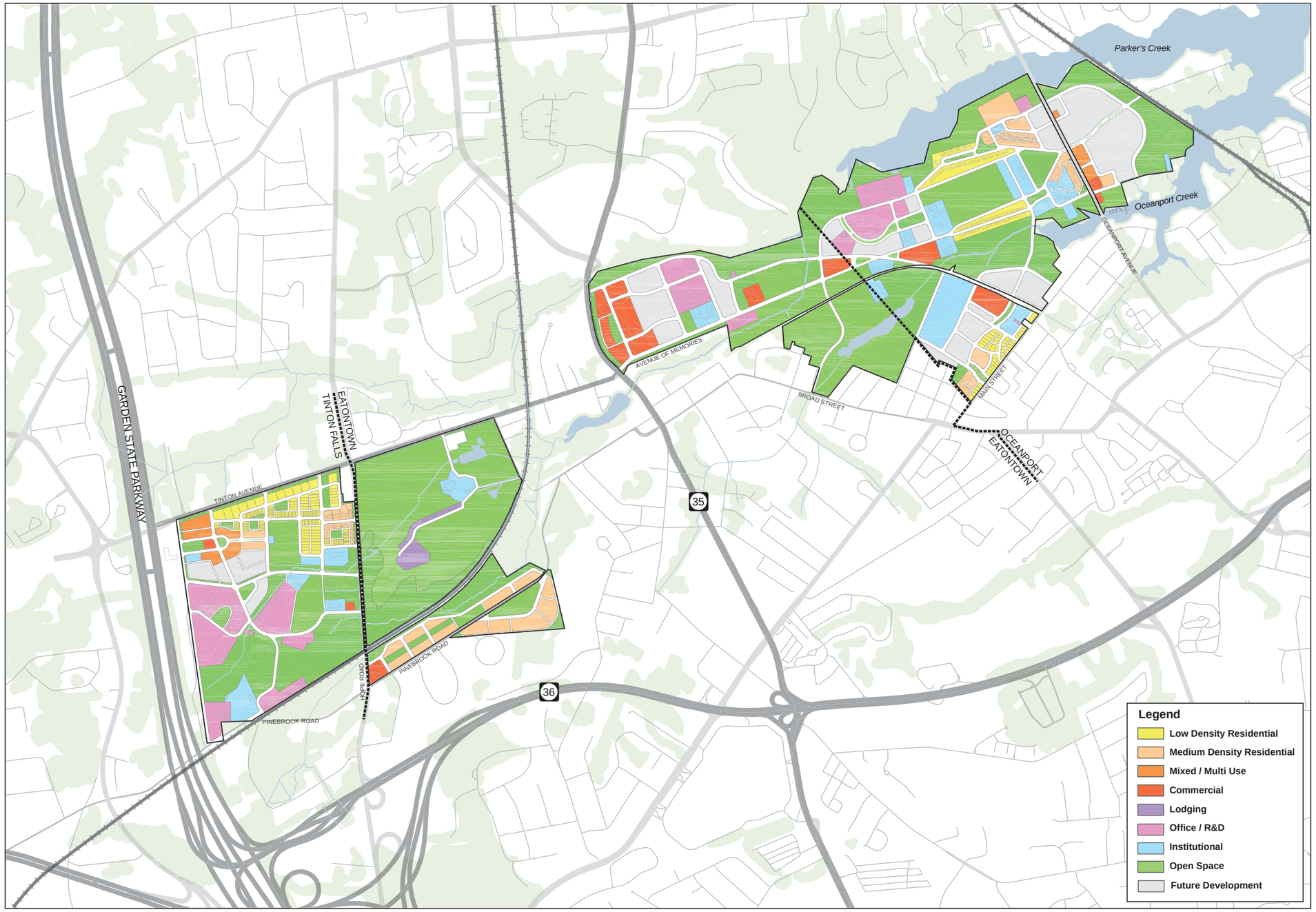

FORT MONMOUTH CONCEPT DIAGRAM : LAND USE PLAN IN 2018 (10 YEAR PLAN)

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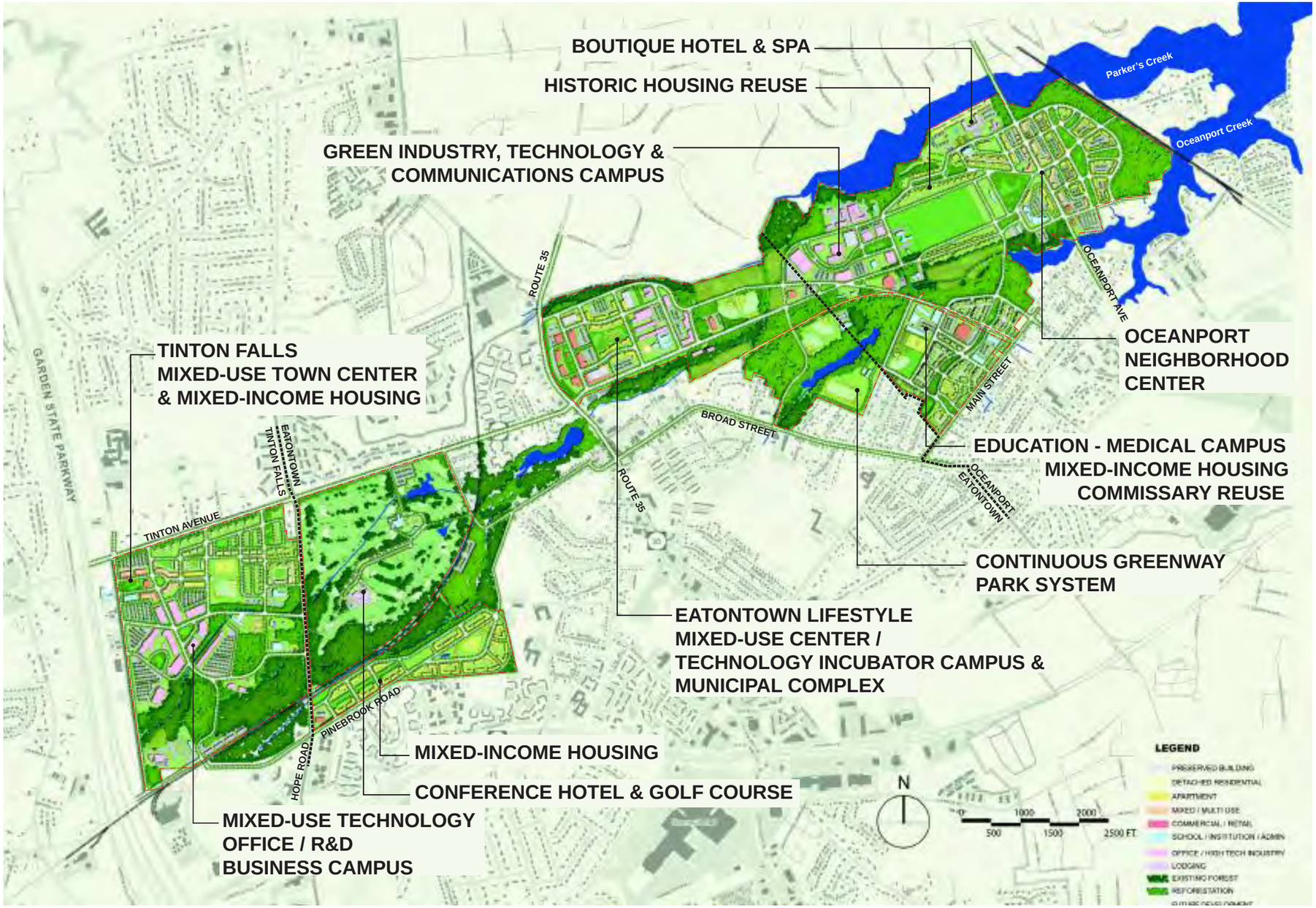

FORT MONMOUTH CONCEPT PLAN CONCEPT PLAN IN 2028 (20 - YEAR PLAN)

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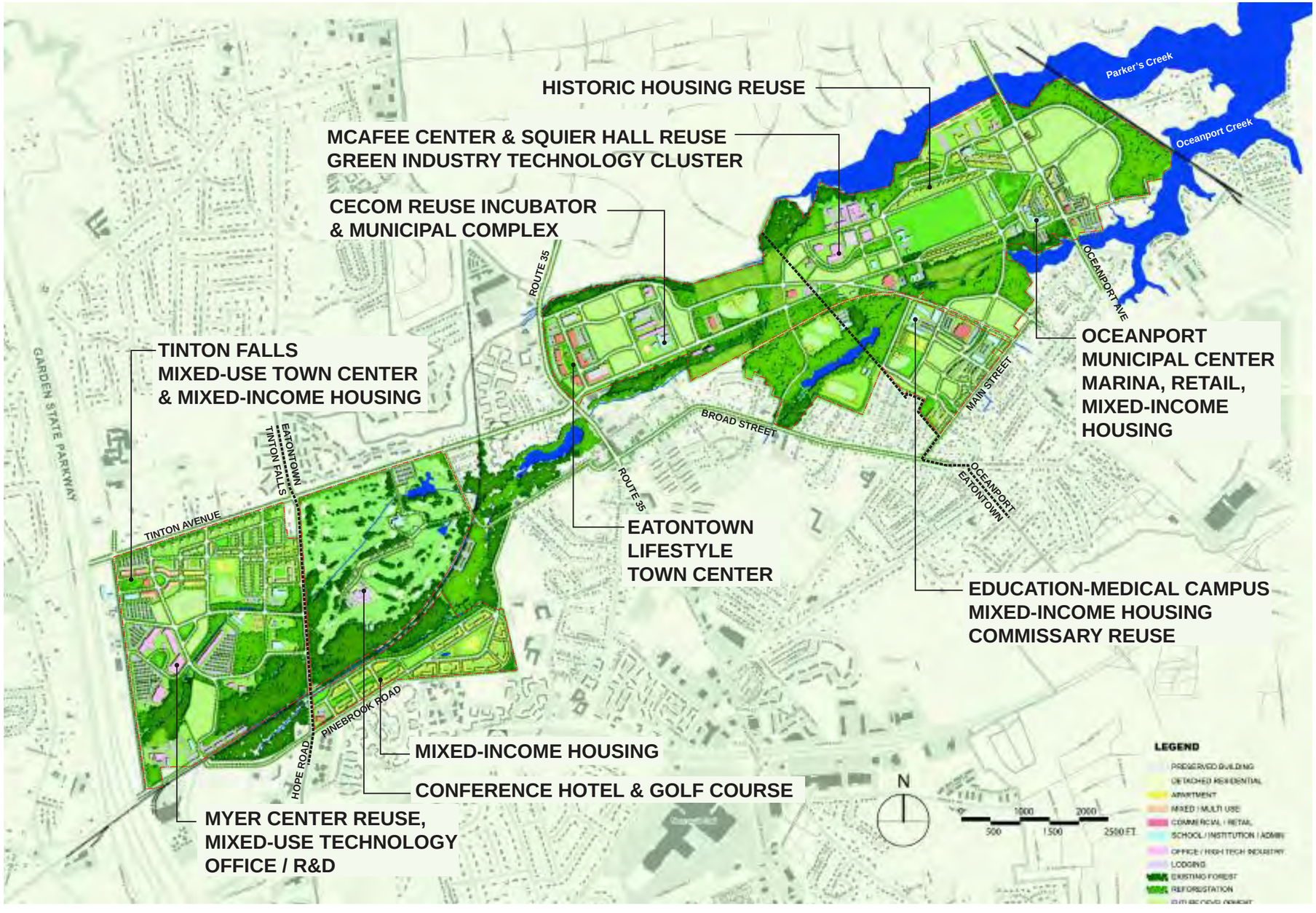


FORT MONMOUTH CONCEPT PLAN CONCEPT PLAN IN 2018 (10 - YEAR PLAN)

FMERPA

Artistic Rendering of Tinton Falls Redevelopment Area

Artist: Thomas W. Schaller

Artistic Rendering of Eatontown Redevelopment Area

Artist: Thomas W. Schaller

Artistic Rendering of Oceanport Redevelopment Area

Artist: Thomas W. Schaller

Existing Building Number	DESCRIPTION	Interim Use (I); Permanent Reuse (P)	Tinton Falls 10 Year Plan	Tinton Falls 20 Year Plan	Eatontown 10 Year Plan	Eatontown 20 Year Plan	Oceanport 10 Year Plan	Oceanport 20 Year Plan	Total 10 Year Plan	Total 20 Year Plan	Grand Total
	OFFICE/RESEARCH AND DEVELOPMENT										
173-174	Lab Testing, Office	P					6,388		6,388	-	6,388
209	Allison Hall Office	P					36,665		36,665	-	36,665
281	Professional Office	P					2,544		2,544	-	2,544
283	Squier Hall Office/Education	P					76,538		76,538	-	76,538
286	Russel Hall Garrison Headquarters	P					76,978		76,978	-	76,978
289, 290, 291, 295	General Office	P					21,006		21,006	-	21,006
600	McAfee Center	P					97,000		97,000	-	97,000
1150, 1152	Vail Hall Communication Center	P			36,483				36,483	-	36,483
1208-1210	CECOM Incubator & Professional Office	P			138,050	207,072			138,050	207,072	345,122
2502-2507	Shops/Warehouses	I	42,752						42,752	-	42,752
2525	Adminstrative Offices	P	86,719						86,719	-	86,719
2539- 2540	Lab Testing Buildings	P	15,756						15,756		15,756
2700 Myers Center	Data Recovery Center _ Reconfigured Myer Cent	P	445,522						445,522	-	445,522
2705	Testing Lab	P	47,592						47,592	-	47,592
2707	RDT&E Lab	P	26,476						26,476	-	26,476
New	Technology Flex Office	P				140,000	50,000		50,000	140,000	190,000
New	Office/Research & Development	P		175,000			50,000		50,000	175,000	225,000
New	Green Industry Cluster	P					100,000	200,000	100,000	200,000	300,000
New	Medical Office Building	P					20,000		20,000	-	20,000
	Subtotal Total Office/R&D Space		664,817	175,000	174,533	347,072	537,119	200,000	1,376,469	722,072	2,098,541
	Total Offive/R&D Space by Municipality			839,817		521,605		737,119			
	RETAIL										
114	Fitness Center	*P*					32,250		32,250	-	32,250
450	Public Marina	P					2,600		2,600	-	2,600
689	Bowling Alley	P			17,599				17,599	-	17,599
1007	Commissary Retail Center	P					53,700		53,700	-	53,700
2000	Gibbs Hall Suneagles Golf Club	P			37,125				37,125		37,125
2018	Suneagles Restaurant	P			3,205				3,205	-	3,205
2567	Gas Station	P	1,335						1,335	-	1,335
New	Neighborhood Convenience Retail	P	48,000	32,000	12,530		19,000	19,000	79,530	51,000	130,530
New	Lifestyle Town Center Retail	P			150,000				150,000	-	150,000
New	Waterfront Retail	P						9,000	-	9,000	9,000
New	Waterfront Boutique Hotel Retail	P						3,000	-	3,000	3,000
New	Spa	P						3,000	-	3,000	3,000
	Credit Union	P					5,000		5,000	-	5,000
	Subtotal Retail Space		49,335	32,000	220,459	-	112,550	34,000	382,344	66,000	448,344
	Total Retail Space by Municipality			81,335		220,459		146,550			
	HOSPITALITY/CONFERENCE CENTER (assume 750 SF per room)										
New	Conference Hotel	P			225,000				225,000	-	225,000
New	Conference Center	P			15,000				15,000	-	15,000
New	Waterfront Hotel	P						70,000	-	70,000	70,000
											-
	Total Hotel/Conference Center		-	-	240,000	-	-	70,000	240,000	70,000	310,000
	RESIDENTIAL (assume 1,500 SF per unit)										
2231-2240,2260	Hemp Hill Housing	P	22						22	-	22
211-319	Russel/Allen Avenue Housing	P					32		32	-	32
234-258	Gosslin Housing	P					45		45		45
261-270, 328, 360	Russel/Carty Avenue Apartments	P					36		36	-	36
271	Gardner Hall Residential	P					15		15	-	15
1077, 1078	Main Street	P					24		24		24
New	1-Family Small Lot	P	39				80	79	119	79	198
New	1-Family Large Lot	P	14						14	-	14
New	Townhouse/Rowhouse	P	83			302			83	302	385
New	Apartments	P	130		275		60	309	465	309	774
New	Oceanport Ave Apartments	P					30	30	30	30	60
	Subtotal Mixed Income Residential Units		288	-	275	302	322	418	885	720	1,605
	Total Residential Units by Municipality			288		577		740			
	Total Mixed Income Square Footage		439,700	-	445,800	453,000	1,122,697	627,000	1,327,500	1,080,000	2,407,500
	CIVIC										
206208	Barker Circle Oceanport Municipal Complex	P					76,776		76,776	-	76,776
275	Kaplan Hall Museum	P					7,432		7,432	-	7,432
501	Family Faith Day Center (former ACS Center)	P					2,832		2,832		2,832
502	Library	P					10,650		10,650	-	10,650
551	Armstrong Hall Education Building	P					13,595		13,595		13,595
702	Lane Hall Community Conference Center	P					12,100		12,100		12,100
814	Recreation Support Building	P					8,863		8,863	-	8,863
1206-1207	Eatontown Municipal Center Malette Hall	P			57,386				57,386	-	57,386
1215	Public Theater	P			18,883				18,883	-	18,883
2290	Child Development Center	P	19,600						19,600	-	19,600
2566	Recreartion Center (former Teen Center)	P	19,636						19,636	-	19,636
2560, 282	Fire/Emergency Services Station	P	10,070				6,089		16,159	-	16,159
2569	Community Pool/Tennis Center(s)	P	1,000						1,000	-	1,000
2707, 2709, 2713	Fire & Police Training Academy	P	11,110						11,110	-	11,110
1230	University Recreation Bubble	P							-	-	-
B500	Chapel	P					16,372		16,372	-	16,372
B1075 PAHC	VA - Community Medical Center	P					60,000		60,000	-	60,000
New	Middle School (450 students, 16-acres)	P					145,000		145,000	-	145,000
New	Fort Monmouth Jitney Bus	P			200				200	-	200
New	Library	P	27,000						27,000	-	27,000
New	Monmouth County Homeless Shelter	P					15,000				
	Total Civic		88,416	-	76,469	-	374,709	-	524,594	-	524,594
	Total Residential Square Footage		439,700	-	445,800	453,000	1,122,697	627,000	1,327,500	1,080,000	2,407,500
	Total Non-residential Square Footage		802,568	207,000	711,461	347,072	1,024,378	304,000	2,523,407	858,072	3,381,479
	Grand Total		1,242,268	207,000	1,157,261	800,072	2,147,075	931,000	3,850,907	1,938,072	5,788,979

Non-Residential Building Reuse Index

Non-Residential Building Reuse Index

Bldg Number	Bldg name	Existing use	Proposed Use	GSF	Tinton Falls	Eatontown	Oceanport	Office	Lab/Data	Homeless	Retail	Educ.	Other
114	Fort Monmouth Physical Fitness Center	Fitness Center	Health Club	32,250			32,250				32,250		
173 - 174	Lab Testing, Administrative General Purpose	same	same	6,388			6,388	6,388					
206, 208	Barker Circle; Barnes Hall	Residential	Municipal Office	67,776			67,776						
209	Allison Hall (Originally Hospital)	Office	Office	36,665			36,665	36,665					
270	Lodge	Guest Housing	Homeless Accommodation	11,315			11,315			11,315			
271	Gardner Hall	Residential	same	20,007			20,007			20,007			
275	Kaplan Hall	Communications Museum	same	7,432			7,432						7,432
281	Administrative Offices	same	Professional office	2,544			2,544	2,544					
282	Firehouse	same	same	6,089			6,089						6,089
283	Squier Hall	Office, Auditorium	same	76,538			76,538	76,538					
286	Garrison Headquarters	Office	FEMA Headquarters	76,978			76,978	76,978					
291	Administrative General Purpose	same	Office	12,006			12,006	12,006					
295	Administrative General Purpose	same	Office	9,000			9,000	9,000					
450	Boat House	same	same	2,600			2,600						2,600
451	Main Post Office	same	same	5,013			5,013						5,013
500	Chapel	Chapel	Chapel	16,372			16,372						16,372
501	Counseling Center	same	same	2,832			2,832						2,832
502	Main Library	Library	Municipal Library	10,650			10,650						10,650
551	Armstrong Hall	Classrooms	BCC Classrooms	13,595			13,595					13,595	
562	Water Tower/utility Building	same	same	332			332						332
600	McAfee Center	Office & R&D	Office & R&D	97,000			97,000						
689	Fort Monmouth Bowling Center	Bowling Alley	Bowling Alley	17,599		17,599					17,599		
702	Lane Hall	Community & Conference Center	same	12,100			12,100						
700	Recruiting Center	Office	Office	unknown									
NA	Credit Union	Bank	Bank	unknown									
814	Recreation Support facility	same	same	8,863		8,863							8,863
1007	Commissary	Commissary	Retail, Community Center	53,700			53,700				53,700		
1150 - 1152	Vail Hall	Communications Center	same	36,483		36,483			36,483				
1206 - 1207	Mallete Hall	CECOM HQ, Auditorium	Eatontown Municipal Bldg	57,386		57,386							57,386
1208 - 1210	CECOM Labs	Ops, Office, Labs	Incubator Space	345,120		345,120		172,560	172,560				
1215	Theater	Auditorium	Theater	18,883		18,883							18,883
1230	Field House Athletic Bubble	Field house	same - relocated off Fort	20,629		20,629						20,629	
2000	Gibbs Hall	Officers Open Dining	Golf Clubhouse	37,125		37,125							37,125
2018	Golf Course Restaurant	Officers Open Dining	Restaurant	3,205		3,205					3,205		
2290	Child Development Center	daycare	same	19,600	19,600							19,600	
2502 - 2504, 2506,2507	Shops	Machine Shops	Fabrication Shops	42,752	42,752								42,752
2525	Administration Building	Office Space	same	86,719	86,719			86,719					
2539 - 2540	Lab Testing Buildings	R&D	same	15,756	15,756				15,756				
2560	Firehouse	same	same	10,070	10,070								10,070
2566	Youth Center	Teen Youth Center	Community Rec. Center	19,636	19,636							19,636	
2567	Gas Station	Gs Station	same	1,335	3,000						1,335		
2627	Gun Range/Fire Training Center	Training	same	11,110	11,110								11,110
2700	Myer Center	HQ/Labs	Data Center or State NOI	673,540	673,540			336,770	336,770				
2705	Network Systems Building	Labs, Testing	same	47,592	47,592				47,592				
2707	RDT&E Labs	Labs, Testing	same	26,476	26,476				26,476				
Total Reuse Area excluding residential				2,079,061	956,251	545,293	579,182	816,168	635,637	31,322	108,089	73,460	237,509

Residential Building Reuse Index

Residential Building Reuse Index

Historic Housing Location	Building Number	Interim (I), Permanent (P)	Total Square Footage	Tinton Falls Square Footage	Eatontown Square Footage	Oceanport Square Footage	Tinton Falls Total Buildings	Total Units	Eatontown Total Buildings	Total Units	Oceanport Total Buildings	Total Units	Grand Total Buildings	Grand Total Units
Historic Housing														
Hemp Hill Housing	B2231-2240, 2260	P	40,700	40,700			11	22					11	22
Megill Housing	B2022-2030	P	33,300		33,300		9	18					9	18
Gosslin Housing	B234-258	P	126,288			126,288					25	45	25	45
Russel/Allen Avenue Housing	B211-319	P	282,496			282,496					19	32	19	32
Russel/Carty Avenue Apartments	B261-270, 328, 360	P	151,643			151,643					13	36	13	36
Barker Circle	B205, 207, 287	P	117,301			117,301					3	75	3	75
Gardner Hall Housing	B271	P	20,007			20,007					1	15	1	15
Non Historic Housing Location														
Main Street	B1077,1078	P	18,655			18,655					2	24	2	24
Total			790,390	40,700	33,300	716,390	20	40	-	-	63	227	83	267

Note: Square Footages exclude garages and out buildings

3.3 Existing Buildings & Facilities Review

As part of the planning process, the condition of buildings and facilities throughout Fort Monmouth was reviewed through data collection and on-site surveys. The facility survey involved a review of available existing data and a field survey of representative buildings located throughout Fort Monmouth, selected based on the following criteria:

- Permanency – Nothing originally built as a temporary structure was surveyed.
- Reuse Potential – Buildings assumed to have potential for reuse based on their existing use and condition were identified for survey.
- Size - Except for housing, only buildings over 10,000 sq. ft. were surveyed.
- Historical Significance – All eligible structures, or representative examples, were surveyed.
- Known interest in re-use – All structures for which there is a Notice of Interest ("NOI") were surveyed.

Refer to Section 7.0 Historic Preservation Guidelines for additional information regarding reuse of existing buildings.

Based upon the review of existing conditions approximately 2,000,000 square feet of non-residential buildings and 800,000 square feet residential buildings are proposed for reuse. A summary matrix of residential and non-residential buildings is provided on page 3-10. The selection of facilities for reuse is subject to change pending completion of FMERPA's NOI review and decision-making process.

3.4 Circulation Plan

As development of the Reuse Area progresses and anticipated growth in the surrounding communities occurs, the need for a clear and reliable transportation Plan would become increasingly important. In order to accommodate and manage this growth, significant improvements would be required. The first step in this process is the identification of both improvements to the existing roadway infrastructure and the management of transportation via improved linkages to transit facilities, thereby minimizing the demand placed on the road network.

This Circulation Element provides a framework for the transportation network improvements and is supplemented by a full report titled "Future Traffic Conditions and Analysis." This report provides a detailed analysis of roadway capacities and service levels as well as suggests improvements to the infrastructure to make the system both financially feasible and operationally acceptable.

The Circulation Element identifies a circulation network for the movement within the entire Reuse Area. The circulation system includes the internal network of roadways, bus/jitney stops and routes, trails, and sidewalks as well as the external network of freeways, arterials, transit stops and routes, and bicycle and pedestrian routes. The Circulation Element and Land Use Element are interconnected in that the Land Use Plan could not function without proper circulation and handling capacity.

Site Access

The Fort is currently a secure installation; therefore, direct access into the site is only available through three designated gates, with the remaining interior roadways terminated at dead ends at the perimeter of the site. Enhanced mobility is a critical factor in the redevelopment and reuse of Fort Monmouth. The opening of the Reuse Area to public traffic, following Fort Monmouth's closure in 2011, would provide an opportunity to greatly enhance east-west and north-south mobility throughout the communities. Under existing conditions, non-military vehicles must circumnavigate the secure site along State Routes 35 and 36, Hope Road, Tinton Avenue, Broad Street, Main Street, Oceanport Avenue, and Sycamore Avenue. During the A.M. and P.M. peak hours, key intersections throughout the area experience poor level of service resulting in travel delays. The reopening of the security gates to allow private vehicle travel throughout the Reuse Area provides an opportunity to enhance local and regional mobility.

Transportation Analysis

In order to enhance area mobility, support redevelopment and reuse of the site, and improve access to recreational facilities and open space, the Plan for on-Fort mobility must address the goals identified to the right.

Transportation Circulation Improvement Goals:

1. Open all security gates and remove all barricades to permit free access to the entire Reuse Area.

2. Open and extend adjacent neighborhood roadways into the Fort to provide mobility options to area residents.

3. Upgrade existing on-Fort roadways to meet State, County and or municipal regulations and standards as may be applicable, while maintaining the character of roadways within the Historic districts.

4. Supplement existing on-Fort roads with new east west and north-south connections through the Fort.

5. Provide for the inclusion of a jitney bus service loop linking all areas of the Fort to the Little Silver train station and to local bus service on Route 35.

6. Provide enhanced bus and jitney connectivity through the provision of safe and efficient intermodal stations and stops.

7. Provide alternative mobility strategies including multi-purpose trails, bikeways and an extensive pedestrian sidewalk system.

8. Improve off-Fort mobility through the improvement of key interchanges, intersections and roadways leading to Fort Monmouth.

1. Open all security gates and remove all barricades to permit free access to the entire Reuse Area.

Today, primary access to the Main Post occurs at three gates: The main gate at Route 35 and Tinton Avenue in Eatontown, and two main gates located on Oceanport Avenue in Oceanport. A secondary gate (Nicodemus Gate) located on Broad Street in Eatontown provides limited access to military personnel only. Tertiary gates located along Main Street in Oceanport are closed to all traffic. The Charles Wood Area is accessed at primary gates located on Tinton Avenue and Hope Road. This Reuse Plan proposes all gates be opened to public traffic and interior roadways be extended outward into the communities following the closure of Fort Monmouth in 2011.

2. Open and extend neighborhood streets.

Vehicular mobility through the Oceanport and Eatontown Reuse Areas can be further enhanced through the extension of streets currently abutting and terminating at the perimeter of the Reuse Area. Specifically, the opening of roadways would occur along Broad Street in Eatontown and Main Street in Oceanport. Further traffic and engineering assessment of streets recommended to be extended would be required in the next stage of planning to confirm feasibility and assess neighborhood impacts.

Existing closed gates on Main Street should be reopened and aligned with neighborhood streets. Stephenson Avenue adjacent to the Patterson Army Health Clinic may be aligned with Whitehall Court. The Razor Avenue gate should be realigned with Wolf Hill Avenue thereby providing enhanced north-south access to Eatontown Boulevard and Route 36. Additional new roads extending Monmouth Park Place and Center Street warrant further study in the next phases of planning.

Similarly, access to the Tinton Falls and western Eatontown Reuse Areas may be enhanced through the addition of a limited number of new intersections along Hope Road and Tinton Avenue. The two existing gates on Hope Road (Laboratory Road and Corregidor Road) should be opened to afford access adjacent to the Youth Center and the Child Development Center, respectively. An additional entrance from Hope Road warrants evaluation at Hemp Hill Road. Assessments of traffic signal progression along Hope Road would be part of future site planning efforts.

Additional access points from Tinton Avenue must consider the roadway's scenic designation, the location of Monmouth Regional High School, and residential uses. Consideration of realigning Norman J. Field Way and Municipal Drive (Pearl Harbor Way) should be considered to address traffic flow and safety. The Bataan Avenue gate and the potential for the extension of Guam Lane to Tinton Avenue should be evaluated in the next phase of work.

3. Upgrade existing on-Fort roadways to meet State, County, and/or municipal regulations and standards.

The following Street Typology Diagram and Street Cross Sections illustrate the proposed system of existing and new roadways that would form the Reuse Area's street network to enhance vehicular mobility. Existing roads would require upgrading to New Jersey Department of Transportation (NJ DOT) standards for lane width, shoulders, curbs, drainage, and other criteria. All new roads would be constructed to the standards of the governing agencies and R.S.I.S.

The following summarize some of the recommended roadway improvements. As previously stated, the rationale for the recommended improvements is based on planning experience as well as the "Future Traffic Considerations and Analysis" report.

Avenue of Memories – extends from the existing main gate at Tinton Avenue and Route 35, through the Historic District to Oceanport Avenue. Enhancement of this corridor is the most important interior improvement that can be made to enhance east-west vehicular mobility. Avenue of Memories would be a four-lane undivided roadway extending to Wilson Avenue at the Historic District.

Avenue of Memories/Saltzman Avenue and Sherril Avenue – would form a one-way pair through the Historic District to preserve the historic width of streets and the mature allees of trees lining them. Avenue of Memories and Saltzman Avenue would provide two lanes of travel eastbound, while Sherril Avenue would provide two lanes of travel westbound.

Razor Drive/North Drive – are proposed to be realigned to provide north-south access between Route 35 in Eatontown and Main Street in Oceanport. The proposed alignment is anticipated to primarily be a two-lane configuration with center turning lanes provided at development clusters in the vicinity of the commissary, Green Industry Cluster, and Lifestyle Town Center. The intersection of Route 35 and North Avenue is anticipated to provide right-in/right-out movements only to expedite traffic flows.

Main Post Historic District's Existing Streets – are to be maintained in their current configuration and alignment unless safety issues are identified in further studies. To the greatest extent practical, the existing roadway network should be retained and upgraded to meet the circulation needs of the planned redevelopment, thereby taking advantage of existing roadway and utility infrastructure. Given the clustering approach to the redevelopment strategy, a number of roads would be abandoned and demolished. Most notable among these is the removal of Alexander Avenue, Nicodemus Avenue, and Malterer Avenue in the area of the existing motor pool. Their removal would facilitate the creation of a large public park and recreation area, provide for the day lighting of the tributary to Oceanport Creek, and facilitate the establishment of wetland buffers to protect the water and habitat resources of the creek.

Additional improvements in the immediate vicinity of the Reuse Area, as identified in the full Transportation Report, include:

Route 36 and Hope Road - potential modifications include the separation of nearly all turning movements with the creation of new jughandles ramps on the east side of the intersection on State-owned lands, and the addition of a new off-ramp from the northbound Garden State Parkway (GSP).

Hope Road and Tinton Avenue- potential modifications include the reconfiguration of all intersection approaches to match the northbound Hope Road approach to Tinton Avenue, configured with two through lanes and one left-turn lane.

Route 35 and Tinton Avenue – in order to continue to serve as the main entrance to the area, as the gateway to the Reuse Area, additional roadway capacity is required. Potential modifications include three through lanes and exclusive left- and right-turn lanes on northbound Route 35; a double left-turn lane into the site, one through lane, and one shared through/right-turn lane on southbound Route 35. Exiting, potential modifications include a double left-turn, one through lane, and one right-turn lane into the site; and two through lanes and one left-turn lane on the eastbound Tinton Avenue approach.

Fort Monmouth Street Typologies and Sections

The Street Typology Map and Street Cross-Sections document the planning team's

recommendations for roadway improvements. The street sections are based in part on the character of existing internal streets and governing agency standards. The planning process included ground truthing of the site's roadways via measuring existing streets and photographically documenting existing conditions. Consideration of maintaining historic character, building to street relationships, and preserving significant street trees was given during the preparation of recommended street sections.

The physical location of streets and street types is illustrated in the Street Typology Map. Corresponding street sections identify the proposed right-of-way, pavement width, street use, parking, sidewalks, tree planting, bio-swale integration and other elements of the streets. All utilities should be placed underground or in rear alleys. Any proposed roadway improvements must maintain the integrity of the Fort Monmouth street typologies and corresponding sections.

Pedestrian Network

In addition to vehicular traffic, the proposed street network accommodates and promotes pedestrian circulation with extensive sidewalk coverage throughout the entire Reuse Area. The existing street system has a fragmented and incomplete network of sidewalks that would be addressed in the Final Plan. As redevelopment and infill takes place throughout the Reuse Area, existing sidewalk upgrades would be undertaken.

The Pedestrian Network Diagram illustrates the proposed integrated sidewalk system that links all components of the Reuse Plan. All street sections are recommended to be developed with sidewalks on both sides of the street to promote pedestrian mobility and contribute to community place-making. Minimum widths of sidewalks are recommended at 5 feet in Residential and Office/R&D clusters. Main Street or retail sidewalks are recommended at a minimum 15-foot width, with 20 feet preferred, to permit outdoor dining and display.

Multi-Purpose/Bicycle Routes

The provision of a comprehensive network of multi-purpose trails and bikeways throughout the Reuse Area is essential to creating a vibrant live-work environment. The Recreation Plan illustrates the conceptual alignment of the trail and pedestrian systems. The multi-purpose trail system is intended to link all development clusters to the Blue-Greenway system of open spaces and to other centers of activity. Multi-purpose trails are recommended to be planned throughout the Blue-Greenway and provide two-way circulation throughout. Multi-purpose trails shall be a minimum of 10 feet wide, and striped and marked in accordance with prevailing standards.

A combination of bicycle routes, lanes within roadbeds (striping and marking), and paths separated from vehicular traffic designed to NJ DOT's Bicycle Compatible Roadways and Bikeways Planning and Design Guidelines (April, 1996), New Jersey Bicycle Manual and Bicycle Plan ,and American Association of State Highway and Transportation Officials (AASHTO) standards is encouraged. To the greatest extent feasible, on-road bicycle dedicated Class 1 or 2 lanes and dedicated paths are to be employed to minimize vehicular conflicts. Bikeways are to have logical connections to surrounding neighborhoods, schools, and existing and proposed Monmouth County bikeways.

All multi-purpose and bicycle trails shall provide convenient and safe connection to public transportation systems (bus and jitney) to promote intermodal trips. Trailheads, intermodal transit stops, open spaces, and neighborhood clusters are to provide bicycle facilities including secure bicycle parking, trail maps, drinking fountains, and publicly accessible restrooms.

SIDEWALK IMPROVEMENTS

-- handicapped- access ramps at all intersection approaches

-- installation of tactile surfaces (ADA)

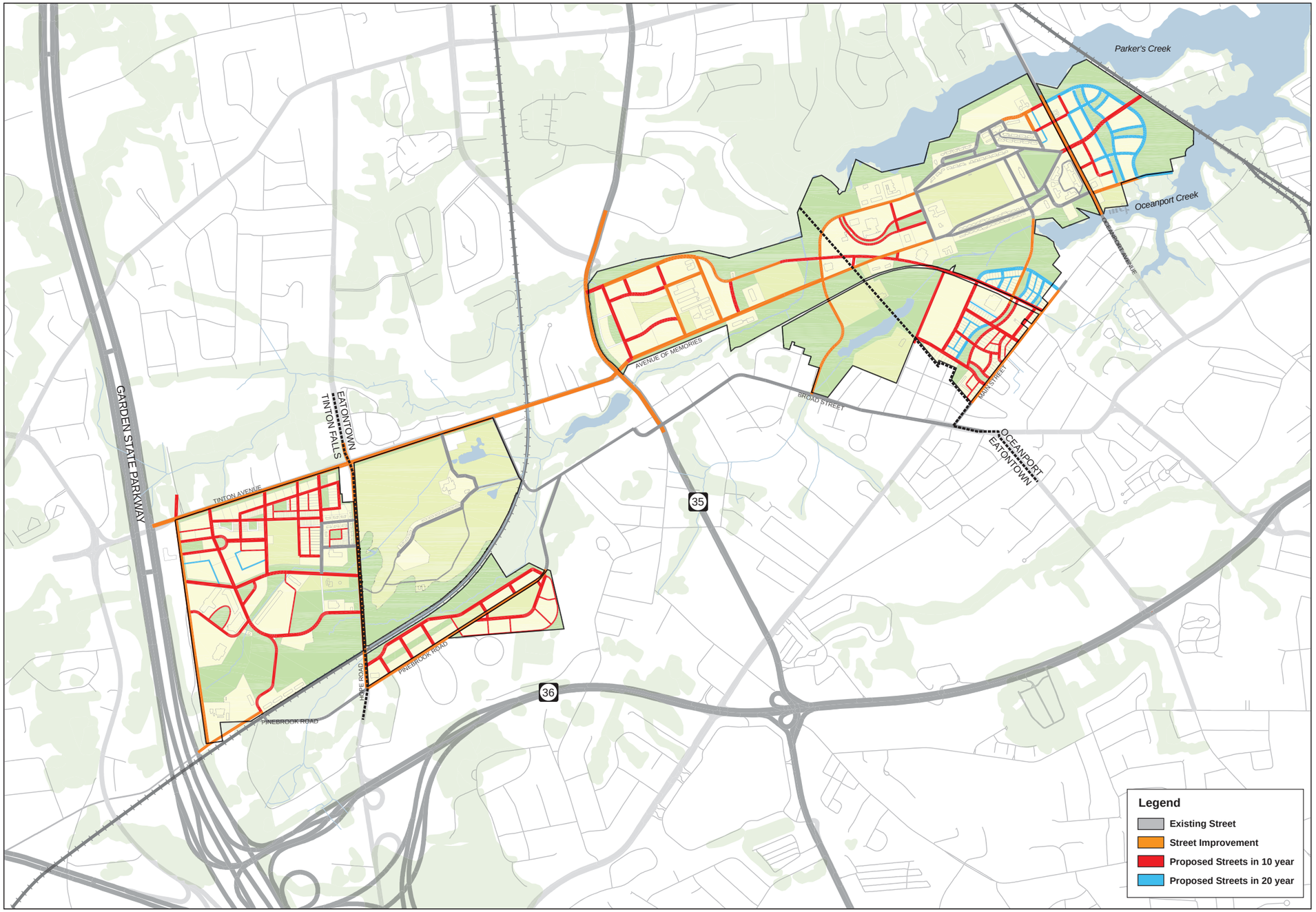
-- provision of adequate widths for ADA

Transit Service

Transit service is a critical component of the Transportation Element as it reduces congestion on roadways, reduces the need for a costly and inefficient expansion of infrastructure, and contributes to the sustainability concept encouraged. Transit service options explored as part of this planning effort focused on rail, bus, and jitney services.

A jitney service is proposed for internal circulation, access to the external roadway network, connection to local bus service on Route 35 and regional rail service at the Little Silver Train Station. The jitney service proposed encircles the entire Reuse Area, accessing all three municipalities. The route has drop-off locations, with two key spots that provide connections to bus service, providing access to a larger regional transit network.

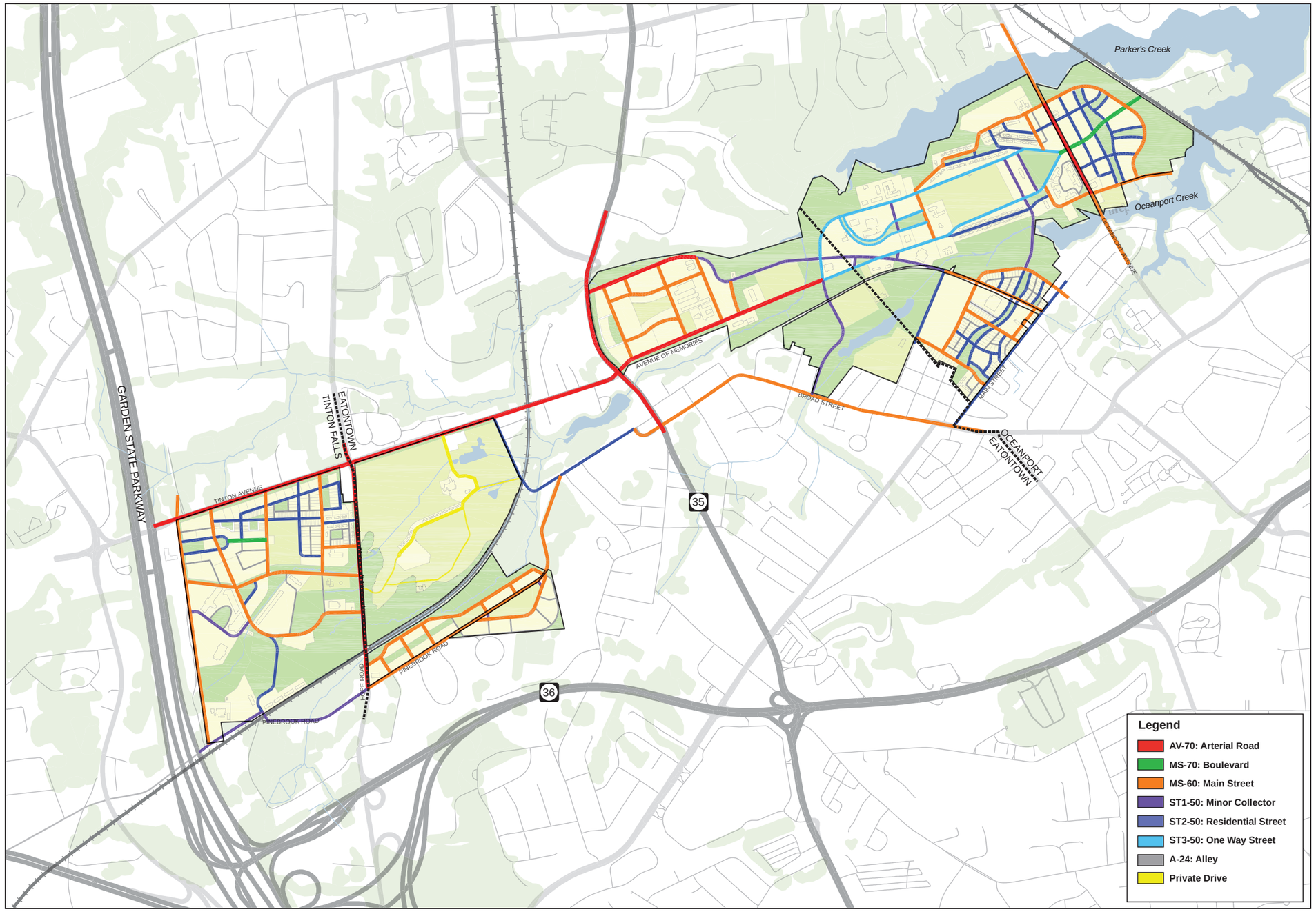
Extensive dialogue has taken place between FMERPA, the consulting team, and New Jersey Transit and State representatives with regard to the potential for the provision of rail stations to access the regions core urban areas. At this time no rail station improvements are planned for Fort Monmouth. Provision for their addition has been made through the reservation of land on or adjacent to the post along the New Jersey coast line in Oceanport and in the southwest corner of Tinton Falls.



FORT MONMOUTH CONCEPT DIAGRAM : STREET PHASING PLAN

FMERPA

0 500 1,000 2,000
Feet



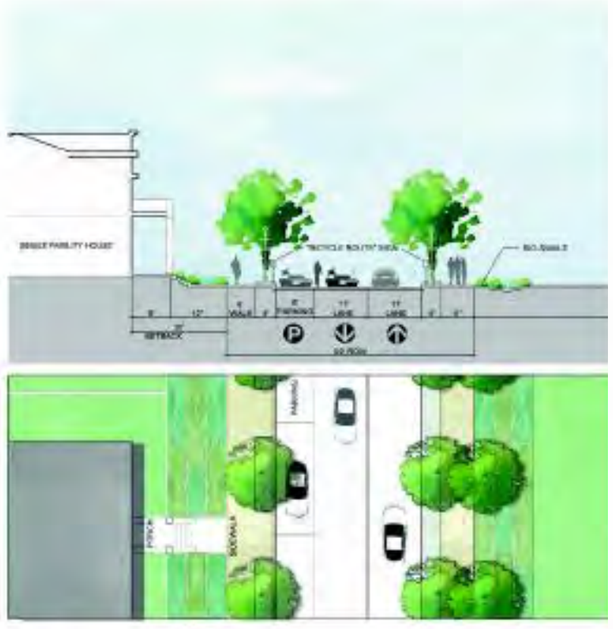
FORT MONMOUTH CONCEPT DIAGRAM : STREET TYPOLOGY MAP

FMERPA

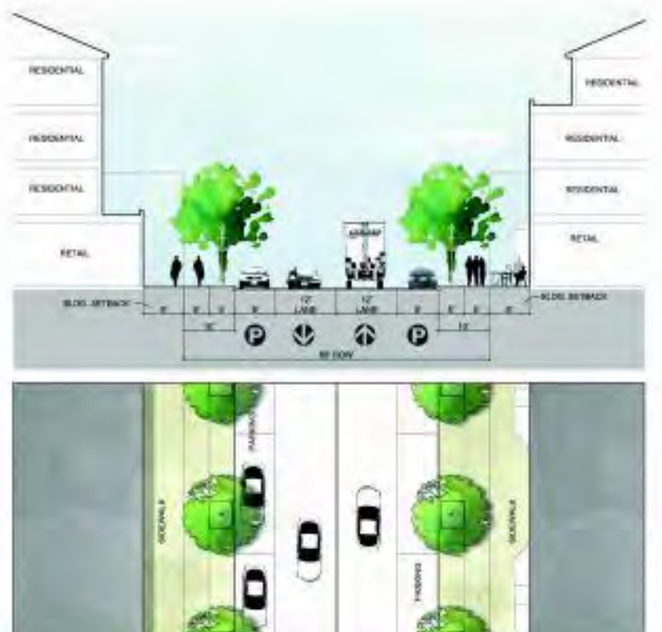
0 500 1,000 2,000
Feet

Street Typology Sections

A - 24	PARKING ALLEY



ST2 - 50	CRESCENT DRIVE

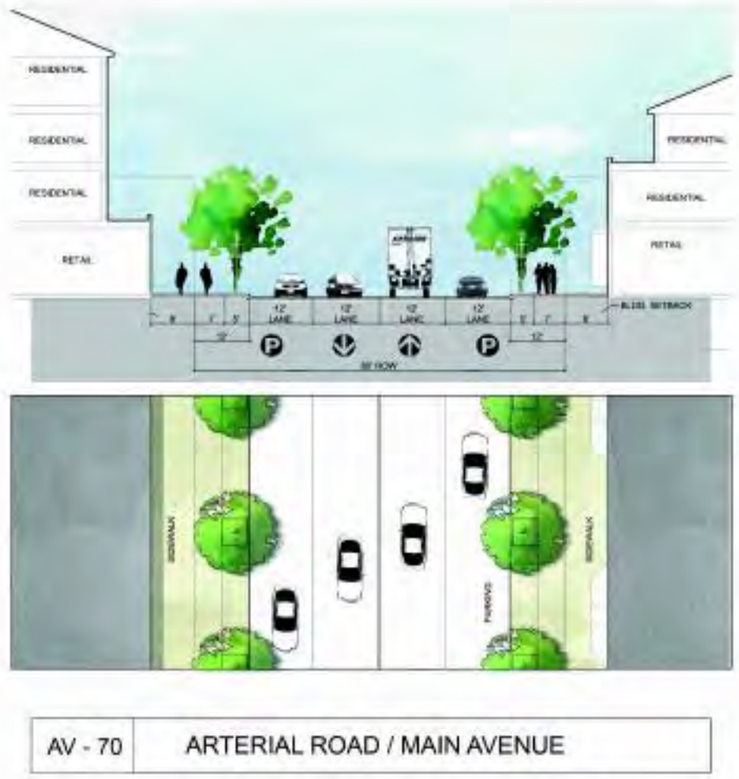


MS - 60	MAIN STREET RETAIL / RESIDENTIAL

Street Typology Sections

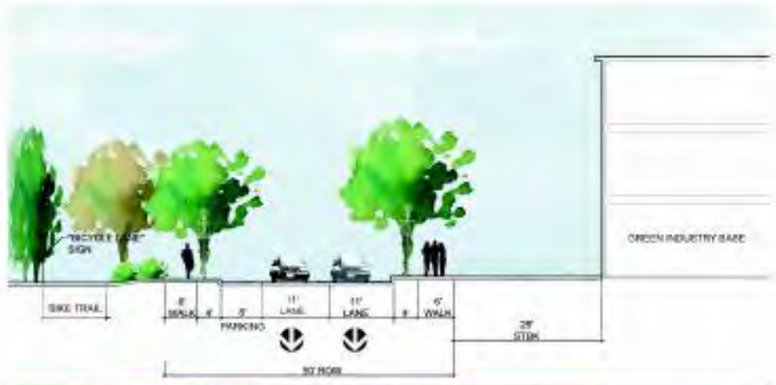
ST2 - 50	RESIDENTIAL STREET DOUBLE LOADED

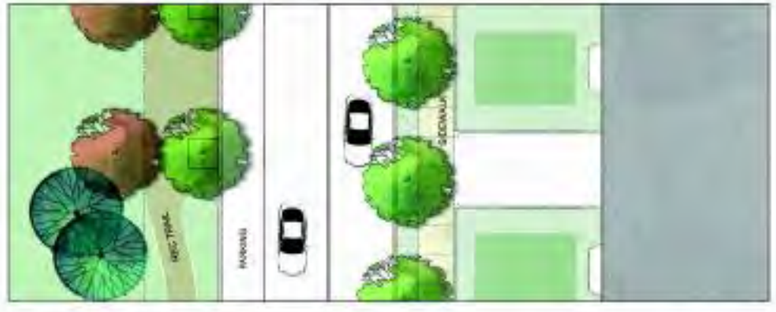
ST1 - 50	MINOR COLLECTOR ROAD



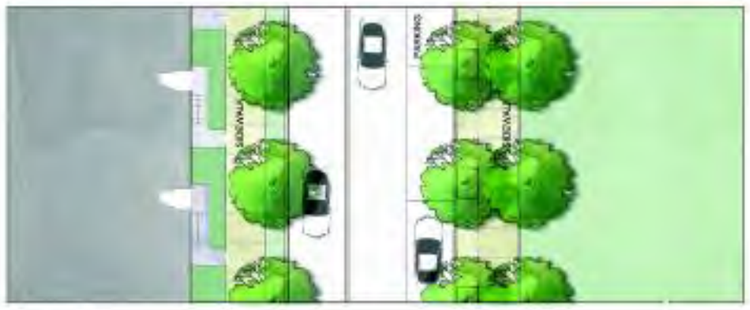
AV - 70	ARTERIAL ROAD / MAIN AVENUE

Street Typology Sections

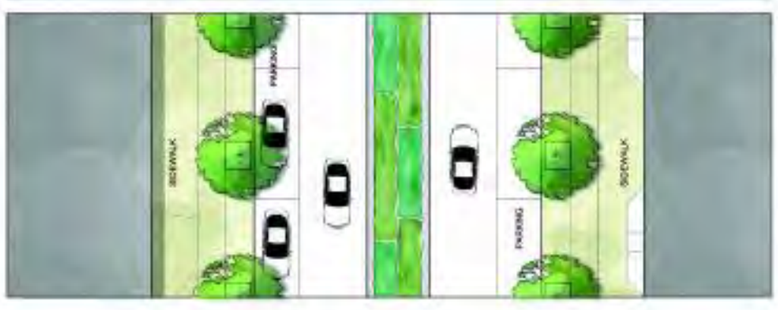




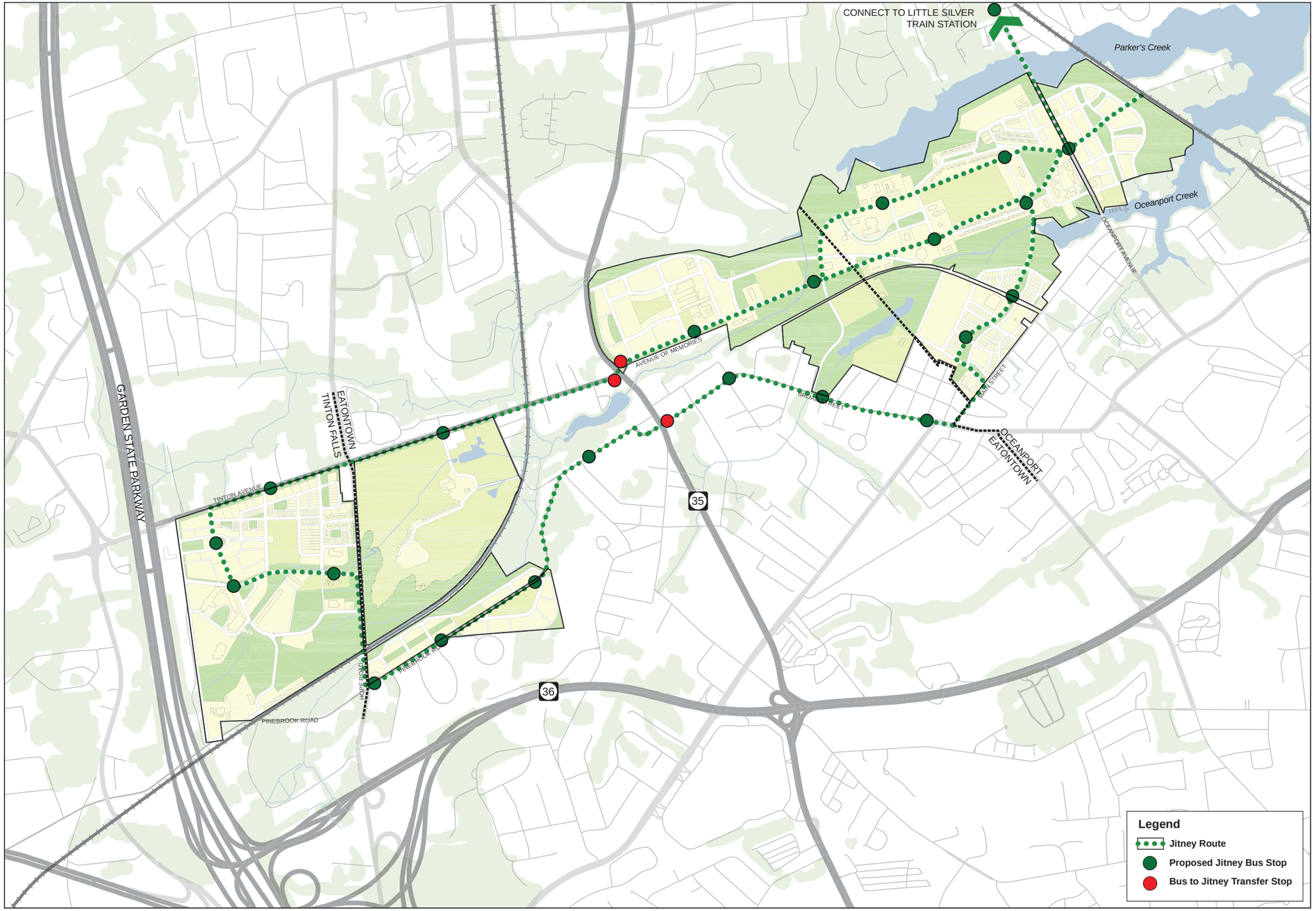
ST3 - 50	ONE WAY STREET (WILSON AVE. / E. AVE OF MEMORIES



ST-50	PARK SOUTH STREET / VILLAGE GREEN



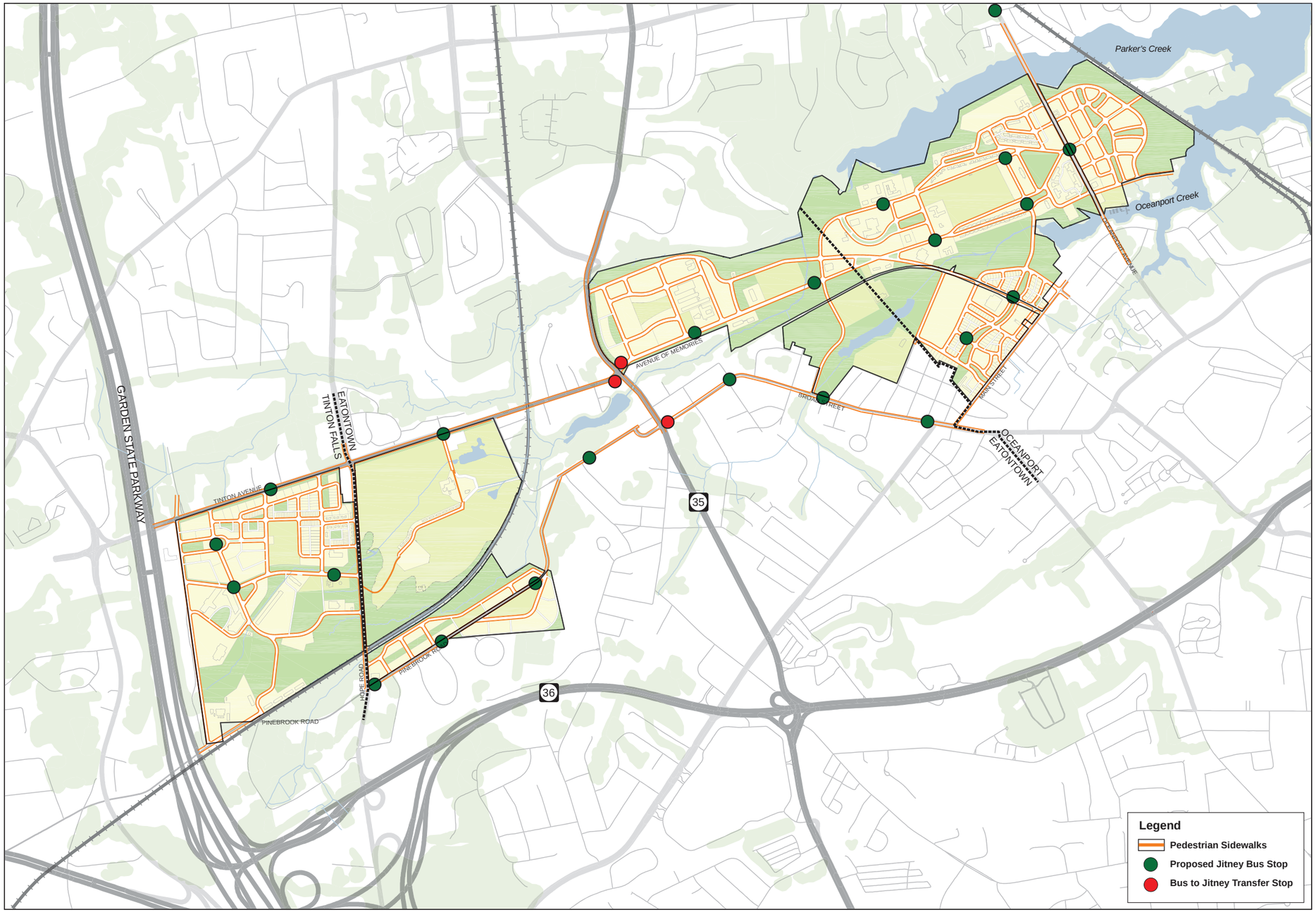
MS - 70	BOULEVARD RETAIL / RESIDENTIAL



FORT MONMOUTH CONCEPT DIAGRAM : TRANSIT PLAN

FMERPA

0 500 1,000 2,000
Feet



FORT MONMOUTH CONCEPT DIAGRAM : PEDESTRIAN NETWORK PLAN

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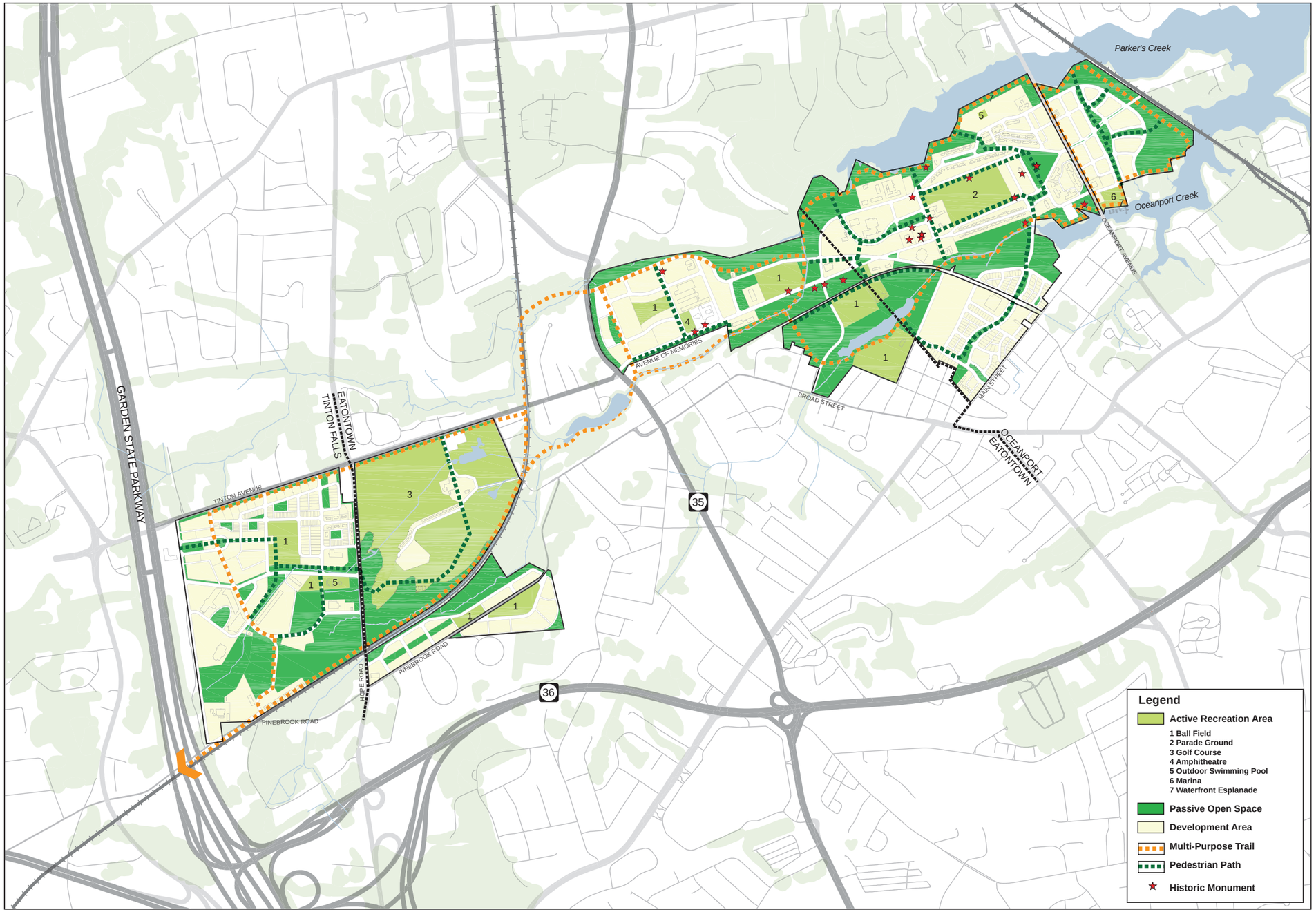


FORT MONMOUTH CONCEPT DIAGRAM : RECREATION PLAN IN 2028 (20-YEAR PLAN)

FMERPA

0 500 1,000 2,000
Feet

4.0 KEY AREA PLANS AND SUSTAINABILITY

4.0 Key Area Plans and Sustainability

4.1 Introduction

Fort Monmouth Reuse and Redevelopment Plan

The Plan for Fort Monmouth creates a framework that is focused on enhancing real estate reuse and development velocity to address the creation of replacement and new jobs and return the region to economic vitality as expeditiously as possible. At the same time the Plan seeks to balance development with the protection and enhancement of natural resources and establish Fort Monmouth as a model for holistic sustainable redevelopment. The Plan proposes the attraction of high technology industries; development of mixed-income neighborhoods; creation of mixed-use, neighborhood centers in each of the Boroughs; provision for enhanced mobility; and the creation of an extensive open space network of ecological and recreational parks. The mix of proposed uses was determined based upon extensive market analysis, development of a robust economic revitalization strategy, and continuous dialogue with the State of New Jersey, Monmouth County, Eatontown, Oceanport, Tinton Falls, and special interest representatives. The Plan results in an opportunity to best balance the needs of all interested parties into an achievable vision for Fort Monmouth's future.

Land Use

The mix of land uses proposed in the 20-year Plan is presented in the table on page 3-12. The mix, while focusing on high technology industry attraction, is deliberately broad to accelerate redevelopment and provide for the creation of a broad range of jobs and housing typologies to meet the needs of a demographically diverse population left behind by the relocation of the mission. The inclusion of office, research and development, business service, incubator business, light manufacturing, retail, market rate and affordable housing, homeless housing, and civic/institutional space reflects FMERPA's commitment to diversity and the need for short, medium, and long-term economic opportunity.

The Plan reflects the redevelopment of five development clusters within the Fort Monmouth reuse and redevelopment area. In response to infrastructure availability and increasing ecological sensitivity, the highest intensity of development is proposed to occur in the Charles Wood area of Tinton Falls, with a reduction in density across the Fort from west to east. Within this density transect each cluster of development is proposed to be mixed-use in nature providing for job creation, residency, entertainment, and recreation, and thereby promoting healthy lifestyles where residents can choose to walk or bicycle to work and shop. The mixed-use centers are set within an extensive Blue-Greenbelt open space network that comprises approximately 45% of the Fort's land area.

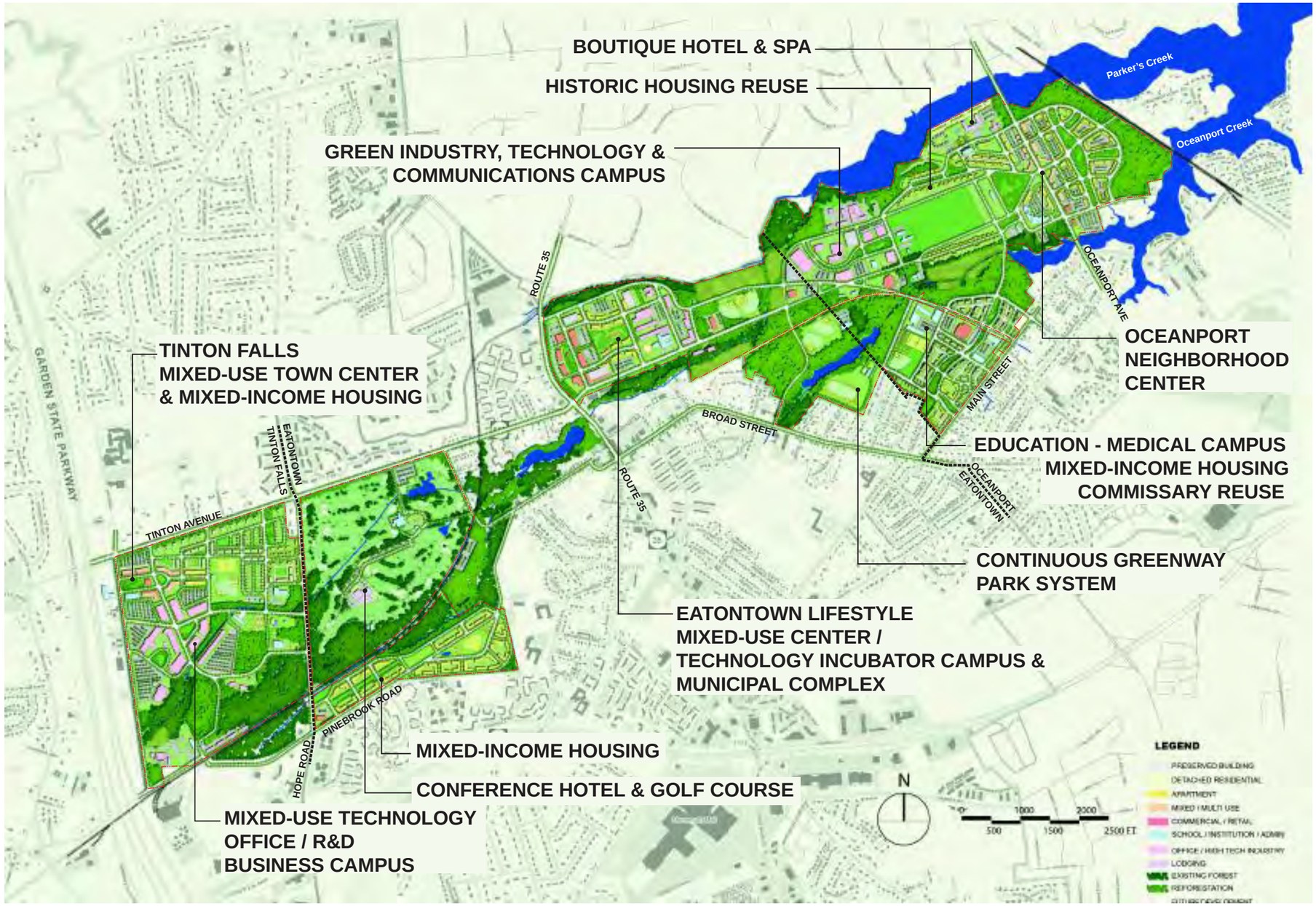
The land use program seeks to leverage the Fort's existing architectural and infrastructure assets as one of the tools to accelerate reuse and redevelopment. Over two million square feet of non-residential and approximately nine hundred thousand square feet of residential buildings are proposed for adaptive reuse. Many of these assets are historic resources, but more importantly many of the structures are enhanced by high-tech infrastructure and highly specialized research and communications equipment making them attractive for reuse in the early phases of plan implementation. Refer to page 3-12 for the reuse and redevelopment program summary.

Land Use Allocation

Description	Acres	Percentage of Site
Recreation/Open Space	503.52	44.74%
Commercial Office/High Tech/R&D	105.54	9.38%
Business Services/Retail	35.20	3.13%
Hospitality/ Conference Center	16.02	1.42%
Government/Civic/Institutional	51.78	4.60%
Residential/Mixed-Use	151.61	13.47%
Educational	19.82	1.76%
Medical/Health Care	2.89	0.26%
Roads & Right-of-Ways	241.98	21.50%

The following illustrate the preliminary Key Area Plans developed within the three Borough Reuse Areas. Key Area Plans are close-up, more detailed views of certain land use areas that are viewed as either particularly important to the Plan or key components to the area's growth.

The Area Plans and their development programs have evolved throughout the planning process as a result of public and stakeholder feedback obtained from the Final Draft Plan presentation, mitigation measures identified for the purpose of offsetting potential impacts, refinement of community impacts and revenue sharing strategies, and the iterative nature of the planning process in general.



FORT MONMOUTH CONCEPT PLAN CONCEPT PLAN IN 2028 (20 - YEAR PLAN)

FMERPA

4.2 Key Area Plans

TINTON FALLS REUSE AREA

Tinton Falls Town Center

The major redevelopment node located within Tinton Falls is a mixed-use retail town center, professional office/research and development and residential neighborhood organized around public open spaces located south of Tinton Avenue. This mixed-use town center provides an extension of the existing Tinton Falls Municipal Center located immediately to the west of the Tinton Falls Reuse Area. This two block mixed-use civic square is comprised of up to 80,000 square feet of convenience retail, shops, restaurants, and professional offices, with potential for above-retail apartments. This new mixed-use town center would link the employment center with the Borough's Municipal center to the west and proposed residential neighborhood to the east. The southwest corner of the square is proposed to be set aside for the future development of a 27,000 square foot Tinton Falls Public Library. Those within an approximately one-quarter mile radius would be treated with an array of amenities within walking distance.

This 2.5 acre civic square is intended to be used as a passive recreational area, an area for community events such as a farmers market, nighttime summer music, and outdoor theatrical events.

Mixed Income Residential

The transition from the mixed use node to the adjacent residential area to the east progresses with tree lined streets reaching towards the neighborhood's recreational area. This 12 acre park is home to the neighborhood's Field House, ballfields and playgrounds. A neighborhood of 288 mixed-income residences are planned surrounding the park. Along Tinton Avenue, behind the tree lined greenway fourteen (14) large lot detached homes are planned in keeping with the character across the scenic street. The remaining homes include reuse of the attached twenty-two (22) unit Hemphill residences, thirty-nine (39) small lot detached homes, eighty-three (83) townhouse/rowhouses, and one hundred thirty (130) 3-story apartments. Access to the other sections of the Tinton Falls Reuse Area is also afforded by an easy stroll to the jitney stop, which also leads to connections beyond the Reuse Area's "boundary line."

High Tech Industry

The central feature of the Office/High Tech Industry node is the reused Myer Center, transformed into a modern multi-tenant corporate facility that may potentially house a financial/insurance company data recovery center, general office space, and technological communications research and development companies. The Myer Center is proposed to be modified as three separate facilities to enhance absorption and make it more operationally efficient. Additional study would be required in future phases of development as potential tenants are identified. The business center provides a mix of Class A general office space, high-tech research and development space, and incubator space in new and renovated buildings. In combination with the proposed reuse of Building 2525 and future construction, a total of 839,817 gross square feet is envisioned. This reuse node is expected to serve as one of the primary economic engines for the Reuse area, generating tax revenue and employment opportunities.

This reuse node is also complemented by a central green within an open courtyard. Tree lined roadways and an interconnected sidewalk system also link the area to the general Reuse Area and provide a pedestrian friendly character throughout. Extensive parking areas are also provided adjacent to the Garden State Parkway, taking advantage of existing impervious surface area and infrastructure. These parking areas are recommended to have landscape islands incorporating shade trees and bio-swales at 120 foot spacing throughout the lots.

Fire & Police Training Center and the Fabrication Shops

In the southwest quadrant of the Tinton Falls Reuse Area the existing fire and police training facilities are proposed to be conveyed for their continued use in training State, county, and local firefighters and law enforcement officers. The metal fabrication shops, Buildings 2502 – 2507, located along the railroad right-of-way are ideally suited to private sector company reuse and comprised of 42,752 square feet in five structures.

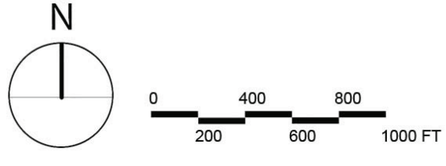
Civic Uses and Public Open Space

The existing civic uses along Hope Road are proposed to remain and include the Early Child Development Center, Pool and Park Complex, and the Teen Center converted to a community recreation center. All development areas within the Tinton Falls Reuse area are proposed to be connected to a continuous 99-acre greenbelt. The greenbelt is part of the Fort-wide "Blue-Green" belt system of parks and open space. It would serve as a passive and active recreational amenity and serve the function of preserving and protecting the wetland resources in this area of the Fort. Approximately 22 acres of active recreation, 77 acres of passive recreation and 3.25 miles of trails in Tinton Falls.

The bicycle and pedestrian trail network would enable the public to engage nature while offering modal choices that enhance mobility throughout this live-work-play development cluster. During the redevelopment process further investigation of enhancing and restoring habitats, integrating stormwater best management practices, and creating program linkages to area public schools should be explored.

TINTON FALLS AREA PLAN ENLARGEMENT

1. Large Lot Detached Housing
2. Small Lot Detached Housing
3. Townhouse
4. Mixed-Income Apartments
5. Hemphill Housing
6. Firehouse
7. Mixed-Use Town Center, Bandshell & Town Green
8. Library
9. Child Care
10. Municipal Use
11. Teen Center
12. Myers Center Reuse
13. Mixed-Use Technology Business Campus
14. Fire & Police Training Center
15. Fabrication Shops
16. Gas Station
17. Pool
18. Field House & Ball Fields
19. Wetland Preservation Park
20. Pulse Power Building R & D
21. Existing Tinton Falls Municipal Complex
22. Geothermal Wells



Artistic Rendering of Tinton Falls Community Center

Artist: Thomas W. Schaller

EATONTOWN REUSE AREA

The western portion of the Eatontown Reuse Area is composed of two Key Areas: the Suneagles Golf Course and associated facilities and the former Howard Commons residential area to the south.

Golf Course and Conference Facilities

As previously discussed, the existing golf course (approximately 129 acres) is to be preserved due to its historic and cultural value. The area would also remain as open space as a result of a perpetual easement requested by Monmouth County through an NOI or another mechanism. The golf course is proposed to remain a public facility and would provide perpetual access to retired veterans who currently enjoy the facility. Gibbs Halls (B2000) would also be retained as a Clubhouse/Pro-shop and would be used as part of the conference and banquet facility. This facility already operates as a dining/ catering facility; however, due to the age and condition of the equipment, extensive improvements would likely be required to meet current market demands and improve the capacity of the dining facility. The 150 room hotel and conference center is located on the site of the Megill Housing neighborhood. The facility would be geared toward guests for longer stays and those on business retreats. The unique setting within the Suneagles golf course in combination with a 20,000 square-foot conference and meeting facility would differentiate it in the marketplace. Local transit services should be provided to the New Jersey shore, area parks, and the proposed Oceanport boutique hotel, spa and wellness center.

Mixed Income Housing

The Howard Commons reuse area is intended to provide mixed-income housing, with an emphasis on affordable and workforce housing, for civil servants such as fire and safety and education professionals. This Residential node is focused on attracting income-restricted residents through the provision of higher density housing units that would also help Eatontown meet COAH requirements generated by the Fort's redevelopment. The 275 units would include apartment style housing along a linear green space. Convenience retail (12,530 sf) would also be provided to the west.

Located to the east of the lifestyle center, a total of 302 mixed-income apartments are envisioned to take on several different formats: above retail small apartments, and 3-story apartment buildings. A total of 577 mixed-income housing units are proposed in Eatontown.

Lifestyle Center/Eatontown Gateway

The design intent of the Lifestyle Town Center located along Route 35 is to create an exciting gateway to the eastern Reuse Areas. This major town center is envisioned as a multi-use area that serves the residences located in proximity to the area as well as the population beyond due to the center's accessibility along Route 35. The center includes 150,000 square feet of retail, restaurants, entertainment venues, residences, and other uses in a "lifestyle format" that creates a vibrant pedestrian environment. The retail may be comprised of a mix of national, regional and local retailers, boutiques, restaurants and a specialty food market in a "Main "Street" format. Shared parking for the retail and adjacent mixed-income apartments is proposed to be located over the existing geothermal field. All development within this node is proposed to preserve the geothermal fields through the location of open space or surface parking over the fields..

Eatontown Municipal Center

The 57,386 square foot Mallette Hall (B1207) with its auditorium and outdoor amphitheater are proposed as the new home for the Eatontown Municipal Complex. Given the anticipated redevelopment of the existing downtown and the desirability of municipal functions being at the center of the Post's redevelopment, this use would contribute to the vitality of the node.

Professional's Row and Incubator Business Center

The CECOM Labs (B1208, 1209, 1210) totaling 345,122 square feet are proposed for two reuse purposes: provision of incubator office space and a professional's row in approximately even measures. The incubator office space supported by State of New Jersey initiatives and programs would offer an ideal location for start-up companies as they develop their businesses. The Professional's Row is envisioned as a desirable location for the county's growing professional service industry including architects and engineers, legal professionals, and financial and accounting practices among others. Projected future growth of these industries and incubator businesses may be met through the development of new facilities east of the CECOM labs on the edge of the central park. A total of up to 140,000 additional square feet of additional office/R&D space may be realized over the 20-year build out.

Specialized Reuse Buildings

Vail Hall (B1150, 1152), located to the south of Mallette Hall, currently operates as the communications hub for Fort Monmouth. Future reuse is anticipated to take advantage of the specialized communications infrastructure and be attractive to the communications industry including potential reuse by wireless service providers.

Building 1215, the theater building, with its auditorium and 18,883 square feet of space, may be suitable for a not-for-profit theater or arts group. Further investigation of its reuse potential is warranted. The "state of the art" Bowling Center is located along the common border with Oceanport and is proposed to remain a privately operated bowling alley.

Public Open Space

To the west of the Lifestyle Incubator Business Center extending to the Oceanport borough line, a central park of more than 100-acres is proposed. The park includes both active recreation fields and passive areas for strolling, biking and enjoying nature.

The bikeway and pedestrian trail system would traverse the park connecting adjacent residential, commercial and retail zones to promote mobility. Additional trail connections to the existing downtown and area parks should be explored by the municipality.

The landfill to the north edge of the park is proposed to be clean up to recreational standards in accordance with NJDEP guidelines. The passive areas play an important role in re-establishing the ecological function and productivity by reconnecting the Parker's and Oceanport Creek tributaries across the Post. Reforestation and specialized habitat typologies along with wetland buffer enhancement should be incorporated into the parks design at later stages of redevelopment.

All post open spaces should be designed to include best management practices for the treatment of stormwater including bio-infiltration and recharge as well as constructed wetland filters to enhance water quality and protect groundwater resources.

A total of 314 acres of public open space is proposed in Eatontown, including the golf course. Approximately 31 acres of active recreation, 154 areas of passive recreation and 7 miles of trails are proposed.

EATONTOWN: HOWARD COMMONS AREA PLAN ENLARGEMENT

1. Suneagles Golf Course
   Main Entrance & Parking
2. Gibbs Hall - Clubhouse & Catering
3. Conference Center & Hotel
4. Restaurant
5. Ball Fields
6. Convenience Retail
7. Mixed Income Housing
8. Community Center & Pool
9. Wetland Preservation Park

EATONTOWN: ROUTE 35 AREA PLAN ENLARGEMENT

1. Lifestyle Town Center
2. Mixed-Income Apartments
3. Parking Structure
4. Incubator & Professional Services
5. Eatontown Municipal Building
6. Office Space
7. Auditorium / Theatre
8. Bowling Center
9. Cell Tower
10. Amphitheatre
11. Ball Fields / Recreation
12. Wetland Preservation Park
13. Office / R & D Space
14. Local Bus to Jitney Transfer Station
15. Geothermal Field

Artistic Rendering of Eatontown Lifestyle Center

Artist: Thomas W. Schaller

OCEANPORT REUSE AREA

High-Tech and Green Industry Campus

The High Tech and Green Industry Campus located in the central portion of the Reuse Area and the westernmost portion of the Oceanport Reuse Area, includes R&D facilities where cutting edge research and development activities can take place, furthering the State of New Jersey's initiative to promote sustainability, renewable energy, and attract biotechnology and nanotechnology companies to Fort Monmouth. A total of 400,000 square feet of high-tech R&D space is proposed at build out. This campus provides an opportunity to leverage existing high tech facilities, infrastructure, and the intellectual capital of a skilled area work force.

The intention of the Green Industry campus is multi-purpose:

- To serve as an educational showpiece
- To provide the Reuse Area with a source of green/renewable energy
- To provide a space for research and development activities, further supporting NJ's High-tech Economic Development initiatives
- To leverage existing intellectual capital in area to further the development of sustainable energy technologies

This campus is to become the area's main knowledge center. The campus would leverage the high tech infrastructure already existing within the McAfee Center (B688) and would capitalize on the civic amenities afforded by the library and recreation center. The 97,000 square foot McAfee Center is proposed to be adaptively reused by a high-tech communications research company who can employ the highly specialized equipment. The building is a skiff and contains an anechoic chamber for specialized radio frequency research.

Squier Hall (B283) at 76,583 square feet is currently used for administrative purposes, is suitable for similar reuse, and is readily adaptable to educational purposes. To the south of the technology cluster, Armstong Hall (B551) presents another opportunity for educational reuse or the potential for an environmental center. Programs to educate visitors as well as the undertaking of environmental/ecological research experiments in the adjacent tidal and terrestrial areas could be envisioned.

Existing in-kind building reuse is proposed for the Library (B502), Chapel (B500), the Counseling Center (B501), and Fitness Center (B114). A linear central park provides a front for all of the buildings in the cluster and provides a greenway linkage between the Parade and the perimeter Blue-Greenbelt open space system.

Historic Oceanport Neighborhood Center

The vision for the Oceanport Historic Housing area is the preservation of historic housing to showcase the cultural value and history of the post. The housing flanking both sides of the Parade Ground is a contributing element to this historic district and is worthy of reuse in today's residential market. The Parade Ground would continue to provide a central expanse of green space and character-defining feature of the Historic Housing Neighborhood. Although no permanent structures are to be placed on the Parade Ground, the large open space would be used for active recreation such as youth sporting league games and special events.

A total of 117 historic residential units are proposed for reuse in the Historic Main Post area. The 45 Gosselin residences have been identified for potential university faculty and married student housing. Gardner Hall (B271) is suitable for mixed-income apartments. The spacious 68 Russel/Allen and Russel/Carty residences at 3,700 to over 6,000 square feet would be attractive to the for sale, single-family, high-end home buyer.

Limited improvements would be done on the historic housing due to the restriction on alterations to the structures. Narrow tree lined streets would continue to provide character to the area and provide connections to the larger Reuse Area. The natural areas alongside the housing would remain and would be reforested as appropriate.

Three of the Barker Circle buildings (B205, 207, 287) are proposed for reuse as mixed-income housing, while the remaining two buildings (B206, 208) are proposed for a new Oceanport Municipal Center adjacent to the firehouse. With the addition of a large meeting room a total of 50,000 square feet of space could be made available.

Russell Hall (B286), the 76,978 square foot Garrison Headquarters located at the eastern end of the Parade, would be conveyed to FEMA for their headquarters. A total of 8 acres have been requested including the parking lot and heliport located adjacent to the building.

Parker's Creek Boutique Hotel and Spa

A unique boutique hotel and wellness spa is envisioned along Parker's Creek. This boutique 75 room hotel and spa would include limited lodging facilities oriented toward those looking for a restorative getaway in a luxurious setting. The area is a complement to the medical campus to the south, further acknowledging the contribution of nature and outdoors to human health.

Public access to the waterfront would be maintained and encouraged by shoreline improvements and a riverfront promenade. The promenade would encourage bird watching and nature observation as well as fishing. Docking and direct access to the water would not be provided.

Education/Medical Campus

The Patterson Army Health Clinic is proposed to be replaced with a new 60,000 square foot joint veterans and community health care clinic. The new clinic would be supported by a 20,000 square foot professional medical office building with the potential addition of professional medical offices to create a "wellness campus" totaling 80,000 square feet. This medical campus would provide services to area veterans and residents. The center would also be improved to allow for medical research activities. During the next phase of work, additional analysis of the reuse feasibility of the clinic should be explored. The extensive green space would be preserved and improved, acknowledging the contribution of the natural element to wellness.

The Educational component includes a 15 acre site for future school development to meet Oceanport's needs. The site is sized to accommodate between 400 and 450 students complete with academic space, parking, ballfields, tennis courts, and flexible outdoor recreational space.

Residential

Townhouses and small lot detached residences are proposed in the area of the school to complement existing Main Street residences south of the Post. A total of 159 townhouses and small cottage type homes are proposed on lots ranging from 3,000 to 7,500 square feet.

Public Open Space

In addition to the proposed school's active recreational element, a linear greenway connects the Educational Medical Campus and residences to the Fort wide Blue-Greenbelt system and the nearby track and football complex.

Oceanport Village Center

The traditional Main Street town center is located along Oceanport Avenue and provides an additional opportunity for the creation of a gateway into the Reuse Area. This gateway area includes a smaller scale walkable Main Street, with vehicular access provided by Oceanport Avenue. Constructed of traditionally scaled blocks and lined with a mix of specialty and convenience retail, restaurants, small professional offices, and potentially art galleries, Oceanport Avenue would be transformed into the civic hub of the Borough. The existing Credit Union is proposed to remain and the southern end of the avenue anchored by a new waterfront restaurant adjacent to the public boat ramp and marina. Single rows of trees would line the streets activated by the first floor retail and outdoor cafes. This small scale walkable village would be inviting to local start up businesses and cafes. The opportunity for an upscale organic restaurant to be located at the western edge exists where it would be afforded a grand view of the vast green space to the west.

Enhancement of the marina is proposed to incorporate a public promenade and gateway pocket park just east of the bridge over Oceanport Creek. The public boat ramp and parking areas are proposed to remain and the marina support facility enhanced.

Oceanport Village Center Residences

To achieve a traditional two to three story Main Street character, mixed-income apartments are proposed above the Oceanport Avenue retail uses. To the east of the Avenue, nine blocks of 3 story mixed-income apartments are proposed within a generous greenway framework. A total of 309 units are proposed with parking located internal to the blocks. Finished floor elevations in this area of the redevelopment would require additional analysis to ensure they are constructed above the floodplain. A total of 740 residential units are proposed in Oceanport in the current plan.

Public Open Space

A total of 173 acres of public open space is proposed in Oceanport Borough. Approximately 28 acres of active recreation, 145 acres of passive recreation, and 7 miles of trails are proposed. A significant portion of this open space is proposed to be developed as ecological buffers to Parker's and Oceanport Creeks and in keeping with CAFRA regulations. These buffers would be critical to the protection of water quality and habitats along the creek's edges. Residences proposed east of Oceanport Avenue have been set back significantly from the creeks in response to the FEMA mapped 100 year floodplain creating a significant buffer between the Horseneck Point residences and the proposed development.

OCEANPORT MAIN POST AREA PLAN ENLARGEMENT

1. Small Lot Detached Housing
2. Mixed-Income Apartments
3. Townhouse
4. Historic District Housing
5. Boutique Hotel & Spa
6. Parade Ground
7. Retail & Professional Office
8. Credit Union
9. Marina, Restaurant & Public Boat Ramp
10. Oceanport Municipal Complex & Mixed-Income Apartments
11. FEMA Office & Property
12. Green Industry Campus
13. Chapel
14. Fitness Center
15. Museum / Art Center
16. Retail Center
17. Medical Center & Medical Offices
18. New School
19. Ball Fields
20. Lane Hall Community Center
21. McAfee Center Reuse / Communication R & D
22. Library
23. Day Center
24. Allison Hall Offices
25. Office Educational Reuse
26. Educational Reuse
27. Waterfront Esplanade
28. WWII Barracks - Retail Reuse
29. Permanent Supportive Housing
30. County Shelter
31. Wetland Preservation Park
32. Geothermal Wells
33. Cell Tower

Artistic Rendering of Oceanport Avenue

Artist: Thomas W. Schaller

4.3 SUSTAINABILITY

The Fort Monmouth Opportunity

The redevelopment of Fort Monmouth presents an unprecedented opportunity in the State of New Jersey to develop a model sustainable technology community. Sustainable developments are those which fulfill present and future needs (WECD, 1987) while only using and not harming renewable resources and unique human-environmental systems of a site: air, water, land, energy, and human ecology and/or those of other off-site sustainable systems (Rosenbaum 1993 and Vieria 1993). The redevelopment of Fort Monmouth, consistent with state of the art sustainable practices, provides the opportunity to advance the State's sustainable policies and capitalize on the robust green building toolbox available through New Jersey State Agencies.

State policies and programs are evolving and remain very dynamic in nature with new programs being developed continuously. Governor Corzine has placed global warming and energy issues at the forefront noting they are not just problems to be solved, but also that there is an economic opportunity to be capitalized upon. In conjunction with an energy use reduction goal of 20 percent by 2020 and the development of the State's Energy Master Plan in 2007, the Governor signed Executive Order 54 calling for a 20 percent reduction in greenhouse gas emissions to 1990 levels by 2020 and an 80 percent reduction of 2006 greenhouse gas levels by 2050. The goals are linked to New Jersey's Renewable Portfolio Standard adopted by the New Jersey Board of Public Utilities (BPU) that requires 20 percent of the State's electricity come from renewable sources by the year 2020. Along with the BPU program, many of the State's agencies, including the New Jersey Department of Environmental Protection (NJDEP), Housing and Mortgage Finance Agency (HMFA), New Jersey Department of Transportation (NJDOT), and the New Jersey Department of Community Affairs (NJDCA), offer a variety of financial incentives in the form of grant and loan programs that support sustainable community development.

NJDEP's Office of Planning and Sustainable Communities (OPSC) defines a sustainable community as one that manages and stewards its natural resources and environmental assets such that their value is preserved, restored, and enhanced for present and future generations; and such stewardship complements the community's effort to foster economic and social health. A listing of programs offered by OPSC is provided below and additional information about the programs can be accessed at www.nj.gov/dep/opsc.

New Jersey Department of Environmental Protection

- Green Acres Grants and Loans
- Green Communities Challenge Grant Urban & Community Forestry Program
- Shore Protection Grants and Loans
- Recreational Trails Development & Maintenance
- Historic Preservation Certified Local Government Grants (CLG)
- 1992 Dam Restoration and Inland Water Projects Loan Program
- Environmental Infrastructure Financing Program
- Pinelands Infrastructure Trust Financing Program
- Combined Sewer Overflow Planning & Design Grants
- Drinking Water State Revolving Fund Program
- Municipal Recycling Tonnage Grant Program
- Solid Waste Services Grants
- Local Tire Management Program Fund Grants
- Nonpoint Source Pollution Control and Management Implementation Grants
- Water Quality Planning Pass-Through Grant Program
- Hazardous Discharge Site Remediation Fund (HDSRF)
- New Jersey Clean Communities

Other State Agency Programs

- Board of Public Utilities (BPU) - Clean Energy Funding
- Department of Agriculture - Farmland Preservation
- Department of Community Affairs - Smart Growth Planning
- Department of Community Affairs "HMFA Green Future & SUNLIT Programs"
- Department of Transportation "Transit Village Initiative"
- Safe Routes to School Program
- The Regional Greenhouse Gas Initiative (RGGI or "ReGGIe")

A Comprehensive and Integrated Sustainability Approach

Fort Monmouth's 1,126 acres and approximately five million square feet of buildings located between ecologically sensitive Parker's and Oceanport Creeks, with existing alternative geothermal energy infrastructure and adjacency to regional transit, presents an exciting opportunity to create a comprehensive and integrated approach to sustainable development. The consulting team recommends that during the next phases of plan implementation, further consideration of establishing measurable guidelines for sustainable development be explored. These guidelines may include recognized US Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) rating standards potentially including LEED for New Construction, LEED for Commercial Interiors, and LEED for Existing Buildings. The USGBC is developing future programs that may be available before 2011 including LEED for Neighborhood Developments (LEED–ND), LEED for Homes, LEED for Schools, Retail, Healthcare, Laboratories, and Multi-building Campuses.

While LEED is the currently accepted standard by which green development is measured, best management practices are evolving beyond LEED. The Fort Monmouth Reuse and Redevelopment Plan embraces smart growth principles and endorses the adoption of Transit Oriented Development (TOD) principles within recognized capital and policy constraints. As the plan evolves, there are ten broad focus areas that should be considered in developing sustainability guidelines for redevelopment. The focus areas include:

1. Site Planning and Landscape
2. Stormwater Management
3. Air Quality
4. Infrastructure
5. Energy
6. Transportation and Connectivity
7. Green Buildings and Reuse
8. Community and Quality of Life
9. Construction Management
10. Operations and Maintenance

In adopting a comprehensive approach, Fort Monmouth can promote and advocate for best management practices, including environmental remediation, ecological restoration and protection, green infrastructure, architectural design, construction, and site planning, as well as the ongoing sustainable management of these buildings. The land use plan envisions the development of a mixed-use community that includes high-tech and general office space, residential, retail, school, hotel, convention center, community space, open space, and access to transit alternatives. The following Sustainable Strategies Summary Matrix identifies vision statements, potential strategies, and sample goals to address each of the ten focus areas identified above.

The development and adoption of sustainability guidelines should be undertaken by the implementation LRA as the project moves forward, as well as a thorough and measured analysis of market receptivity, life cycle costs, and benefits.

SUSTAINABLE STRATEGIES MATRIX

Focus Area	Vision	Potential Strategies	Potential Goals & Targets
Site Planning and Landscape	Fort Monmouth will be a mixed-use, compact, clustered, and walkable community. The build-out will include massing and orientation of built structures to create quality open spaces, frame access and views and optimize passive solar design. The clustered design will be linked by a Blue-Greenway network of open spaces that interconnect the creeks with existing and new open space between the Garden State Parkway and Horseneck Point to create a continuous ecological resource and multi-purpose trail network. Reforestation of significant portions of the property is recommended to enhance habitat diversity and connectivity and enhance carbon sequestration.	S-1 Landfill Remediation & Phyto-Remediation S-2 Waterfront Climate Adaptation S-3 Wetland Preservation & Restoration S-4 Mixed-Use Land Use Clustering S-5 Interconnected Open Space Plan S-6 Green Infrastructure Streetscape Design S-7 Multi-modal Site Circulation S-8 Density Ratio Enhancement S-9 Native Plant, Water Efficient Landscaping S-10 Biodiversity Strategies S-11 Reforestation – Carbon Sequestration S-12 Habitat Enhancement S-13 Designed Experimentation	1. Landfill reclamation will be done on-site with in-situ remediation schemes utilizing phyto-remediation, along with NJDEP approved capping strategies. 2. At least 1,500 residential units will be developed on the site at an average density of 4 dwelling units per acre. 3. 75% or more of the project's blocks will be designed for appropriate solar orientation. 4. A minimum of 45% of the site will be allocated to open space. 5. The site will be developed as a pilot study for sustainability, flood control system, and a native plant center. 6. The site will be integrated with the Parkers & Oceanport Creek estuaries and existing park network. 7. The existing wetlands at Fort Monmouth will be preserved and enhanced and buffers established. 8. Fort Monmouth will integrate appropriate climate adaptation strategies to address sea level change and other climate issues. 9. Employ conservation easements and deed restrictions to protect open space and ecological resources.
Stormwater Management	Fort Monmouth should utilize progressive, sustainable, and robust water management practices that are fully integrated into the site, neighborhood and adjacent land uses. High quality open spaces will provide ecosystem services such as stormwater retention, water filtration and urban cooling through shade vegetation. The Suneagles Golf Course presents an opportunity to address stormwater and dam issues in the western portion of the fort. The system will be designed to include collection, sequential treatment, storage and on-site reuse, capable of handling future climate scenarios and adaptable for continued monitoring and upgrades.	SW-1 Erosion & Sedimentation Control SW-2 Controlled Paving Strategies SW-3 Stormwater Runoff & Water Quality SW-4 Water Recycling & Reuse SW-5 Flood Control SW-6 Stormwater Adaptive Management	1. Develop erosion control strategies utilizing bioengineering approaches and temporary detention basins 2. Increase the scale of the constructed hydrology & habitat system to 1.5 times the current size for flood treatment and control 3. Implement a comprehensive stormwater management plan that infiltrates, reuses, or evapo-transpirates runoff from small storms (or 90% of all storms) 4. Treat 100% of stormwater collected from these storms on-site via constructed wetlands and other stormwater treatment systems 5. Recycle 25% wastewater to be used for irrigation and other appropriate uses
Air Quality	Air quality at Fort Monmouth may be improved by promoting cleaner fuels for on-site energy generation, controlling transport emissions, implementing vehicle reduction strategies, and planting an abundance of trees. Best practice technologies and sustainable management plans will address air quality issues during the design, construction, operation and maintenance stages of Fort Monmouth redevelopment.	AQ-1 Tree Planting Initiative & Reforestation AQ-2 Air Quality Monitoring AQ-3 Building Emissions AQ-4 Transportation Emissions AQ-5 On-Site Power Generation Emissions	1. Undertake a tree planting-reforestation program 2. Install an air quality monitoring program 3. Construction and Maintenance Vehicles will be low emitting 4. Energy systems and components will be Energy Star compliant 5. Renewable or Alternative Fuels for Power Generation will be used

Focus Area	Vision	Potential Strategies	Potential Goals & Targets
Energy	An energy master plan should determine the strategy for Fort Monmouth to meet its own energy demands and reduce dependence on the electrical grid. Energy generated on-site will be sourced from cleaner and alternative fuels and renewable technologies. The attractions of green industries including Photo-voltaic and Hydrogen Fuel Cell companies working within a closed loop system presents a unique opportunity. Energy loads from buildings and infrastructure will be reduced through design and coupled with optimized energy management, will lower the overall carbon footprint.	E-1 Energy Master Plan E-2 Integrated Design E-3 District Heating & Cooling E-4 On-Site Energy Generation E-5 Combined Heat & Power E-6 On-Site Renewable Energy E-7 Green Power E-8 Peak Shaving E-9 Infrastructure Energy Efficiency E-10 Greenhouse Gases & Carbon Footprint	1. Develop on-site energy generation system with the capacity to supply all of the annual electrical and thermal energy consumption. 2. Incorporate on-site renewable energy technologies to provide a minimum of 5% electrical and 25% thermal consumption. 3. A minimum of 5% of any electricity purchased from the utility will be supplied by Green Power. 4. Incorporate a district heating and cooling system that will connect to all buildings and meets 100% of the thermal load.
Transportation and Connectivity	Fort Monmouth will be connected to all activity centers within the site and to the surrounding communities, by emphasizing walking, cycling, and encouraging the use of public transit. A proposed Shuttle Bus will link all areas of the Fort to regional rail service and the potential for rail station development in the Charles Wood Area should continue to be explored. Pedestrian-oriented streets and a continuous bicycle network will reduce vehicle-dependency and promote a healthy lifestyle.	T-1 Transportation Demand Management Plan T-2 Pedestrian-Oriented Streets T-3 Bicycle – Multi-Purpose Trail Network T-4 Promote Electric Vehicle Use T-5 Parking Control T-6 Shared Parking T-7 Shuttle Bus, Van, & Car Share Programs T-8 Promoting Public Transit	1. All residents, employees and visitors to Fort Monmouth will be within a 10-minute walk of public transportation. 2. Bicycle routes will connect throughout the entire site and extend to existing and proposed bicycle networks. 3. Bicycle parking will be provided throughout the site. 4. Shared parking will be employed throughout the Fort. 5. Carpooling, car sharing, fuel efficient vehicles, and NEV's will be given priority parking. 6. A shuttle bus will connect enhanced public transit systems surrounding the Fort with all development clusters. 7. Existing street networks will be extended through the fort to enhance mobility and relieve congestion.
Green Buildings	All buildings at Fort Monmouth should be designed to the highest green building standards, integrating best management practices and LEED criteria. Design will pay particular attention to acoustics, improved indoor environmental quality, daylighting, and energy and water efficiency. All buildings should be commissioned to ensure optimum system performance. A showcase building, open to the public, will demonstrate the sustainability features implemented.	GB-1 LEED Certification GB-2 Building Orientation GB-3 Universal Accessibility GB-4 Daylighting GB-5 Energy Performance GB-6 Green Roofs GB-7 Indoor Environmental Quality GB-8 Acoustics GB-9 Building Materials GB-10 Water Efficiency & Wastewater Management GB-11 Commissioning GB-12 Sustainability Showcase Building	1. Maximize the adaptive reuse of existing buildings and infrastructure. 2. At least 40% of the square footage of buildings should be LEED Silver certified and 10% LEED Gold certified. The remaining buildings should meet the equivalent of LEED certified standards. 3. At least 75% of the stand-alone building frontages will be designed & oriented for optimal solar orientation. 4. A modeled energy performance target of at least 20% or better will be achieved for residential buildings and 25% or better for commercial and institutional buildings. 5. Buildings must maximize daylighting for at least 95% of all occupied spaces, 75% of interior spaces, and views for 90% occupied spaces. 6. Source 20% of the building materials with recycled content and 20% of the materials locally. 7. Specify 50% Forest Stewardship Council (FSC) certified wood for all interior finish woodwork. 8. Specify rapidly renewable materials for 5% of the total value of building materials. 9. At least 50% of the exposed new building roof areas should be green roofs. 10. Buildings will meet the following criteria for water and wastewater: Consume 50% less potable water, treat 100% of the wastewater on-site for 75% of the buildings, recycle at least 50% of the grey water from buildings

Focus Area	Vision	Potential Strategies	Potential Goals & Targets
Construction Management	During construction, Fort Monmouth will be a safe, clean, and environmentally responsible site that demonstrates progressive and sustainable construction best management practices with regard to energy use, air and water pollution, and construction waste. Construction activities will be sensitive to the local ecology and surrounding neighborhoods.	CM-1 Energy & Water Use CM-2 Construction Waste Management CM-3 Low-Emitting Construction Vehicles CM-4 Sustainable Wood in Temporary Construction Practices CM-5 Environmental Training CM-6 Air, Water, & Noise Pollution CM-7 Ecology in Construction Zone CM-8 Site Cleanliness CM-9 Communication & Community Involvement	1. Monitor, report and target CO2 emissions arising from construction activities. 2. Separate and recycle demolition debris and reuse on site. 3. Divert 90% of construction and demolition waste from landfills. 4. Train all site personnel on sustainable development issues. 5. Utilize energy efficient construction and site equipment. 6. Operate a clean and considerate construction site.
Operations and Maintenance	Fort Monmouth will be managed by trained operation and maintenance staff who are familiar with green building systems, cleaning products, materials, and equipment to ensure a safe and clean environment. Waste will be reduced through the implementation of recycling and composting initiatives. Residents and business owners will be guided with a manual on day-to-day indoor sustainable living.	OM-1 Building & Home User Guide OM-2 Retail Sustainability Guidelines OM-3 Green Purchasing Guidelines OM-4 Facilities Management Training OM-5 Recycling and Composting OM-6 Management Plans OM-7 Landscape Maintenance	1. Each residential and commercial unit shall include a Building User Guide, that includes green purchasing guidelines. 2. All retail tenants must adhere to sustainability guidelines for the fit-out of their space. 3. Fort Monmouth must recycle 50% of its total waste stream.

5.0 INFRASTRUCTURE PLAN

5.0 Infrastructure Plan

5.1 Anticipated Development

The anticipated development provided in the Fort Monmouth Reuse and Redevelopment Plan was used to project the demands for the various utilities serving the area. The Reuse and Redevelopment Program is summarized on Page 3-12. Based on the Plan, Utility demands were calculated for gas, electric, water and wastewater based on the development summary provided. The demands were projected by development type in square feet (SF), within each of the three municipalities, and for 10 Year and 20 Year periods.

Projected utility demands were submitted to the appropriate utility company to review and provide:

- Input on the ability of the utility company to meet projected demands,
- An analysis of system improvements and upgrades needed to meet projected demands,
- Cost estimates associated with identified system improvements, and
- The utility company's policy with respect to a potential cost-sharing program.

A summary of the utility demand analyses along with the responses of the respective utility companies follows.

5.2 Utility Systems

Gas Utility

New Jersey Natural Gas (NJNG) currently provides service to and throughout the Fort Monmouth facilities, as this is the only utility that was previously privatized. The anticipated natural gas demand associated with the projected development is approximately 151,000 cubic feet per hour (CFH) for the 10 Year Plan and 68,000 CFH for the 20 Year Plan periods, for a total demand of approximately 219,000 CFH. Approximately 80% of the estimated gross natural gas demand for the total build-out is required for Office/R&D and Residential components of the Plan.

Adequacy of Existing System

NJNG, on the basis of their system model for the proposed development, responded that the existing system can support the 10 Year (until 2018) additional load in Tinton Falls, Eatontown, and Oceanport Reuse Areas. However, by the end of the 20 Year Plan (2028) the model projects some weakness in the

Eatontown, Belmar, and Spring Lake sections of their service area.

System Improvements

NJNG projects that some minimal system improvements may be needed in the Red Bank, Fairhaven, and Rumson areas for the 10 Year Plan. By the end of the 20 Year Plan period, however, substantial system improvements will be required in the Tinton Falls, Eatontown, Oceanport, Belmar, and Spring Lake sections.

Currently, NJNG performs system improvements as a part of their standard maintenance procedures to support existing and new customers.

Costs

Based on current tariff and standard operating procedures, NJNG plans to provide new gas main services to serve the proposed redevelopment under a Firm Rate free of charge, as long as the cost to serve equals or is less than ten times the margin. In other words, per the current procedures, NJNG would forgo ten years' margin, not making any money on a gas main extension until year eleven.

The work associated with the potential system improvements is not typically charged to a customer, rather it is absorbed by the rate base. In the case of the proposed redevelopment, this would be the norm. For example, the Franklin line (transmission main that serves the Fort Monmouth area) is currently being replaced and this cost is covered in the transportation charges that all customers pay. Hence, such an improvement substantially increases the amount of gas that can flow to support the proposed Reuse Areas as well as any other projects in the area.

Comments/Suggestions

NJNG requires a detailed Final Reuse Plan in order to further refine its gas distribution system model, which in turn would enable NJNG to project itemized distribution improvements and related costs. Based on the initial forecasts, NJNG deems adequate the potential to handle the projected redevelopment per the 10 Year Plan, and costs associated with the 20 Year projected redevelopment need to be investigated further as they are more likely to impact the development process.

Electric Utility

Electricity is currently supplied to Fort Monmouth by Jersey Central Power & Light (JCP&L). The anticipated electric demand associated with the projected redevelopment is approximately 30,000 Kilowatts (KW) for the 10 Year Plan and 14,000 KW for the 20 Year Plan periods, for a total demand of approximately 44,000 KW. Approximately 77% of the estimated gross electric demand for the total build-out is required for Office/R&D and Residential components of the Reuse Plan.

Adequacy of Existing System

Annual consumption of electricity by Fort Monmouth is currently approximately 20,000 KW. Approximately 90 Uninterruptible Power Supply (UPS) systems and 51 emergency generators are located in various buildings throughout the facility. The electricity is distributed through a series of transformers located throughout the Fort area, and there is concern about the feasibility of the existing system to handle the projected demands.

System Improvements

Upon review of the projected demands, JCP&L reported that, typically, customer-owned facilities do not meet JCP&L standards and are not reused by JCP&L. Further, JCP&L indicated that additional capacity, if required, would be determined when the Final Reuse Plan and specific site plans and loading impacts are developed and submitted for review. Area requirements are dynamic and time-sensitive, so available capacity, service proposals, and associated costs could be affected by the timing of applications and installations. Capacity is not reserved. Depending upon the magnitude of new loads, coupled with regional load requirements, significant infrastructure improvements may be required outside of the Reuse Area. These improvements may require existing transmission circuits to be rebuilt, upgraded, or replaced.

The full impact of the development on JCP&L, and the need for improvements, would be determined by an Initial Load Study (ILS), which requires a well-defined redevelopment proposal and timeline, including detailed locations of proposed loads. JCP&L indicated that new substations would be required

within the Reuse Areas; however, these could be on existing substation sites. Easements or conveyance of property would also be required.

Costs

JCP&L provided the following cost information and assumptions:

• Primary/Secondary Distribution (6 – 12.5kV Overhead Feeders)	$5,400,000
• Transmission (Relocation of existing Transmission, Rebuild existing line)	$2,100,000
• Substation (2 Substations – high side 34.5kV)	$4,700,000
Subtotal	$12,200,000
Tax Gross up (23.97%)	$ 3,000,000
Total	$15,200,000

NOTE:

1. Cost estimates are not based upon a planning study. Costs are 2008 dollars.

2. The municipalities of Oceanport, Eatontown, and Tinton Falls may require by ordinance that electric distribution be done underground. Costs associated would require detailed study at later stages of implementation.

Assumptions:

1. All JCP&L facilities are overhead, except for transformers larger than 300kVA.

2. All three phase underground commercial services are installed and owned by the company/customer requesting service.

3. Overhead line extensions are along existing roads.

4. Distribution costs were developed utilizing a per foot cost estimate that reflected the existing system denoted in the base maps that were provided. It needs to be noted, however, the actual build-out of the system may be significantly different.

5. Smart Growth designations would be granted for the area, thus line extension costs to the developer/customer would be refundable, predicated on meeting revenue requirements.

6. JCP&L facilities are not in a designated wetland area, which would require permitting and additional engineering costs.

7. The rough distribution design has capacity to serve approximately 42 MW of load.

8. The existing transmission, presently, can support 20 MW of load. Any increase beyond the 20 MW would require a full planning study that incorporates the review of the Fort Monmouth load projection, in conjunction with the loading impacts from surrounding communities and the County. This is a detailed study that requires a non-refundable fee.

9. The new JCP&L substations would require an acre of property. If bulk (115kV or 230kV) transmission is required to support the redevelopment, the substation footprint is a minimum of 2 acres, and the associated costs are substantially greater than noted above.

10. There are no single customers with loads exceeding 2,500kVA. Customers exceeding 2,500kVA may be required to accept transmission service and provide their own transformation and regulation.

Comments/Suggestions

JCP&L requires a detailed Final Reuse Plan in order to further refine its electrical distribution system needs, and provide reliable conclusions on its ability to meet projected demands and at what cost. JCP&L has also been requested to provide costs for an underground distribution system within the Fort property.

Water Utility

New Jersey American Water (NJAW) currently provides service to and throughout the Fort Monmouth facilities. The anticipated water demand associated with the projected development is approximately 1,000,000 gallons per day (gpd) for the 10 Year Plan and 670,000 gpd for the 20 Year Plan periods, for a total demand of approximately 1,670,000 gpd. Approximately 75 % of the estimated gross water demand for the total build-out is required for Office/R&D and Residential components of the development.

Adequacy of Existing System

The Main Post and Charles Wood Area have had some water quality problems throughout the years, primarily due to the system's age. Presently, the system is presumed to be in fairly reliable condition, with adequate quality; however, it may be preferable for a developer, or NJAW, to install a new water distribution system rather than replacing and/or repairing the existing one. In fact, NJAW has indicated that a majority of the water system piping has reached its useful life, and the proposed development would require installation of new water mains, sized to meet demand. NJAW does currently have several large diameter water mains adjacent to the Fort property that may be able to adequately service the property; however, NJAW makes no guarantee that the allocation required would be available at the time of application/development.

System Improvements

NJAW has indicated that the development Plan extends into a time frame where water allocation would potentially be a problem unless several long-term projects are completed. However, NJAW has not provided any further detail, plans, or reports on potential improvements.

Costs

NJAW currently anticipates that all on-site piping would have to be replaced to meet the demands and/or layout of the proposed development. These costs would be paid for by the developer, with the potential for eligibility for refund depending on then-current Smart Growth development programs. NJAW has not provided any estimates for the potential improvements.

Comments/Suggestions

The maintenance and repair of the existing water distribution system would be complex and costly. It may be advantageous to utilize the existing storage tanks located in the Reuse Area. Potential use of any aquifer to supplement water service would be subject to the approval of the New Jersey Department of Environmental Protection.

Additional follow-up with NJAW's Developer Services Department would be required. They have indicated that a formal application, including at least a concept design of the on-site system, would be required for NJAW to initiate its Developer Services Service Extension review process.

Wastewater

Wastewater from Fort Monmouth currently flows to Two Rivers Water Reclamation Authority (TRWRA) wastewater lift/metering stations, and is then pumped to the TRWRA's wastewater treatment plant located in Monmouth Beach on the Shrewsbury River. Currently, TRWRA is under a self-imposed ban on new sewer connections for an anticipated two year period as of July 2007.

The anticipated wastewater output associated with the projected development is approximately 1,000,000 (gpd) per the 10 Year Plan and 670,000 gpd per the 20 Year Plan periods, with a total output of approximately 1,670,000 gpd. Approximately 75 % of the estimated gross wastewater output from the total build-out would result from the Office/R&D and Residential components of the development. Considering the addition of infiltration/inflow, the gross quantity of wastewater to be treated is estimated at 1, 750,000 gpd.

Adequacy of Existing System

For the year 2007, the total metered flow discharged from both the Main Post and Charles Wood Areas was 142 million gallons, although Fort Monmouth was charged for 204 million gallons due to the required minimum charges. This current arrangement resulted in Fort Monmouth being charged for 62 million gallons of wastewater discharge above its actual usage.

The TRWRA's treatment plant located on the Shrewsbury River is permitted to treat 13.83 mgd on average per month. The constraint in the system, however, is the TRWRA's main wastewater pump station. From March to May of 2007, it was observed that the pump station was operating above its capacity, and it was this overloading of the pump station that resulted in the sewer connection ban.

In consultation with FMERPA, the TRWRA has indicated that a more detailed analysis of the existing on-site wastewater piping system is necessary to ascertain the condition of the system, the severity of the infiltration/inflow, and the feasibility of repair versus replacement of the piping. To this end, FMERPA has assembled a subcommittee of the Infrastructure Advisory Committee, with representatives from each of the three towns, the TRWRA, and the Garrison office of Fort Monmouth. This subcommittee has been charged with developing a Request for Proposals (RFP) for engineering services to perform an in-depth assessment of the existing wastewater system piping. The portions of the system to be assessed and the methods of testing are still being evaluated. It is anticipated that the engineering services would be scheduled for the spring of 2009. FMERPA has secured federal funds to undertake these services.

System Improvements

It can be inferred from the above projected demand estimates and the capacity of the TRWRA treatment plant that the treatment plant itself could adequately handle the additional wastewater flows projected by the Reuse Plans. The existing pump station, however, would have to be replaced to match the capacity of the treatment plant. The TRWRA recently completed a $45 million upgrade of the treatment plant; hence, it is anticipated that funding the replacement of the existing pump station is a major concern for the TRWRA.

The results of the detailed analysis of the existing on-site wastewater system would also serve to determine recommendations regarding the extent, magnitude, and cost of repair and/or replacement of the existing system.

Costs

The TRWRA stated that the existing pump station cannot be expanded and would have to be replaced to provide the additional capacity. The TRWRA has selected a new location on the site of the TRWRA treatment plant. The TRWRA estimates the cost to construct the new pump station between $25 and $35 million dollars.

Comments/Suggestions

The existing TRWRA treatment plant is adequate to handle the future wastewater needs of the proposed redevelopment of Fort Monmouth. The constraint lies in the inadequacy of the existing pump station to pump the current wastewater flows to the treatment plant, much less the additional demands of future development. Based on the construction schedule of the proposed redevelopment, it would appear that there is adequate time for the TRWRA to construct a new pump station. Discussions between the TRWRA and FMERPA should proceed.

Telephone

Verizon did not provide any details on their ability to handle the demands of the redevelopment of Fort Monmouth; however, they did state that all the costs associated with any upgrades to the existing systems required and installation of new infrastructure would be at the expense of the developer. Verizon further stated that they would require more detailed concept redevelopment Plans before they could proceed with a feasibility analysis and cost breakdown of their distribution systems, as well as a "letter of intent" for payment of all of their costs to perform the analysis. Through FMERPA, assistance has been solicited from a representative of the New Jersey Board of Public Utilities (NJBPU) to seek a greater level of cooperation from Verizon on the condition of the existing telephone system, the potential for system improvements, and costs for meeting the proposed development demands on the Fort property.

6.0 ENVIRONMENTAL REMEDIATION GUIDELINES

6.0 Environmental Remediation Guidelines

This section of the Plan provides an overview of recommendations related to environmental cleanup. Please refer to Technical Memorandum: Environmental Conditions (September 2007) for the history and current conditions of the site.

6.1 Environmental Conditions

Research and development activities and associated support activities that have occurred at Fort Monmouth during its over 80 years of operation have resulted in the generation of a number of wastes. Prior to recognition of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Resource Conservation and Recovery Act (RCRA), disposal of some wastes occurred on site instead of being transported off-site and handled by the proper authorities. Due to this common practice, the Installation Restoration Program (IRP) was developed by the DoD to comply with federal guidelines for managing and controlling past hazardous waste disposal actions. The IRP is intended to address the cleanup and environmental impacts of contamination and damage resulting from past, not current, activities. The DoD is the lead federal agency responsible for conducting environmental investigations and implementing the final cleanup plans at a military base under the IRP.

As a result of Fort Monmouth's history of research and development (R&D) activity, known and potential environmental concerns identified to date include:

- 43 IRP sites (26 are considered No Further Action (NFA) sites, 17 are still active)
- Petroleum Hydrocarbons Releases resulting from Underground Storage Tanks (USTs) and Above-ground Storage Tanks (ASTs)
- Munitions and Explosives of Concern (MECs)(1 active range)
- Potential Radiological Contamination
- Underground Utilities
- Asbestos and Lead-Based Paint
- Polychlorinated Biphenyl (PCB)-Impacted Equipment, Storage, Spills, and Disposal Areas
- Pesticide and Herbicide Storage Areas, Mixing Areas, and Site-Wide Application

Note: Additional detail and background information is provided in the referenced Technical Memorandum

It should be noted that many of the potential environmental concerns do not pose environmental constraints; however, field investigation and remediation would be necessary to ensure that environmental risk is managed as property transfer proceeds.

The current quantitative environmental information has been used to help guide reuse planning activities, including identification of appropriate locations of each land uses depending on level of contamination, budgeting considerations, potential schedule impacts, and potential land use controls. Final remediation requirements would be determined by the New Jersey Department of Environmental Protection (DEP) and would include consideration of the future land use proposed for the individual areas. Critical environmental constraints were honored during the Plan development. In other words, prime development locations do not conflict with IRP site restrictions. In order to further reduce the level of contamination on the site, administrative controls, engineering controls,

and additional investigation may be used to mitigate contamination or reduce minor environmental constraints.

Due to the potential for other environmental contamination, not previously detected, to exist throughout the installation, use of a Materials Management Plan and a Health and Safety Plan during construction activities is strongly recommended. If potentially contaminated soil, sediment, or water is observed during construction or renovation activities, the procedures outlined in the Materials Management Plan should be followed.

6.2 Property Reuse Constraints

While there would clearly be environmental remediation efforts within the Reuse Areas continuing well into the future, this Plan has been developed so that none of the proposed land uses are subject to critical constraints from the environmental sites. The Plan development process has been completed in concert with this evaluation of environmental conditions and, as a result, any severe constraints resulting from environmental conditions have already been identified and avoided. The following figure on page 6-4 shows the known environmental conditions combined with the current reuse Plan and illustrates the compatible reuse proposed for critical environmental sites such as the landfills.

As the property transfer proceeds and the disposition strategy is refined, it is critical that the stakeholders continue to be aware of engineering constraints imposed by the remaining environmental conditions. Issues such as potential vapor intrusion into new or existing structures from contaminated groundwater would require minimal additional engineering and construction costs that must be factored into any future transfer strategy. The continuing investigation and remediation activities performed by the Army would also continue to refine the understanding and consideration of any future engineering constraints resulting from environmental conditions. FMERPA or its successor must remain vigilant in monitoring the progress of the Army's efforts and the resulting improved understanding of the environmental conditions within the Reuse Areas.

This section, including environmental concerns and cleanup requirements would be updated once the Final Plan is determined based on the data that is available at this time.

6.3 Remediation Requirements

Because of the proactive approach taken by Fort Monmouth staff in identifying, investigating, and remediating the IRP sites at the installation, future remediation requirements should be straightforward to formulate. Ultimate remediation requirements would be coordinated with and determined by the NJDEP with future property use as one of the criteria considered for formulating appropriate remediation requirements. The environmental data gaps are limited at the site; therefore, the only critical remaining issue that must be resolved is the finalization of the redevelopment components. The current Plan has been developed so as to avoid critical conflicts between the selected land use and the existing environmental conditions. Thus, environmental remediation is not a prerequisite for any redevelopment activity proposed. There are likely situations where a remediation effort could benefit from concurrent performance of a development activity or where a concurrent remediation effort would be required to be protective of human health. However, this type of aggressive scheduling cannot be completed until a disposition strategy and schedule are complete.

6.4 Remediation Timeframe and Responsibilities

The Base Closure & Realignment (BRAC) Acts of 1988 and 1990 provide a number of specific legal requirements that must be met when a military base is closed and transferred to a different owner, such as FMERPA. Specifically, the US Army is responsible for either transferring clean property or for paying for the investigation and cleanup of environmental contamination in soil, sediment, groundwater, and surface water necessary to protect human health and the environment.

It is important to understand that there are two different environmental remediation scenarios allowed under the BRAC law that create both opportunity and complexity in the planning of property disposition. Without BRAC, the Army would be required to transfer property only after it had satisfied the provisions of CERCLA. While this routine approach remains one of the possible scenarios, the BRAC provisions make it possible for the Army to transfer the remediation responsibility to the new property owner prior to satisfying the CERCLA requirements. This process is referred to as Early Transfer or accelerated transfer and involves a negotiation process whereby the Army agrees to provide funds for the necessary environmental remediation.

The flexibility allowed by BRAC means that the timing of the environmental remediation of the Reuse Areas can be adjusted to address the community's needs as identified in the reuse planning process. For example, a highly desirable property that is determined to represent economic benefit to the community and is contaminated could be a candidate for transfer prior to remediation. This Early Transfer places more control in the hands of the community for ensuring that the remediation goals meet the land use needs identified by the community as opposed to those imposed by the Army. In cases where a specific parcel is not as economically critical, or the transfer schedule is not short, the Army could proceed with remediation on their schedule and transfer the property along with the NJDEP approval of a completed remedy sufficient to protect human health and the environment under the planned land use scenario.

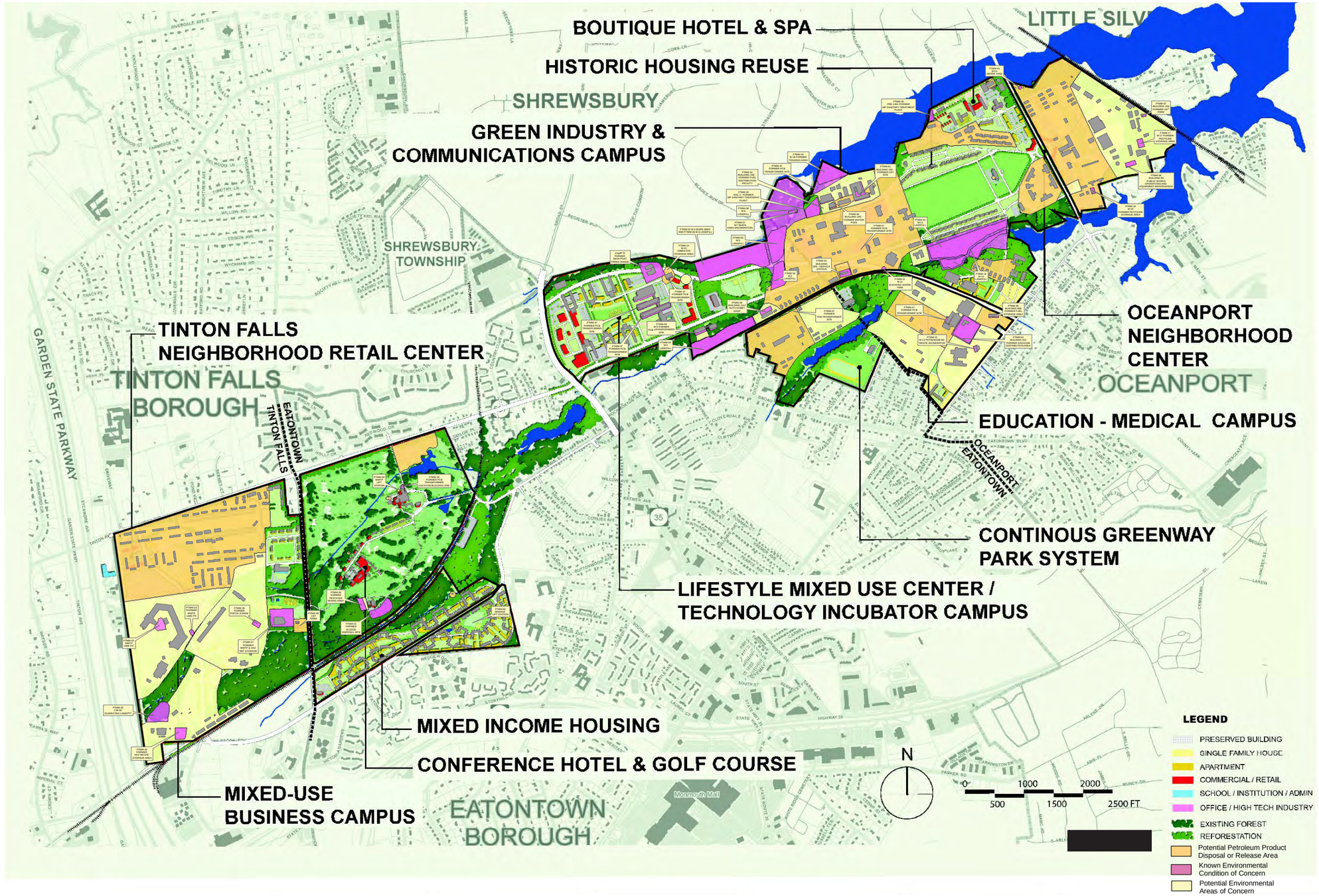
This inter-related nature of the environmental responsibilities under BRAC make the determination of a remediation schedule prior to finalization of a disposition strategy and associated schedule problematic. Further complication arises from the fact that the FMERPA would identify development schedule constraints that are unknown to the Army, and are driven by economic factors that are not of concern to the Army, and that are likely to change over time. These schedule requirements must also be taken into consideration when developing a timeframe and establishing whom the responsible party is with respect to remediation as part of the disposition implementation.

The degree of remediation that is eventually achieved is also of great concern to the community and is closely related to the land use proposed for the transferred property. Environmental remediation is intended to reduce or eliminate ecological or human health risk that could be created by environmental contaminants. Risk (ecological or human health) is characterized by considering a variety of factors that have the potential to contribute to that risk including, at the basic level, the type and concentration of contaminants and the magnitude of exposure for both ecological and human receptors. Residential use creates more exposure than recreational use because people spend more time on average in and around their homes than walking in a park. Because regulatory cleanup criteria are driven by an evaluation of the risk that is created on a site specific basis, it is critical that land use be identified prior to establishing these cleanup criteria. For example, the cleanup criteria for a landfill that is planned to be used as open space would be much less restrictive than for a landfill planned for residential use. This process is straightforward and well understood; however, it is not possible to finalize the cleanup criteria for any specific site within the Reuse Areas until the Plan and disposition strategy is finalized.

Finally, the cost of environmental remediation is also dependent upon the finalization of the Plan. The Early Transfer includes a detailed negotiation process where FMERPA or its successor would study the environmental conditions associated with any specific Early Transfer properties and, in cooperation with NJDEP, forecast the required remediation efforts. The Army and the community would then agree to a transfer including funding that would allow FMERPA to achieve the regulatory criteria and obtain clean closure for each site. Although the simplest example of funding the remediation is for the Army to provide a grant in the negotiated amount, there are other approaches that may be attractive at Fort Monmouth. For example, because of the value of a specific parcel, the Army may prefer to discount the purchase price for a specific parcel by an amount commensurate with the remediation cost. In the end however, these alternatives are variations on the theme of Army funded remediation in support of an Early Transfer.

Any properties that remain in the Army's hands as part of the disposition strategy would proceed through cleanup to clean closure under the Army's direct supervision and using funds separate from any direct community involvement. FMERPA would continue to be able to comment on the costs, schedule, and cleanup criteria for these properties but would lack any direct influence on the Army's process or progress.

Because of these identified interrelated factors, it is impossible to establish a clear timeframe regarding remediation of the Reuse Areas or to establish responsibilities beyond the general understanding that the Army is ultimately responsible under law. Once the Reuse Plan is adopted, and a strategy and schedule is in place, a more detailed environmental remediation timeframe and responsibility matrix can be developed.



Source: Matrix Design Group

Environmental Conditions of the Property

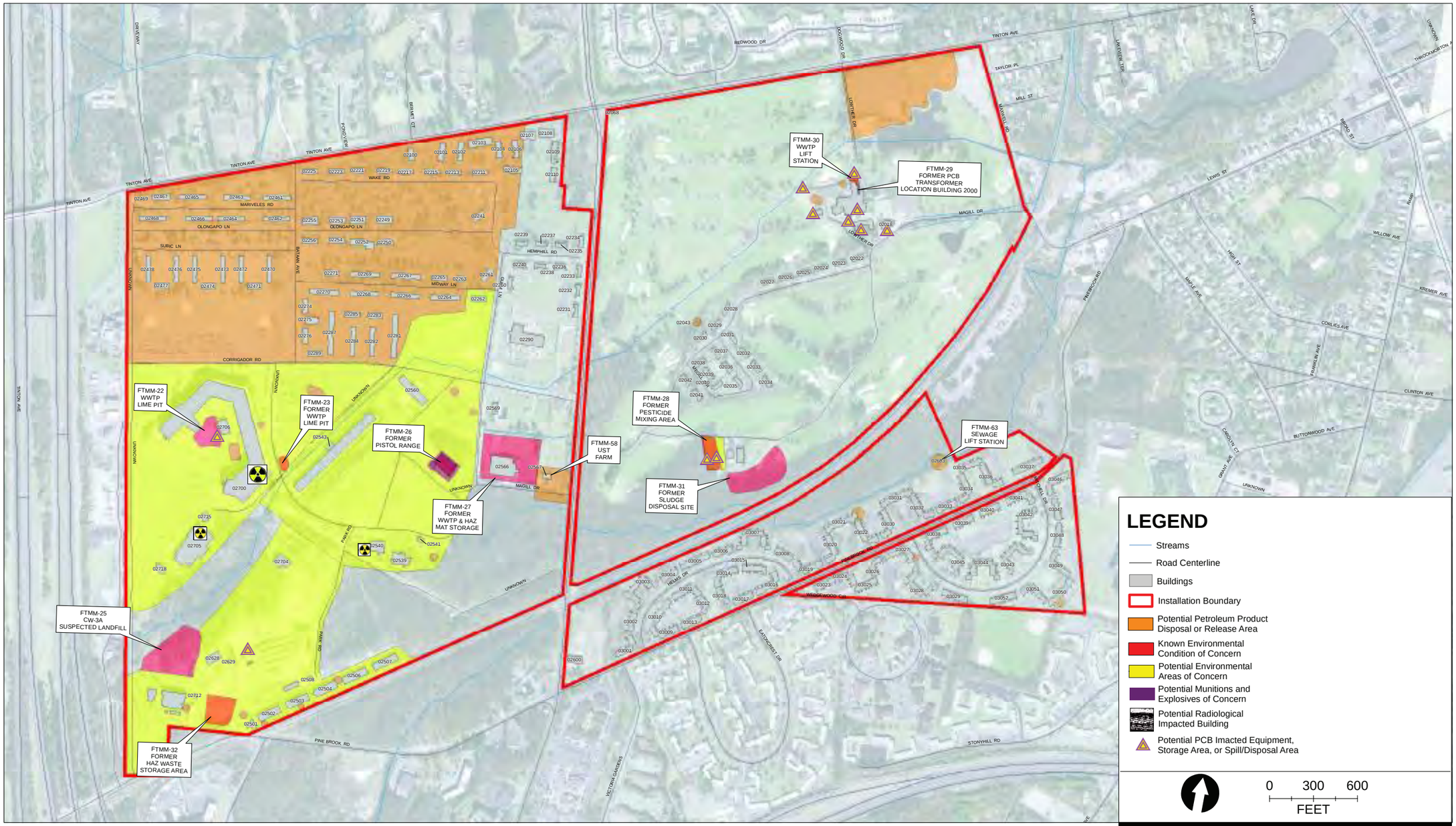


FIGURE 2: ENVIRONMENTAL CONDITIONS OF CONCERN: CHARLES WOOD

FORT MONMOUTH REUSE AND REDEVELOPMENT PLAN

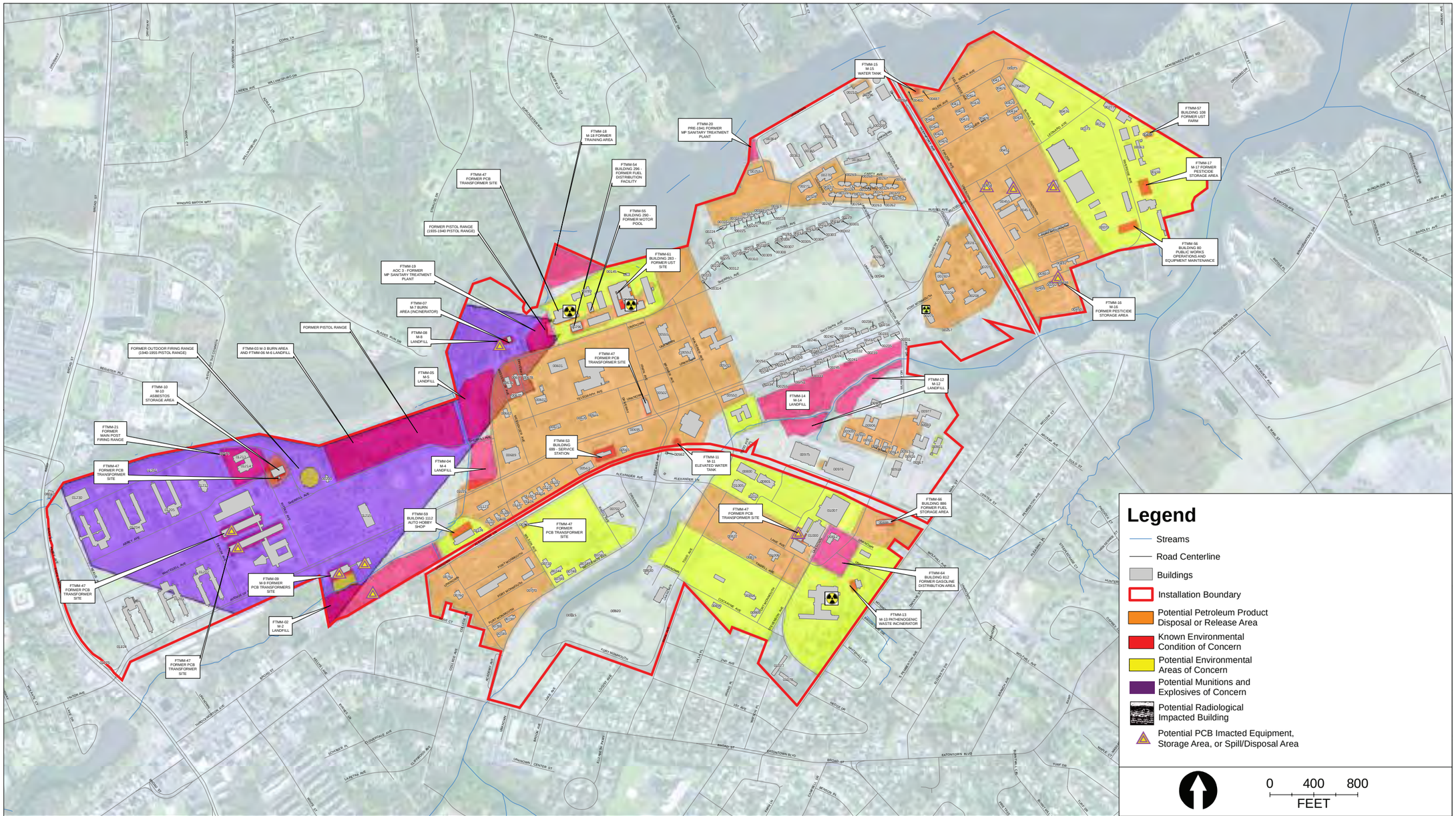
Matrix Design Group Inc. Integrated Design Solutions

FMERPA

FORT MONMOUTH Community Planning for a Bright Future

EDAW | AECOM

Environmental Conditions of the Property



FORT MONMOUTH REUSE AND REDEVELOPMENT PLAN

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ENVIRONMENTAL CONDITIONS OF CONCERN: MAIN POST

Environmental Conditions of the Property

7.0 HISTORIC PRESERVATION GUIDELINES

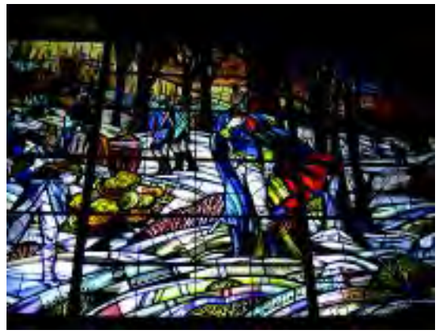
7.0 Historic Preservation Guidelines

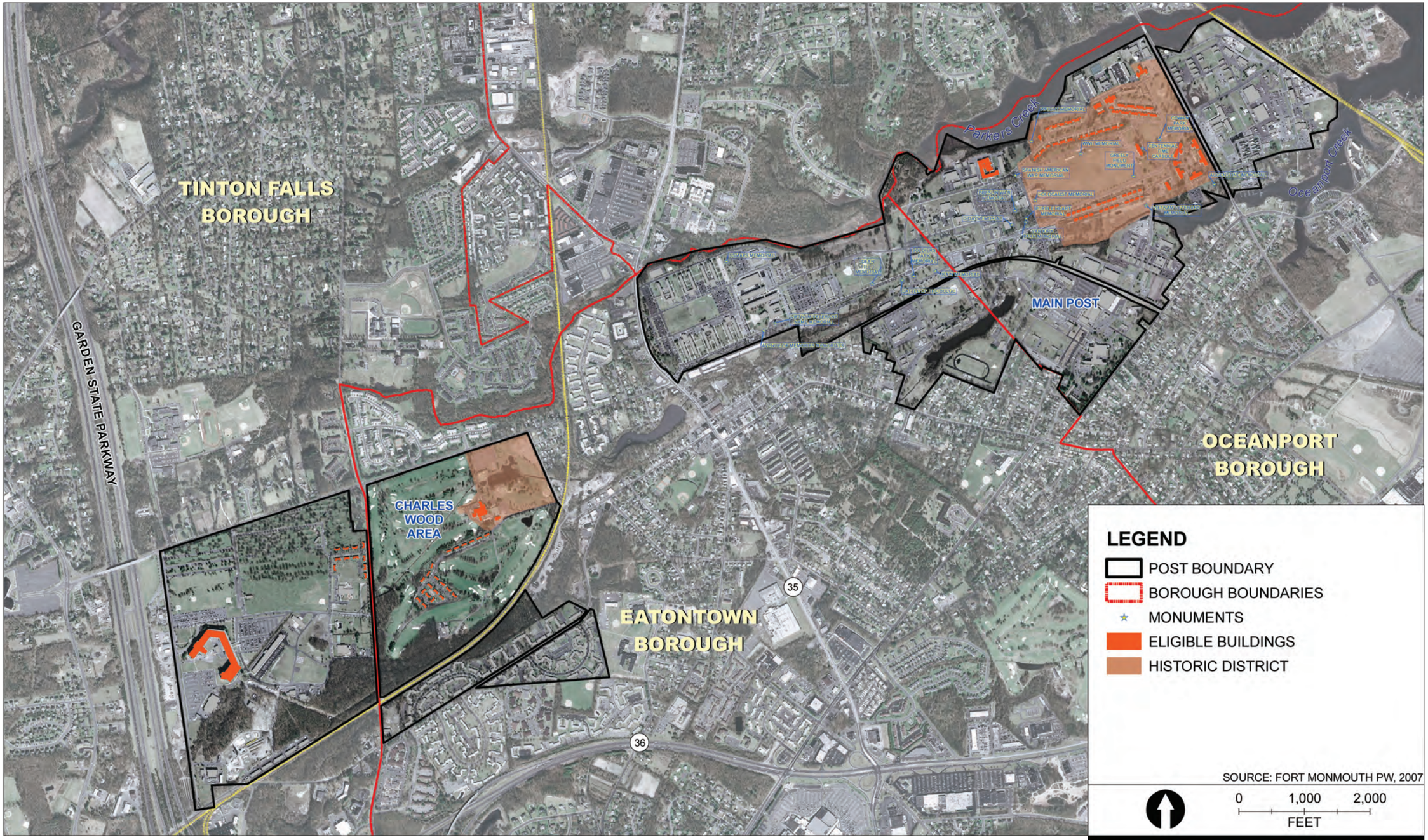
7.1 Historic Resources Overview

The buildings within Fort Monmouth display a wide range of design characteristics and uses including residential, educational, commercial, office, and industrial. These buildings were developed over time in different architectural styles in response to the needs of the garrison and its mission. They have been generally well maintained by the Army, but vary individually in condition and their adaptability to civilian uses.

Based upon the buildings' architectural merit, their association with significant events in American history such as World War II and the Cold War, or both, it has been determined that there are nearly 100 buildings eligible for the State and National Register of Historic Places.

Historic preservation guidelines for the buildings determined to have historic significance are based on the latest revisions of The Secretary of Interior's Standards for Rehabilitation, published by the United States Department of Interior. This document defines the various levels of preservation treatment; which are: preservation, restoration, rehabilitation, and reconstruction; and gives guidelines for the treatment depending on the circumstances.





FORT MONMOUTH REUSE AND REDEVELOPMENT PLAN

FMERPA

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AUGUST 2007

7.1.1 Historic Resources to be Retained

Through a series of buildings surveys and consultations with stakeholders, several buildings were either identified to be physically retained or their history and cultural value be retained through mitigation measures such as documentation and educational showpieces and displays.

HISTORIC DISTRICTS

Three historic districts within Fort Monmouth have been determined as eligible for listing on the National Register of Historic Places by the NJ State Historic Preservation Office.

Fort Monmouth Historic District, Main Post

The largest of the districts is the Fort Monmouth Historic District, which comprises 94 resources that date from the late 1920s through the mid-1930s, with one exception (the WWII Memorial, dating to 1952.)

The resources included in the Fort Monmouth Historic District are largely of brick construction, and represent a range of uses, including offices and administrative functions, family housing, garages, and a fire station. The Parade Ground (and associated WWII Memorial) is also located within the district boundaries.

Russel Hall, Building 286, the garrison headquarters, at the east end of the Parade Ground (Photo courtesy of FMERPA)

Camp Charles Wood Historic District

The Camp Charles Wood Historic District contains far fewer structures but is nearly as large as the Fort Monmouth Historic District in area. The focal point of the district is Gibbs Hall (Building 2000), a 1926, Tudor Revival style golf clubhouse that was originally constructed as the Suneagles Country Club. Gibbs Hall (Building 2000) and its accompanying outbuildings (Buildings 2001, 2018, 2019, and 2020), as well as the surrounding golf course (originally designed by A. W. Tillinghast, a well-known golf course architect) are contained within the historic district.

Gibbs Hall, Building 2000

Camp Charles Wood Residential Historic District

A Residential Historic District located to the east side of Hope Road at the center of the Charles Wood portion of the base includes a total of 32 housing units, constructed circa 1949 to 1955. The buildings were constructed as duplexes and represent the earliest housing to be constructed in the Camp Charles Wood area. As such, they are significant for their association with the post-World War II efforts of Fort Monmouth, which focused on communications research and development. The NJ State Historic Preservation Officer has determined that this housing is not eligible for listing in the National Register at this time.

Megill Circle housing in Camp Charles Wood Residential Historic District

HISTORIC STRUCTURES

In addition to Historic Districts, several historic buildings have been identified for retention or interpretation.

Squier Hall (Building 283)
- **Eligible for individual listing on the National Register**
- **Constructed in 1935 as research laboratories and training facilities**
- **Exterior of the building is original; interiors have been renovated**

World War II Temporary Wood Structures
- **Many one- and two- story wood frame buildings were constructed for barracks and training facilities as part of Fort Monmouth expansion during World War II**
- **A large number of these structures have been demolished**
- **Significant part of the World War II era at Fort Monmouth**

Myer Center (Building 2700)
- **Eligible for listing on the National Register**
- **Associated with the Cold War and the development of military electronics**
- **Local landmark; highly visible from the Garden State Parkway**

Dymaxion Deployment Units (on roof, as seen from the ground)
- **Designed in 1940 as inexpensive, temporary housing for Army during World War II**
- **Concept design based on the functional style of the grain bin**
- **Constructed of corrugated steel**

MONUMENTS AND MEMORIALS

One of the goals of the Historical Preservation Advisory Committee has been the documentation and preservation of the existing memorials and markers dispersed throughout Fort Monmouth. The twenty memorials identified range from such large-scale, architectural works as the World War II Memorial at the edge of the Parade Ground (Greely Field) to the markers that line the Avenue of Memories.

Only one memorial is located on Camp Charles Wood (Constitution Plaza at the Myer Center); the remaining nineteen are all found on the Main Post. The majority of the memorials were installed in the 1950s, although the collection grew over the next several decades.

World War II Memorial

7.1.2 Recommended Reuse Options

HISTORIC DISTRICTS

Fort Monmouth Historic District, Main Post

The resources included in the Fort Monmouth Main Post Historic District are, of the three identified historic districts, the most diverse in terms of style and use. Its significance is both historic and architectural; the Fort Monmouth Historic District stands as a physical reminder of Fort Monmouth's early years of development as an Army post. As such, the physical arrangement of this district is of extreme importance and should be respected when new construction is being considered. The open space – the parade ground – at the core of the district should be maintained as one of the most important character defining elements of the district. Similarly, the arrangement of the residential buildings at the edge of the parade ground, and the termination of the ground at its east end in the imposing Art Deco Style Russel Hall (Building 286), are key design elements. In considering new construction within or adjacent to this district, key design considerations would include symmetry, scale (two to three stories), material (brick or other masonry), and details such as door and window openings.

Housing Flanking Parade Ground

Reuse Recommendations

The detached and double housing units surrounding the Parade Ground are well-suited for re-use as housing. They range from modest to substantial in scale, and would suit a variety of markets without significant modifications.

Recommended Treatments

The recommended treatment for these buildings is Preservation. They are currently in good condition, and would remain so with standard maintenance. They do not require any significant alterations for continued use as housing.

Barker Circle

The buildings known as Barker Circle were originally constructed for barrack-type housing. The plans of these buildings do not readily adapt to traditional civilian housing forms, but they are suitable for adaptation to office use or loft-type housing.

Fire House

The firehouse facing the Parade Ground at Barker Circle should be re-used as a firehouse.

Recommended Treatments

The recommended treatment for the firehouse is Rehabilitation. It would need some improvements to accommodate modern emergency equipment, but its essential character-defining features may be retained with compatible new doors and windows.

Aerial view of Barker Circle from the southeast. The fire house is at the upper center of the complex

Colonnaded Facade at Barker Circle

Family Housing Surrounding the Parade Grounds

Recommended Treatments

Rehabilitation is the recommended treatment for these buildings. Because they have been previously altered, further alterations which do not detract from the character-defining features of the original work are appropriate.

These buildings would require complete interior renovation including mechanical and electrical systems, as well as upgrades to comply with the NJ Barrier-Free Subcode. Structural improvements are also required at the porches.

Kaplan Hall

Kaplan Hall was built as a theatre for Fort Monmouth, and has been adapted to serve as a museum. It is recommended that it remain a museum or other civic use.

Recommended Treatments

Preservation is recommended for Kaplan Hall. While the building would require some improvements for energy efficiency and barrier-free access, there is no need for substantial alteration that would constitute an adverse impact to adapt to a new use.

Gardner Hall and Guest House

To the north of the housing at the northern edge of the Parade Ground are two buildings, Gardner Hall and the Guest House, currently serving as short-term housing for visitors and temporary duty personnel at the Fort. These low, hip-roofed buildings are contributing elements in the Fort Monmouth Historic District, and should be retained for re-use as housing.

Recommended Treatments

These buildings would require Rehabilitation to adapt to a different housing use. Their exterior character-defining features such as the overhanging roofs and porches should be retained. Provision for barrier-free access would be required. If one of these buildings is demolished, mitigation would be required under Section 106 of the National Historic Preservation Act.

Allison Hall

Allison Hall was built as the hospital for Fort Monmouth. It is a sound building that has been renovated several times to serve as office space. It can be adapted again to continue to serve as office space for new tenants.

Recommended Treatments

Allison Hall would require rehabilitation to continue as office space. The interior would require improvements to comply with NJ Building Codes, including barrier-free access. Some original interior features, such as metal moldings and transoms at interior door frames, should be retained in any rehabilitation.

Parade Ground

The Parade Ground is the primary character-defining feature of the Fort Monmouth Historic District. It is remarkable in its scale, and provides a gracious setting for the housing that lines its edges. It should remain an unobstructed green space for the use of the community.

Recommended Treatments

Preservation is the recommended treatment for the Parade Ground. Existing plantings and walks should be preserved, and additional walks or paths added as needed for the new community. No structures or landscaping should be erected on the Parade Ground; it should remain an open lawn.

Russel Hall

Russel Hall dominates the Parade Ground, and is the anchor of the entrance to Fort Monmouth. This Art Deco brick building would remain in the hands of the US government, and would continue to be used for office space.

Recommended Treatments

Russel Hall would continue to be preserved by the US government.

Chapel

The Chapel is a non-contributing element of the Fort Monmouth Historic District based on National Register of Historic Places criteria. It is, however, harmonious in scale and design with the other buildings surrounding the Parade Ground, and should be retained as a religious structure.

Recommended Treatments

The Chapel may be preserved, rehabilitated, or demolished. Changes required for a new use would be suitable as long as they do not adversely affect other contributing elements of the Historic District. New construction should follow the guidelines for new construction.

Antennae

Several antennae remain at the northeast corner of the Fort Monmouth Historic District as a reminder of the Fort's role in development of communications technology during the Cold War. These structures would be relocated by the Army when they leave Fort Monmouth.

Recommended Treatments

Because these antennas relate directly to the historic significance of Fort Monmouth, they should be documented prior to removal as part of mitigation of the adverse impact on the Fort Monmouth Historic District.

Gardner Hall

Antennas in domes at the northeast corner of Fort Monmouth. Allison Hall is to the left, above the parking lot.

The Parade Ground from the east. Russel Hall and the Chapel sit at either end of the open space. The World War II Memorial is the only structure within the Parade Ground.

Camp Charles Wood Historic District, Gibbs Hall and Suneagles Golf Course

Reuse Recommendation

The focal point of the Camp Charles Wood Historic District is Gibbs Hall (Building 2000), a 1926, Tudor Revival style golf clubhouse that was originally constructed as the Suneagles Country Club. New construction within or adjacent to this district would need to respect the scale and style of Gibbs Hall as well as its primacy in the district. Gibbs Hall should be re-used in keeping with its original design intent and current use as a clubhouse and restaurant. The building has a commercial kitchen and dining rooms that are conducive to reuse. General dining areas are also available, although the banquet capabilities are small in scale.

Recommended Treatments

Gibbs Hall requires preservation and minor rehabilitation to address current building conditions and make interior upgrades to suit expanded usage. Rehabilitation should retain original features and materials at both the interior and exterior, including fireplaces, ornamental plaster, and copper trim.

Other Historic Structures

Squier Hall

Reuse Recommendations

Squier Hall (Building 283) is currently used as office space and would be most appropriately reused as office space. Its layout is irregular, although most wings have double-loaded corridors.

Recommended Treatments

The exterior of the building should be preserved, and any necessary repairs performed. The interior may be rehabilitated with new plan layouts and finishes as required to meet the needs of a new user. Barrier-free access and energy conservation should also be improved.

Dymaxion Deployment Units

Reuse Recommendations

The Dymaxion Deployment Units should be removed from the roof of the Myer Center, and located where they can be used and/or interpreted to the public. They would not be suitable for re-use as housing, their original function, but could be used for retail or welcome space.

Recommended Treatments

Because of their significance and rarity, the Dymaxion Deployment Units should be restored to their original condition after relocation.

Myer Center

Reuse Recommendations

The Albert J. Myer Center is a sound building constructed for telecommunications research purposes. It has a plan layout of two corridors defining two perimeter zones and an interior zone, corresponding to the layout of steel and concrete masonry unit piers. The building has high floor-to-floor heights and a relatively flexible plan, making it suitable for continued use for communications and electronics research.

Recommended Treatments

The Myer Center would need significant modernization to building systems and finishes for use for new tenants. It would also require development of a strategy to subdivide the building for phased occupancy, taking into account exiting, vertical transportation, and services such as HVAC and rest rooms. Because of limited original interior character-defining features, interior treatments would require little regulation.

At the exterior, a Rehabilitation approach should be employed. The existing building skin is not original, and the narrow strip windows present an austere appearance. The windows and wall cladding could be modified to create a more human scale for the building, and to be more in character with its original appearance.

World War II Temporary Structures

Reuse Recommendations

Throughout Fort Monmouth are temporary wood structures related to the expansion of the Fort during World War II. Because they were hastily built and not intended for permanent use, these structures all require substantial upgrades for energy efficiency and code compliance for adaptation to permanent use. As a result of a programmatic agreement concerning temporary structures

Gibbs Hall

Fireplace with ornamental over-mantle at interior lobby of Gibbs Hall

Squier Hall

nationwide, none of these structures are required to be retained. Because they represent a significant period of the history of Fort Monmouth, however, relocation and re-use of a small number of these structures for seasonal recreational or specialty retail use is recommended.

Recommended Treatments

The World War II structures should be relocated as needed, and placed on new foundations. Rehabilitation should include removal of later accretions, new roofing and siding similar in character to the original, rehabilitation of existing wood windows, installation of building systems required for new uses, and barrier-free access.

MONUMENTS AND MEMORIALS

Reuse Recommendations

The monuments and memorials should remain in place where their settings remain intact. Where a change in setting is necessary, the memorial should be relocated to a compatible location.

Recommended Treatments

As a number of these monuments and memorials have reached fifty years of age, an assessment of their condition by a professional conservator is recommended. This assessment should include a prioritized list of recommendations for restoration and maintenance, and also provide associated costs for the work outlined. Such an assessment is particularly important for the large-scale memorials and/or those with a structural component, such as the World War II Memorial, the Augenstine Memorial, or the Spanish American War Memorial, all of which date to the early 1950s.

The Dymaxion Deployment Unit should be placed on a concrete foundation, and all materials restored to their original condition.

The Myer Center from the west. The Dymaxion Deployment Unit is on the roof beyond, near the chimney stack.

7.2 Effects on Historic Structures and Recommended Mitigation Measures

This chapter outlines the potential effects to the historic structures of Fort Monmouth that would be realized in both the 10-Year and 20-Year Concept Plans. In general, potential effects can include both direct physical effects, such as demolition or alteration, and indirect effects, such as the introduction of new buildings or site features in close proximity that are out of character with a property or that alter its historic setting and context.

Main Post

The Main Post has a large collection of buildings, many incorporated within an eligible historic district, that are appropriate for preservation and reuse. The administrative and residential buildings on the Main Post have been well maintained and are in sound condition, and both the 10- and 20-Year Concept Plans show retention and reuse of the majority of these buildings. In fact, few physical changes to the existing buildings or their physical setting are anticipated within the eligible Fort Monmouth Historic District, and many buildings would continue to serve the same or similar use.

The buildings that comprise Barker Circle would remain, but plans show these buildings being adapted for use as municipal offices and residential reuse. The adaptive use of the buildings is considered to be a direct effect, but one that can be mitigated through design consultation with the New Jersey State Historic Preservation Office (NJSHPO).

The 20-Year Concept Plan also shows new construction to the north of Allison Hall (Building 209), a building that was originally constructed as a hospital but was later converted for office use. This new construction may visually alter the surrounding area, resulting in an indirect effect on the eligible resource (Fort Monmouth Historic District). New construction would need to be sensitive to the historic buildings in close proximity, such as Allison Hall, and the adjacent historic district, and designs should be developed in consultation with the NJSHPO and local historic preservation commissions.

Similarly, while the 10-Year Concept Plan shows no immediate changes to the Register-eligible Squier Hall (Building 283), the 20-Year Concept Plan provides for the growth and development of a new high tech green industry "center" immediately to the south of Squier Hall. This new construction would visually alter the surrounding area, resulting in an indirect effect on the eligible resource (Squier Hall). New construction would need to be sensitive to the historic building and to the general physical context.

Camp Charles Wood

The creation of a new hotel and conference center to the west of Gibbs Hall (Building 2000) is shown on the 10-Year Concept Plan. This new construction constitutes an indirect effect on National Register eligible resources. The new conference center would have an indirect effect on Gibbs Hall and its associated resources, as it would be within the viewshed of the Register-eligible building and would alter their physical context. Mitigation should include documentation of the entire Megill Circle complex and its landscape, and consultation with the NJSHPO and local historic preservation commissions regarding design of new construction.

The Myer Center (Building 2700-01) is an approximately 675,000 square foot, open hexagon plan research facility built in the 1950s. The Myer Center, which has been identified as an individually eligible building, dominates the western section of the Charles Wood area. The 10-Year Concept Plan shows partial demolition of the Myer Center, and its reuse as a commercial / general office / data center, with additional new construction to be completed as part of the 20-Year Concept Plan. These Plans constitute a direct effect on the Register-eligible building. Mitigation should include documentation of the structure, interpretation of its history, and design consultation regarding alterations and adjacent construction.

Myer Center courtyard

7.3 Guidelines for Preservation and New Construction

Preservation

The Secretary of Interior's Standards for the Treatment of Historic Properties [http://www.nps.gov/history/hps/tps/standguide] define four categories of treatment for historic structures, each of which involves varying degrees of retention of historic materials.

Preservation

Preservation is defined as "the act or process of applying measures necessary to sustain the existing form, integrity, and materials of a historic property." This treatment requires the retention of the greatest amount of historic fabric, including the features that illustrate the building's evolution over time.

Restoration

Restoration is defined as "the process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of removal of features from other periods in its history and reconstruction of features from the restoration period." In restoration, material authenticity is often sacrificed, as certain materials may be removed or missing features rebuilt to depict a single period.

Rehabilitation

The broadest category in the Secretary of Interior's Standards is rehabilitation. This is defined as "the act of process of making possible a compatible use for the property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values." Projects in this category may range from building renovation for similar uses, restoration of landmark public buildings that do not involve a change of use, to the adaptation of historic structures for uses other than the original. As in Preservation, a large amount of material fabric is retained

in Rehabilitation, as more than one period in the building may be represented. However, there may be less material authenticity due to the fact that alterations and additions for a new use are often required in this treatment category. Often, these projects involve very extensive renovations to HVAC, electrical, fire protection, plumbing, and security systems; while allowing the original design and materials of historic spaces to be preserved.

Reconstruction

Reconstruction is defined as "the act or process of depicting, by means of new construction, the form, features, and detailing of a non-surviving site, landscape, building, structure, or object for the purpose of replicating its appearance at a specific period of time and in its historic location." A reconstruction has the least authenticity of historic materials, since it depicts a single period in history using new materials, and is often based solely on archeology or other documentary evidence.

It is anticipated and recommended that the majority of the work on historic buildings at Fort Monmouth would be in the area of Rehabilitation. The monuments and memorials would be in the Preservation category, and the Family Houses on the Parade Ground would also be in the area of Preservation as they would serve for their original use. Restoration of buildings to a given historic time period is not anticipated, as the resources evolved over time and were utilized through many historic periods. Reconstruction or the creation of exact replicas of historic structures or sites is not anticipated or recommended in the Plan.

Modifications to existing structures should be designed to ensure minimal loss or removal of distinctive or character defining features, such as:

- Scale and massing of exterior walls
- Fenestration
- Decorative masonry details
- Decorative wood trim
- Roof shapes
- Special roofs and roof trim
- Porticos and porches
- Ornamental metals
- Dormers
- Shutters
- Decorative chimneys
- Landscape entrance elements

New Construction

The design of new buildings, as well as the design of building additions, within or adjacent to the defined historic districts or individually eligible buildings must be treated sensitively in order to preserve the historic character of the districts, each of which possesses its own identity and sense of place, and the significant landmarks. New buildings should respect not only the built context, but also the character of the landscape and streetscape.

Additional archaeological investigation that incorporates a program of subsurface testing is recommended to complement the information that has already been gathered on Fort Monmouth's above-ground resources and present a more complete picture of the cultural resources associated with the development of this site. It is important to complete archaeological investigations prior to the commencement of any new building on the Fort Monmouth property.

Compatible new construction can be achieved through an understanding and respect for a variety of design principles, including: setback, orientation, scale, proportion, massing, height, materials, and roof shape. In addition, the location and design of landscape features – trees, driveways, sidewalks, and even outbuildings – contribute to the character of the historic district or the setting of the significant building and should be considered throughout the planning process.

Generally:

- Modifications to existing structures should be designed to ensure minimal loss or removal of distinctive or character-defining features;
- The design of additions or new structures should be of a size and scale that is in keeping with the size and scale of the historic structure or structures; and
- The creation of exact replicas of existing historic structures is not recommended.

7.4 Section 106 Process

7.4.1 Consultation

In considering the future of Fort Monmouth's historic resources, FMERPA (Fort Monmouth Economic Revitalization Planning Authority), acting on behalf of the Army, is required to participate in the Section 106 review process. Section 106 review (which refers to Section 106 of the National Historic Preservation Act of 1966) requires federal agencies to consult with the State Historic Preservation Officer prior to implementing projects that impact historic properties, and ensures that private citizens and local governments have an opportunity to participate in the preservation planning process.

The Section 106 review process requires the project team to work with the New Jersey State Historic Preservation Office to reach a consensus regarding the eligibility of the resources and then to evaluate the effect of the proposed projects on those resources. Consultation with the NJSHPO typically results in a Memorandum of Agreement (MOA) or Programmatic Agreement (PA), which outlines the means by which the effects on historic resources would be mitigated.

The historic preservation review process mandated by Section 106 is outlined in regulations issued by the Advisory Council on Historic Preservation (ACHP). Revised regulations, "Protection of Historic Properties," (36 CFR Part 800), became effective January 11, 2001.

7.4.2 Mitigation

As mandated by Section 106 of the NHPA of 1966, FMERPA is participating in an ongoing consultation process with the NJ SHPO with respect to potential impacts on historic resources. As part of this consultation process, measures are being developed to avoid or minimize any significant adverse impacts – both direct and indirect – to historic resources.

Mitigation options may include:

- Ongoing consultation with NJ SHPO with respect to the design of project elements that would physically alter a historic resource or that could affect its context or setting.
- Documentation of historic resources and landscapes prior to their removal or alteration, ideally performed while the buildings and landscapes maintain the current degree of historic integrity. The level and type of documentation should be determined in consultation with the NJ SHPO.
- Additional study of the property. For instance, archaeological investigation that incorporates a program of subsurface testing could complement the information that has already been gathered on Fort Monmouth's above-ground resources, and would present a more complete picture of the cultural resources associated with the development of this important site.
- Public dissemination of the importance and historical significance of Fort Monmouth and its attendant resources, such as the development of a website, walking tour, publication, or permanent on-site exhibition.

8.0 COMMUNITY IMPACTS

8.0 Community Impacts

8.1 Overview

Economics Research Associates (ERA) has conducted a net fiscal impact analysis for the preliminary redevelopment program for Fort Monmouth. The analysis focuses primarily on the impacts to the municipal operating budgets of the three boroughs that encompass the Fort: Eatontown, Oceanport and Tinton Falls, as well as impacts to the local and regional school operating budgets. As part of our analysis, ERA met with Administrators or Chief Financial Officers for each of the Boroughs to discuss cost allocation methodologies and tax and equalization rates, and interviewed local assessors regarding valuation methodologies.

ERA provides our findings, expressed in constant 2008 dollars, in this memorandum report. These findings are based on the proposed plan concept as currently envisioned. As such, the estimates of fiscal costs and revenues are subject to modification as the proposed plan concept continues to evolve.

The proposed uses in the redevelopment program, by jurisdiction, are summarized in the following table (Note: the 20-year plan is additive to the 10-year plan).

8.2 Summary of Findings

ERA's analysis concludes that the proposed physical development plan will generally result in positive fiscal impacts for the jurisdictions analyzed. The net fiscal impact to the municipal operating, local school district, and regional high school district funds are generally favorable as summarized below in Table 2.

Table 1: Proposed Redevelopment Program

	Eatontown		Oceanport		Tinton Falls	
	10-Year Plan	20-Year Plan	10-Year Plan	20-Year Plan	10-Year Plan	20-Year Plan
Office and R&D Space (SF)	174,533	397,072	437,119	200,000	664,817	225,000
Retail Space (SF)	165,735	-	112,550	34,000	48,000	32,000
Hotel / Conference Center Space (SF)	254,400	-	-	70,000	-	-
Residential Units	275	302	294	418	288	-
Civic Uses Space (SF)	76,611	-	359,709	-	88,416	-

Source: EDAW; Economics Research Associates, 2008.

Table 2: Summary of Net Fiscal Impacts

	Municipal Use Fund		Local District K-8 School Fund		Regional 9-12 High School Fund	
	Year 10	Year 20	Year 10	Year 20	Year 10	Year 20
EATONTOWN					*Monmouth*	
Real Property Tax Revenues	$948,000	$1,904,000	$1,143,000	$2,295,000	$669,000	$1,343,000
Hotel Tax	$162,000	$162,000				
Estimated Public Service Costs	($580,000)	($1,099,000)	($97,000)	($246,000)	($32,000)	($113,000)
Net Fiscal Impact	$530,000	$967,000	$1,046,000	$2,049,000	$637,000	$1,230,000
OCEANPORT					*Shore*	
Real Property Tax Revenues	$749,000	$1,302,000	$1,254,000	$2,178,000	$572,000	$993,000
Hotel Tax	$0	$75,000				
Estimated Public Service Costs	($742,000)	($1,330,000)	($402,000)	($554,000)	($298,000)	($391,000)
Net Fiscal Impact	$7,000	$47,000	$852,000	$1,624,000	$274,000	$602,000
TINTON FALLS					*Monmouth*	
Real Property Tax Revenues	$837,000	$1,028,000	$1,526,000	$1,876,000	$874,000	$1,075,000
Estimated Public Service Costs	($430,000)	($482,000)	($294,000)	($294,000)	($139,000)	($139,000)
Net Fiscal Impact	$407,000	$546,000	$1,232,000	$1,582,000	$735,000	$936,000

Source: Economics Research Associates, 2008.

8.3 Methodology

The two primary components of a net fiscal impact analysis include revenue generation and cost allocation, which are each discussed in their respective sections below.

Revenue Generation

The majority of non-State and non-Federal funding for municipal operations is generated through property taxes, for each of the three subject jurisdictions. Other sources of revenue include hotel taxes, which have been incorporated in this analysis, as well as fines and fees, which have been excluded from this analysis, since they generally cover the costs of services provided by the municipal government, and are therefore considered "revenue neutral".

According to discussions with local tax assessors, the most common method for valuing commercial property, or other property where rent is collected, is the income approach to valuation. The income approach applies a capitalization rate to the estimated net operating income of a given property. Generally, the land value is built into the resulting property value, unless there is a large amount of developable land in addition to the land already improved. ERA valued for-sale residential property using a sales comparables approach.

Eatontown and Oceanport were reassessed within the last few years, while Tinton Falls has been recently reassessed. Therefore, we have assumed that assessed values will reflect actual market values for property tax generation. The property tax levies, per $100 in assessed value, that were incorporated into this analysis, were from the Monmouth County Board of Taxation General Rate Certification Schedule for 2007 for Eatontown and Oceanport, while the Tinton Falls levies are based on 2008 estimates, provided by the Borough Chief Financial Officer, since the recent revaluation has rendered the 2007 Tinton Falls approved rates inappropriate for this analysis. The tax levies incorporated are summarized in Table 3 below.

Comparables

ERA relied on Hanley Wood Market Intelligence data to develop sales comparable assumptions for the proposed for-sale residential units. Comparables were obtained for multiple unit types within 19 area developments. New townhouse units generally range from the mid $400,000s to the mid $500,000s, with a few upper end units in Tinton Falls selling for around the $900,000 pricepoint. ERA assumed a townhouse value of $450,000.

Other than a few developments with price ranges from $1.0 to $4.0 million dollars, most of the single family homes on the market are in the $500,000 to $900,000 price range with the greatest numbers in the $600,000 to $800,000 range. Therefore, ERA assumed $600,000 values for the small lot single family units and $800,000 for the large lot single family developments.

Blended average sales prices (and rents, discussed below) were developed to account for COAH low- and moderate-income housing requirements, as shown in the table below.

The golf course and gas station were also valued using a comparables approach, due to a lack of sufficient operating inputs to determine net operating income. The comparables are of actual assessed value, as determined through the Monmouth County online assessment database. The assessed values were adjusted to actual market value using the ratio of assessed value to true value, as indicated in the 2007 Director's Table of Equalized Valuations (for use in 2008), as shown in the following two tables.

Table 3: Tax Levies per $100 in Assessed Value

	Eatontown	Oceanport	Tinton Falls
District School Budget	0.569	0.522	0.644
Regional School Budget	0.333	0.238	0.369
Local Municipal Purposes	0.472	0.312	0.353

Source: EDAW; Economics Research Associates, 2008.

Table 4: Market Rate and Affordable Housing Blended Values

Tenure	Planned Units	Target HH Income	Pct Income to Hsg	Affordable Rent / Sales Price	Market Rate Comparable	Percent Affordable	Blended Average Rent / Sales Price
Existing Rental Apartments	22	$ 31,712	30%	$ 793	$ 1,100	20%	$ 1,040
New Rental Apartments	495	$ 38,055	30%	$ 951	$ 2,100	20%	$ 1,870
For Sale Attached	385	$ 43,974	30%	$ 181,588	$ 450,000	20%	$ 396,300
Single Family Small Lot	315	$ 43,974	30%	$ 181,588	$ 600,000	20%	$ 516,300
Single Family Large Lot	14	$ 55,814	30%	$ 230,481	$ 800,000	20%	$ 686,100

Source: Economics Research Associates, 2008.

Table 5: Golf Course Assessment Comparables

Golf Course	Acreage	Total Assmnt	% Market	Market	Assmnt / Ac
Bel-Aire	81.90	$ 9,551,300	56.46%	$ 16,916,932	$ 206,556
Howell Park	285.55	$ 7,792,500	97.20%	$ 8,016,975	$ 28,076
Charleston Springs	594.25	$ 8,939,900	64.72%	$ 13,813,195	$ 23,245
Pine Brook	60.49	$ 3,024,500	98.24%	$ 3,078,685	$ 50,896
Hominy Hill	179.80	$ 6,564,100	41.72%	$ 15,733,701	$ 87,507
Shark River	292.81	$ 12,632,200	74.19%	$ 17,026,823	$ 58,150
				Average:	$ 75,738

Source: Monmouth County, NJ; Economics Research Associates, 2008.

Table 6: Gas Station Assessment Comparables

Gas Station	Street	Municipality	Assessment	% of Market	Market
BP	20 Main St	Asbury Park	$ 685,700	30.43%	$ 2,253,368
BP	264 Hwy 35	Eatontown	$ 631,900	102.97%	$ 613,674
Exxon	Hwy 35 & Wyckoff	Eatontown	$ 1,225,000	102.97%	$ 1,189,667
Exxon	Hwy 35 & Tinton	Eatontown	$ 800,000	102.97%	$ 776,925
Getty	Hwy 35	Eatontown	$ 1,395,000	102.97%	$ 1,354,764
Exxon	4211 Rt 9	Freehold	$ 1,307,200	47.06%	$ 2,777,731
Fast Fuel	238 Jerseyville Ave	Freehold	$ 359,900	47.06%	$ 764,768
Sun	3541 Rt 9	Freehold	$ 401,300	47.06%	$ 852,741
Exxon	963 Hwy 36	Hazlet	$ 359,900	40.04%	$ 898,851
Exxon	3328 Hwy 35	Hazlet	$ 459,700	40.04%	$ 1,148,102
Sunoco	210 Hwy 36	Hazlet	$ 366,600	40.04%	$ 915,584
Exxon	46 Main St	Holmdel	$ 1,050,000	100.27%	$ 1,047,173
Exxon	639 Hwy 9	Howell	$ 1,178,000	97.20%	$ 1,211,934
Getty	Broad & Hwy 36	Keyport	$ 304,600	41.90%	$ 726,969
Exxon	Branch & Sycamore	Little Silver	$ 545,900	75.46%	$ 723,430
Sun	1075 Norwood Ave	Long Branch	$ 897,100	102.12%	$ 878,476
				Average:	$ 1,133,385

Source: Tax Board, Monmouth County, NJ; Economics Research Associates, 2008.

Net Operating Income

The income approach to valuation is driven largely by anticipated rents and expenses.

Office and retail space rental rates are based on Costar rent data for a five mile radius around the Fort. Average per square foot (PSF) rents for the following uses (and classes) are as follows:

- Office Class A & B = $21.13 (generally ranging from $18.00 to $26.00 PSF)
- Office Class C = $19.52 (generally ranging from $16.00 to $24.00 PSF)
- Retail = $26.72 (generally ranging from $16.00 to $28.00 PSF)

For most proposed uses, ERA applied the lower end of the rent spectrum to the existing structures that will remain, and higher anticipated rents to planned new buildings. McAfee Center and Suneagles restaurant are exceptions.

Based on the predominance of triple net leases in the Costar data, it was assumed that all expenses would be passed through to the tenants for the commercial uses.

According to Reis apartment market data, the average asking rent in the Central New Jersey Shore submarket is approximately $1,100 per month overall, while at those properties constructed after 1999, average asking rents are over $2,100.

For apartment operating expenses, ERA assumed $4,800 per unit annually, based on ULI's "Dollars and Cents of Multifamily Housing", for garden apartments in the New York-Newark-Edison market area.

Detailed valuation calculations, and resulting property taxes, for each of the proposed uses at Fort Monmouth can be found in the Appendix (provided under separate cover), with the exception of the hotel uses, which are described below.

Hotel

Estimates of stabilized year net operating income and financial statements are presented according to the Uniform System of Accounts for lodging properties. It is assumed that the conference center hotel will contain 150 rooms and the waterfront hotel will contain 75 rooms. To derive the projected net operating income for both the conference center hotel and the waterfront hotel, ERA utilized market-based occupancy and rate projections from the prior ERA study regarding the market demand for lodging facilities at Fort Monmouth. ERA assumes an average annual occupancy of 68% for both properties and an average daily rate (ADR) of $145 for the conference hotel and $135 for the waterfront hotel. Rooms revenue is assumed to account for 60.9 percent and 62.2 percent of total revenue for the conference and waterfront hotels respectively. Estimated stabilized total revenue is $8.86 million for the conference hotel and $4.04 million for the waterfront hotel.

Expenses are estimated on a fixed and variable basis. Variable expense ratios are derived from the PKF annual lodging report and the STR HOST study. Fixed salary expenses were assumed from average wages for New Jersey for various positions according to the Bureau of Labor Statistics. A staffing plan was completed assuming an industry standard 1.5 employees per room for full service upscale properties. Fixed utility expenses were assumed from utilization estimates provided by the EPA and usage charges estimates provided by the New Jersey Natural Gas Company and PPL electric company. Estimated stabilized year net operating income is $1.72 million for the conference hotel and $800,000 for the waterfront hotel.

Table 7: Conference Hotel Net Revenue Estimate

	Amount	Percent	PAR[1]	POR[2]
Revenue				
Rooms	$ 5,398,350	60.9%	$ 35,989	$ 145.00
Food	2,308,260	26.1%	$ 15,388	$ 62.00
Beverage	558,450	6.3%	$ 3,723	$ 15.00
Rentals and Other Income	148,920	1.7%	$ 993	$ 4.00
Telecommunications	74,460	0.8%	$ 496	$ 2.00
Other Departments	372,300	4.2%	$ 2,482	$ 10.00
Total Revenue	**$ 8,860,740**	**100.0%**	**$ 118,143**	**$ 238.00**
Departmental Expenses				
Rooms	$ 1,534,556	28.4%	$ 10,230	$ 41.22
Food and Beverage	1,793,010	77.7%	$ 11,953	$ 48.16
Telecommunications	72,944	98.0%	$ 486	$ 1.96
Other	385,055	103.4%	$ 2,567	$ 10.34
Total Departmental Expenses	**$ 3,785,565**	**42.7%**	**$ 25,237**	**$ 101.68**
Gross Operating Profit	**$ 5,075,175**	**57.3%**	**$ 33,834**	**$ 136.32**
Undistributed Operating Expenses				
Administrative & General	$ 819,060	9.2%	$ 5,460	$ 22.00
Franchise Fees	88,607	1.0%	$ 591	$ 2.38
Marketing	611,391	6.9%	$ 4,076	$ 16.42
Property Operation and Maintenance	446,760	5.0%	$ 2,978	$ 12.00
Utilities	478,480	5.4%	$ 3,190	$ 12.85
Management Fee	292,404	3.3%	$ 1,949	$ 7.85
Insurance	135,000	1.5%	$ 900	$ 3.63
Other	44,304	0.5%	$ 295	$ 1.19
Total Undistributed Operating Expenses	**$ 2,916,007**	**32.9%**	**$ 19,440**	**$ 78.32**
Income before Reserve	**$ 2,159,168**	**24.4%**	**$ 14,394**	**$ 58.00**
Replacement Reserve	$ 443,037	5.0%	$ 2,954	$ 11.90
EBITDA	**$ 1,716,131**	**19.4%**	**$ 11,441**	**$ 46.10**

Source: Economics Research Associates, 2008
1/: PAR: Per Available Room. This denotes revenue and cost per hotel room.
2/: POR: Per Occupied Room. This denotes revenue and cost per annual occupied rooms.
Note: Stabilized year estimates exclude inflation.

Table 8: Waterfront Hotel Net Revenue Estimate

	Amount	Percent	PAR[1]	POR[2]
Revenue				
Rooms	$ 2,513,025	62.2%	$ 33,507	$ 135.00
Food	1,023,825	25.3%	13,651	55.00
Beverage	279,225	6.9%	3,723	15.00
Rentals and Other Income	74,460	1.8%	993	4.00
Telecommunications	37,230	0.9%	496	2.00
Other Departments	111,690	2.8%	1,489	6.00
Total Revenue	**$ 4,039,455**	**100.0%**	**$ 53,859**	**$ 217.00**
Departmental Expenses				
Rooms	$ 665,737	26.5%	$ 8,876	$ 35.76
Food and Beverage	721,928	70.5%	9,626	38.78
Telecommunications	25,316	68.0%	338	1.36
Other	232,326	208.0%	3,098	12.48
Total Departmental Expenses	**$ 1,645,307**	**40.7%**	**$ 21,937**	**$ 88.39**
Gross Operating Profit	**$ 2,394,148**	**59.3%**	**$ 31,922**	**$ 128.61**
Undistributed Operating Expenses				
Administrative & General	$ 372,300	9.2%	$ 4,964	$ 20.00
Franchise Fees	40,395	1.0%	539	2.17
Marketing	278,722	6.9%	3,716	14.97
Property Operation and Maintenance	186,150	4.6%	2,482	10.00
Utilities	239,240	5.9%	3,190	12.85
Management Fee	137,341	3.4%	1,831	7.38
Insurance	75,000	1.9%	1,000	4.03
Other	40,395	1.0%	539	2.17
Total Undistributed Operating Expenses	**$ 1,369,543**	**33.9%**	**$ 18,261**	**$ 73.57**
Income before Reserve	**$ 1,024,606**	**25.4%**	**$ 13,661**	**$ 55.04**
Replacement Reserve	$ 201,973	5.0%	$ 2,693	10.85
EBITDA	**$ 822,633**	**20.4%**	**$ 10,968**	**$ 44.19**

Source: Economics Research Associates, 2008

1/: PAR: Per Available Room. This denotes revenue and cost per hotel room.

2/: POR: Per Occupied Room. This denotes revenue and cost per annual occupied rooms.

Note: Stabilized year estimates exclude inflation.

Table 9: Local Hotel Tax Estimate

Municipality / Facility	Year 10 Room Revenue	Year 20 Room Revenue	Year 10 Local Hotel Tax Revenue (@3%)	Year 20 Local Hotel Tax Revenue (@3%)
Eatontown				
Conference Hotel	$ 5,398,350	$ 5,398,350	$ 161,951	$ 161,951
Oceanport				
Waterfront Hotel	$ -	$ 2,513,025	$ -	$ 75,391

Source: Economics Research Associates, 2008.

Public Service Cost Allocation Methodology

Based on public service cost methodologies published by the International City/County Management Association (ICMA) and The Fiscal Impact Handbook (Burchell and Listokin, 1983), ERA relied upon the per capita marginal cost approach to estimating the potential incremental public service costs that could result from reversion of the Fort Monmouth base to the jurisdictions of Oceanport, Tinton Falls, and Eatontown. ERA's cost factors include municipal operating costs and public school education costs only.

The marginal cost approach projects the fiscal impact of the proposed redevelopment by calculating the current average cost per resident, employee, or public school child, respectively, and subsequently applying the factors as impact costs to the proposed growth increment based on detailed demographic profiles of the proposed plan land uses.

The per capita marginal cost approach to fiscal cost estimates requires the following inputs:

- Estimates of the new residents, employees, and public school children that would result from the proposed redevelopment
- Analysis of the fixed (staffing) and variable (materials) costs of the local jurisdictions General Fund operations.
- Estimates of the cost per public school child (net of State and Federal transfers) to both the local District School (elementary and middle schools) and the Regional High School District.
- Ratio of total residential property assessed value to total commercial property assessed value as the basis for allocating public service costs to new residents and employees.

ERA provides a summary of the underlying data sources, assumptions, and other factors that support an estimate of the potential incremental public service costs that could result in Year 10 and Year 20 of the proposed Fort Monmouth redevelopment in the following section.

Population, Households, and Employment

ERA relied upon proprietary 2008 data reported by ESRI Business Information Solutions, a demographic and economic forecasting company to develop estimates of current residential and commercial populations in each jurisdiction. For the purpose of estimating average household size as the basis for projecting new residents resulting from the proposed housing program, ERA assumed the current average household size reported for all unit types. ERA considers this approach to be conservative because multifamily housing units typically are associated with smaller than average household size. As such, the estimated new residential population and residential public service costs are likely overstated. A summary of ERA's residential population estimates in Year 10 and Year 20 of buildout is provided in the following table.

Table 10: Estimated Residential Population

EATONTOWN	Housing Units			Persons / HH	New Residents		
	Year 10	Year 20	Total		Year 10	Year 20	Total
Townhouse/Rowhouse	0	302	302	2.34	-	707	707
Garden Apartments - Howard Commons	275	0	275	2.34	644	-	644
Total	**275**	**302**	**577**		**644**	**707**	**1,350**

OCEANPORT	Housing Units			Persons / HH	New Residents		
	Year 10	Year 20	Total		Year 10	Year 20	Total
Gardner Hall Residential	15	0	15	2.69	40	-	35
Historic District 1-Family	117	0	117	2.69	315	-	274
1-Family Small Lot	80	79	159	2.69	215	213	372
Apartments	60	309	369	2.69	161	831	863
Oceanport Ave Apartments	30	30	60	2.69	81	81	140
Total	**302**	**418**	**720**		**812**	**1,124**	**1,685**

TINTON FALLS	Housing Units			Persons / HH	New Residents		
	Year 10	Year 20	Total		Year 10	Year 20	Total
Hemp Hill Housing	22	0	22	2.49	55	-	55
1-Family Small Lot	39	0	39	2.49	97	-	97
1-Family Large Lot	14	0	14	2.49	35	-	35
Townhouse/Rowhouse	83	0	83	2.49	207	-	207
Apartments	130	0	130	2.49	324	-	324
Total	288	0	288		717	0	717
Grand Total	865	720	1,585		2,173	1,831	3,752

Source: Boroughs of Oceanport, Eatontown, and Tinton Falls; ESRI Business Information Solutions; Economics Research Associates, 2008.

Employment Generation Factors

ERA's estimates of new employment that would be created by the reuse of existing commercial buildings and the construction of new commercial property is based on employment generation factors published by ULI-the Urban Land Institute's Dollar and Cents of Shopping Centers and ULI's Dollars and Cents Multifamily Housing. A summary of the employment generation factors and projected employment yield associated with the proposed plan is located in Appendix Table B-1.

Local Fund "Appropriations" (Operating) Cost Factors

ERA evaluated the standard form New Jersey 2008 Municipal Budget for each jurisdiction that will be impacted by the reversion of the Fort Monmouth site to the localities. For the purpose of calculating per capita marginal cost factors, ERA focused on the "Current Fund – Appropriations" (operating) budgets for FY2008 as the basis for estimating the potential incremental costs associated with providing municipal services to current and projected residents and employees. Specifically, ERA included 100 percent of the "Current Fund – Appropriation" costs detailed on budget sheets 12 through budget sheet 17 (refer to Appendix B-2 for detailed summary of appropriations line items included in the public service cost analysis).

ERA determined that typically, more than 50 percent of each Borough's operating budget is dedicated to staffing and wage costs. However, based on interviews with the Chief Financial Officers or Borough Administrators of each of the localities, ERA concluded that the residential and commercial uses proposed by the Fort Monmouth plan would not require a significant increase in current municipal staffing levels. Based on ERA's experience in similar communities, ERA applied a cost burden factor of 20 percent to salaries and wages. ERA determined that other annual ongoing expenses (variable operating costs) would be directly impacted by an increase in residential and commercial activity in each jurisdiction. ERA applied a cost burden factor of 100 percent to these expenses, such as utilities, equipment repair and maintenance, machinery supplies, and motor fuel.

Finally, ERA evaluated the relative cost burden of residential and commercial populations in each jurisdiction. This step is typically calculated by evaluating the relationship between the total assessed value of residential versus commercial property. ERA obtained estimates from each jurisdiction regarding the relative weight of the residential and commercial values as the basis for performing the allocation calculations detailed in the following series of tables. (Note: ERA will update this analysis to reflect actual assessed values as more accurate and up to date assumptions are made available.)

The estimated residential cost value was then divided by total residential population to yield the residential per capita public service cost value and the estimated commercial cost value was then divided by the total commercial population to yield the estimated commercial per capita cost value, as defined by the proposed development program outlined in the appendix to this report. These values were then multiplied by the estimated new residential and commercial populations that are expected to result from the proposed Fort Monmouth plan to develop the total public service cost impact to each jurisdiction.

Table 11: Per Capita Public Service Cost Estimates – Eatontown

EATONTOWN	2008 Residents	2008 Employees	Total Population Served
Persons	14,156	13,702	27,858
% of Total	51%	49%	100%

		Value Impacted by New Residents/Employees	
Current Fund Appropriations (2008)		%	$
Total Salaries	$ 8,534,044	20%	$ 1,706,809
Total Other Expenses	$ 6,268,278	100%	$ 6,268,278
Total Operating Appropriations	$ 14,802,322		**$ 7,975,087**

Per Capita Fund Appropriations (2008)	Residential Property	Commercial Property	Total
	$ 7,975,087	**$ 7,975,087**	
Assessed Value Ratio	65%	35%	100%
Current Fund Appropriations Impacted by New Residents/Employees	$ 5,183,806	$ 2,791,280	$ 7,975,087
Persons	14,156	13,702	27,858
Per Capita Public Service Cost	**$ 366**	**$ 204**	

Source: Borough of Eatontown; ESRI Business Information Solutions; Economics Research Associates, 2008.

Table 12: Per Capita Public Service Cost Estimates –Oceanport

OCEANPORT	2008 Residents	2008 Employees	Total Population Served
Persons	5,864	2,508	8,372
% of Total	70%	30%	100%

		Value Impacted by New Residents/Employees	
Current Fund Appropriations (2008)		%	$
Total Salaries	$ 2,675,584	20%	$ 535,117
Total Other Expenses	$ 2,317,664	100%	$ 2,317,664
Total Operating Appropriations	$ 4,993,248		**$ 2,852,781**

Per Capita Fund Appropriations (2008)	Residential Property	Commercial Property	Total
	$ 2,852,781	**$ 2,852,781**	
Assessed Value Ratio	75%	25%	100%
Current Fund Appropriations Impacted by New Residents/Employees	$ 2,139,586	$ 713,195	$ 2,852,781
Persons	5,864	2,508	8,372
Per Capita Public Service Cost	**$ 365**	**$ 284**	

Source: Borough of Oceanport; ESRI Business Information Solutions; Economics Research Associates, 2008.

Table 13: Per Capita Public Service Cost Estimates –Tinton Falls

TINTON FALLS	2008 Residents	2008 Employees	Total Population Served
Persons	16,909	6,857	23,766
% of Total	71%	29%	100%

		Value Impacted by New Residents/Employees	
Current Fund Appropriations (2008)		%	$
Total Salaries	9729087	20%	$ 1,945,817
Total Other Expenses	5967695	100%	$ 5,967,695
Total Operating Appropriations	$ 15,696,782		**$ 7,913,512**

Per Capita Fund Appropriations (2008)	Residential Property	Commercial Property	Total
	$ 5,967,695	**$ 5,967,695**	
Assessed Value Ratio	75%	25%	100%
Current Fund Appropriations Impacted by New Residents/Employees	$ 4,475,771	$ 1,491,924	$ 5,967,695
Persons	16,909	6,857	23,766
Per Capita Public Service Cost	**$ 265**	**$ 218**	

Source: Borough of Tinton Falls; ESRI Business Information Solutions; Economics Research Associates, 2008.

Utility Fund Expenditures

Based on discussions with individual jurisdictions, the majority of new residential and commercial property will likely be served by fee-based public utility services. Accordingly, these items are considered "revenue neutral" and are excluded from the analysis.

Civic Uses

The proposed Fort Monmouth plan includes a variety of civic uses that are proposed to revert to the Boroughs or non-profit uses, or be sold for private operation. For those uses that are intended for continued public use, existing and proposed properties may require upfront capital investment for acquisition or renovation. Costs estimates for the majority of these properties were not available. ERA concludes that an estimate of the one-time capital cost impact to the Boroughs will require further evaluation. A summary of the civic uses as currently allocated to each jurisdiction follows.

Eatontown

- Eatontown Municipal Center Malette Hall
- Public Theater
- Gibbs Hall Suneagles Golf Club (Acres)
- Fort Monmouth Jitney Bus

Oceanport

- Barker Circle Oceanport Municipal Complex
- Kaplan Hall Museum
- Public Marina
- Counseling Center
- Library
- Armstrong Hall Education Building
- Lane Hall Community Conference Center
- Recreation Support Building
- Fire/Emergency Services Station
- Chapel
- VA - Community Medical Center
- Main Post Office
- Middle School (450 students, 16-acres)

Tinton Falls

- Child Development Center
- Recreation Center (formerly Teen Center)
- Fire/Emergency Services Station
- Community Pool/Tennis Center(s)
- Fire & Police Training Academy
- Library

Public School Education Estimates

Public school education costs are based on current costs per pupil reported by local and regional school district budgets. Public school child generation factors are based on the Quick Guide to New Jersey Residential and Demographic Multipliers (Listokin, Bloustein School of Planning and Public Policy, November 2006). Note that ERA includes only local costs per pupil (net of costs funded by State and Federal sources). The following series of tables summarizes ERA's assumptions regarding the potential cost of public school education that could result from new school children living within the Fort Monmouth site.

Table 14: Estimated Current Fund – Appropriations (Operating) Costs FY2008

EATONTOWN	Year 10	Year 20	Total	Per Capita Cost	Total Estimated Cost Year 10	Total Estimated Cost Year 20	Total Estimated Cost Total
New Residents	644	707	1,350	$ 366	$ 235,644	$ 258,780	$ 494,424
New Employees	1,689	1,277	2,966	$ 204	$ 344,122	$ 260,179	$ 604,300
Total	**2,333**	**1,984**	**4,317**		**$ 579,766**	**$ 518,959**	**$ 1,098,725**

OCEANPORT	Year 10	Year 20	Total	Per Capita Cost	Total Estimated Cost Year 10	Total Estimated Cost Year 20	Total Estimated Cost Total
New Residents	812	1,124	1,937	$ 365	$ 296,411	$ 410,265	$ 706,676
New Employees	1,568	625	2,193	$ 284	$ 445,985	$ 177,716	$ 623,701
Total	**2,381**	**1,749**	**4,130**		**$ 742,397**	**$ 587,981**	**$ 1,330,377**

TINTON FALLS	Year 10	Year 20	Total	Per Capita Cost	Total Estimated Cost Year 10	Total Estimated Cost Year 20	Total Estimated Cost Total
New Residents	717	0	717	$ 265	$ 189,820	$ -	$ 262,603
New Employees	1,103	239	1,342	$ 218	$ 239,940	$ 52,001	$ 273,339
Total	**1,820**	**239**	**2,059**		**$ 429,760**	**$ 52,001**	**$ 535,943**

TOTAL PROJECT SITE							
New Residents	**2,173**	**1,831**	**4,004**		**$ 721,876**	**$ 669,045**	**$ 1,390,921**
New Employees	**4,360**	**2,141**	**6,501**		**$ 1,030,047**	**$ 489,895**	**$ 1,519,942**

Source: Boroughs of Oceanport, Eatontown, and Tinton Falls; ESRI Business Information Solutions; Economics Research Associates, 2008.

Table 15: Estimated Local Cost per Pupil

	Proposed 2008-2009 /1			
	Eatontown	Oceanport	Tinton Falls	Monmouth Regional High School
Revenues: Local Tax Levy	$ 12,859,451	$ 7,256,612	$ 17,580,444	$ 19,164,921
Total Revenue	$ 23,248,071	$ 9,818,293	$ 28,243,300	$ 26,910,338
Local Tax Levy as % of Total /2	55%	74%	62%	71%
Per Pupil Cost Estimate	$ 14,874	$ 11,142	$ 14,126	$ 17,882
Estimated Local Cost Per Pupil /3	$ 8,227	$ 8,235	$ 8,793	$ 12,735

/1 Eatontown, Oceanport, and Tinton Falls School District Budgets, 2008.
/2 ERA estimate, 2008.
/3 ERA estimate, 2008.
Source: Economics Research Associates, 2008.

Table 16: Local School District Student Generation Estimates (K-8)

EATONTOWN	Housing Units			Pupils / HH	New Public School Children		
	Year 10	Year 20	Total		Year 10	Year 20	Total
Townhouse/Rowhouse	0	302	302	0.059999	-	18	18
Garden Apartments - Howard Commons	275	0	275	0.0429994	12	-	12
Total	**275**	**302**	**577**		**12**	**18**	**30**

OCEANPORT	Housing Units			Pupils / HH	New Public School Children		
	Year 10	Year 20	Total		Year 10	Year 20	Total
Gardner Hall Residential	15	0	15	0.037	1	-	1
Historic District 1-Family	117	0	117	0.3159934	37	-	37
1-Family Small Lot	80	79	159	0.3159934	5	5	10
Apartments	60	309	369	0.037	2	11	14
Oceanport Ave Apartments	30	30	60	0.037	1	1	2
Total	**302**	**418**	**720**		**46**	**17**	**63**

TINTON FALLS	Housing Units			Pupils / HH	New Public School Children		
	Year 10	Year 20	Total		Year 10	Year 20	Total
Hemp Hill Housing	22	0	22	0.3159934	7	-	7
1-Family Small Lot	39	0	39	0.3159934	12	-	12
1-Family Large Lot	14	0	14	0.3159934	4	-	4
Townhouse/Rowhouse	83	0	83	0.059999	5	-	5
Apartments	130	0	130	0.037	5	-	5
Total	288	0	288		33	0	33
Grand Total	865	720	1,585		91	35	126

Basis for Proposed Student Generation Factors: A Quick Guide to New Jersey Residential and Demographic Multipliers, Listokin / Rutgers Bloustein School of Planning and Public Policy, November 2006.

Listokin	Elementary K-6	Junior High 7-9	High School 10-12	Total
Single-Family Detached	0.25	0.099	0.074	0.423
Single-Family Attached	0.05	0.015	0.016	0.081
Multifamily Rental	0.037	0.009	0.006	0.052

Adjusted	Elementary K-6	Junior High 7-8	High School 9-12	Total
Single-Family Detached	0.25	0.066	0.107	0.423
Single-Family Attached	0.05	0.010	0.021	0.081
Multifamily Rental	0.037	0.006	0.009	0.052

Source: Boroughs of Oceanport, Eatontown, and Tinton Falls; ESRI Business Information Solutions; Economics Research Associates, 2008.

Table 17: Regional High School District Student Generation Estimates (10-12)

EATONTOWN	Housing Units			Pupils / HH	New Public School Children		
	Year 10	Year 20	Total		Year 10	Year 20	Total
Townhouse/Rowhouse	0	302	302	0.0209995	-	6	6
Garden Apartments - Howard Commons	275	0	275	0.0089997	2	-	2
Total	**275**	**302**	**577**		**2**	**6**	**9**

OCEANPORT	Housing Units			Pupils / HH	New Public School Children		
	Year 10	Year 20	Total		Year 10	Year 20	Total
Gardner Hall Residential	15	0	15	0.0089997	0	-	0
Historic District 1-Family	117	0	117	0.1069967	13	-	13
1-Family Small Lot	80	79	159	0.1069967	2	2	3
Apartments	60	309	369	0.0089997	1	3	3
Oceanport Ave Apartments	30	30	60	0.0089997	0	0	1
Total	**302**	**418**	**720**		**15**	**5**	**20**

TINTON FALLS	Housing Units			Pupils / HH	New Public School Children		
	Year 10	Year 20	Total		Year 10	Year 20	Total
Hemp Hill Housing	22	0	22	0.1069967	2	-	2
1-Family Small Lot	39	0	39	0.1069967	4	-	4
1-Family Large Lot	14	0	14	0.1069967	1	-	1
Townhouse/Rowhouse	83	0	83	0.0209995	2	-	2
Apartments	130	0	130	0.0089997	1	-	1
Total	288	0	288		11	0	11
Grand Total	865	720	1,585		29	11	40

Basis for Proposed Student Generation Factors: A Quick Guide to New Jersey Residential and Demographic Multipliers, Listokin / Rutgers Bloustein School of Planning and Public Policy, November 2006.

Listokin	Elementary K-6	Junior High 7-9	High School 10-12	Total
Single-Family Detached	0.250	0.099	0.074	0.423
Single-Family Attached	0.050	0.015	0.016	0.081
Multifamily Rental	0.037	0.009	0.006	0.052

Adjusted	Elementary K-6	Junior High 7-8	High School 9-12	Total
Single-Family Detached	0.250	0.066	0.107	0.423
Single-Family Attached	0.050	0.010	0.021	0.081
Multifamily Rental	0.037	0.006	0.009	0.052

Source: Boroughs of Oceanport, Eatontown, and Tinton Falls; ESRI Business Information Solutions; Economics Research Associates, 2008.

Table 18: Estimated Public School Education Costs at Buildout

EATONTOWN	Public School Children			Per Capita Cost	Total Estimated Cost		
	Year 10	Year 20	Total		Year 10	Year 20	Total
Local School District	12	18	30	$ 8,227	$ 97,288	$ 149,078	$ 246,366
Regional High School	2	6	9	$ 12,735	$ 31,518	$ 80,764	$ 112,283
Total	**14**	**24**	**39**	**$**	**$ 128,806**	**$ 229,843**	**$ 358,649**

OCEANPORT	Public School Children			Per Capita Cost	Total Estimated Cost		
	Year 10	Year 20	Total		Year 10	Year 20	Total
Local School District	46	17	63	$ 8,806	$ 402,061	$ 152,198	$ 554,260
Regional High School	15	5	20	$ 19,658	$ 297,688	$ 92,585	$ 390,274
Total	**61**	**22**	**83**	**$**	**$ 699,750**	**$ 244,784**	**$ 944,534**

TINTON FALLS	Public School Children			Per Capita Cost	Total Estimated Cost		
	Year 10	Year 20	Total		Year 10	Year 20	Total
Local School District	33	0	33	$ 8,793	$ 294,470	$ -	$ 294,470
Regional High School	11	0	11	$ 12,735	$ 139,293	$ -	$ 139,293
Total	**44**	**0**	**44**	**$**	**$ 433,763**	**$ -**	**$ 433,763**

Source: Boroughs of Oceanport, Eatontown, and Tinton Falls; A Quick Guide to New Jersey Residential Demographic Multipliers, Bloustein School of Planning and Public Policy (Listokin), 2008; ESRI Business Information Solutions; Economics Research Associates, 2008.

8.4 Conclusion

ERA's analysis concludes that the proposed physical development Plan would generally result in positive fiscal impacts for the jurisdictions analyzed. The net fiscal impact to the municipal operating, local school district, and regional high school district funds are generally quite favorable.

8.5 Appendix

Appendix Table A-1: Fort Monmouth Property Tax Generation

Existing Building Number	DESCRIPTION	10 Year Plan	20 Year Plan	Year 10 Assessed Value	Year 20 Assessed Value	Year 10 Municipal Use Property Tax Revenue	Year 20 Municipal Use Property Tax Revenue	Year 10 District School Property Tax Revenue	Year 20 District School Property Tax Revenue	Year 10 Regional High School Property Tax Revenue	Year 20 Regional High School Property Tax Revenue
EATONTOWN						**0.472**	**0.472**	**0.569**	**0.569**	**0.333**	**0.333**
	OFFICE/RESEARCH AND DEVELOPMENT										
1150-1152	Vail Hall Communication Center	36,483	-	$ 7,798,241	$ 7,798,241	$ 36,808	$ 36,808	$ 44,372	$ 44,372	$ 25,968	$ 25,968
1208-1210	CECOM Incubator & Professional Office	138,050	157,072	$ 29,508,188	$ 63,082,328	$ 139,279	$ 297,749	$ 167,902	$ 358,938	$ 98,262	$ 210,064
New	Technology Flex Office	-	190,000	$ -	$ 49,162,500	$ -	$ 232,047	$ -	$ 279,735	$ -	$ 163,711
	Total Office/R&D Space	174,533	347,072								
	RETAIL										
689	Bowling Alley	17,599	-	$ 31,713,398	$ 31,713,398	$ 149,687	$ 149,687	$ 180,449	$ 180,449	$ 105,606	$ 105,606
2,018	Suneagles Restaurant	3,205	-	$ 901,406	$ 901,406	$ 4,255	$ 4,255	$ 5,129	$ 5,129	$ 3,002	$ 3,002
New	Neighborhood Convenience Retail	12,530	-	$ 3,524,063	$ 3,524,063	$ 16,634	$ 16,634	$ 20,052	$ 20,052	$ 11,735	$ 11,735
New	Lifestyle Town Center Retail	150,000	-	$ 42,187,500	$ 42,187,500	$ 199,125	$ 199,125	$ 240,047	$ 240,047	$ 140,484	$ 140,484
	Total Retail Space	165,735	-								
	HOSPITALITY/CONFERENCE CENTER (assume 750 SF per room)										
B2022-B2042	Conference Hotel Residential	14,400	-	$ 1,292,146	$ 1,372,905	$ 6,099	$ 6,480	$ 7,352	$ 7,812	$ 4,303	$ 4,572
New	Conference Hotel	225,000	-	$ 20,189,776	$ 20,189,776	$ 95,296	$ 95,296	$ 114,880	$ 114,880	$ 67,232	$ 67,232
New	Conference Center	15,000	-	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Total Hotel/Conference Center	254,400	-								
	RESIDENTIAL (assume 1,500 SF per unit)										
New	Townhouse/Rowhouse	-	302	$ -	$ 119,682,600	$ -	$ 564,902	$ -	$ 680,994	$ -	$ 398,543
New	Garden Apartments - Howard Commons	275	-	$ 52,923,750	$ 52,923,750	$ 249,800	$ 249,800	$ 301,136	$ 301,136	$ 176,236	$ 176,236
	Total Mixed Income	275	302								
	CIVIC										
B1206-1207	Eatontown Municipal Center Malette Hall	57,386	-	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
1,215	Public Theater	18,883	-	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Golf Course	Gibbs Hall Suneagles Golf Club	142	-	$ 10,800,360	$ 10,800,360	$ 50,978	$ 50,978	$ 61,454	$ 61,454	$ 35,965	$ 35,965
New	Fort Monmouth Jitney Bus	200	-	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Total Civic	76,611	-			**$ 947,959**	**$ 1,903,759**	**$ 1,142,773**	**$ 2,294,998**	**$ 668,793**	**$ 1,343,118**
OCEANPORT						**0.312**	**0.312**	**0.522**	**0.522**	**0.238**	**0.238**
	OFFICE/RESEARCH AND DEVELOPMENT										
173-174	Lab Testing, Office	6,388	-	$ 1,365,435	$ 1,365,435	$ 4,260	$ 4,260	$ 7,128	$ 7,128	$ 3,250	$ 3,250
209	Allison Hall Office	36,665	-	$ 7,837,144	$ 7,837,144	$ 24,452	$ 24,452	$ 40,910	$ 40,910	$ 18,652	$ 18,652
281	Professional Office	2,544	-	$ 543,780	$ 543,780	$ 1,697	$ 1,697	$ 2,839	$ 2,839	$ 1,294	$ 1,294
283	Squier Hall Office/Education	76,538	-	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
286	Russel Hall Garrison Headquarters	76,978	-	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
289, 290, 291, 295	General Office	21,006	-	$ 4,490,033	$ 4,490,033	$ 14,009	$ 14,009	$ 23,438	$ 23,438	$ 10,686	$ 10,686
600	McAfee Center	97,000	-	$ 25,098,750	$ 25,098,750	$ 78,308	$ 78,308	$ 131,015	$ 131,015	$ 59,735	$ 59,735
New	Green Industry Cluster	200,000	200,000	$ 51,750,000	$ 103,500,000	$ 161,460	$ 322,920	$ 270,135	$ 540,270	$ 123,165	$ 246,330
New	Medical Office Building	20,000	-	$ 5,175,000	$ 5,175,000	$ 16,146	$ 16,146	$ 27,014	$ 27,014	$ 12,317	$ 12,317
	Total Office/R&D Space	537,119	200,000								
	RETAIL										
114	Fitness Center	32,250	-	$ 5,805,000	$ 5,805,000	$ 18,112	$ 18,112	$ 30,302	$ 30,302	$ 13,816	$ 13,816
B450	Public Marina	2,600	-	$ 2,698,000	$ 2,698,000	$ 8,418	$ 8,418	$ 14,084	$ 14,084	$ 6,421	$ 6,421
1007	Commissary Retail Center	53,700	-	$ 9,666,000	$ 9,666,000	$ 30,158	$ 30,158	$ 50,457	$ 50,457	$ 23,005	$ 23,005
New	Neighborhood Convenience Retail	19,000	19,000	$ 5,343,750	$ 10,687,500	$ 16,673	$ 33,345	$ 27,894	$ 55,789	$ 12,718	$ 25,436
New	Waterfront Retail	-	9,000	$ -	$ 2,531,250	$ -	$ 7,898	$ -	$ 13,213	$ -	$ 6,024
New	Waterfront Boutique Hotel Retail	-	3,000	$ -	$ 843,750	$ -	$ 2,633	$ -	$ 4,404	$ -	$ 2,008
New	Spa	-	3,000	$ -	$ 843,750	$ -	$ 2,633	$ -	$ 4,404	$ -	$ 2,008
	Credit Union	5,000	-	$ 1,406,250	$ 1,406,250	$ 4,388	$ 4,388	$ 7,341	$ 7,341	$ 3,347	$ 3,347
	Total Retail Space	112,550	34,000								
	HOSPITALITY/CONFERENCE CENTER (assume 750 SF per room)										
New	Waterfront Hotel		70,000	$ -	$ 9,678,033	$ -	$ 30,195	$ -	$ 50,519	$ -	$ 23,034
	Total Hotel/Conference Center	-	70,000								

Appendix Table A-1: Fort Monmouth Property Tax Generation (Continued)

Existing Building Number	DESCRIPTION	10 Year Plan	20 Year Plan	Year 10 Assessed Value	Year 20 Assessed Value	Year 10 Municipal Use Property Tax Revenue	Year 20 Municipal Use Property Tax Revenue	Year 10 District School Property Tax Revenue	Year 20 District School Property Tax Revenue	Year 10 Regional High School Property Tax Revenue	Year 20 Regional High School Property Tax Revenue
	RESIDENTIAL (assume 1,500 SF per unit)										
271	Gardner Hall Residential	15	-	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
0	Historic District 1-Family	117	-	$ 60,407,100	$ 60,407,100	$ 188,470	$ 188,470	$ 315,325	$ 315,325	$ 143,769	$ 143,769
New	1-Family Small Lot	80	79	$ 41,304,000	$ 82,091,700	$ 128,868	$ 256,126	$ 215,607	$ 428,519	$ 98,304	$ 195,378
New	Apartments	60	309	$ 11,547,000	$ 71,014,050	$ 36,027	$ 221,564	$ 60,275	$ 370,693	$ 27,482	$ 169,013
New	Oceanport Ave Apartments	30	30	$ 5,773,500	$ 11,547,000	$ 18,013	$ 36,027	$ 30,138	$ 60,275	$ 13,741	$ 27,482
	Total Mixed Income	302	418								
	CIVIC										
206, 208	Barker Circle Oceanport Municipal Complex	76,776	-	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
275	Kaplan Hall Museum	7,432	-	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
501	Counseling Center	2,832	-	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
502	Library	10,650	-	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
551	Armstrong Hall Education Building	13,595	-	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
702	Lane Hall Community Conference Center	12,100	-	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
814	Recreation Support Building	8,863	-	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
B2560 or 282	Fire/Emergency Services Station	6,089	-	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
B500	Chapel	16,372	-	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
B1075 PAHC	VA - Community Medical Center	60,000	-	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
New	Middle School (450 students, 16-acres)	145,000	-	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Total Civic	359,709	-			**$ 749,458**	**$ 1,301,756**	**$ 1,253,900**	**$ 2,177,938**	**$ 571,702**	**$ 993,006**
TINTON FALLS						**0.353**	**0.353**	**0.644**	**0.644**	**0.369**	**0.369**
	OFFICE/RESEARCH AND DEVELOPMENT										
2502-2507	Shops/Warehouses	42,752	-								
2525	Administrative Offices	86,719	-	$ 18,536,186	$ 18,536,186	$ 65,433	$ 65,433	$ 119,373	$ 119,373	$ 68,399	$ 68,399
2539- 2540	Lab Testing Buildings	15,756	-	$ 3,367,845	$ 3,367,845	$ 11,888	$ 11,888	$ 21,689	$ 21,689	$ 12,427	$ 12,427
2700 Myers Center	Data Recovery Center _ Reconfigured	445,522	-	$ 95,230,328	$ 95,230,328	$ 336,163	$ 336,163	$ 613,283	$ 613,283	$ 351,400	$ 351,400
2705	Testing Lab	47,592	-	$ 10,172,790	$ 10,172,790	$ 35,910	$ 35,910	$ 65,513	$ 65,513	$ 37,538	$ 37,538
2707	RDT&E Lab	26,476	-	$ 5,659,245	$ 5,659,245	$ 19,977	$ 19,977	$ 36,446	$ 36,446	$ 20,883	$ 20,883
New	Office/Research & Development	-	175,000	$ -	$ 45,281,250	$ -	$ 159,843	$ -	$ 291,611	$ -	$ 167,088
	Total Office/R&D Space	664,817	175,000								
	RETAIL										
2567	Gas Station	1	-	$ 1,100,000	$ 1,100,000	$ 3,883	$ 3,883	$ 7,084	$ 7,084	$ 4,059	$ 4,059
New	Neighborhood Convenience Retail	48,000	32,000	$ 13,500,000	$ 22,500,000	$ 47,655	$ 79,425	$ 86,940	$ 144,900	$ 49,815	$ 83,025
	Total Retail Space	48,001	32,000								
	RESIDENTIAL (assume 1,500 SF per unit)										
B2231-2240,2260	Hemp Hill Housing	22	-	$ 1,768,800	$ 1,768,800	$ 6,244	$ 6,244	$ 11,391	$ 11,391	$ 6,527	$ 6,527
New	1-Family Small Lot	39	-	$ 20,135,700	$ 20,135,700	$ 71,079	$ 71,079	$ 129,674	$ 129,674	$ 74,301	$ 74,301
New	1-Family Large Lot	14	-	$ 9,605,400	$ 9,605,400	$ 33,907	$ 33,907	$ 61,859	$ 61,859	$ 35,444	$ 35,444
New	Townhouse/Rowhouse	83	-	$ 32,892,900	$ 32,892,900	$ 116,112	$ 116,112	$ 211,830	$ 211,830	$ 121,375	$ 121,375
New	Apartments	130	-	$ 25,018,500	$ 25,018,500	$ 88,315	$ 88,315	$ 161,119	$ 161,119	$ 92,318	$ 92,318
	Total Mixed Income	288	-								
	CIVIC										
B2290	Child Development Center	19,600	-	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2566	Youth Center	19,636	-	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
B2560 or 282	Fire/Emergency Services Station	10,070	-	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
B2569	Community Pool/Tennis Center(s)	1,000	-	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
B2707, 2709, 2713	Fire & Police Training Academy	11,110	-	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
New	Library	27,000	-	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	Total Civic	88,416	-			**$ 836,567**	**$ 1,028,179**	**$ 1,526,201**	**$ 1,875,772**	**$ 874,485**	**$ 1,074,782**

Source: Economics Research Associates, 2008.

Appendix Table A-2: Fort Monmouth Assessed Value

Existing Building Number	DESCRIPTION	Interim Use (I); Permanent Reuse (P)	Likely User	10 Year Plan	20 Year Plan	Valuation Method	Year 10 Market Value	Year 20 Market Value	Assessed Value to Market Value Ratio	Year 10 Assessed Value	Year 20 Assessed Value
EATONTOWN											
	OFFICE/RESEARCH AND DEVELOPMENT										
1150-1152	Vail Hall Communication Center	P	FP	36,483		I	$ 7,798,241	$ 7,798,241	100%	$ 7,798,241	$ 7,798,241
1208-1210	CECOM Incubator & Professional Office	P	FP	138,050	157,072	I	$ 29,508,188	$ 63,082,328	100%	$ 29,508,188	$ 63,082,328
New	Technology Flex Office	P	FP		190,000	I	$ -	$ 49,162,500	100%	$ -	$ 49,162,500
										$ -	$ -
	Total Office/R&D Space			174,533	347,072					$ -	$ -
										$ -	$ -
	RETAIL									$ -	$ -
689	Bowling Alley	P	FP	17,599		I	$ 31,713,398	$ 31,713,398	100%	$ 31,713,398	$ 31,713,398
2018	Suneagles Restaurant	P	FP	3,205		I	$ 901,406	$ 901,406	100%	$ 901,406	$ 901,406
New	Neighborhood Convenience Retail	P	FP	12,530		I	$ 3,524,063	$ 3,524,063	100%	$ 3,524,063	$ 3,524,063
New	Lifestyle Town Center Retail	P	FP	150,000		I	$ 42,187,500	$ 42,187,500	100%	$ 42,187,500	$ 42,187,500
	Total Retail Space			165,735	-						
	HOSPITALITY/CONFERENCE CENTER (assume 750 SF per room)										
B2022-B2042	Conference Hotel Residential	P	FP	14,400		I	$ 1,292,146	$ 1,372,905	100%	$ 1,292,146	$ 1,372,905
New	Conference Hotel	P	FP	225,000		I	$ 20,189,776	$ 20,189,776	100%	$ 20,189,776	$ 20,189,776
New	Conference Center	P	FP	15,000		I	$ -	$ -	100%	$ -	$ -
	Total Hotel/Conference Center			254,400	-						
	RESIDENTIAL (assume 1,500 SF per unit)										
New	Townhouse/Rowhouse	P	FP		302	C	$ -	$ 119,682,600	100%	$ -	$ 119,682,600
New	Garden Apartments - Howard Commons	P	FP	275		I	$ 52,923,750	$ 52,923,750	100%	$ 52,923,750	$ 52,923,750
	Total Mixed Income			275	302						
	CIVIC										
B1206-1207	Eatontown Municipal Center Malette Hall	P	BO	57,386		N	$ -	$ -	100%	$ -	$ -
1215	Public Theater	P	NP	18,883		N	$ -	$ -	100%	$ -	$ -
Golf Course	Gibbs Hall Suneagles Golf Club	P	FP	142.11		C	$ 10,800,360	$ 10,800,360	100%	$ 10,800,360	$ 10,800,360
New	Fort Monmouth Jitney Bus	P	NP	200		N	$ -	$ -	100%	$ -	$ -
	Total Civic			76,611	-						
OCEANPORT											
	OFFICE/RESEARCH AND DEVELOPMENT										
173-174	Lab Testing, Office	P	FP	6,388		I	$ 1,365,435	$ 1,365,435	100%	$ 1,365,435	$ 1,365,435
209	Allison Hall Office	P	FP	36,665		I	$ 7,837,144	$ 7,837,144	100%	$ 7,837,144	$ 7,837,144
281	Professional Office	P	FP	2,544		I	$ 543,780	$ 543,780	100%	$ 543,780	$ 543,780
283	Squier Hall Office/Education	P	FP	76,538		N	$ -	$ -	100%	$ -	$ -
286	Russel Hall Garrison Headquarters	P	NP	76,978		N	$ -	$ -	100%	$ -	$ -
289, 290, 291, 295	General Office	P	FP	21,006		I	$ 4,490,033	$ 4,490,033	100%	$ 4,490,033	$ 4,490,033
600	McAfee Center	P	FP	97,000		I	$ 25,098,750	$ 25,098,750	100%	$ 25,098,750	$ 25,098,750
New	Green Industry Cluster	P	FP	200,000	200,000	I	$ 51,750,000	$ 103,500,000	100%	$ 51,750,000	$ 103,500,000
New	Medical Office Building	P	FP	20,000		I	$ 5,175,000	$ 5,175,000	100%	$ 5,175,000	$ 5,175,000
	Total Office/R&D Space			537,119	200,000						
	RETAIL										
114	Fitness Center	P	FP	32,250		I	$ 5,805,000	$ 5,805,000	100%	$ 5,805,000	$ 5,805,000
B450	Public Marina	P	FP	2,600		C	$ 2,698,000	$ 2,698,000	100%	$ 2,698,000	$ 2,698,000
1007	Commissary Retail Center	P	FP	53,700		I	$ 9,666,000	$ 9,666,000	100%	$ 9,666,000	$ 9,666,000
New	Neighborhood Convenience Retail	P	FP	19,000	19,000	I	$ 5,343,750	$ 10,687,500	100%	$ 5,343,750	$ 10,687,500
New	Waterfront Retail	P	FP		9,000	I	$ -	$ 2,531,250	100%	$ -	$ 2,531,250
New	Waterfront Boutique Hotel Retail	P	FP		3,000	I	$ -	$ 843,750	100%	$ -	$ 843,750
New	Spa	P	FP		3,000	I	$ -	$ 843,750	100%	$ -	$ 843,750
	Credit Union	P	FP	5,000		I	$ 1,406,250	$ 1,406,250	100%	$ 1,406,250	$ 1,406,250
	Total Retail Space			112,550	34,000						
	HOSPITALITY/CONFERENCE CENTER (assume 750 SF per room)										
New	Waterfront Hotel	P	FP		70,000	I	$ -	$ 9,678,033	100%	$ -	$ 9,678,033
	Total Hotel/Conference Center			-	70,000						

Appendix Table A-2: Fort Monmouth Assessed Value (Continued)

Existing Building Number	DESCRIPTION	Interim Use (I); Permanent Reuse (P)	Likely User	10 Year Plan	20 Year Plan	Valuation Method	Year 10 Market Value	Year 20 Market Value	Assessed Value to Market Value Ratio	Year 10 Assessed Value	Year 20 Assessed Value
	RESIDENTIAL (assume 1,500 SF per unit)										
271	Gardner Hall Residential	P	FP	15		N	$ -	$ -	100%	$ -	$ -
	Historic District 1-Family	P	FP	117		C	$ 60,407,100	$ 60,407,100	100%	$ 60,407,100	$ 60,407,100
New	1-Family Small Lot	P	FP	80	79	C	$ 41,304,000	$ 82,091,700	100%	$ 41,304,000	$ 82,091,700
New	Apartments	P	FP	60	309	I	$ 11,547,000	$ 71,014,050	100%	$ 11,547,000	$ 71,014,050
New	Oceanport Ave Apartments	P	FP	30	30	I	$ 5,773,500	$ 11,547,000	100%	$ 5,773,500	$ 11,547,000
	Total Mixed Income			287	418						
	CIVIC										
206, 208	Barker Circle Oceanport Municipal Complex	P	BO	76,776		N	$ -	$ -	100%	$ -	$ -
275	Kaplan Hall Museum	P	NP	7,432		N	$ -	$ -	100%	$ -	$ -
501	Counseling Center	P	NP	2,832		N	$ -	$ -	100%	$ -	$ -
502	Library	P	CO	10,650		N	$ -	$ -	100%	$ -	$ -
551	Armstrong Hall Education Building	P	NP	13,595		N	$ -	$ -	100%	$ -	$ -
702	Lane Hall Community Conference Center	P	CO	12,100		N	$ -	$ -	100%	$ -	$ -
814	Recreation Support Building	P	CO	8,863		N	$ -	$ -	100%	$ -	$ -
B2560 or 282	Fire/Emergency Services Station	P	BO	6,089		N	$ -	$ -	100%	$ -	$ -
B500	Chapel	P	NP	16,372		N	$ -	$ -	100%	$ -	$ -
B1075 PAHC	VA - Community Medical Center	P	FE	60,000		N	$ -	$ -	100%	$ -	$ -
New	Middle School (450 students, 16-acres)	P	SD	145,000		N	$ -	$ -	100%	$ -	$ -
	Total Civic			359,709	-						
TINTON FALLS											
	OFFICE/RESEARCH AND DEVELOPMENT										
2502-2507	Shops/Warehouses	I	NP	42,752		I	$ -	$ -	100%	$ -	$ -
2525	Administrative Offices	P	FP	86,719		I	$ 18,536,186	$ 18,536,186	100%	$ 18,536,186	$ 18,536,186
2539- 2540	Lab Testing Buildings	P	FP	15,756		I	$ 3,367,845	$ 3,367,845	100%	$ 3,367,845	$ 3,367,845
2700 Myers Center	Data Recovery Center _ Reconfigured	P	FP	445,522		I	$ 95,230,328	$ 95,230,328	100%	$ 95,230,328	$ 95,230,328
2705	Testing Lab	P	FP	47,592		I	$ 10,172,790	$ 10,172,790	100%	$ 10,172,790	$ 10,172,790
2707	RDT&E Lab	P	FP	26,476		I	$ 5,659,245	$ 5,659,245	100%	$ 5,659,245	$ 5,659,245
New	Office/Research & Development	P	FP		175,000	I	$ -	$ 45,281,250	100%	$ -	$ 45,281,250
	Total Office/R&D Space			664,817	175,000						
	RETAIL										
2567	Gas Station	P	FP	1		C	$ 1,100,000	$ 1,100,000	100%	$ 1,100,000	$ 1,100,000
New	Neighborhood Convenience Retail	P	FP	48,000	32,000	I	$ 13,500,000	$ 22,500,000	100%	$ 13,500,000	$ 22,500,000
	Total Retail Space			48,001	32,000						
	RESIDENTIAL (assume 1,500 SF per unit)										
B2231-2240,2260	Hemp Hill Housing	P	FP	22		I	$ 1,768,800	$ 1,768,800	100%	$ 1,768,800	$ 1,768,800
New	1-Family Small Lot	P	FP	39		C	$ 20,135,700	$ 20,135,700	100%	$ 20,135,700	$ 20,135,700
New	1-Family Large Lot	P	FP	14		C	$ 9,605,400	$ 9,605,400	100%	$ 9,605,400	$ 9,605,400
New	Townhouse/Rowhouse	P	FP	83		C	$ 32,892,900	$ 32,892,900	100%	$ 32,892,900	$ 32,892,900
New	Apartments	P	FP	130		I	$ 25,018,500	$ 25,018,500	100%	$ 25,018,500	$ 25,018,500
	Total Mixed Income			288	-						
	CIVIC										
B2290	Child Development Center	P	SD	19,600		N	$ -	$ -	100%	$ -	$ -
2,566	Youth Center	P	SD	19,636		N	$ -	$ -	100%	$ -	$ -
B2560 or 282	Fire/Emergency Services Station	P	FD	10,070		N	$ -	$ -	100%	$ -	$ -
B2569	Community Pool/Tennis Center(s)	P	BO	1,000		N	$ -	$ -	100%	$ -	$ -
B2707, 2709, 2713	Fire & Police Training Academy	P	BO	11,110		N	$ -	$ -	100%	$ -	$ -
New	Library	P	BO	27,000		N	$ -	$ -	100%	$ -	$ -
	Total Civic			88,416	-						

Source: EDAW; Economics Research Associates, 2008.

Likely Users:
BO = Borough
CO = County
FD = Fire District
SD = School District
FP = For Profit
NP = Non Profit

Valuation Method:
C = Comparables
I = Income
R = Replacement
N = Not Valued

Appendix Table A-3: Fort Monmouth Valuation - Income Approach

Existing Building Number	DESCRIPTION	10 Year Plan	20 Year Plan	Price / Rent	Pricing Unit	Occu-pancy	Year 10 Rental Income	Year 20 Rental Income	Rent Type	Op Ex	Op Ex Units	Year 10 Total Op Ex	Year 20 Total Op Ex	Year 10 NOI	Year 20 NOI	Cap Rate	Year 10 Market Value	Year 20 Market Value
EATONTOWN																		
	OFFICE/RESEARCH AND DEVELOPMENT																	
1150-1152	Vail Hall Communication Center	36,483	-	$ 19.00	SF / Ann	90%	$ 623,859	$ 623,859	NNN	$ -	NA	$ -	$ -	$ 623,859	$ 623,859	8.0%	$ 7,798,241	$ 7,798,241
1208-1210	CECOM Incubator & Professional Office	138,050	157,072	$ 19.00	SF / Ann	90%	$ 2,360,655	$ 5,046,586	NNN	$ -	NA	$ -	$ -	$ 2,360,655	$ 5,046,586	8.0%	$ 29,508,188	$ 63,082,328
New	Technology Flex Office	-	190,000	$ 23.00	SF / Ann	90%	$ -	$ 3,933,000	NNN	$ -	NA	$ -	$ -	$ -	$ 3,933,000	8.0%	$ -	$ 49,162,500
	Total Office/R&D Space	174,533	347,072															
	RETAIL																	
689	Bowling Alley	17,599	-	$ 16.00	SF / Ann	901%	$ 2,537,072	$ 2,537,072	NNN	$ -	NA	$ -	$ -	$ 2,537,072	$ 2,537,072	8.0%	$ 31,713,398	$ 31,713,398
2018	Suneagles Restaurant	3,205	-	$ 25.00	SF / Ann	90%	$ 72,113	$ 72,113	NNN	$ -	NA	$ -	$ -	$ 72,113	$ 72,113	8.0%	$ 901,406	$ 901,406
New	Neighborhood Convenience Retail	12,530	-	$ 25.00	SF / Ann	90%	$ 281,925	$ 281,925	NNN	$ -	NA	$ -	$ -	$ 281,925	$ 281,925	8.0%	$ 3,524,063	$ 3,524,063
New	Lifestyle Town Center Retail	150,000	-	$ 25.00	SF / Ann	90%	$ 3,375,000	$ 3,375,000	NNN	$ -	NA	$ -	$ -	$ 3,375,000	$ 3,375,000	8.0%	$ 42,187,500	$ 42,187,500
	Total Retail Space	165,735	-															
	HOSPITALITY/CONFERENCE CENTER (assume 750 SF per room)																	
B2022-B2042	Conference Hotel Residential	14,400	-	See Hotel Income Calculation Sheets										$ 109,832	$ 109,832	8.0%	$ 1,372,905	$ 1,372,905
New	Conference Hotel	225,000	-	See Hotel Income Calculation Sheets (includes conference center value)										$ 1,716,131	$ 1,716,131	8.5%	$ 20,189,776	$ 20,189,776
New	Conference Center	15,000	-	See Hotel Income Calculation Sheets										$ -	$ -	8.5%	$ -	$ -
	Total Hotel/Conference Center	254,400	-															
	RESIDENTIAL (assume 1,500 SF per unit)																	
New	Garden Apartments - Howard Commons	275	-	$ 1,870	Unit / Mo	90%	$ 5,553,900	$ 5,553,900	FS	$ 4,800	Unit	$ 1,320,000	$ 1,320,000	$ 4,233,900	$ 4,233,900	8.0%	$ 52,923,750	$ 52,923,750
	Total Mixed Income	275	-															
	CIVIC																	
	Total Civic	-	-															
OCEANPORT																		
	OFFICE/RESEARCH AND DEVELOPMENT																	
173-174	Lab Testing, Office	6,388	-	$ 19.00	SF / Ann	90%	$ 109,235	$ 109,235	NNN	$ -	NA	$ -	$ -	$ 109,235	$ 109,235	8.0%	$ 1,365,435	$ 1,365,435
209	Allison Hall Office	36,665	-	$ 19.00	SF / Ann	90%	$ 626,972	$ 626,972	NNN	$ -	NA	$ -	$ -	$ 626,972	$ 626,972	8.0%	$ 7,837,144	$ 7,837,144
281	Professional Office	2,544	-	$ 19.00	SF / Ann	90%	$ 43,502	$ 43,502	NNN	$ -	NA	$ -	$ -	$ 43,502	$ 43,502	8.0%	$ 543,780	$ 543,780
289, 290, 291, 295	General Office	21,006	-	$ 19.00	SF / Ann	90%	$ 359,203	$ 359,203	NNN	$ -	NA	$ -	$ -	$ 359,203	$ 359,203	8.0%	$ 4,490,033	$ 4,490,033
600	McAfee Center	97,000	-	$ 23.00	SF / Ann	90%	$ 2,007,900	$ 2,007,900	NNN	$ -	NA	$ -	$ -	$ 2,007,900	$ 2,007,900	8.0%	$ 25,098,750	$ 25,098,750
New	Green Industry Cluster	200,000	200,000	$ 23.00	SF / Ann	90%	$ 4,140,000	$ 8,280,000	NNN	$ -	NA	$ -	$ -	$ 4,140,000	$ 8,280,000	8.0%	$ 51,750,000	$ 103,500,000
New	Medical Office Building	20,000	-	$ 23.00	SF / Ann	90%	$ 414,000	$ 414,000	NNN	$ -	NA	$ -	$ -	$ 414,000	$ 414,000	8.0%	$ 5,175,000	$ 5,175,000
	Total Office/R&D Space	383,603	200,000															
	RETAIL																	
114	Fitness Center	32,250	-	$ 16.00	SF / Ann	90%	$ 464,400	$ 464,400	NNN	$ -	NA	$ -	$ -	$ 464,400	$ 464,400	8.0%	$ 5,805,000	$ 5,805,000
1007	Commissary Retail Center	53,700	-	$ 16.00	SF / Ann	90%	$ 773,280	$ 773,280	NNN	$ -	NA	$ -	$ -	$ 773,280	$ 773,280	8.0%	$ 9,666,000	$ 9,666,000
New	Neighborhood Convenience Retail	19,000	19,000	$ 25.00	SF / Ann	90%	$ 427,500	$ 855,000	NNN	$ -	NA	$ -	$ -	$ 427,500	$ 855,000	8.0%	$ 5,343,750	$ 10,687,500
New	Waterfront Retail	-	9,000	$ 25.00	SF / Ann	90%	$ -	$ 202,500	NNN	$ -	NA	$ -	$ -	$ -	$ 202,500	8.0%	$ -	$ 2,531,250
New	Waterfront Boutique Hotel Retail	-	3,000	$ 25.00	SF / Ann	90%	$ -	$ 67,500	NNN	$ -	NA	$ -	$ -	$ -	$ 67,500	8.0%	$ -	$ 843,750
New	Spa	-	3,000	$ 25.00	SF / Ann	90%	$ -	$ 67,500	NNN	$ -	NA	$ -	$ -	$ -	$ 67,500	8.0%	$ -	$ 843,750
0	Credit Union	5,000	-	$ 25.00	SF / Ann	90%	$ 112,500	$ 112,500	NNN	$ -	NA	$ -	$ -	$ 112,500	$ 112,500	8.0%	$ 1,406,250	$ 1,406,250
	Total Retail Space	109,950	34,000															
	HOSPITALITY/CONFERENCE CENTER (assume 750 SF per room)																	
New	Waterfront Hotel	-	70,000	See Hotel Income Calculation Sheets										$ -	$ 822,633	8.5%	$ -	$ 9,678,033
	Total Hotel/Conference Center	-	70,000															

Appendix Table A-3: Fort Monmouth Valuation - Income Approach (Continued)

Existing Building Number	DESCRIPTION	10 Year Plan	20 Year Plan	Price / Rent	Pricing Unit	Occu-pancy	Year 10 Rental Income	Year 20 Rental Income	Rent Type	Op Ex	Op Ex Units	Year 10 Total Op Ex	Year 20 Total Op Ex	Year 10 NOI	Year 20 NOI	Cap Rate	Year 10 Market Value	Year 20 Market Value
	RESIDENTIAL (assume 1,500 SF per unit)																	
New	Apartments	60	309	$ 1,870	Unit / Mo	90%	$ 1,211,760	$ 7,452,324	FS	$ 4,800	Unit	$ 288,000	$ 1,771,200	$ 923,760	$ 5,681,124	8.0%	$ 11,547,000	$ 71,014,050
New	Oceanport Ave Apartments	30	30	$ 1,870	Unit / Mo	90%	$ 605,880	$ 1,211,760	FS	$ 4,800	Unit	$ 144,000	$ 288,000	$ 461,880	$ 923,760	8.0%	$ 5,773,500	$ 11,547,000
	Total Mixed Income	90	339															
	CIVIC																	
	Total Civic	-	-															
TINTON FALLS																		
	OFFICE/RESEARCH AND DEVELOPMENT																	
2502-2507	Shops/Warehouses	42,752	-															
2525	Administrative Offices	86,719	-	$ 19.00	SF / Ann	90%	$ 1,482,895	$ 1,482,895	NNN	$ -	NA	$ -	$ -	$ 1,482,895	$ 1,482,895	8.0%	$ 18,536,186	$ 18,536,186
2539- 2540	Lab Testing Buildings	15,756	-	$ 19.00	SF / Ann	90%	$ 269,428	$ 269,428	NNN	$ -	NA	$ -	$ -	$ 269,428	$ 269,428	8.0%	$ 3,367,845	$ 3,367,845
2700 Myers Center	Data Recovery Center _ Reconfigured	445,522	-	$ 19.00	SF / Ann	90%	$ 7,618,426	$ 7,618,426	NNN	$ -	NA	$ -	$ -	$ 7,618,426	$ 7,618,426	8.0%	$ 95,230,328	$ 95,230,328
2705	Testing Lab	47,592	-	$ 19.00	SF / Ann	90%	$ 813,823	$ 813,823	NNN	$ -	NA	$ -	$ -	$ 813,823	$ 813,823	8.0%	$ 10,172,790	$ 10,172,790
2707	RDT&E Lab	26,476	-	$ 19.00	SF / Ann	90%	$ 452,740	$ 452,740	NNN	$ -	NA	$ -	$ -	$ 452,740	$ 452,740	8.0%	$ 5,659,245	$ 5,659,245
New	Office/Research & Development	-	175,000	$ 23.00	SF / Ann	90%	$ -	$ 3,622,500	NNN	$ -	NA	$ -	$ -	$ -	$ 3,622,500	8.0%	$ -	$ 45,281,250
	Total Office/R&D Space	664,817	175,000															
	RETAIL																	
New	Neighborhood Convenience Retail	48,000	32,000	$ 25.00	SF / Ann	90%	$ 1,080,000	$ 1,800,000	NNN	$ -	NA	$ -	$ -	$ 1,080,000	$ 1,800,000	8.0%	$ 13,500,000	$ 22,500,000
	Total Retail Space	48,000	32,000															
	RESIDENTIAL (assume 1,500 SF per unit)																	
B2231-2240,2260	Hemp Hill Housing	22	-	$ 1,040	Unit / Mo	90%	$ 247,104	$ 247,104	FS	$ 4,800	Unit	$ 105,600	$ 105,600	$ 141,504	$ 141,504	8.0%	$ 1,768,800	$ 1,768,800
New	Apartments	130	-	$ 1,870	Unit / Mo	90%	$ 2,625,480	$ 2,625,480	FS	$ 4,800	Unit	$ 624,000	$ 624,000	$ 2,001,480	$ 2,001,480	8.0%	$ 25,018,500	$ 25,018,500
	Total Mixed Income	152	-															
	CIVIC																	
	Total Civic	-	-															

Source: Costar office, flex, and retail rent data; Reis apartment market data; ULI Dollars and Cents of Multifamily Housing; Economics Research Associates, 2008.

Appendix Table A-4: Fort Monmouth Valuation - Comparables Approach

Existing Building Number	DESCRIPTION	10 Year Plan	20 Year Plan	Price / Rent	Pricing Unit	Year 10 Market Value	Year 20 Market Value
EATONTOWN							
	OFFICE/RESEARCH AND DEVELOPMENT						
	Total Office/R&D Space	-	-				
	RETAIL						
	Total Retail Space	-	-				
	HOSPITALITY/CONFERENCE CENTER (assume 750 SF per room)						
	Total Hotel/Conference Center	-	-				
	RESIDENTIAL (assume 1,500 SF per unit)						
New	Townhouse/Rowhouse	-	302	$ 396,300	Unit	$ -	$ 119,682,600
	Total Mixed Income	-	302				
	CIVIC						
Golf Course	Gibbs Hall Suneagles Golf Club	142.11	-	$ 76,000	Acre	$ 10,800,360	$ 10,800,360
	Total Civic	142	-				
OCEANPORT							
	OFFICE/RESEARCH AND DEVELOPMENT						
	Total Office/R&D Space	-	-				
	RETAIL						
B450	Public Marina	71	-	$ 38,000	Slip	$ 2,698,000	$ 2,698,000
	Total Retail Space	71	-				
	HOSPITALITY/CONFERENCE CENTER (assume 750 SF per room)						
	Total Hotel/Conference Center	-	-				
	RESIDENTIAL (assume 1,500 SF per unit)						
-	Historic District 1-Family	117	-	$ 516,300	Unit	$ 60,407,100	$ 60,407,100
New	1-Family Small Lot	80	79	$ 516,300	Unit	$ 41,304,000	$ 82,091,700
	Total Mixed Income	197	79				
	CIVIC						
	Total Civic	-	-				
TINTON FALLS							
	OFFICE/RESEARCH AND DEVELOPMENT						
	Total Office/R&D Space	-	-				
	RETAIL						
2567	Gas Station	1	-	$ 1,100,000	Unit	$ 1,100,000	$ 1,100,000
	Total Retail Space	1	-				
	RESIDENTIAL (assume 1,500 SF per unit)						
New	1-Family Small Lot	39	-	$ 516,300	Unit	$ 20,135,700	$ 20,135,700
New	1-Family Large Lot	14	-	$ 686,100	Unit	$ 9,605,400	$ 9,605,400
New	Townhouse/Rowhouse	83	-	$ 396,300	Unit	$ 32,892,900	$ 32,892,900
	Total Mixed Income	136	-				
	CIVIC						
	Total Civic	-	-				

Source: Hanley Wood Market Intelligence; Monmouth County tax assessor online database; Economics Research Associates, 2008.

Appendix B-1: Fort Monmouth Employment Generation Analysis

Existing Building Number	DESCRIPTION	10 Year Plan	20 Year Plan	Employment Factor / SF /1	Total Estimated Employees 10 Year Plan	Total Estimated Employees 20 Year Plan
EATONTOWN						
	OFFICE/RESEARCH AND DEVELOPMENT					
1150-1152	Vail Hall Communication Center	36,483	-	275	133	-
1208-1210	CECOM Incubator & Professional Office	138,050	157,072	275	502	571
New	Technology Flex Office	-	190,000	275	-	691
	Total Office/R&D Space	174,533	347,072		635	1,262
	RETAIL					
689	Bowling Alley	17,599	-	1500	12	-
2018	Suneagles Restaurant	3,205	-	400	8	-
New	Neighborhood Convenience Retail	12,530	-	400	31	-
New	Lifestyle Town Center Retail	150,000	-	400	375	-
	Total Retail Space	183,334	-		414	-
	HOSPITALITY/CONFERENCE CENTER (assume 750 SF per room)			***Employees per Room***		
B2022-B2042	Conference Hotel Residential	14,400	-	1.5	29	-
New	Conference Hotel	225,000	-	1.5	450	-
New	Conference Center	15,000	-	1.5	30	-
	Total Hotel/Conference Center	254,400	-	5	509	-
	RESIDENTIAL (assume 1,500 SF per unit)					
New	Townhouse/Rowhouse	-	302	0.05	-	15
New	Garden Apartments - Howard Commons	275	-	0.05	14	-
	Total Mixed Income	275	302	0	14	15
	CIVIC					
B1206-1207	Eatontown Municipal Center Malette Hall	57,386	-	750	77	-
1215	Public Theater	18,883	-	750	25	-
Golf Course	Gibbs Hall Suneagles Golf Club (Acres)	142	-	16	16	-
New	Fort Monmouth Jitney Bus	200	-	N/A	N/A	N/A
	Total Civic	76,611	-		118	-
	TOTAL				1,689	1,277
OCEANPORT						
	OFFICE/RESEARCH AND DEVELOPMENT					
173-174	Lab Testing, Office	6,388	-	500	13	-
209	Allison Hall Office	36,665	-	500	73	-
281	Professional Office	2,544	-	275	9	-
283	Squier Hall Office/Education	76,538	-	500	153	-
286	Russel Hall Garrison Headquarters	76,978	-	500	154	-
289, 290, 291, 295	General Office	21,006	-	275	76	-
600	McAfee Center	97,000	-	500	194	-
New	Green Industry Cluster	200,000	200,000	500	400	400
New	Medical Office Building	20,000	-	375	53	-
	Total Office/R&D Space	537,119	200,000		1,126	400
	RETAIL					
114	Fitness Center	32,250	-	500	65	-
B450	Public Marina	2,600	-	NA		
1007	Commissary Retail Center	53,700	-	500	107	-
New	Neighborhood Convenience Retail	19,000	19,000	500	38	38
New	Waterfront Retail	-	9,000	500	-	18
New	Waterfront Boutique Hotel Retail	-	3,000	500	-	6
New	Spa	-	3,000	500	-	6
	Credit Union	5,000	-	500	10	-
	Total Retail Space	112,550	34,000		220	68
	HOSPITALITY/CONFERENCE CENTER (assume 750 SF per room)			***Employees per Room***		
New	Waterfront Hotel	-	70,000	1.50	-	140
	Total Hotel/Conference Center	-	70,000		-	140

Appendix B-1: Fort Monmouth Employment Generation Analysis

Existing Building Number	DESCRIPTION	10 Year Plan	20 Year Plan	Employment Factor / SF /1	Total Estimated Employees 10 Year Plan	20 Year Plan
	RESIDENTIAL (assume 1,500 SF per unit)			***Employees / Unit***		
271	Gardner Hall Residential	15	-	0.05	1	-
	Historic District 1-Family	117	-	N/A	N/A	N/A
New	1-Family Small Lot	80	79	N/A	N/A	N/A
New	Apartments	60	309	0.05	3	15
New	Oceanport Ave Apartments	30	30	0.05	2	2
	Total Mixed Income	302	418		5	17
	CIVIC					
206,208	Barker Circle Oceanport Municipal Complex	76,776	-	NA	-	-
275	Kaplan Hall Museum	7,432	-	NA	1	-
501	Counseling Center	2,832	-	500	6	-
502	Library	10,650	-	500	21	-
551	Armstrong Hall Education Building	13,595	-	500	27	-
702	Lane Hall Community Conference Center	12,100	-	500	24	-
814	Recreation Support Building	8,863	-	500	18	-
B2560 or 282	Fire/Emergency Services Station	6,089	-	N/A		
B500	Chapel	16,372	-	N/A		
B1075 PAHC	VA - Community Medical Center	60,000	-	500	120	-
New	Middle School (450 students, 16-acres)	145,000	-	N/A		
	Total Civic	359,709	-		217	-
	TOTAL				1,568	625
TINTON FALLS						
	OFFICE/RESEARCH AND DEVELOPMENT					
2502-2507	Shops/Warehouses	42,752	-	500	86	-
2525	Administrative Offices	86,719	-	275	315	-
2539- 2540	Lab Testing Buildings	15,756	-	500	32	-
2700 Myers Center	Data Recovery Center _ Reconfigured	445,522	-	1000	446	-
2705	Testing Lab	47,592	-	1000	48	-
2707	RDT&E Lab	26,476	-	1000	26	-
New	Office/Research & Development	-	175,000	1000	-	175
	Total Office/R&D Space	664,817	175,000		952	175
	RETAIL					
2567	Gas Station	1	-	N/A	5	
New	Neighborhood Convenience Retail	48,000	32,000	500	96	64
	Total Retail Space	48,001	32,000	500	101	64
	RESIDENTIAL (assume 1,500 SF per unit)			***Employees / Unit***		
B2231-2240,2260	Hemp Hill Housing	22	-	0.05	1	-
New	1-Family Small Lot	39	-	N/A	N/A	N/A
New	1-Family Large Lot	14	-	N/A	N/A	N/A
New	Townhouse/Rowhouse	83	-	N/A	N/A	N/A
New	Apartments	130	-	0.05	7	-
	Total Mixed Income	288	-	0	8	-
	CIVIC					
B2290	Child Development Center	19,600	-	1000	20	-
2,566	Youth Center	19,636	-	1,000	20	-
B2560 or 282	Fire/Emergency Services Station	10,070	-	N/A		
B2569	Community Pool/Tennis Center(s)	1,000	-	N/A		
B2707, 2709, 2713	Fire & Police Training Academy	11,110	-	N/A		
New	Library	27,000	-	9000	3	-
	Total Civic	88,416	-	11,000	42	-
	TOTAL				1,103	239

1/ ULI Dollars & Cents of Shopping Centers, 2007; ULI Dollars & Cents of Multifamily Housing, 2006.
2/ Bowling Proprietors Association of America, 2008; US Bureau of Labor Statistics, Recreation Occupations, 2008.
Source: Economics Research Associates, 2008.

Appendix Table B-2: Current Fund Appropriations Included in Public Service Cost Analysis

General Appropriations
Borough Council
Office of the Mayor
Municipal Clerk
Office of the Tax Assessor
Division of Administration
Human Resources
Division of Central Services
Division of Engineering
Historical Sites Office
Division of Law
Division of Central Maintenance
Division of Streets
Division of Sanitation
Division of Buildings and Grounds
Maintenance of Parks
Shade Tree
Community Services Act
Police
Division of Emergency Managements
Prosecutor
Division of Finance
Division of Revenue
Division of Health
Environmental Health Sciences
Contribution to Social Services Agencies
Alliance Program
Division of Recreation
Municipal Library
Division of Housing
Division of Planning
Division of Code Enforcement
Division of Fire Prevention
Animal Control Services
Municipal Court
Public Defender
Public Employees Occupational Safety and Health Act
Insurance
State Uniform Construction Code
Utilities
Accumulated Leave Compensation

Source: FY2008 Municipal Budget Summary, Sheet 12 through Sheet 17; Economics Research Associates, 2008.

9.0 ZONING & LAND USE IMPACTS

9.0 Zoning & Land Use Impacts

9.1 Statement Of Goals and Objectives

The following Goals and Objectives have been developed to guide the preparation of this plan:

To create a "green community" model where sustainable redevelopment at Fort Monmouth balances the economic, environmental and social triple bottom line within the limits of available resources.

To plan for beneficial redevelopment that improves and reinforces the quality of life in the constituent municipalities consistent with State, County & Municipal planning policy, by:

- Creating Mixed-Use Live/Work/Leisure Centers;
- Linking centers & increasing local and regional mobility with connected transit infrastructure serving the region and the Fort;
- Enhancing auto mobility and redevelopment capacity with targeted roadway improvements;
- Establishing a continuous Blue – Greenbelt combining active and passive open space, wildlife habitat, riparian corridors and wetlands;
- Enhancing bicycle & pedestrian mobility throughout the Fort and adjoining areas utilizing the Blue - Greenbelt to maximize linkages; and
- Eliminating perceived Fort boundaries and connecting proposed and existing land uses to reintegrate the Fort to the communities

To promote the efficient and comprehensive conversion and revitalization of Fort Monmouth and leverage existing Fort Monmouth assets, by

- Reusing, adapting, replacing or upgrading the Fort Monmouth buildings
- Stabilizing and growing the high-tech workforce in the region and managing job replacement & employee training
- Retaining jobs and creating new employment and other business opportunities
- Attracting and supporting NJ growth industries (Communications, renewable energy, life science, nanotech, stem cell, homeland security)

To promote a balance of land uses and varied housing types (including Homeless, COAH & Workforce housing) that meets regional needs and promotes municipal fiscal health.

9.1.1 Current Local Land Use Policies

Eatontown

A July 23, 2007 update of the Eatontown Master Plan incorporated the results and recommendations of Borough planning studies on the reuse of Fort Monmouth and the future of the downtown Village area of the Borough. The Planning Board also updated the statement of relationship of the Borough plan to the plans of adjoining municipalities, the County and the State. Two of the goals of the Master Plan that relate to Fort Monmouth included:

- To design and implement the road plan of the Borough to facilitate the movement of residents from one quadrant to others without using Routes 35 and 36 or the Route 35/Route 36 intersection; to discourage traffic from outside the Borough from using streets internal to residential areas; and, to assure that adequate parking is provided by all new developments.
- To support the commercial and industrial attractiveness of the Borough by facilitating continued viability of existing commercial development along Routes 35 and 36, and additional and upgraded development on vacant land within existing commercial areas.

As part of the reuse and redevelopment of Fort Monmouth for civilian activity, the Borough Master Plan recommends the following:

a. Relocate the Borough municipal complex onto Fort Monmouth to reoccupy the Fort Monmouth Life Cycle Management Building as the new Borough municipal complex.

b. Adopt the recommendations of the Howard Commons Reuse Study prepared February 2003 by Kise, Straw and Kolodner. The Howard Commons study is appended to the Borough Master Plan and adopted by reference as the Borough plan for the reuse of the Howard Commons area of Fort Monmouth.

c. Endorse the public benefit conveyance of surplus property at Fort Monmouth for park and recreation purposes as recommended by Monmouth County in the County notice of intent dated February 14, 2007.

The Land Use Plan identified Federal government lands at Fort Monmouth as the "Fort Monmouth Reuse Planning Area" on the Master Plan map. These lands are included in the zone plan as part of the P-1 zone for public use.

The Land Use Plan recommends that the Howard Commons Area of Fort Monmouth be redeveloped and reused in accordance with the recommendations of the Howard Commons Reuse Study prepared February 2003 by Kise, Kolodner, and Straw. The Howard Commons planning area is shown on the Borough Master Plan map and the Howard

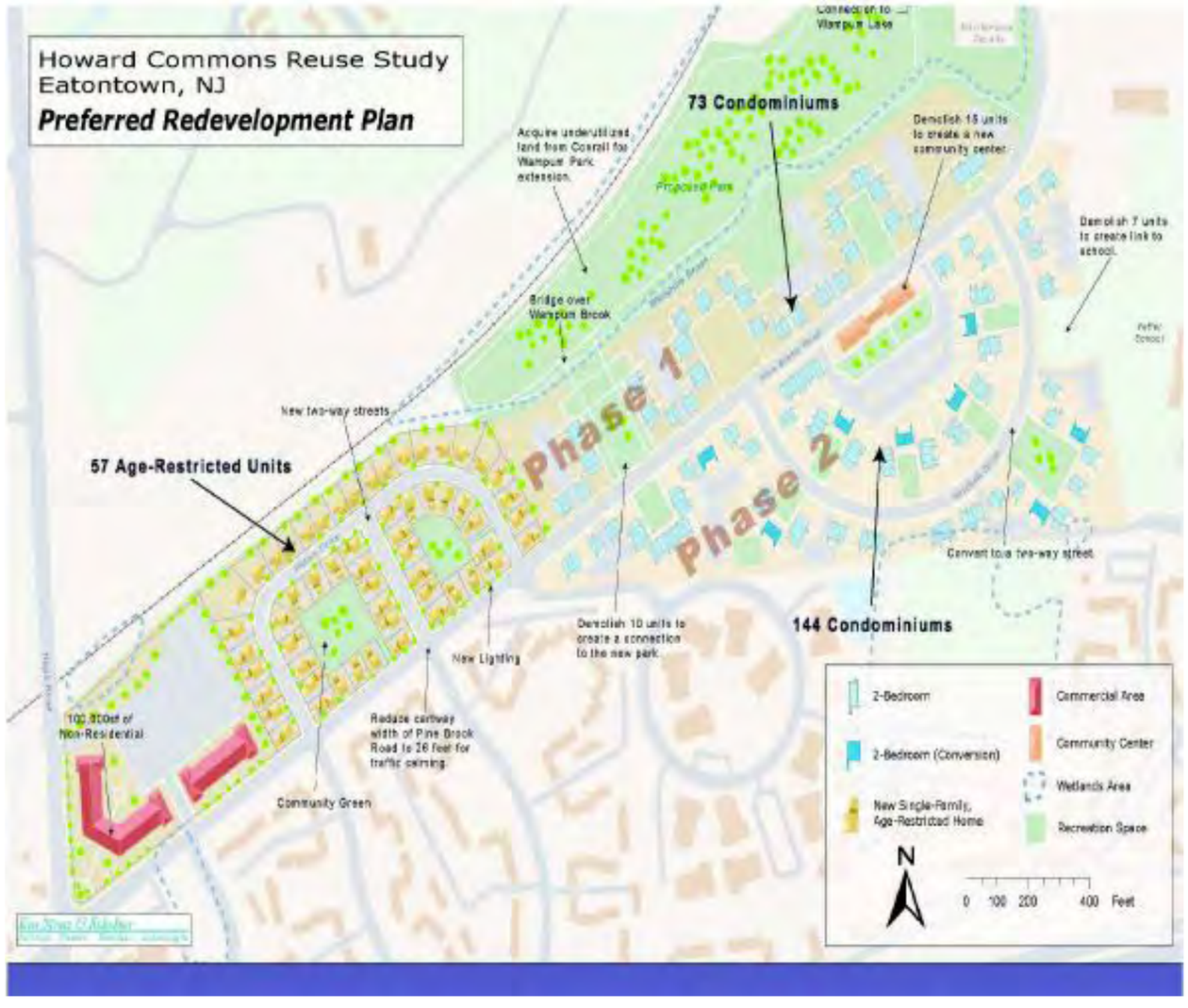
Commons Reuse Study is appended to and adopted as part of this Borough Master Plan.

The Eatontown plan also recommends that the Fort Monmouth reuse plan should provide for the relocation of the Borough municipal complex from Broad Street into the Fort Monmouth Life Cycle Management Building. The Borough Master Plan map shows the location of the Life Cycle Management Building as the proposed location of the Borough municipal building.

Eatontown advances the concept that the Fort Monmouth reuse plan should provide for reuse of land within the base as park and recreation land as recommended by the February 14, 2007 notice of public interest by Monmouth County for the conveyance of surplus property for park and recreation use. Three recreation parcels are located in Eatontown, including Husky Brook Lake and the football complex; Lefetra Creek, Parkers Creek and Mill Creek, the baseball/ softball fields and bowling center; and the base golf course.

The Borough Master Plan map shows the location of the proposed Fort Monmouth Park and recreation land. A description of the proposed use of each of the three open space and recreation parcels is included in the Borough's Open Space, Recreation, and Conservation Plan Element.

The Eatontown plan also recommends that Tinton Avenue (CR 537) should be extended as a through street across the base from Route 35 eastward to Oceanport.



Oceanport

From Fort to Village: A Vision for Oceanport's Fort Monmouth is a plan for redevelopment of the Ft. Monmouth property in Oceanport. Intended as a demonstration of the principles of smart growth set forth in the New Jersey State Development and Redevelopment Plan, new development would be compact, walkable and bikeable.

Natural features of the site including wetlands and waterfronts would be preserved and upgraded, and new development would conserve energy by being designed in accordance with the LEED standards for neighborhood development.

Two of the goals of the Oceanport Plan that relate to Fort Monmouth include:

- Creating employment opportunities and commercial ratables is one of Oceanport's major objectives. The existing McAfee Center is one of the most modern office space structures on the base and would lend itself to the conversion to commercial office space.

Overall Concept Plan

- The creation of a series of public space that integrate all of these elements together in order to produce a community framework that embodies sustainable principles of community development. These components would be comprised of existing natural areas as well as built areas.

From Fort to Village finds that the open spaces within Fort Monmouth are largely based on the existing unique natural attributes. These include the coastal fringes, freshwater wetlands, and stream corridors associated with Parker's and Oceanport Creeks, branches of the Shrewsbury River. Areas identified as bald eagle habitat and the existing marina are integral to this network, which also includes the existing ponds and recreational lands, as well as those open lands identified for public benefit conveyance by Monmouth County Parks. Oceanport's plan envisions the integration of existing contaminated lands within the open space network, where they may be contained while contributing to the framework of open spaces.

The following is a summary of the specific recommendations of the Oceanport Vision Plan:

a. The open space requested by the Monmouth County Parks Department, including the historic parade ground and the environmentally sensitive land along Oceanport Creek and Parker's Creek, would become dedicated public property. This land would serve as open space for both the Fort development and surrounding neighborhoods.

b. The Fort Monmouth Historic District would be preserved and structures within the district would be restored and reused in accordance with the Secretary of the Interior Standards.

c. The 98 acres between Oceanport Avenue and the NJ Transit tracks would be developed as a mixed-use, small scale,

age Center Concept Plan

walkable village. Oceanport Avenue would be developed as a boulevard and provide the major North-South traffic route for Oceanport development.

d. The Patterson Medical Center would be maintained as a veterans health facility and the land close to the Center would be developed with a mix of health care providers and professional offices. This area would also provide sites for an elementary and a middle school located next to County open space.

e. The Oceanport Board of Education has requested the conveyance of the McAfee Center. If it is not used by the B.O.E., then McAfee Center and the surrounding property are seen as well suited to be developed as an office campus.

f. The 28 acres along Parker's Creek is a prime waterfront development site that calls for the highest design quality with a unique resort hotel, spa, and/or conference facility.

g. Redevelopment of Ft. Monmouth would require the creation of an east-west arterial street in order to connect the proposed development areas with Rt. 35 and the regional highway system. The new east-west street should be designed to be compatible with the historic district and connect with Oceanport Avenue.

h. The vision plan envisions that there would be a jitney or small bus system connecting the various development centers at the Fort with the Little Silver train station. Since jitneys are generally small-capacity vehicles that follow a service route, but can divert to pick up and drop off passengers, the jitney would serve as an important link to the NJ Transit rail system. Such a system would also allow commuters from outside the area to access jobs located within the redevelopment area.

Medical Office Park Concept Plan

Tinton Falls

Public land parcels represent the single largest land category, including 3,249 acres or nearly 33% of Tinton Falls's total land area. The three largest publicly-owned sites - Naval Weapons Station Earle (approximately 1200 acres), Fort Monmouth (approximately 170 acres), and the Monmouth County Reclamation Center (approximately 900 acres) – are dominant land uses in Tinton Falls, with other publicly-owned parcels such as schools and open space scattered throughout the Borough.

One of the goals of the Tinton Falls Master Plan is to ensure the most appropriate reuse of Fort Monmouth. The Borough's objectives for land use include being actively involved in the planning process for the redevelopment of Fort Monmouth in order to ensure the most appropriate and beneficial reuse of the site.

Goals for housing include the objective of fully integrating affordable housing throughout the Borough, both within development projects and geographically throughout Tinton Falls.

Tinton Falls land use policies regarding Fort Monmouth are summarized below.

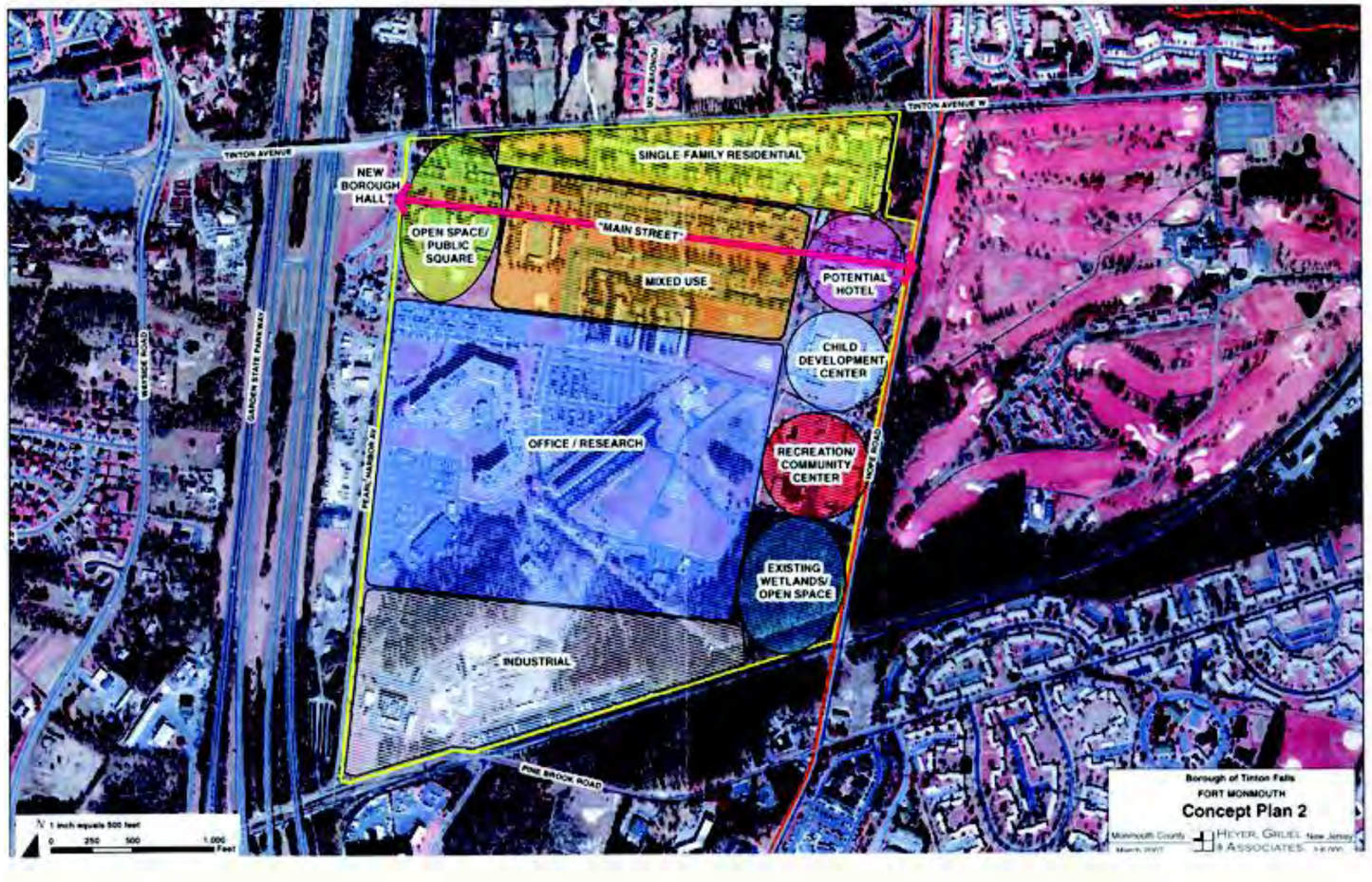
a. Fort Monmouth would become private land under statutory provisions that give the Borough limited ability to regulate the land use of the parcel. However, Tinton Falls sees this property as the last and best opportunity to create something special for the Borough, and seeks to advance its vision for the ultimate development of the site.

This vision is graphically shown on the Concept Plan map for Fort Monmouth that assumes a variety of uses, some public, some of which may be private. For example, the County may have an interest in the Fire Academy and other public uses on the site. The remainder of the site should be carefully developed, if it becomes available.

b. Sensitivity to the development of Tinton Avenue West is a principal concern.

- The properties to the north of Tinton Avenue adjacent to Fort Monmouth are within the Borough's RA Residential Agricultural designation, the lowest intensity zone within the Borough. The roadway is also designed as a scenic corridor by the County.

- The uses of Fort Monmouth lands along the Tinton Avenue frontage should be restricted to either very low intensity uses or buffering along the road. New curb cuts and significant traffic generators should not be located adjacent to Tinton Avenue.



- The central core of the Fort Monmouth site has great potential to serve as Tinton Falls' Town Center and the Borough hopes to create a new "Main Street" development running westward from Hope Road and terminating at the municipal complex adjacent to the Parkway. Along this Main Street and on the balance of the tract, a compact mixed-use, walking scale community could be developed. The Town Center should include a substantial commercial component as well as residential development, entertainment uses, and well defined public spaces including a possible new Library.

- Linkages to the neighborhoods of Tinton Falls should be carefully considered. The Town Center should also accommodate affordable housing. Consideration should be given to development of a hotel.

- A significant open space component should be included which can also connect the activity centers within the site and preserve the site's environmental features.

9.1.2 Comparison of Fort Monmouth Concept Plan and Local Plans

The following analysis identifies by municipality how the proposed concept reuse plan for Fort Monmouth compares with the local plans described above.

Oceanport (Proceeding from east to west on concept plan)

a. Concurrence

1. Medium density housing between NJ Transit line and Oceanport Ave.
2. The land areas along Oceanport Creek and Parker's Creek would be developed as natural open spaces
3. Marina
4. Mixed use retail/housing around Oceanport Ave.
5. Historic Parade Ground and surrounding structures preserved
6. Mixed Use resort/cottage retail along Parkers Creek (Borough refers to it as Riverfront Resort Development area)
7. Ecotech Park or McAfee Corporate Center - agreement except for name

b. Open

1. Municipal Complex - Borough plan includes it as part of the mixed-use area, while the FMERPA plan locates this facility at Barker Circle, where the Borough plan indicates University residences and fire station or municipal uses
2. Paterson Army Health Clinic, school - Oceanport proposes townhouses and professional offices (medical) while FMERPA Plan calls for a medical office building, apartments, townhouses and a limited number of detached small lot homes.
3. Homeless accommodations
4. The FMERPA Plan calls for single-family detached housing across the street from similar housing on Main Street.
5. Thoroughbred training and stabling facility (Oceanport Resolution #R-08-97 adopted June 19, 2008)

Eatontown

a. Concurrence

1. Howard Commons Area – this area is intended for housing in both Borough's and FMERPA's concept plans.
2. Relocate Borough administrative offices to the Mallette Hall.
3. Tinton Avenue (CR 537) should be extended as a through street across the base from Route 35 eastward to Oceanport
4. Open space areas

b. No Comments or acknowledgement

1. Hotel and conference center
2. Commercial incubator, community center retail and housing in Master Plan (there is a town center identified in the Howard Commons report)
3. Homeless accommodations

c. Open

1. Howard Commons Area – type of housing - FMERPA Plan calls for courtyard apartments and is silent on ownership and age restriction, while the Borough plan calls for age-restricted housing and condominiums

Tinton Falls

a. Concurrence

1. Town Center "Main Street" is identified in FMERPA Plan and Borough's concept plan
2. Commercial/general office
3. Open space to the east

b. Open

1. Homeless accomodations

9.2 Municipal Zoning Initiatives related to Fort Monmouth

The FMERPA plan development process would include public meetings with municipalities regarding the plan, which would provide a forum for communicating municipal positions on the base redevelopment. A formal procedure mandated as part of the FMERPA planning process requires a review of the draft FMERPA plan by municipal planning boards and comparison to the municipal Master Plan:

C.52:27I-15 Submission of proposed plan to constituent municipalities.

15. Prior to the adoption of the plan, or revision or amendment thereto, the authority shall transmit a copy of the proposed plan to the planning board of each constituent municipality. Within 45 days after referral, each planning board shall transmit to the authority a report containing its recommendation concerning the plan. This report shall include an identification of any provisions in the proposed plan that are inconsistent with the master plan and recommendations concerning these inconsistencies and any other matters as the board deems appropriate.

The host municipalities have indicated the following local zoning preferences for implementation and their implications:

Eatontown

Pending the finalization of a reuse plan for Fort Monmouth and the adoption of a redevelopment plan for Eatontown Village, no other zone changes are being recommended at this time to implement the land use element.

Oceanport

With the completion of the ***Fort to Village Plan: A Vision for Oceanport's Fort Monmouth***, Oceanport has articulated its vision for the redevelopment of the 419 acres of Fort Monmouth that lie within its boundaries. However, this plan does not represent the end of the process. As FMERPA proceeds through the development of the plan for the Fort, the ***Fort to Village Plan*** may be used by Oceanport to inform the FMERPA plan process and other regional and state planning initiatives.

The inclusion of the ***Fort to Village Plan*** in the local Master Plan would provide that the required referral and review by the Planning Board would capture the principles and concepts contained in the Concept Plan. Ultimately, the entire Master Plan should be updated to reflect the vision for Fort Monmouth.

Tinton Falls

Tinton Falls includes most lands on Fort Monmouth within the IOP Industrial/ Office Park Districts (IOP-10, IOP-15, IOP-20, IOP-25, IOP-35, and IOP-50). The IOP zones permitted and conditional uses are as follows:

1. Permitted uses include offices; hotels and motels; research facilities; hospital; veterinary hospitals; utilities; restaurants; restaurants with bar; manufacturing; fabrication and assembly operations; agricultural uses but not "farms"; tennis courts, gymnasiums, weight rooms and exercise centers; instructional centers; golf courses, parks, and other open space uses; elementary, middle, and high schools offering academic instruction with curriculums approved by the elementary and/or regional boards of education; retail/ warehouse uses, lumber yards, and home improvement centers; Borough uses; child care centers; automobile car wash in the IOP- 15, IOP-20 and IOP-25 districts; utility services; a continuing care retirement community (CCRC) under the provisions of a general development plan and certain requirements; and an active adult community in the IOP-35 zone.

2. Conditional uses include automobile service stations; permitted office, research, hospital, warehousing, manufacturing, fabrication and assembly operations shall be permitted limited accessory and incidental to retail outlets; warehousing; residence inns; outdoor equipment storage; commercial radio and other communications towers; a limited recycling operation in the IOP-20 district only; and assisted living residences.

The majority of the IOP zones are located in the center of the Borough, including lands at Fort Monmouth and Naval Weapons Station Earle. Several other smaller IOP zones are located in different sections of the Borough.

The Open Space Government Use designation represents a new land use category for Tinton Falls. This designation includes the County Park south of Route 33 and the County-owned parcels on the east side of Wayside Road. This category also includes those large publicly-held parcels including Fort Monmouth, Naval Weapons Station Earle, and the County Reclamation Center. The intent of this designation is to allow the existing activities on the properties as a matter of right while not committing to a specific zone assuming the properties become available for development.

It is recommended that the Borough give some thought to the ultimate disposition of these properties if they become available for development. For example, that portion of Earle located within Tinton Falls is an extremely valuable property from an open space perspective. It includes an extensive habitat suitable for rare and endangered species and would make an excellent open space tract. The landfill would ultimately close and could serve as an industrial park property or a portion might be used for intensive active outdoor recreation. The County should prepare a reuse Plan for the landfill's ultimate closure.

9.3 Monmouth County Plans

The Monmouth County Planning Board approach to planning is a reflection of the County Enabling legislation in New Jersey. Not having direct land use control, the County has assumed a leadership position by advocating for good planning at the municipal level, as well as preparing functional plans in cooperation with other County agencies. The following is a synopsis of the several plans the County has prepared.

Monmouth County Growth Management Guide

The Growth Management Guide was adopted by the Planning Board in December 1995. With a structure similar to the SDRP, outlining a series of goals, objectives, and policies in ten categories, the plan addresses air resources, centers, comprehensive planning, economic development, farmland preservation and agriculture development, historic, cultural, natural and scenic resources, housing, solid waste, transportation, and water resources.

Each of the categories has a goal with several objectives and related policies. The municipalities in Monmouth County use this document to address the statutory requirement of reviewing adjacent municipal plans, County plans, and the SDRP.

Monmouth County Open Space Plan

The Monmouth County Open Space Plan, adopted by the Monmouth County Planning Board, as an element of the Monmouth County Growth Management Guide in August 2006, specifically mentions the acquisition of a portion of the Fort Monmouth property as a new County park site. To fulfill this acquisition,

Monmouth County filed a Notice of Interest for park and recreation lands within Fort Monmouth property. The County subsequently filed an application to the National Park Service's Federal Lands to Park Program for a Public Benefit Conveyance, which was endorsed by the three host communities of Eatontown, Oceanport and Tinton Falls, and is consistent with their local land use policies and the current Fort Monmouth Reuse and Redevelopment Plan. This application was approved by the National Park Service on July 26, 2008. Conveyance of the requested property will be pursued as disposition and conveyance strategies are developed in conjunction with approval of the Reuse Plan.

Coastal Monmouth Plan

The Coastal Monmouth Plan (CMP) is a two-year regional planning effort that would create a vision for the future of the Monmouth County, NJ Atlantic Coastal Region, which spans over 27 miles of the New Jersey shoreline. Covering the region as a whole as well as each of the 30 municipalities within the study area (including Oceanport and Eatontown), the Plan's purpose is to help the communities prepare, collectively and individually, for sustainable growth, while protecting environmental resources and maintaining their unique coastal character.

The project started in the fall of 2006 and would be completed in the fall of 2008, with the Boroughs of Eatontown and Oceanport as two of the participants.

The Plan has several purposes:

a. To establish a set of planning alternatives to help coastal municipalities manage their remaining development potential, conserve open space, explore redevelopment opportunities and address the impacts of future growth on infrastructure, the natural environment, and the overall quality of life.

b. To formulate a plan that would be adopted as an element for the Monmouth

County Growth Management Guide.

c. To formulate a regional plan suitable for endorsement by the New Jersey State Planning Commission. (Project is receiving funding from the Department of Community Affairs).

The Plan would examine the region's land development pattern and identify the present and future capacity for growth to support economic development. Using demographic, socioeconomic and land use data, it would evaluate a set of planning alternatives to help the area guide future growth and conservation efforts. An Implementation Agenda would provide a strategic framework for municipalities, the County, and State agencies to follow in order to carry out identified strategies necessary to meet the vision of the Coastal Monmouth Region.

On March 15, 2007 the second meeting of the Coastal Regional Collaborative convened at Brookdale Community College, in the Student Life Center. Approximately 55 municipal representatives, stakeholders, and government agency officials from Monmouth County communities met. One of the announcements was that Freeholder Burry had asked the Monmouth County Planning Board to coordinate planning activities (of the study) with the Fort Monmouth Redevelopment Commission.

On May 30, 2007 a one-on-one meeting was conducted by the County with representatives from Neptune Township, Eatontown, and Ocean Township. The meeting took place at the Neptune City Borough Community Center. On June 13, 2007 a meeting was held with municipal representatives from Oceanport.

Monmouth County staff view redevelopment of the Fort as a regional issue, due to implications for vehicle traffic. The only definitive discussion items with the municipalities have been the need to maintain the Emergency Management Facility and the need to provide as much open space as possible. The County's involvement in the planning process would continue and evolve as the next steps occur.

9.4 New Jersey State Development and Redevelopment Plan

The New Jersey State Development and Redevelopment Plan (SDRP) is an outgrowth of the State Planning Act which was signed into law January 2, 1985. The SDRP was first adopted on June 12, 1992. It was revised and readopted on March 1, 2001 and presently is in the process of being reconsidered for readoption.

The purpose of the SDRP is to provide a vision for the future that would preserve and enhance the quality of life for all residents of New Jersey. The SDRP is the result of a cross-acceptance process that includes officials from counties, municipalities and the citizens of New Jersey in numerous public assemblies, discussing all of the major aspects of the Plan - its goals, strategies, policies, and application. This process ensures that the Plan belongs to the citizens of New Jersey, whose hopes and visions have shaped it.

Within the State Planning Act, the Legislature declared that the purpose of the SDRP is to:

Coordinate planning activities and establish Statewide planning objectives in the following areas: land use, housing, economic development, transportation, natural resource conservation, agriculture and farmland retention, recreation, urban and suburban redevelopment, historic preservation, public facilities and services, and intergovernmental coordination (N.J.S.A. 52:18A-200(f)

The objectives of the SDRP are outlined in its statewide goals and strategies, as follows:

1. Revitalize the State's Cities and Towns

- Protect, preserve, and develop the valuable human and economic assets in cities, towns, and other urban areas. Plan to improve their livability and sustainability by investing public resources in accordance with current plans which are consistent with the provisions of the State Plan. Leverage private investments in jobs and housing; provide comprehensive public services at lower costs and higher quality; and improve the natural and built environment. Incorporate ecological design through mechanisms such as solar access for heating and power generation. Level the playing field in such areas as financing services, infrastructure, and regulation. Reduce the barriers which limit mobility and access of city residents, particularly the poor and minorities, to jobs, housing, services, and open space within the region. Build on the assets of cities and towns such as their labor force, available land and buildings, strategic location, and diverse populations.

2. Conserve the State's Natural Resources and Systems

- Conserve the state's natural resources and systems as capital assets of the public by promoting ecologically sound development and redevelopment in the Metropolitan and Suburban Planning Areas, accommodating environmentally designed development and redevelopment in Centers in the Fringe, Rural and Environmentally Sensitive Planning Areas, and by restoring the integrity of natural systems in areas where they have been degraded or damaged. Plan, design, invest in and manage the development and redevelopment of Centers and the use of land, water, soil, plant, and animal resources to maintain biodiversity and the viability of ecological systems. Maximize the ability of natural systems to control runoff and flooding, and to improve air and water quality and supply.

3. Promote Beneficial Economic Growth Development and Renewal for All Residents of New Jersey

- Promote socially and ecologically beneficial economic growth, development and renewal, and improve both the quality of life and the standard of living of New Jersey residents, particularly the poor and minorities, through partnerships and collaborative planning with the private sector. Capitalize on the state's strengths—its entrepreneurship, skilled labor, cultural diversity, diversified economy and environment, strategic location and logistical excellence—and make the state more competitive through infrastructure and public services cost savings and regulatory streamlining resulting from comprehensive and coordinated planning. Retain and expand businesses, and encourage new, environmentally sustainable businesses in Centers and areas with existing infrastructure. Encourage economic growth in locations and ways that are both fiscally and environmentally sound. Promote the food and agricultural industry throughout New Jersey through coordinated planning, regulations, investments and incentive programs—both in Centers to retain and encourage new businesses and in the Environs to preserve large contiguous areas of farmland.

4. Protect the Environment, Prevent and Clean-Up Pollution

- Develop standards of performance and create incentives to prevent and reduce pollution and toxic emissions at the source, in order to conserve resources and protect public health. Promote the development of businesses that provide goods and services that eliminate pollution and toxic emissions or reduce resource depletion. Actively pursue public/private partnerships, the latest technology, and strict enforcement to prevent toxic emissions and clean up polluted air, land, and water without shifting pollutants from one medium to another; from one geographic location to another; or from one generation to another. Promote ecologically designed development and redevelopment in the Metropolitan and Suburban Planning Areas and accommodate ecologically designed development in Centers in the Fringe, Rural, and Environmentally Sensitive Planning Areas, to reduce automobile usage; land, water and energy consumption; and to minimize impacts on public health and biological systems, water and air quality. Plant and maintain trees and native vegetation. Reduce waste and reuse and recycle.

5. Provide Adequate Public Services at a Reasonable Cost

- Provide infrastructure and related services more efficiently by supporting investments based on comprehensive planning and by providing financial incentives for jurisdictions that cooperate in supplying public infrastructure and shared services. Encourage the use of infrastructure needs assessments and life-cycle costing. Reduce demands for infrastructure investment by using public and private markets to manage peak demands, applying alternative management and financing approaches, using resource conserving technologies and information systems to provide and manage public facilities and services, and purchasing land and easements to prevent development, protect flood plains and sustain agriculture where appropriate.

6. Provide Housing at a Reasonable Cost

- Provide adequate housing at a reasonable cost through public/private partnerships that create and maintain a broad choice of attractive, affordable, ecologically designed housing, particularly for those most in need. Create and maintain housing in the Metropolitan and Suburban Planning Areas and in Centers in the Fringe, Rural, and Environmentally Sensitive Planning Areas, at densities which support transit and reduce commuting time and costs, and at locations easily accessible,

preferably on foot, to employment, retail, services, and cultural, civic, and recreational opportunities. Support regional and community-based housing initiatives and remove unnecessary regulatory and financial barriers to the delivery of housing at appropriate locations.

7. Preserve and Enhance Areas with Historic, Cultural, Scenic, Open Space, and Recreational Values

- Enhance, preserve and use historic, cultural, scenic, open space, and recreational assets by collaborative planning, design, investment, and management techniques. Locate and design development and redevelopment and supporting infrastructure to improve access to and protect these sites. Support the important role of the arts in contributing to community life and civic beauty.

8. Ensure Sound and Integrated Planning and Implementation Statewide

- Use the State Plan and the Plan Endorsement process as a guide to achieve comprehensive, coordinated, long-term planning based on capacity analysis and citizen participation; and to integrate planning with investment, program, and regulatory land-use decisions at all levels of government and the private sector, in an efficient, effective, and equitable manner. Ensure that all development, redevelopment, revitalization, or conservation efforts support State Planning Goals and are consistent with the Statewide Policies and State Plan Policy Map of the State Plan.

These objectives are to be achieved through a series of statewide policies addressing equity, comprehensive planning, public investment priorities, infrastructure investments, economic development, urban revitalization, transportation, historic, cultural and scenic resources, air resources, water resources, open lands and natural systems, energy resources, waste, recycling and brownfields, agriculture, coastal resources, planning established by state statue (Meadowlands, Pinelands and Highlands), special resource areas, and design.

These statewide objectives are applied through the State Plan Policy Map which is divided into six (6) planning areas and five (5) levels of Centers. The planning areas, which do not coincide with municipal boundaries, attempt to address growth in terms of its character, location, and magnitude. The planning areas are:

1. ***Metropolitan Planning Area*** - The communities within the Metropolitan Planning Area have many things in common: mature settlement patterns resulting in a diminished supply of vacant land; infrastructure systems that generally are beyond or approaching their reasonable life expectancy; the need to rehabilitate housing to meet ever changing market standards; the recognition that redevelopment is, or would be in the not-too-distant future, the predominant form of growth; and a growing realization of the need to regionalize an increasing number of services and systems in light of growing fiscal constraints.

2. ***Suburban Planning Area*** - The Suburban Planning Area is generally located adjacent to the more densely developed Metropolitan Planning Area, but can be distinguished from it by a lack of high intensity urban form, by the availability of developable land, and by a more dispersed and fragmented pattern of predominantly low-density development. These areas are or would be served by regional infrastructure, except that, outside of Centers and major transportation corridors, there is limited, if any, availability of alternative modes of transportation to the automobile. These areas have generally been designated for growth in municipal Master Plans. As development expands, these services would become increasingly available if planned properly.

3. ***Fringe Planning Area*** - The Fringe Planning Area is a predominantly rural landscape (not prime agricultural or environmentally sensitive land) with scattered small communities and free-standing residential, commercial, and industrial development. Large investments in water and sewer and local road networks have not occurred and circulation is primarily provided by state and county highways supplemented by locally-maintained roads. Investments in water and sewer are mainly in existing or proposed Centers.

4. ***Rural Planning Area*** - The open lands of the Rural Planning Area include most of New Jersey's prime farmland, which has the greatest potential of sustaining continued agricultural activities in the future. They also include wooded tracts, lands with one or more environmentally sensitive features, and rural towns and villages.

4B. ***Rural/Environmentally Sensitive Planning Area*** - Some lands in the Rural Planning Area (PA4) have one or more environmentally sensitive features qualifying for delineation as Rural/ Environmentally Sensitive (PA4B). This sub-area contains valuable ecosystems or wildlife habitats. Rural/Environmentally Sensitive Planning Areas are supportive of agriculture and other related economic development efforts that ensure diversity within New Jersey. Any development or redevelopment planned in the Rural/Environmentally Sensitive Area should respect the natural resources and environmentally sensitive features of the area.

5. ***Environmentally Sensitive Planning Area*** - The Environmentally Sensitive Planning Area contains large contiguous land areas with valuable ecosystems, geological features and wildlife habitats. The Environmentally Sensitive Planning Area is highly vulnerable to damage of many sorts from new development in the Environs, including fragmentation of landscapes, degradation of aquifers and potable water, habitat destruction, extinction of plant and animal species and destruction of other irreplaceable resources which are vital for the preservation of the ecological integrity of New Jersey's natural resources.

Centers are the SDRP's preferred vehicle for accommodating growth. Center-based development patterns are superior to sprawl for a number of reasons (see sidebar on page 231). A Center's compact form is considerably more efficient than sprawl, providing opportunities for cost savings across a wide range of factors. Compact form also translates into significant land savings. A Center's development form and structure, designed to accommodate diversity, is also more flexible than single-use, single-purpose sprawl, allowing Centers to evolve and adapt over time, in response to changing conditions and markets. Centers promote community, protect the environment, provide enhanced cultural and aesthetic experiences, and offer residents a superior quality of life. The five types of centers are:

Urban Center- Generally the largest Centers, offering the most diverse mix of industry, commerce, services, residences and cultural facilities (Newark, Jersey City, Atlantic City, Camden)

Regional Centers - A compact mix of residential, commercial and public uses, serving a large surrounding area and developed at an intensity that makes public transportation feasible. (Red Bank, Eatontown, Long Branch).

Towns - Traditional Centers of commerce or government throughout New Jersey, with diverse residential neighborhoods served by a mixed-use Core offering locally oriented goods and services (Freehold, Highland Park, Matawan, Atlantic Highlands)

Villages - Primarily residential places that offer a small Core with limited public facilities, consumer services and community activities (Englishtown, Pine Brook, Hance Park)

Hamlets- Small-scale, compact residential settlements organized around a community focal point, such as a house of worship, luncheonette, small park or a civic building (Adelphia, Imlaystown)

The SDRP is shaped through a Cross-Acceptance process that involves all stakeholders. In the State Planning Act Cross-Acceptance is the prescribed method for advancing the goals and vision of the SDRP. According to the Act it is:

"a process of comparison of planning policies among governmental levels with the purpose of attaining compatibility between local, county and State plans. The process is designed to result in a written statement of agreement or disagreement and areas requiring modification by parties to the cross acceptance." (N.J.S.A. 52:18A-202.b.)

This description has been embodied in rules which in turn have led to a process of comparison and identification of issues and recommendations by the counties such as Monmouth on behalf of its municipalities. It then proceeds to series of negotiations where agreements, disagreements, and issues which require further discussion are identified or are resolved in the process of Plan Endorsement. The agreed upon issues result in revisions or modifications to the SDRP and the points of disagreement and further issues in need of refinement move forward into the final phase of Cross-Acceptance, the issue resolution phase.

Implementation of SDRP is carried out by State agencies, regional entities, Counties, and municipalities. State agencies do it by not only participating in the Cross-Acceptance process but also by incorporating the SDRP's policies and provisions into their functional plans such as transportation, water supply, and wastewater management. Along with regional agencies, State agencies use the policies of the SDRP in their public investments and in their regulatory programs, such the Coastal Area Facilities Review Act (CAFRA) which utilizes the State Plan Policy Map to regulate impervious surface.

On April 28, 2004 the State Planning Commission approved the release of the Preliminary State Development and Redevelopment Plan (State Plan) and the Preliminary State Plan Policy Map. This action launched the third round of Cross-Acceptance. At the same time a revised State Plan Policy Map was also released. Both documents did not impact Fort Monmouth.

As 2008 progresses, the Cross-Acceptance process is in the final phase. Monmouth County's negotiation with the State Planning Commission concluded with a public hearing on August 21, 2007. Nine agreements between the State Planning Commission and the County were reached which involved Tinton Falls, but none of them impacted Fort Monmouth. The State Planning Commission is now in the process of preparing a Final Draft Plan.

Municipalities and counties can implement the policies and provisions of the SDRP informally or formally. The formal process is called Plan Endorsement. It ensures that municipal, County, regional, and State Agency plans are consistent with the State Development and Redevelopment Plan and with each other. An endorsed plan entitles municipalities and counties to a higher priority for available funding, streamlined permit reviews, and coordinated state agency services. Priority is given to county and regional strategic plans.

In Monmouth County several regional initiatives have been advanced by the County Planning Board. The most advanced is the Western Monmouth Development Plan which involves Howell, Freehold, Marlboro and Manalapan Townships, Freehold, Englishtown and Farmingdale. Other Monmouth County efforts have resulted in pre-petition meetings for the Coastal Region Plan involving Allenhurst, Little Silver, Rumson, Asbury Park, Loch Arbour, Sea Bright, Avon, Long Branch, Sea Girt, Belmar, Manasquan, Shrewsbury Borough, Bradley Beach Monmouth Beach, Shrewsbury Township, Brielle, Neptune City, South Belmar, Deal, Neptune Township, Spring Lake, Eatontown, Ocean Township, Spring Lake Heights, Fair Haven, Oceanport, Wall, Interlaken, Red Bank, and West Long Branch.

A pre-petition meeting was also held for the Bayshore Plan involving Atlantic Highlands, Aberdeen Township, Hazlet, Holmdel Township, Keansburg, Highlands, Keyport, Matawan, Middletown, and Union Beach.

It is anticipated that upon completion of the Coastal Monmouth Plan it would be filed with the State Planning Commission for Plan Endorsement.

It is recommended that each of the Fort Monmouth municipalities petition the State Planning Commission for Plan Endorsement, particlarly since the FMERPA Plan recommends a new center in each of the three municipalities. Eatontown held a pre-petition meeting for Plan Endorsement with the Office of Smart Growth and other State agencies on November 20, 2007. Oceanport, which falls within the CAFRA zone, would be required to work with the Office of Smart Growth and NJDEP to designate the Town Center within the Borough.

9.5 Fair Housing Considerations

Existing Housing on Fort Monmouth

According to the official report from the Garrison, the existing complement of housing on Fort Monmouth is less than 1,000 dwelling units. Table 9-1 shows additional detail.

Council on Affordable Housing

Affordable housing is an important part of a balanced land use plan. Yet defining the dimensions of affordable housing need is difficult. The range of below market rate housing options serves a clientele that spans from the homeless to households spending an inordinate amount of income on housing (cost burden), but it also includes the workforce housing needed to assure that New Jersey can remain competitive in attracting and retaining industry.

New Jersey is a national leader in defining the affordable housing obligations of its municipalities. Home to the Mount Laurel doctrine, a pronouncement of New Jersey's Supreme Court that identified the constitutional obligation, municipalities are held accountable to assure that the zoning governing lands within their borders provides a realistic opportunity for the creation of the municipality's fair share of the affordable housing need in the region.

New Jersey has codified the Mount Laurel decisions through the Fair Housing Act and Administrative Code regulations of the Council on Affordable Housing (COAH). Charged with calculating and disaggregating affordable housing needs in the state, COAH has on several occasions promulgated substantive and procedural rules governing the production of affordable housing. In their initial iteration, the COAH rules calculated regional housing need for rehabilitation of substandard units occupied by lower income households and for the construction of new units to meet regional needs. "Fair share" assignments were made on a municipality by municipality basis requiring a minimum, that local zoning provide a realistic opportunity to accommodate these units. In subsequent iterations of the rules, referred to as the Second Round and Third Round rules, the calculated need assessments

were reexamined and adjusted. In the Third Round rules a new concept was included which is referred to as "growth share". The Third Round rules continue assignment of rehabilitation need, prior round recalculated need, and the new growth share element. The Third Round rules were effective December 20,2004 and amended on May 15, 2006. These rules projected that the Statewide need for housing affordable to low- and moderate-income households approximated roughly 53,000 dwelling units.

New Jersey's Appellate Division concluded in January 2007 that the initial Third Round rules were flawed and directed COAH to remedy certain defects and promulgate revised rules. Among the criticisms by the Appellate Division was its finding that the rules would not realistically accomplish the identified need and in fact understated the extent of such need.

In the initial Third Round rules, growth share required the production of an affordable unit for every eight new market rate dwelling units. Affordable housing obligations also accrued from job creation, and the original Third Round rules required one affordable unit for every 25 jobs, with the calculation of jobs based on floor area by building use group, a typology used by the New Jersey Department of Community Affairs in its administration of the Uniform Construction Code.

After revisiting the need calculations, COAH proposed a target of 115,666 affordable units statewide by the year 2018 and modified several of the terms of the growth share provision. Most notably, the affordable housing production requirements doubled from one affordable unit per eight market-rate dwelling units (one affordable among 9 total units) to one affordable unit per four market-rate dwelling units (one affordable among 9 total units). A fifth market unit is provided as the presumptive compensatory benefit in return for construction of one

Table 9-1: Existing Housing

Neighborhood	# Units	Total Occupied	% Occupied	Total Vacant	Vacant Ready	Vacant Not Ready
Russel/Allen	32	27	84.38%	5	4	1
Russel/Carty	36	31	86.11%	5	5	0
Megill	42	37	88.10%	5	1	4
Hope/Hemphill/Guam Ln	22	20	90.91%	2	2	0
Gosselin	45	45	100.00%	0	0	0
Howard Commons	486	0	0.00%	486	0	486
TOTALS:	663	160	24.13%	503	12	491
Lodging Buildings:						
361, 362, 363, 364, 270*, 271, 1077, 1078	251					
Total w/lodging	914					
Dorm Rooms* @ Prep School	71					
Total w/lodging and Dormitory Rooms	985					
**Dormitory Rooms and Building 270 units do not have individual kitchens or kitchenettes.*						
216 Includes both sides of double units (19 double units)						
1, 3, 5, 7 Gosselin Avenue-Quarters not renovated						

affordable housing unit. Application of the growth share concept has also been modified in NJAC 5:97 et seq., with jobs gained from non-residential space accruing an obligation for one affordable unit for every 16 jobs.

Additionally, where demolished dwelling units were previously subtracted from the growth share obligation under the initial Third Round rules, such residential reconstruction would be considered a new unit with a growth share obligation, despite the fact that the net number of dwelling units has not increased with the removal and replacement of an existing dwelling.

On May 6, 2008, COAH adopted N.J.A.C. 5:97, which became effective on June 2, 2008. In consideration of the extensive public comments, COAH also proposed amendments to N.J.A.C. 5:97, which were published on June 16, 2008 with a public comment period extending to August 15, 2008. The proposed rule also recalculated the housing need by municipality, producing the third set of affordable housing assignments that municipalities have had to address in the Third Round.

Prospects for redevelopment at Fort

Monmouth received a boost on July 17, 2008, when Governor Corzine signed the latest amendment to the Fair Housing Act (A-500/S-1783) making FMERPA one of the regional planning entities whose jurisdiction is called out for special COAH treatment. As a result of this legislation, COAH is convening a working group including mayors of the host towns to address key issues related to the method of calculating affordable housing obligations. This will be particularly important to FMERPA's ability to adopt and implement a viable reuse plan for robust redevelopment.

Recognizing that COAH's presumptive affordable housing set-aside (at least 20 percent of the residential units) could interfere with the economic feasibility of the redevelopment of Fort Monmouth, the Act now provides potential adjustments of the COAH obligation, which can mitigate the dire circumstances surrounding the Fort closing. This could be essential to an economically viable plan, especially since municipal compliance options are changing at a time when municipal affordable housing obligations have increased dramatically. The elimination of the Regional Contribution Agreement (RCA), a key COAH compliance mechanism

that allowed municipalities to fund affordable housing construction outside their jurisdiction, puts new pressure on the State's remaining vacant lands and municipal resources.

A statewide commercial development fee (2.5% of value), which became effective upon signing by the Governor, now provides the uniform mechanism whereby commercial developers can discharge the affordable housing obligation they create for the municipality. As Fort Monmouth's closing impacts the host municipalities and the regional economy, prospects for timely and efficient redevelopment will depend on the economics of the plan, and a unique approach to the COAH mandate, as envisioned in the Fair Housing Act, will be essential.

As FMERPA examines the affordable housing responsibilities affecting the Fort Monmouth lands, several facts must be recognized:

1. Currently, due to its existence as a federally-owned property, Fort Monmouth accrues no affordable housing obligation according to the Fair Housing Act and the COAH rules. Any responsibility for accomodating future affordable housing needs resides with the municipality to which the housing obligation would be assigned or within which growth occurs. However, the Reuse Plan accomodates the future possibility of affordable housing units in each of the three host municipalities on the Fort Monmouth property.
2. The US Department of Housing and Urban Development has prioritized the reuse of military installations closed through the Base Realignment and Closing Commission procedure for housing of the homeless. This is a burden not imposed by the State of New Jersey and not quantified by any government agency. The Corporation for Supportive Housing conducted a HUD mandated Point In Time Survey on January 29, 2008 under contract to the New Jersey Housing and Mortgage Finance Agency (HMFA). This survey identified 452 homeless persons in Monmouth County, representing 6% of the Statewide total.
3. The proposed redevelopment at Fort Monmouth would be substantially impacted by the cost implications of the proposed COAH rules, although the uncertain nature of the final rule provisions makes this impact difficult to accurately predict.

In summary, the impact of COAH's affordable housing requirements to the host municipalities, as they relate to Fort Monmouth's redevelopment, is not possible to predict accurately at this time. However, with the recent adoption of N.J.A.C. 5:97, and with amendments currently proposed, the effective rules and the proposed amendments result in the following COAH-assigned municipal affordable housing obligations.

Eatontown

- Under the original Third Round rules Eatontown's total fair share obligation was comprised of a municipality's rehabilitation share, the total remaining obligation from prior rounds, and the growth share. As indicated in Appendix C of N.J.A.C. 5:94, Eatontown's rehabilitation share was 12 units, and Eatontown's total remaining obligation from prior rounds was 503 units. Eatontown's growth share obligation was 69 units.

- Under the newly effective N.J.A.C. 5:97, Eatontown's rehabilitation share is 32 units, and Eatontown's total remaining obligation from prior rounds is 504 units. Eatontown's growth share obligation is 429 units.

- Under the proposed amendments to N.J.A.C. 5:97 the only change is in the growth share, which is proposed to increase to 491 units.

Table 9-2: Housing Rules

Municipal Fair Share	Rehabilitation	Prior Round Obligation	Growth Share
Eatontown			
Original Round 3 (N.J.A.C. 5:94)	12	503	69
Effective rules N.J.A.C. 5:97	32	504	429
Proposed amendments	32	504	491
Oceanport			
Original Round 3 (N.J.A.C. 5:94)	0	157	26
Effective rules N.J.A.C. 5:97	0	149	43
Proposed amendments	0	149	53
Tinton Falls			
Original Round 3 (N.J.A.C. 5:94)	0	655	178
Effective rules N.J.A.C. 5:97	26	622	555
Proposed amendments	26	622	494

Source: Banisch Associates, Inc.

Oceanport

- As indicated in Appendix C of N.J.A.C. 5:94, Oceanport's original Third Round rehabilitation share was 0, the total remaining obligation from prior rounds was 157 units and the growth share obligation was 26 units.

- Under N.J.A.C. 5:97 as recently adopted, Oceanport's rehabilitation share is 0 units, Oceanport's total remaining obligation from prior rounds is 149 units and the growth share obligation is 43 units.

- Under the proposed amendments Oceanport's growth share obligation would increase to 53 units.

Tinton Falls

- As indicated in Appendix C of N.J.A.C. 5:94, Tinton Falls' initial Third Round rehabilitation share was 0, the total remaining obligation from prior rounds was 655 units, and the Tinton Falls' growth share obligation was 178 units.

- Under N.J.A.C. 5:97, Tinton Falls' rehabilitation share is 26 units, the total remaining obligation from prior rounds is 622 units, and Tinton Falls' growth share obligation is 555 units.

- Under the proposed amendments, Tinton Falls' growth share would decrease to 494 units

Housing for the Homeless

According to the Base Closure Community Redevelopment and Homeless Assistance Act of 1994 (Pub. L. 103-421) ("Homeless Assistance Act"), State and local governments, representatives of the homeless, and other interested parties may submit to the local redevelopment authority a notice of the interest in the buildings or property, or any portion thereof. The local redevelopment authority can negotiate with qualified homeless providers to accommodate some of the needs of the homeless on the base. The redevelopment authority shall, in preparing the reuse and redevelopment plan, consider these interests to assist the homeless in the use of the buildings and property at the installation that are expressed in the notices of interest submitted to the redevelopment authority.

While there are no numerical requirements stipulated in the Homeless Assistance Act, the property at Fort Monmouth would accommodate a variety of opportunities to serve the homeless, which would be required in order to receive HUD approval of FMERPA's reuse plan.

The accommodations that are supported by FMERPA and being submitted to HUD are:

1. Building 501, currently the Counseling Center, is recommended to be conveyed to Family Promise, a faith-based non-profit organization, for use as a day center for up to 10 homeless families. As no families would be in residence at this location, there would be no additional burden on the local school district.

2. A single adult shelter to house up to 40 homeless single adults. This shelter is currently located on Fort Monmouth in Buildings 417 and 421. As these buildings are currently in the FEMA designated flood plain and the shelter is not appropriately located in their current location for the development planned for that area of the Fort Monmouth, a new shelter is proposed to be built to the east of Squier Hall. Should it become necessary to vacate the current facilities before the new shelter is built, facilities would need to be made available in the interim. As no children would be in residence at this shelter, there would be no additional burden on the local school district.

3. Building 270, a lodging facility is recommended to be conveyed to the Affordable Housing Alliance as part of a Permanent Supportive Housing Bank. This building is proposed to house an assisted living, Single Room Occupancy (SRO) program. This facility would consist of a minimum of 16 bedroom units. As no families would be in residence at this location, there would be no additional burden on the local school district.

4. A total of 40 single family units for permanent supportive housing are recommended to be conveyed to the Affordable Housing Alliance as part of a Permanent Supportive Housing Bank. These units would be located at scattered sites within the housing units planned for the Eatontown and Tinton Falls reuse areas. It is proposed that these units consist of two - 4 bedroom units, eight – 3 bedroom units, twenty – 2 bedroom units and ten – 1 bedroom units.

5. Additionally, 180 Turning Lives Around, Inc. would be acquiring and constructing an expanded, replacement, safe house for victims of domestic violence and their children at an off-site property located within the Fort Monmouth Region. FMERPA is recommending that a monetary accommodation in the amount of $4.5 million be given to 180 Turning Lives Around, Inc. to help fund the acquisition and construction of this new safe house at an off-site location.

Although not a homeless accommodation, FMERPA would also be recommending conveyance of land to accommodate a Public Benefit Conveyance Notice of Interest request, for Self-Help Housing.

10.0 NEXT STEPS: IMPLEMENTING THE VISION

10.0 Next Steps: Implementing the Vision

The vision for the reuse and redevelopment of Fort Monmouth calls for the creation of a Sustainable Technology Community composed of activity zones designed to energize the site and blend with the fabric of the host communities, while also respecting existing neighborhood character. This Plan has been developed in cooperation with the host municipalities and Monmouth County, who have identified local objectives, and is documented in the preceding chapters of this Plan through diagrams, plans, illustrations, text, and tabular data.

This chapter identifies the necessary steps for realizing the Fort's transformation into a built Sustainable Technology Community. The planning process for reaching the desired results for the Reuse Areas does not end with the completion of this Plan. Additional review and analysis would need to occur prior to the formal adoption of a preferred Final Reuse Plan. The following steps are necessary to finalize the Plan and begin the process of implementation.

10.1 Implementation

1. RESOLVE COAH OBLIGATIONS

The revised Third Round COAH rules, outlining municipal affordable housing obligations, were up for adoption in June 2008. FMERPA commented on the proposed rule, asking whether the affordable housing obligation related to Fort Monmouth could be met by the host municipalities on a regional rather than individual basis. FMERPA and the Boroughs are involved in ongoing discussions to clarify the COAH obligation for the redevelopment of Fort Monmouth and the three municipalities.

2. FINALIZE COMMUNITY IMPACT ANALYSIS

The multi-disciplinary planning team and FMERPA have held extensive discussions with the communities regarding the assessment. Fully analyzing, developing, understanding, and building consensus on the potential impacts of the area's reuse and redevelopment are critical to the Plan's adoption by FMERPA with support of the local municipalities. Coordination between FMERPA, the planning team, and the community will continue beyond the release of this Final Plan.

3. EXPLORE POTENTIAL BENEFITS OF A REVENUE SHARING MODEL OR INTER-LOCAL AGREEMENTS

A model for Revenue and Cost Sharing that provides a win-win-win scenario for the three Boroughs can only be developed with a full understanding of the community impacts of redevelopment and reuse. During this ongoing phase of work, a range of sharing structures should be explored. These could include formation of an oversight entity, or the establishment of a series of inter-local agreements between the Boroughs to provide the required services in an efficient manner.

4. CONCEPT PLAN ADOPTED

This Reuse Plan is intended to serve as a guiding document to FMERPA and other regulatory authorities as the Reuse Plan is evaluated. FMERPA adopted the Reuse Concept Plan on September 03, 2008, understanding that the Final Reuse Plan would continue to evolve. The adoption of the Reuse Concept Plan sends an important message to community members and state and local officials that FMERPA supports the Reuse Plan and planning essentials set forth in the Plan.

5. PROMOTE THE REUSE PLAN

FMERPA should continue to review the Plan with the host municipalities and other public and private stakeholders. This would enable FMERPA to maintain a level of public involvement and continually receive, and incorporate into the planning process, valuable public input, a crucial process for building consensus and setting the stage for successful implementation. To communicate the vision for the Reuse Areas, a variety of media should be engaged including brochures, websites, and print and televised media. These vehicles would allow FMERPA to promote the Plan, and make it a tool for transformation of Fort Monmouth that "learns" how to evolve in response to changing economic and other circumstances. To aid this process, the State, municipalities, and FMERPA should develop a communications strategy and allocate funds to ensure the sustained promotion of the Plan.

6. COLLABORATE

The strength and viability of the Plan would rely on multi-level partnerships. These should include partnerships between the State of New Jersey, Monmouth County, and the host and adjacent Boroughs, the Department of the Army, the Department of Housing and Urban Development (HUD), local advocates, and the redevelopment community.

The Reuse Plan is just one component of the larger BRAC process. Additional review of the Plan is necessary and the Final Reuse Plan should incorporate the requirements of NJDEP regarding cleanup, the implications of newly-adopted COAH requirements, compliance with the NJ SHPO requirements, and the HUD Homeless Screening Process.

7. ADOPT ZONING AND A FORM-BASED CODE

The Fort Monmouth Implementation Local Redevelopment Authority (LRA) should adopt a Form-Based Code to guide the redevelopment process. The Code should be referred to the three Boroughs as required by N.J.S.A. 52-27I-14.

A Form-Based Code would allow as-of-right development of the property in conformance with standards designed to achieve the stated vision of the Reuse Area, and eliminate the guessing game often associated with conventional zoning. Recognizing that the Reuse Area would continue to contain valuable historic resources, the Form-Based Code would include mechanisms for the proper maintenance of historic structures and a strict review process for new development. Appropriate regulations that are supportive of community-endorsed policies can encourage reuse and redevelopment by providing transparency, clarity, and certainty. By establishing clear standards that support the Boroughs' vision, a Form-Based Code would provide a visual guide to design character, helping FMERPA and the communities assure that reuse and redevelopment would occur in a desirable fashion

8. ESTABLISH THE OFFICE OF THE POST ARCHITECT

FMERPA's Implementation LRA should establish the Office of the Post's Architect and establish the position of Post Architect. This professional should have a full understanding of the principles that underpin the Reuse Plan, as well as a comprehensive understanding of the historical significance and heritage of Fort Monmouth. The Post Architect should oversee the application of the Fort's zoning and form-based code. The Post Architect in concert with the LRA and local authorities would review development and building plans for compliance with regulating ordinances and provide design guidance as the Plan evolves over time.

9. EVALUATE STAFFING NEEDS OF THE IMPLEMENTATION LRA

At the conclusion of the Planning LRA's duties, an Implementation LRA should be formed to oversee the reuse and redevelopment of the Post. Consideration of the specialized staffing needs should be undertaken in the near future. A staffing Plan should be developed to address Post promotion and marketing, day to day operations, implementation of the reuse Plan, economic development policies and incentives, environmental protection, historic preservation, maintenance of facilities and infrastructure, legal counsel, ongoing public communications, and administrative support.

10. MAINTAIN INFRASTRUCTURE

Resources need to be made available to insure that infrastructure repairs are met by Federal Authorities while they still control the property. Some infrastructure demands would be met by market forces and user fees, while other services would require ongoing support of the LRA, Boroughs, or County such as police and fire protection, maintenance of streets, roads, bridges and parks. Returning infrastructure in working condition to the appropriate authority is critical to early success of the Plan. Additional investigation of how the utility infrastructure would be operated is warranted as it could provide revenue to the LRA in support of future reuse.

11. BEGIN ENVIRONMENTAL CLEAN-UP

Fort Monmouth clean-up before reversion is critical. The Implementation LRA should analyze the options for clean-up and remediation of contaminated areas of the Post. Discussion with the federal government to further understand clean-up funding availability and timetables should be undertaken. Alternative approaches to federal clean-up including privatization for the clean-up process warrant exploration.

12. PURSUE FUNDING MECHANISMS

To achieve the goals for reuse of Fort Monmouth, discussions should be entered into with Federal, State, County, and Borough representatives to further explore a variety of funding mechanisms. Key funding sources used at other base closings include:

- Bonds and private debt
- Federal, State, County and Local Government Appropriations
- Federal and State grants
- Local Redevelopment Authority revenues.

Additional funding sources for reuse and redevelopment include private foundation grants, private investment capital, tax credits, impact fees, business improvement districts, and special assessment districts. The format of real estate transactions would also have an impact on the degree to which funding would be needed from public sources. Short- and long-term leases and rental opportunities, as well as the sale of structures and property can assist with lessening the financial impact of the maintenance and upkeep of the property.

13. ATTAIN SHPO APPROVAL OF HISTORIC DISTRICT(S)

The LRA should hire a Historic Preservation Consultant to prepare the necessary studies and reports for SHPO in support of the creation of historic districts at the Post. These analyses should also prepare a plan for the long-term maintenance and protection of the Post's valuable heritage resources.

14. PRO-ACTIVELY MARKET FORT MONMOUTH

Additional plans and strategies would be required in the years ahead to properly market and position Fort Monmouth. The Implementation LRA should further detail and implement a marketing strategy to attract businesses, residents, institutions, and visitors to Fort Monmouth. This strategy should focus on the branding and identity of Fort Monmouth as a Sustainable Technology Community, where heritage tourism, protected open spaces and economic vitality are combined for a desirable quality of life and beneficial future as these areas formerly behind the fence become reintegrated into the fabric of the boroughs.

10.2 Impact Statement

The County of Monmouth and the communities contiguous to Fort Monmouth have long enjoyed a communal relationship with both the employees and the military personnel at the Fort. This social and economic interaction has been an essential fiber in the fabric of this Central New Jersey region. The strength of this fabric has been severely diminished as a result of the 2005 BRAC decision to close Fort Monmouth. The impact of this decision cuts across a myriad of social and economic issues, many of which are being addressed through the creation of the Fort Monmouth Reuse and Redevelopment Plan and the associated economic, social, and infrastructure studies that support the Plan. In order for this region to continue to prosper following the Fort closure as dictated by the BRAC decision, careful and measured execution of a robust economic revitalization strategy is mandatory. This should be carried out in concert with addressing the obvious needs for affordable housing and the homeless continuum. The uncertainty that these elements bring to the residents of the three host communities of Tinton Falls, Eatontown, and Oceanport, which are already reeling from the economic downturn and one of the most severe tax burdens in the country, is further aggravated by the enormity of the prospective infrastructure costs that their towns face.

While the Plan itself, as a land use concept, enjoys the support of a majority of the area's people, much of the skepticism of its execution is centered around the cost and the time to execute the Plan. Necessary improvements to essential components such as electrical service, potable water, sewerage treatment, sludge removal and treatment, local and regional traffic mitigation, and public transportation availability will require extensive funding, very little if any of which will be available from an already deficit ridden State. Without the necessary funding from private or federal sources to address these essential components, the Plan, regardless of its enormous upside potential, may fail. And failure is not an option.

Therefore, we look forward to addressing this Plan, its potential contributions to the revitalization of the region, and its attendant needs, with our colleagues at the Department of the Army.

11.0 Existing Buildings Plan and Index

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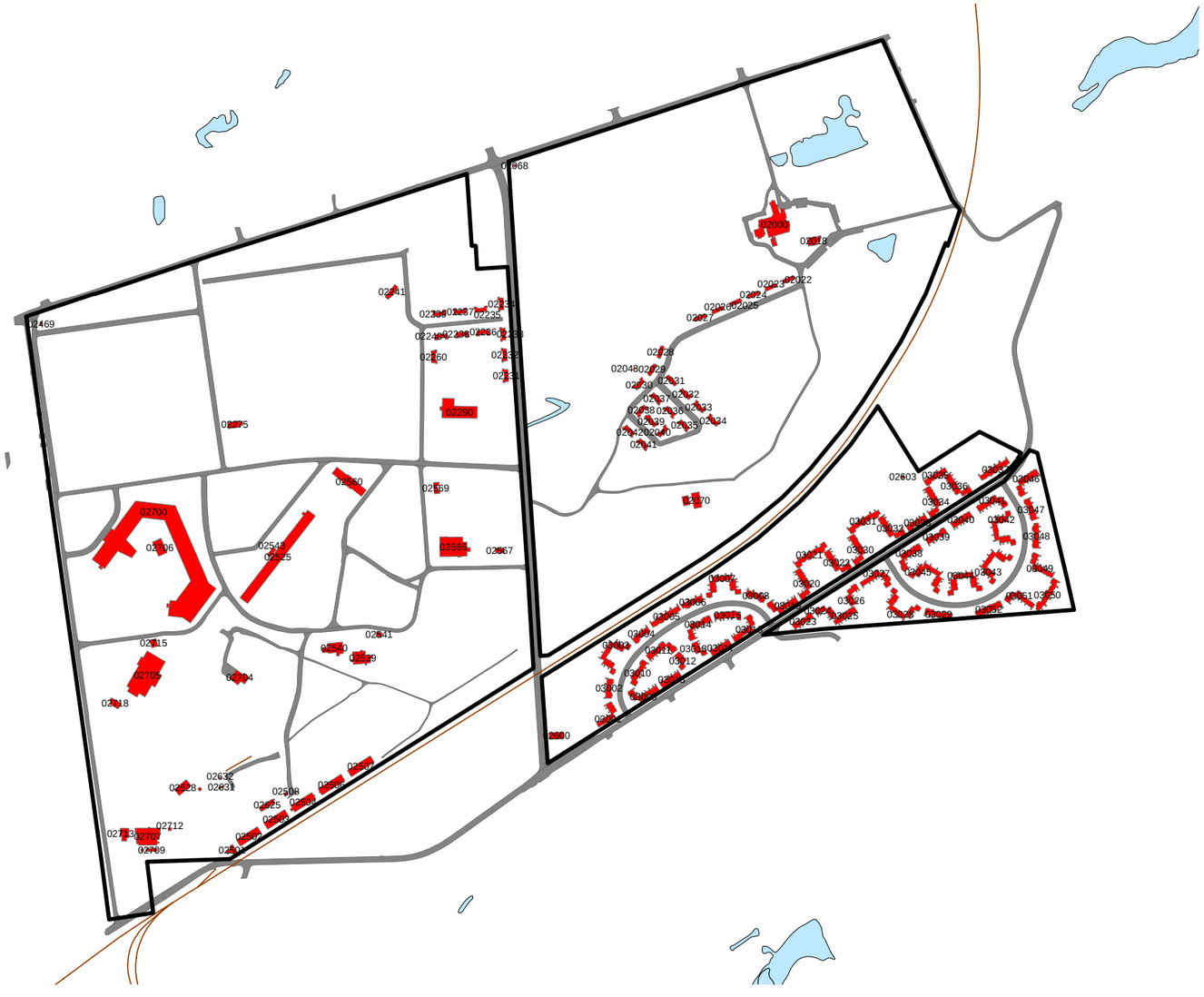
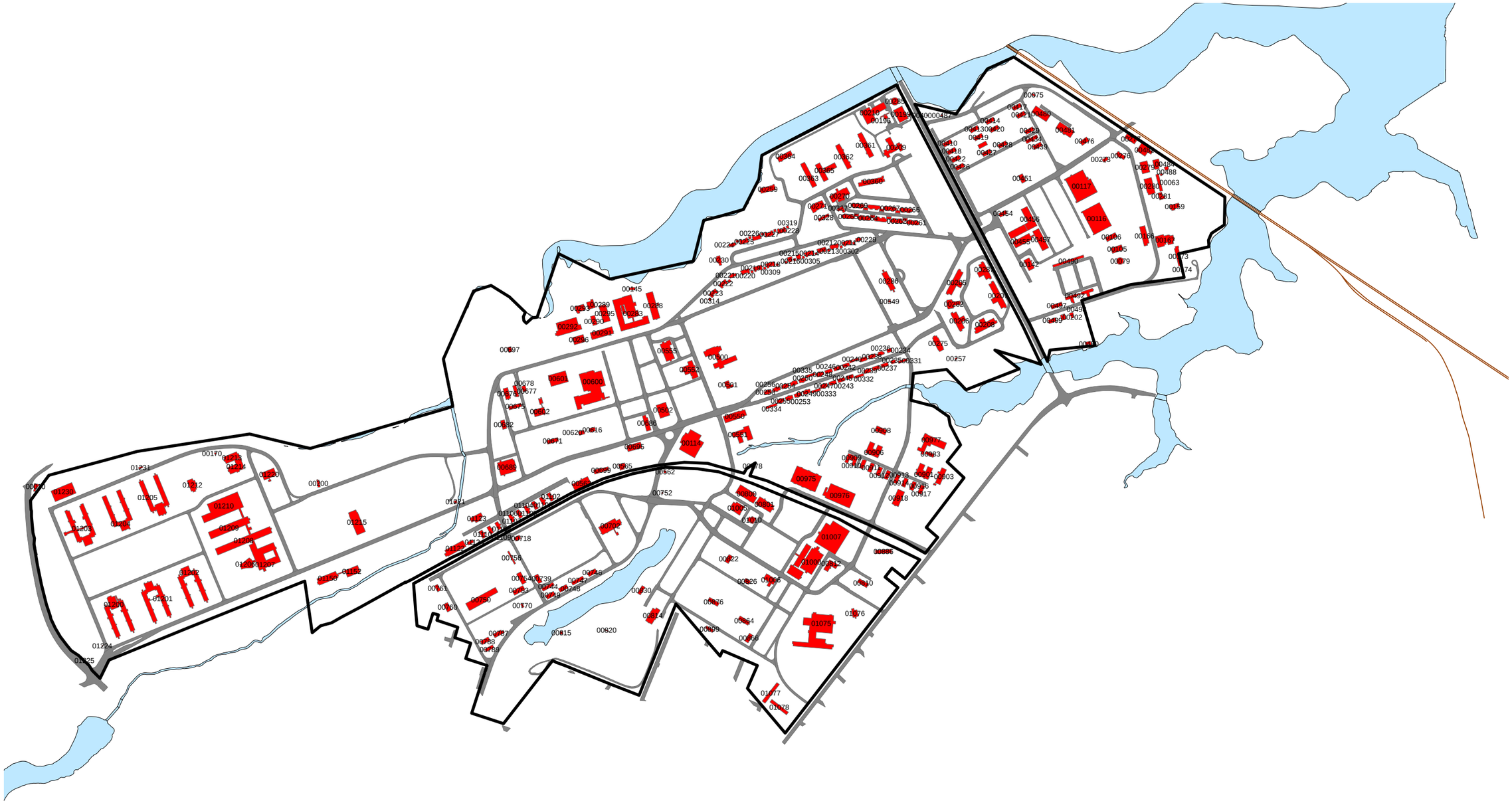


Existing Fort Monmouth Building Key Plan: Charles Woods Area



Existing Fort Monmouth Building Key plan: Main Post Area

Building Number	Permanent/Temporary	Building/Property Description		Gross Square Ft.	Year Built
00001	P	SOFTBALL FIELD			1969.0
00002	P	SOFTBALL FIELD			1969.0
00004	T	WASH PLAT ORG			1941.0
00055	P	LD/UNLD DOC/RMP			1955.0
00063	T	STORAGE GP INST	SF	3696.0	1940.0
00072	P	OPEN STR INST	SY	9852.0	1943.0
00073	P	POL PIPE ABV			1974.0
00075	P	SCALE HOUSE	SF	450.0	1969.0
00077	T	REC PIER/PLAT			1968.0
00079	P	STR SHED GP INS	SF	3600.0	1982.0
00082	P	LD/UNLD DOC/RMP			1971.0
00091	P	CHLORINATOR FAC			1990.0
00091	P	WTR SUP/TRT BLD	SF	196.0	
00100	P	FLAGPOLE			1939.0
00101	T	HEAT PLANT OIL			1943.0
00101	T	HEAT PLT BLDG	SF	494.0	
00105	T	STORAGE GP INST	SF	4800.0	1943.0
00106	T	STORAGE GP INST	SF	4050.0	1943.0
00110	S	STR SHED GP INS	SF	49.0	1955.0
00112	S	MISC SHED	SF	160.0	1955.0
00113	P	BASEBALL FIELD			1956.0
00114	P	PHYS FIT CTR	SF	32250.0	1952.0
00115	P	MON/MEMORIALS			1952.0
00116	P	STORAGE GP INST	SF	40951.0	1943.0
00117	P	STORAGE GP INST	SF	43920.0	1943.0
00118	P	ACCESS CNT FAC	SF	123.0	1955.0
00119	P	SEW/WST WTR TRT	SF	89.0	1952.0
00120	P	INFO SYS FAC	SF	60.0	1958.0
00120	P	MISC SHED	SF	140.0	
00121	P	FLAM MAT STR IN	SF	200.0	1990.0
00122	P	FLAM MAT STR IN	SF	2885.0	1990.0
00123	P	FLAM MAT STR IN	SF	200.0	1990.0
00124	P	ACCESS CNT FAC	SF	45.0	1981.0
00125	P	INFO SYS FAC	SF	432.0	2001.0
00142	P	BOX/CRATE SHOP	SF	6316.0	1922.0
00145	S	STORAGE GP INST	SF	905.0	1941.0
00159	S	STORAGE GP INST	SF	3438.0	1941.0
00166	P	ENG/HOUSING MNT	SF	4810.0	1942.0
00166	P	ADMIN GEN PURP	SF	3455.0	
00167	P	ADMIN GEN PURP	SF	13570.0	1942.0
00168	P	REC SHELTER	SF	500.0	1996.0
00169	P	CENT WASH BLDG	SF	170.0	1998.0
00173	P	LAB/TST BLDG GP	SF	1800.0	1974.0
00173	P	ADMIN GEN PURP	SF	3806.0	
00174	P	STORAGE GP INST	SF	782.0	1995.0
00200	S	XMITTER BLDG	SF	1280.0	1958.0
00201	T	PLT/UTIL BLDG	SF	218.0	1943.0
00203	P	COURT AREA			1973.0
00205	P	ENLISTED UPH	SF	41376.0	1927.0
00206	P	ADMIN GEN PURP	SF	31392.0	1927.0
00207	P	ENLISTED UPH	SF	43872.0	1927.0
00208	P	ENLISTED UPH	SF	36384.0	1927.0
00209	P	ADMIN GEN PURP	SF	36665.0	1928.0
00210	P	COMMO EQ BLDG	SF	29296.0	1975.0
00211	P	FH COL	SF	6834.0	1929.0
00212	P	FH COL	SF	6834.0	1929.0
00213	P	FH COL	SF	6834.0	1929.0
00214	P	FH COL	SF	6428.0	1932.0
00215	P	FH COL	SF	3396.0	1931.0
00216	P	FH COL	SF	3496.0	1931.0
00217	P	SEWAGE LFT STAT			1975.0
00218	P	FH COL	SF	6743.0	1932.0
00219	P	FH COL	SF	6743.0	1932.0
00220	P	FH COL	SF	6743.0	1935.0
00221	P	FH GENERAL OFF	SF	3108.0	1931.0
00222	P	FH COL	SF	6743.0	1935.0
00223	P	FH COL	SF	6743.0	1935.0
00224	P	FH GENERAL OFF	SF	3108.0	1931.0
00225	P	FH COL	SF	6743.0	1932.0
00226	P	FH COL	SF	6743.0	1932.0
00227	P	FH COL	SF	6743.0	1932.0
00228	P	FH COL	SF	6743.0	1932.0
00229	P	FH COL	SF	3020.0	1931.0
00230	P	FH GENERAL OFF	SF	5273.0	1936.0
00233	P	FH SR NCO	SF	4724.0	1929.0
00234	P	FH SR NCO	SF	3780.0	1931.0
00235	P	FH SR NCO	SF	6024.0	1931.0
00236	P	FH SR NCO	SF	3780.0	1931.0
00237	P	FH SR NCO	SF	6024.0	1931.0
00238	P	FH SR NCO	SF	5592.0	1931.0
00239	P	FH SR NCO	SF	6024.0	1931.0
00240	P	FH SR NCO	SF	5592.0	1932.0
00241	P	FH SR NCO	SF	5592.0	1932.0
00242	P	FH SR NCO	SF	5592.0	1932.0
00243	P	FH SR NCO	SF	5592.0	1932.0
00244	P	FH SR NCO	SF	5592.0	1932.0
00245	P	FH SR NCO	SF	5592.0	1932.0
00246	P	FH SR NCO	SF	5592.0	1932.0
00247	P	FH SR NCO	SF	5592.0	1934.0
00248	P	FH SR NCO	SF	5592.0	1934.0
00249	P	FH SR NCO	SF	5592.0	1934.0
00250	P	FH SR NCO	SF	5592.0	1934.0
00251	P	FH SR NCO	SF	5592.0	1934.0
00252	P	FH SR NCO	SF	5592.0	1934.0
00253	P	FH SR NCO	SF	5592.0	1934.0
00254	P	FH SR NCO	SF	5592.0	1934.0

00255	P	FH SR NCO	SF	5592.0	1934.0
00256	P	FH SR NCO	SF	5592.0	1934.0
00257	P	SEWAGE LFT STAT			1930.0
00258	P	FH SR NCO	SF	5592.0	1934.0
00259	P	PVT/ORG CLUB	SF	6182.0	1938.0
00260	P	SEWAGE LFT STAT			1930.0
00261	P	FH LTC/MAJ	SF	11856.0	1930.0
00262	P	FH LTC/MAJ	SF	11856.0	1930.0
00263	P	FH LTC/MAJ	SF	12656.0	1930.0
00264	P	FH LTC/MAJ	SF	12656.0	1931.0
00265	P	FH LTC/MAJ	SF	12656.0	1932.0
00266	P	FH LTC/MAJ	SF	12656.0	1932.0
00267	P	FH LTC/MAJ	SF	11856.0	1931.0
00268	P	FH LTC/MAJ	SF	12656.0	1931.0
00269	P	FH LTC/MAJ	SF	12656.0	1930.0
00270	P	ADMIN GEN PURP	SF	3000.0	1930.0
00270	P	ARMY LODGING	SF	11315.0	
00271	P	UOQ MILITARY	SF	20007.0	1934.0
00272	P	COURT AREA			1969.0
00273	P	VEH FUEL MOGAS			1991.0
00273	P	FUEL/POL BLDG	SF	72.0	
00273	P	MOGAS STR UNGD			
00275	P	MUSEUM SPT BLDG	SF	7432.0	1934.0
00276	P	ADMIN GEN PURP	SF	2744.0	1953.0
00277	P	ADMIN GEN PURP	SF	12600.0	1951.0
00279	P	ENG/HOUSING MNT	SF	7168.0	1934.0
00280	P	ENG/HOUSING MNT	SF	9936.0	1934.0
00281	P	ENG/HOUSING MNT	SF	2544.0	1934.0
00282	P	FIRE STATION	SF	6089.0	1935.0
00283	P	ADMIN GEN PURP	SF	73994.0	1935.0
00283	P	AUDITORIUM GP	SF	2544.0	
00284	T	STORAGE GP INST	SF	357.0	1940.0
00286	P	ADMIN GEN PURP	SF	42300.0	1936.0
00287	P	ENLISTED UPH	SF	32053.0	1940.0
00288	S	ADMIN GEN PURP	SF	15038.0	1941.0
00291	P	ADMIN GEN PURP	SF	12006.0	1966.0
00292	S	STORAGE GP INST	SF	13440.0	1944.0
00292	S	ADMIN GEN PURP	SF	17600.0	
00293	P	LAB/TST BLDG GP	SF	4217.0	1943.0
00295	P	ADMIN GEN PURP	SF	9000.0	1969.0
00296	P	ADMIN GEN PURP	SF	5996.0	1970.0
00301	P	GARAGE FAM HS	SF	412.0	1932.0
00302	P	GARAGE FAM HS	SF	412.0	1932.0
00303	P	GARAGE FAM HS	SF	412.0	1932.0
00304	P	GARAGE FAM HS	SF	412.0	1932.0
00305	P	GARAGE FAM HS	SF	412.0	1932.0
00306	P	GARAGE FAM HS	SF	412.0	1932.0
00307	P	GARAGE FAM HS	SF	412.0	1932.0
00308	P	GARAGE FAM HS	SF	412.0	1932.0
00309	P	GARAGE FAM HS	SF	412.0	1932.0
00310	P	GARAGE FAM HS	SF	412.0	1932.0
00312	P	GARAGE FAM HS	SF	499.0	1951.0
00313	P	GARAGE FAM HS	SF	412.0	1932.0
00314	P	GARAGE FAM HS	SF	412.0	1932.0
00315	P	GARAGE FAM HS	SF	412.0	1932.0
00316	P	GARAGE FAM HS	SF	412.0	1932.0
00317	P	GARAGE FAM HS	SF	412.0	1932.0
00318	P	GARAGE FAM HS	SF	412.0	1932.0
00319	P	GARAGE FAM HS	SF	412.0	1932.0
00320	P	GARAGE FAM HS	SF	847.0	1934.0
00321	P	GARAGE FAM HS	SF	847.0	1934.0
00322	P	GARAGE FAM HS	SF	847.0	1934.0
00323	P	GARAGE FAM HS	SF	847.0	1934.0
00324	P	GARAGE FAM HS	SF	847.0	1934.0
00325	P	GARAGE FAM HS	SF	847.0	1934.0
00326	P	GARAGE FAM HS	SF	847.0	1934.0
00327	P	GARAGE FAM HS	SF	1851.0	1934.0
00328	P	GARAGE FAM HS	SF	2409.0	1937.0
00331	P	GARAGE FAM HS	SF	1600.0	1934.0
00332	P	GARAGE FAM HS	SF	1600.0	1934.0
00333	P	GARAGE FAM HS	SF	1600.0	1934.0
00334	P	GARAGE FAM HS	SF	2000.0	1934.0
00335	P	GARAGE FAM HS	SF	1600.0	1934.0
00336	P	GARAGE FAM HS	SF	1600.0	1934.0
00340	P	PLAYGROUND GP			1985.0
00341	P	PLAYGROUND GP			1985.0
00342	P	PLAYGROUND GP			1985.0
00360	P	ARMY LODGING	SF	23415.0	1956.0
00361	P	ENLISTED UPH	SF	27160.0	1965.0
00362	P	ENLISTED UPH	SF	27140.0	1965.0
00363	P	ARMY LODGING	SF	27137.0	1968.0
00364	P	ARMY LODGING	SF	10720.0	1971.0
00365	P	ARMY LODGING	SF	34313.0	1991.0
00366	P	SEWAGE LFT STAT			1992.0
00367	P	SEWAGE LFT STAT			1992.0
00400	P	SEWAGE LFT STAT			1940.0
00402	P	PLAYGROUND GP			1985.0
00410	T	TT OFF QTRS	SF	4720.0	1940.0
00413	T	TT OFF QTRS	SF	4720.0	1940.0
00414	T	STORAGE GP INST	SF	4720.0	1940.0
00417	T	HOMELESS SHELTR	SF	4720.0	1940.0
00418	T	TT OFF QTRS	SF	4720.0	1940.0
00419	T	STORAGE GP INST	SF	2360.0	1941.0
00419	T	ADMIN GEN PURP	SF	2360.0	
00420	T	ADMIN GEN PURP	SF	4720.0	1940.0
00421	T	HOMELESS SHELTR	SF	4720.0	1941.0
00422	T	ADMIN GEN PURP	SF	2360.0	1940.0
00422	T	PVT/ORG CLUB	SF	2360.0	
00423	T	ADMIN GEN PURP	SF	4720.0	1941.0
00426	T	PVT/ORG CLUB	SF	4720.0	1940.0
00427	T	ADMIN GEN PURP	SF	4720.0	1941.0
00428	T	ADMIN GEN PURP	SF	4720.0	1941.0

00429	T	ADMIN GEN PURP	SF	4720.0	1941.0
00434	T	PVT/ORG CLUB	SF	2888.0	1941.0
00439	T	ADMIN GEN PURP	SF	4720.0	1941.0
00450	P	BOAT HOUSE	SF	2600.0	1986.0
00451	P	PO MAIN	SF	5013.0	1988.0
00454	P	ADMIN GEN PURP	SF	2135.0	1939.0
00476	P	STORAGE GP INST	SF	3016.0	1985.0
00480	S	STORAGE GP INST	SF	9267.0	1941.0
00481	S	STORAGE GP INST	SF	9267.0	1941.0
00482	T	HAZ MAT STR INS	SF	9267.0	1941.0
00484	S	ENG/HOUSING MNT	SF	3817.0	1941.0
00486	P	WAT STR TK POT			1941.0
00487	P	PUMP STAT POT			1943.0
00487	P	WTR SUP/TRT BLD	SF	196.0	
00488	P	DRUM RECON PLT	SF	900.0	1997.0
00490	P	STORAGE GP INST	SF	6069.0	1939.0
00490	P	TRALR PARK BLDG	SF	5269.0	
00491	P	SEWAGE LFT STAT			1951.0
00494	T	CHLORINATOR FAC			1940.0
00494	T	WTR SUP/TRT BLD	SF	131.0	
00497	P	STORAGE GP INST	SF	3000.0	1940.0
00498	P	ADMIN GEN PURP	SF	1223.0	1939.0
00499	P	COURTROOM	SF	2040.0	1939.0
00500	P	CHAPEL	SF	16372.0	1962.0
00501	P	ADMIN GEN PURP	SF	2832.0	1969.0
00502	P	LIBRARY MAIN	SF	10650.0	1974.0
00549	P	STANDBY GEN			1950.0
00549	P	PWR PLT BLDG	SF	352.0	
00550	S	ADMIN GEN PURP	SF	11767.0	1941.0
00551	P	ORG CLASSROOM	SF	8595.0	1942.0
00551	P	ACES FAC	SF	5000.0	
00552	S	RECREATION CTR	SF	16420.0	1941.0
00553	P	PUMP STAT POT			1943.0
00553	P	WTR SUP/TRT BLD	SF	64.0	
00555	S	ADMIN GEN PURP	SF	18967.0	1941.0
00557	P	WAT STR TK POT			1943.0
00562	T	PLT/UTIL BLDG	SF	332.0	1941.0
00563	S	ADMIN GEN PURP	SF	8894.0	1941.0
00600	P	SCIF	SF	44492.0	1997.0
00600	P	COMMO EQ BLDG	SF	45000.0	
00601	P	ORG STR BLDG	SF	16000.0	1997.0
00602	P	ORG STR BLDG	SF	6000.0	1997.0
00616	P	CO HQ BLDG	SF	1520.0	1967.0
00620	P	CO HQ BLDG	SF	1520.0	1967.0
00671	P	CIDC FLD OPS BD	SF	3020.0	1967.0
00675	S	ADMIN GEN PURP	SF	2892.0	1941.0
00676	S	ADMIN GEN PURP	SF	3663.0	1941.0
00677	S	ADMIN GEN PURP	SF	2592.0	1941.0
00678	P	ADMIN GEN PURP	SF	1520.0	1967.0
00682	S	MARS STATION	SF	4720.0	1941.0
00686	S	THRIFT SHOP	SF	5929.0	1957.0
00689	P	BOWLING CENTER	SF	17599.0	1967.0
00699	P	EXCH AUTO SER	SF	1769.0	1953.0
00702	P	CMTY/CONF CTR	SF	12100.0	1983.0
00750	P	VEH FUEL MOGAS			1987.0
00750	P	VEH MAINT SHOP	SF	14391.0	
00752	P	SEWAGE LFT STAT			1941.0
00753	P	STORAGE GP INST	SF	4311.0	1987.0
00754	P	STORAGE GP INST	SF	4320.0	1987.0
00755	P	ACCESS CNT FAC	SF	112.0	1987.0
00756	P	STORAGE GP INST	SF	1260.0	1992.0
00760	P	STORAGE GP INST	SF	3012.0	1988.0
00761	P	STORAGE GP INST	SF	1800.0	1988.0
00770	P	STORAGE GP INST	SF	570.0	1989.0
00787	S	ADMIN GEN PURP	SF	5314.0	1941.0
00788	S	ORG CLASSROOM	SF	4720.0	1941.0
00789	S	ADMIN GEN PURP	SF	2000.0	1941.0
00792	S	INFO SYS FAC	SF	49.0	1956.0
00793	P	CHLORINATOR FAC			1984.0
00793	P	WTR SUP/TRT BLD	SF	131.0	
00800	S	ORG CLASSROOM	SF	5964.0	1942.0
00800	S	ADMIN GEN PURP	SF	9000.0	
00801	S	REC EQ CHECKOUT	SF	9267.0	1941.0
00803	P	MULTI ATH FIELD			1954.0
00810	S	VET FACILITY	SF	3222.0	1941.0
00812	S	ACS CTR	SF	5563.0	1941.0
00814	P	REC SPT FAC	SF	8863.0	1966.0
00815	P	REC SHELTER	SF	500.0	1972.0
00816	P	RUNNING TRACK			1954.0
00817	P	GRANDSTAN/BLEAC			1988.0
00818	P	GRANDSTAN/BLEAC			1988.0
00819	P	GRANDSTAN/BLEAC			1988.0
00820	P	GRANDSTAN/BLEAC			1988.0
00822	P	EXCHANGE CAFE	SF	2525.0	1989.0
00826	P	ADMIN GEN PURP	SF	1520.0	1967.0
00830	P	REC/PICNIC AREA	AC	2856.0	1990.0
00886	S	STORAGE GP INST	SF	4608.0	1943.0
00900	T	STORAGE GP INST	SF	3393.0	1941.0
00901	S	ADMIN GEN PURP	SF	12897.0	1941.0
00903	T	HEAT PLANT OIL			1943.0
00903	T	HEAT PLT BLDG	SF	296.0	
00904	T	HEAT PLANT OIL			1946.0
00904	T	HEAT PLT BLDG	SF	236.0	
00906	S	COMMO EQ BLDG	SF	11102.0	1942.0
00909	S	ADMIN GEN PURP	SF	5269.0	1942.0
00910	S	ADMIN GEN PURP	SF	4720.0	1943.0
00911	S	ADMIN GEN PURP	SF	4720.0	1943.0
00912	S	ADMIN GEN PURP	SF	4720.0	1943.0
00913	S	ADMIN GEN PURP	SF	4720.0	1943.0
00914	S	ADMIN GEN PURP	SF	4720.0	1943.0
00915	S	ADMIN GEN PURP	SF	4720.0	1943.0
00916	S	ADMIN GEN PURP	SF	4720.0	1943.0

00917	S	ADMIN GEN PURP	SF	4720.0	1943.0
00918	P	ADMIN GEN PURP	SF	8570.0	1967.0
00919	T	HEAT PLANT OIL			1943.0
00919	T	HEAT PLT BLDG	SF	296.0	
00920	S	ACCESS CNT FAC	SF	64.0	1981.0
00921	T	HEAT PLANT OIL			1943.0
00921	T	HEAT PLT BLDG	SF	385.0	
00922	T	HEAT PLANT OIL			1943.0
00922	T	HEAT PLT BLDG	SF	296.0	
00949	P	SEWAGE LFT STAT			1943.0
00952	P	PLT/UTIL BLDG	SF	86.0	1946.0
00953	P	PLT/UTIL BLDG	SF	86.0	1946.0
00975	P	STORAGE GP INST	SF	36000.0	1954.0
00976	P	COLD STR INST	SF	13440.0	1954.0
00976	P	STORAGE GP INST	SF	13440.0	
00977	P	POLICE/MP STA	SF	18675.0	1953.0
00978	P	SUB/SWIT STA BD	SF	988.0	1954.0
00979	P	SEWAGE LFT STAT		0.0	1954.0
00983	P	WK ANIMAL BLDG	SF	1924.0	1977.0
01000	P	EXCH MAIN STORE	SF	28904.0	1970.0
01001	P	EXCH SER OUTLET	SF	9018.0	1970.0
01002	P	EXCH SER OUTLET	SF	3162.0	1970.0
01003	P	EXCH SER OUTLET	SF	4542.0	1970.0
01005	P	PO MAIN	SF	7645.0	1971.0
01006	P	BANK	SF	5100.0	1975.0
01007	P	COMMISSARY	SF	53700.0	1998.0
01010	P	ACS CTR	SF	2600.0	1970.0
01074	P	CHLORINATOR FAC			1984.0
01074	P	WTR SUP/TRT BLD	SF	131.0	1984.0
01075	P	MED WAREHOUSE	SF	700.0	1961.0
01075	P	DENTAL CLINIC	SF	2800.0	
01075	P	HEALTH CLINIC	SF	114157.0	
01077	P	UOQ MILITARY	SF	9282.0	1962.0
01078	P	UOQ MILITARY	SF	9373.0	1962.0
01102	S	STORAGE GP INST	SF	4130.0	1942.0
01103	S	ADMIN GEN PURP	SF	4130.0	1942.0
01104	S	ADMIN GEN PURP	SF	4130.0	1942.0
01105	S	ADMIN GEN PURP	SF	2065.0	1942.0
01105	S	PVT/ORG CLUB	SF	2065.0	
01106	S	PVT/ORG CLUB	SF	4130.0	1942.0
01107	S	ADMIN GEN PURP	SF	2065.0	1942.0
01107	S	PVT/ORG CLUB	SF	2065.0	
01108	S	CIDC FLD OPS BD	SF	4130.0	1942.0
01109	S	ORG CLASSROOM	SF	4130.0	1942.0
01110	S	PVT/ORG CLUB	SF	4130.0	1942.0
01122	P	AUTO SKILL CTR	SF	11624.0	1971.0
01123	P	ADMIN GEN PURP	SF	5400.0	1976.0
01124	P	MWR CAR WASH	SF	1092.0	1994.0
0114A	P	SEWAGE LFT STAT			1960.0
01150	P	COMMO CTR	SF	36483.0	1952.0
01152	P	INFO PROC CTR	SF	7200.0	1971.0

01200	P	ADMIN GEN PURP	SF	84878.0	1953.0
01201	P	EMERG OPNS CNTR	SF	14764.0	1953.0
01201	P	ADMIN GEN PURP	SF	73114.0	
01202	P	ADMIN GEN PURP	SF	84878.0	1953.0
01203	P	INFO PROC CTR	SF	83438.0	1953.0
01204	P	GEN INST BLDG	SF	30537.0	1953.0
01204	P	LAB INST	SF	1643.0	
01204	P	AUTO-AID INST	SF	5416.0	
01204	P	ENLISTED UPH	SF	34902.0	
01204	P	MISC FAC DET	SF	9500.0	
01204	P	AUDITORIUM GP	SF	6683.0	
01205	P	ENLISTED UPH	SF	76857.0	1953.0
01205	P	DINING FACILITY	SF	6683.0	
01206	P	AUDITORIUM GP	SF	9256.0	1953.0
01207	P	ADMIN GEN PURP	SF	57386.0	1953.0
01208	P	EMERG OPNS CNTR	SF	1423.0	1953.0
01208	P	ADMIN GEN PURP	SF	126641.0	
01209	P	LAB/TST BLDG GP	SF	23124.0	1953.0
01209	P	ADMIN GEN PURP	SF	69372.0	
01209	P	ORG STR BLDG	SF	600.0	
01210	P	COMMO EQ BLDG	SF	23780.0	1953.0
01210	P	ADMIN GEN PURP	SF	61732.0	
01210	P	LAB/TST BLDG GP	SF	30866.0	
01210	P	FST FD/SNK BAR	SF	496.0	
01211	P	OUTDOOR THEATER			1953.0
01212	P	ADMIN GEN PURP	SF	6029.0	1960.0
01213	P	ADMIN GEN PURP	SF	9205.0	1967.0
01214	P	ADMIN GEN PURP	SF	7685.0	1967.0
01215	P	AUDITORIUM GP	SF	18883.0	1968.0
01220	P	HEAT PLANT OIL			1953.0
01220	P	HEAT PLT BLDG	SF	9011.0	
01221	P	SEWAGE LFT STAT			1953.0
01222	P	ACCESS CNT FAC	SF	45.0	1957.0
01223	P	MISC SHED	SF	72.0	1963.0
01224	P	MISC SHED	SF	72.0	1967.0
01226	P	INFO STAND			1993.0
01231	P	SUBSTATION			1994.0
01232	P	IMPROVED LANDS	AC	6.94	2005.0
0170D	P	SEWAGE LFT STAT			1950.0
02000	P	OFF OPEN DINING	SF	37125.0	1942.0
02001	P	COURT AREA			1942.0
02002	P	COURT AREA			1968.0
02017	P	SEW/WST WTR TRT	SF	123.0	1943.0
02018	P	OFF OPEN DINING	SF	3205.0	1942.0
02020	P	OD SWIM POOL			1942.0
02021	P	SEW/WST WTR TRT	SF	178.0	1983.0
02022	P	FH COL	SF	3700.0	1951.0
02023	P	FH COL	SF	3700.0	1949.0
02024	P	FH COL	SF	3700.0	1949.0
02025	P	FH COL	SF	3700.0	1949.0
02026	P	FH COL	SF	3700.0	1949.0

00200	S	XMITTER BLDG	SF	1280.0	1958.0
00201	T	PLT/UTIL BLDG	SF	218.0	1943.0
00203	P	COURT AREA			1973.0
00205	P	ENLISTED UPH	SF	41376.0	1927.0
00206	P	ADMIN GEN PURP	SF	31392.0	1927.0
00207	P	ENLISTED UPH	SF	43872.0	1927.0
00208	P	ENLISTED UPH	SF	36384.0	1927.0
00209	P	ADMIN GEN PURP	SF	36665.0	1928.0
00210	P	COMMO EQ BLDG	SF	29296.0	1975.0
00211	P	FH COL	SF	6834.0	1929.0
00212	P	FH COL	SF	6834.0	1929.0
00213	P	FH COL	SF	6834.0	1929.0
00214	P	FH COL	SF	6428.0	1932.0
00215	P	FH COL	SF	3396.0	1931.0
00216	P	FH COL	SF	3496.0	1931.0
00217	P	SEWAGE LFT STAT			1975.0
00218	P	FH COL	SF	6743.0	1932.0
00219	P	FH COL	SF	6743.0	1932.0
00220	P	FH COL	SF	6743.0	1935.0
00221	P	FH GENERAL OFF	SF	3108.0	1931.0
00222	P	FH COL	SF	6743.0	1935.0
00223	P	FH COL	SF	6743.0	1935.0
00224	P	FH GENERAL OFF	SF	3108.0	1931.0
00225	P	FH COL	SF	6743.0	1932.0
00226	P	FH COL	SF	6743.0	1932.0
00227	P	FH COL	SF	6743.0	1932.0
00228	P	FH COL	SF	6743.0	1932.0
00229	P	FH COL	SF	3020.0	1931.0
00230	P	FH GENERAL OFF	SF	5273.0	1936.0
00233	P	FH SR NCO	SF	4724.0	1929.0
00234	P	FH SR NCO	SF	3780.0	1931.0
00235	P	FH SR NCO	SF	6024.0	1931.0
00236	P	FH SR NCO	SF	3780.0	1931.0
00237	P	FH SR NCO	SF	6024.0	1931.0
00238	P	FH SR NCO	SF	5592.0	1931.0
00239	P	FH SR NCO	SF	6024.0	1931.0
00240	P	FH SR NCO	SF	5592.0	1932.0
00241	P	FH SR NCO	SF	5592.0	1932.0
00242	P	FH SR NCO	SF	5592.0	1932.0
00243	P	FH SR NCO	SF	5592.0	1932.0
00244	P	FH SR NCO	SF	5592.0	1932.0
00245	P	FH SR NCO	SF	5592.0	1932.0
00246	P	FH SR NCO	SF	5592.0	1932.0
00247	P	FH SR NCO	SF	5592.0	1934.0
00248	P	FH SR NCO	SF	5592.0	1934.0
00249	P	FH SR NCO	SF	5592.0	1934.0
00250	P	FH SR NCO	SF	5592.0	1934.0
00251	P	FH SR NCO	SF	5592.0	1934.0
00252	P	FH SR NCO	SF	5592.0	1934.0
00253	P	FH SR NCO	SF	5592.0	1934.0
00254	P	FH SR NCO	SF	5592.0	1934.0

02027	P	FH COL	SF	3700.0	1949.0
02028	P	FH COL	SF	3700.0	1949.0
02029	P	FH LTC/MAJ	SF	3700.0	1949.0
02030	P	FH LTC/MAJ	SF	3700.0	1949.0
02031	P	FH LTC/MAJ	SF	3700.0	1949.0
02032	P	FH LTC/MAJ	SF	3700.0	1949.0
02033	P	FH LTC/MAJ	SF	3700.0	1949.0
02034	P	FH LTC/MAJ	SF	3700.0	1949.0
02035	P	FH LTC/MAJ	SF	3700.0	1949.0
02036	P	FH LTC/MAJ	SF	3700.0	1949.0
02037	P	FH LTC/MAJ	SF	3700.0	1949.0
02038	P	FH LTC/MAJ	SF	3700.0	1951.0
02039	P	FH LTC/MAJ	SF	3700.0	1951.0
02040	P	FH LTC/MAJ	SF	3700.0	1951.0
02041	P	FH LTC/MAJ	SF	3700.0	1951.0
02042	P	FH LTC/MAJ	SF	3700.0	1951.0
02043	P	SEW/WST WTR TRT	SF	110.0	1948.0
02046	P	CENT WASH BLDG	SF	170.0	1998.0
02068	P	CHLORINATOR FAC			1953.0
02070	P	STORAGE GP INST	SF	5000.0	1991.0
02071	P	STORAGE GP INST	SF	2400.0	1999.0
0210A	P	SEWAGE LFT STAT			1975.0
02231	P	FH LTC/MAJ	SF	3700.0	1955.0
02232	P	FH LTC/MAJ	SF	3700.0	1955.0
02233	P	FH LTC/MAJ	SF	3700.0	1955.0
02234	P	FH LTC/MAJ	SF	3700.0	1955.0
02235	P	FH LTC/MAJ	SF	3700.0	1955.0
02236	P	FH LTC/MAJ	SF	3700.0	1955.0
02237	P	FH LTC/MAJ	SF	3700.0	1955.0
02238	P	FH LTC/MAJ	SF	3700.0	1955.0
02239	P	FH LTC/MAJ	SF	3700.0	1955.0
02240	P	FH LTC/MAJ	SF	3700.0	1955.0
02241	P	ACS CTR	SF	4692.0	1960.0
02260	P	FH LTC/MAJ	SF	3700.0	1955.0
02275	S	CHAPEL	SF	3279.0	1942.0
02290	P	CDC UNDER 6 YRS	SF	19600.0	1996.0
02291	P	SEWAGE LFT STAT			1995.0
02292	P	IMHOFF TANK			1996.0
02300	P	PLAYGROUND GP			1985.0
02469	P	PLT/UTIL BLDG	SF	140.0	1954.0
02501	P	ORG CLASSROOM	SF	1440.0	1942.0
02502	P	PREC MACH SHOP	SF	7680.0	1942.0
02503	P	PREC MACH SHOP	SF	7680.0	1942.0
02504	P	PREC MACH SHOP	SF	7936.0	1942.0
02506	P	PREC MACH SHOP	SF	10944.0	1942.0
02507	P	STORAGE GP INST	SF	8512.0	1942.0
02508	P	SEP TOIL/SHOWER	SF	480.0	1942.0
02510	P	CHLORINATOR FAC			1953.0
02510	P	WTR SUP/TRT BLD	SF	196.0	
02525	P	ADMIN GEN PURP	SF	86400.0	1942.0
02535	T	LAB/TST BLDG GP	SF	738.0	1942.0

03002	P	FH JR NCO/ENL	SF	7240.0	1953.0
03003	P	FH JR NCO/ENL	SF	19064.0	1953.0
03004	P	FH JR NCO/ENL	SF	7367.0	1953.0
03005	P	FH JR NCO/ENL	SF	12324.0	1953.0
03006	P	FH JR NCO/ENL	SF	7367.0	1953.0
03007	P	FH JR NCO/ENL	SF	14064.0	1953.0
03008	P	FH JR NCO/ENL	SF	7240.0	1953.0
03009	P	FH JR NCO/ENL	SF	12268.0	1953.0
03010	P	FH JR NCO/ENL	SF	9058.0	1953.0
03011	P	FH JR NCO/ENL	SF	12268.0	1953.0
03012	P	FH JR NCO/ENL	SF	6363.0	1953.0
03013	P	FH JR NCO/ENL	SF	8704.0	1953.0
03014	P	FH JR NCO/ENL	SF	12268.0	1953.0
03015	P	FH JR NCO/ENL	SF	9058.0	1953.0
03016	P	FH JR NCO/ENL	SF	12268.0	1953.0
03017	P	FH JR NCO/ENL	SF	8704.0	1953.0
03018	P	FH JR NCO/ENL	SF	6210.0	1953.0
03019	P	FH JR NCO/ENL	SF	12268.0	1953.0
03020	P	FH JR NCO/ENL	SF	12658.0	1953.0
03021	P	FH JR NCO/ENL	SF	13048.0	1953.0
03022	P	FH JR NCO/ENL	SF	12658.0	1953.0
03023	P	FH JR NCO/ENL	SF	7540.0	1953.0
03024	P	FH JR NCO/ENL	SF	7681.0	1953.0
03025	P	FH JR NCO/ENL	SF	8063.0	1953.0
03026	P	FH JR NCO/ENL	SF	7681.0	1953.0
03027	P	FH JR NCO/ENL	SF	12374.0	1953.0
03028	P	FH JR NCO/ENL	SF	18620.0	1953.0
03029	P	FH JR NCO/ENL	SF	9430.0	1953.0
03030	P	FH JR NCO/ENL	SF	12658.0	1953.0
03031	P	FH JR NCO/ENL	SF	12324.0	1953.0
03032	P	FH JR NCO/ENL	SF	12658.0	1953.0
03033	P	FH JR NCO/ENL	SF	8340.0	1953.0
03034	P	FH JR NCO/ENL	SF	12905.0	1953.0
03035	P	FH JR NCO/ENL	SF	9058.0	1953.0
03036	P	FH JR NCO/ENL	SF	12905.0	1953.0
03037	P	FH JR NCO/ENL	SF	12324.0	1953.0
03038	P	FH JR NCO/ENL	SF	12905.0	1953.0
03039	P	FH JR NCO/ENL	SF	8340.0	1953.0
03040	P	FH JR NCO/ENL	SF	8804.0	1953.0
03041	P	FH SR NCO	SF	12268.0	1953.0
03042	P	FH SR NCO	SF	19488.0	1953.0
03043	P	FH SR NCO	SF	19488.0	1953.0
03044	P	FH SR NCO	SF	19488.0	1953.0
03045	P	FH SR NCO	SF	19488.0	1953.0
03046	P	FH JR NCO/ENL	SF	11344.0	1953.0
03047	P	FH JR NCO/ENL	SF	7540.0	1953.0
03048	P	FH JR NCO/ENL	SF	8028.0	1953.0
03049	P	FH JR NCO/ENL	SF	11344.0	1953.0
03050	P	FH JR NCO/ENL	SF	13048.0	1953.0
03051	P	FH JR NCO/ENL	SF	11344.0	1953.0
03052	P	FH JR NCO/ENL	SF	9430.0	1953.0

03300	P	PLAYGROUND GP			1985.0
03301	P	PLAYGROUND GP			1985.0
03302	P	PLAYGROUND GP			1985.0
03303	P	PLAYGROUND GP			1985.0
03304	P	PLAYGROUND GP			1985.0
03305	P	PLAYGROUND GP			1985.0
03306	P	PLAYGROUND GP			1985.0
10000	P	SOFTBALL FIELD			1960.0
11130	P	RW LAND PAD PAV	SY	2100.0	1955.0
1204A	P	HEAT PLT GEO			2005.0
1205A	P	HEAT PLT GEO			2005.0
12300	S	PE TNG BUILDING	SF	20000.0	2004.0
13510	P	COMMO LINES UNG			1954.0
13511	P	COMMO LINES UNG			1954.0
13512	P	COMMO LINES UNG			1954.0
15410	P	BULKHEADS			1953.0
17980	P	PARADE/DRIL FLD	AC	25.0	1917.0
17981	P	PARADE/DRIL FLD	AC	7.0	1952.0
2018A	P	SEWAGE LFT STAT			1960.0
2302A	T	STR SHED GP INS	SF	247.0	1945.0
2542A	P	PLT/UTIL BLDG	SF	264.0	1951.0
71310	S	TRAILER SITES			1943.0
75011	P	GOLF CSE 18-HOL	AC	152.0	1942.0
75028	P	OD ROLL RINK			1966.0
81230	P	EXT LIGHTING			1965.0
81231	P	EXT LIGHTING			1968.0
81240	P	OH ELECT LINES			1962.0
81260	P	TRANSFORMERS			1967.0
81261	P	TRANSFORMERS			1968.0
81262	P	TRANSFORMERS			1968.0
81263	P	TRANSFORMERS			1970.0
81291	P	UNG ELECT LINES			1962.0
81293	P	OH ELECT LINES			1942.0
81294	S	TRANSFORMERS			1943.0
81360	P	TRANSFORMERS			1977.0
81392	P	SUBSTATION			1953.0
82211	P	HOT WATER LINES			1958.0
82240	P	STEAM LINES			1953.0
83210	P	SANITARY SEWER			1940.0
83211	P	SANITARY SEWER			1943.0
84210	P	WATER DIST POT			1943.0
84291	P	WATER DIST POT			1943.0
85113	T	ROADS, UNPAVED	SY	15091.0	1962.0
85114	P	TA ROADS PAVED	SY	96105.0	1943.0
85115	T	TA ROADS UNPAVE	SY	28051.0	1943.0
85211	P	SIDEWALKS PVD	SY	64049.0	1956.0
85213	S	SIDEWALKS PVD	SY	53762.0	1959.0
85214	P	NONORG PK PAVD	SY	84474.0	1943.0
85215	P	NONORG PK PAVD	SY	169676.0	1962.0
85216	S	NONORG PK PAVD	SY	434353.0	1960.0
85217	P	SIDEWALKS PVD	SY	6530.0	1943.0

85218	P	SIDEWALKS PVD	SY	42424.0	1943.0
85219	S	NONORG PK PAVD	SY	99290.0	1943.0
85220	S	SIDEWALKS PVD	SY	4959.0	1943.0
87110	P	STORM SEWER			1962.0
87111	P	STORM SEWER			1943.0
87112	P	DRAINAGE DITCH			1943.0
87131	P	IRRIGATION FAC			1969.0
87210	P	FENCING/WALLS			1962.0
87251	P	ENTRANCE GATE			1962.0
88010	P	FIRE ALARM SYS			1943.0
88011	P	FIRE ALARM SYS			1943.0
88040	P	INTRU ALM SYS			1970.0
91110	P	LAND HELD PUR	AC	636.1	1940.0
91111	P	LAND HELD PUR	AC	489.5	1942.0

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United States Army
Fort Monmouth, New Jersey

M-5 Landfill (FTMM-05)
Remedial Action Progress Report
(1st Quarter 2009 through 3rd Quarter 2010)

(ABRIDGED)

Main Post
Fort Monmouth, New Jersey

Prepared by

U.S. Army, Office of the Assistant Chief of Staff for Installation Management

Fort Monmouth, New Jersey

April 2012

TABLE OF CONTENTS

EXECUTIVE SUMMARY i

1.0 INTRODUCTION 1

1.1 Objectives 1

1.2 Report Organization 1

2.0 SITE BACKGROUND 2

2.1 Site Location and Description 2

2.2 Site History and Background Investigations 2

2.2.1 SI Report, 1995 – Roy F. Weston, Inc. 3
2.2.2 Remedial Action Work Plan (RAWP), 2000 – ATC Associates Inc. 3
2.2.3 Remedial Action Progress Report (RAPR), 1999-2002 – Versar, Inc. 5
2.2.4 Remedial Action Progress Report (RAPR), 2002-2003 – Versar, Inc. 5
2.2.5 Remedial Investigation Report (RIR) and Sediment Quality Evaluation (SQE), 2004 – Versar, Inc. 6
2.2.6 Remedial Investigation Report (RIR) for Near Surface Soils, 2004 – Versar, Inc. 6
2.2.7 Remedial Action Progress Report (RAPR), 2003-2005 – VEETech P.C. 6
2.2.8 Remedial Action Progress Report (RAPR), 2005-2006 – VEETech P.C. 7
2.2.9 Remedial Action Progress Report (RAPR), 2006-2008 – VEETech P.C. 7

3.0 REMEDIAL ACTIVITIES 9

3.1 Landfill Cover Investigation 9

3.2 Proposed Future Remedial Activities 10

4.0 MONITORING AND SAMPLING ACTIVITIES 12

4.1 Ground Water Monitoring 12

4.2 Ground Water Sampling 13

4.3 Surface Water Sampling 13

4.4 Types of Waste Generated and Disposal Methods 14

5.0 SAMPLING ANALYTICAL RESULTS 15

5.1 Ground Water Sampling Results 15

5.1.1 Volatile Organic Compounds (VOCs) and Semivolatile Organic Compounds (SVOCs) 16
5.1.2 Tentatively Identified Compounds (TICs) 16
5.1.3 Metals 16
5.1.4 Pesticides/Polychlorinated Biphenyls (PCBs) 17
5.1.5 Ground Water Contaminants of Concern (COCs) 17
5.1.6 Ground Water - Quality Assurance/Quality Control (QA/QC) 19

5.2 Surface Water Sampling Results 21

5.2.1 Volatile Organic Compounds (VOCs) 22
5.2.2 Tentatively Identified Compounds (TICs) 22

5.2.3 Metals 22
5.2.4 Pesticides 22
5.2.5 Surface Water Contaminants of Concern (COCs) 22
5.2.6 Surface Water – Quality Assurance/Quality Control (QA/QC) 23

6.0 BACKGROUND METALS EVALUATION 25

6.1 Evaluation Approach 25
6.1.1 Nature of Apparent Sources 26
6.1.2 Relationship of Metal Levels to Turbidity 27
6.1.3 Extreme Variability in Metal Content of Field Duplicate Samples 30
6.1.4 Occurrence of Atypical Spikes 32
6.2 Conclusion of Base-Wide Evaluation of Metals As Contaminants of Concern 35

7.0 RECEPTOR EVALUATION 38

7.1 Sensitive Receptor and Well Search 38
7.2 Vapor Intrusion (VI) Investigation 38
7.3 Baseline Ecological Evaluation (BEE) 39
7.4 Public Notification 39

8.0 REMEDIAL ACTION PROGRESS 41

8.1 Costs of Remediation Incurred to Date 41
8.2 Ground Water Conclusions 41
8.3 Surface Water Conclusions 43
8.4 Future Plans 43
8.5 Remedial Action (RA) Schedule 44

9.0 CLASSIFICATION EXCEPTION AREA (CEA) 45

10.0 REFERENCES 46

FIGURES	
Figure 2-1	Site Location Map
Figure 2-2	Site Layout Map
Figure 3-1	Bioremediation Area Map
Figure 5-1	Ground Water Contaminant Distribution Map
Figure 5-2	Tetrachloroethene Concentrations vs Time at M-5MW11
Figure 5-3A	Tetrachloroethene Concentrations vs Time at M-5MW16
Figure 5-3B	Trichloroethene Concentrations vs Time at M-5MW16
Figure 5-3C	Vinyl Chloride Concentrations vs Time at M-5MW16
Figure 5-4A	Tetrachloroethene Concentrations vs Time at M-5MW19
Figure 5-4B	Trichloroethene Concentrations vs Time at M-5MW19
Figure 5-5A	Tetrachloroethene Concentrations vs Time at M-5MW20
Figure 5-5B	Trichloroethene Concentrations vs Time at M-5MW20
Figure 5-5C	cis-1,2 DCE Concentrations vs Time at M-5MW20
Figure 5-6A	Tetrachloroethene Concentrations vs Time at M-5MW23
Figure 5-6B	Tetrachloroethene Concentrations vs Time at M-5MW23

TABLES	
Table 4-1	Ground Water Sampling Summary
Table 5-1	Ground Water Sampling Results Site M-5MW10
Table 5-2	Ground Water Sampling Results Site M-5MW11
Table 5-3	Ground Water Sampling Results Site M-5MW12
Table 5-4	Ground Water Sampling Results Site M-5MW13
Table 5-5	Ground Water Sampling Results Site M-5MW14
Table 5-6	Ground Water Sampling Results Site M-5MW15
Table 5-7	Ground Water Sampling Results Site M-5MW16
Table 5-8	Ground Water Sampling Results Site M-5MW18
Table 5-9	Ground Water Sampling Results Site M-5MW19
Table 5-10	Ground Water Sampling Results Site M-5MW20
Table 5-11	Ground Water Sampling Results Site M-5MW23
Table 5-12	Ground Water Sampling Results Site M-5MW25
Table 5-13	Ground Water Exceedance Summary
Table 5-14	Ground Water Tentatively Identified Compounds (TICs)
Table 5-15	Ground Water Relative Percent Difference Calculations

APPENDICES	
Appendix A	Electronic Documents Library
Appendix B	Remedial Action Documents
Appendix C	Fort Monmouth Directorate of Public Works Standard Operating Procedure
Appendix D	1st Quarter 2009 Ground Water Sampling
Appendix E	2nd Quarter 2009 Ground Water Sampling
Appendix F	3rd Quarter 2009 Ground Water Sampling
Appendix G	4th Quarter 2009 Ground Water Sampling
Appendix H	1st Quarter 2010 Ground Water Sampling
Appendix I	2nd Quarter 2010 Ground Water Sampling
Appendix J	3rd Quarter 2010 Ground Water Sampling
Appendix K	1st Quarter 2009 through 3rd Quarter 2010 Surface Water Sampling
Appendix L	Background Metals Evaluation
Appendix M	Receptor Evaluation
Appendix N	Landfill Costs and Schedule for the M-5 Landfill
Appendix O	Classification Exception Area (CEA) Documents

EXECUTIVE SUMMARY

This *Remedial Action Progress Report* (RAPR) documents the quarterly ground water sampling of 10 monitoring wells at the M-5 Landfill (FTMM-05) from the 1st Quarter 2009 through the 3rd Quarter 2010 to monitor the progress of the enhanced natural attenuation program [Hydrogen Release Compound® (HRC®)] in reducing contaminant of concern (COC) concentrations in ground water. A proposed Ground Water Classification Exception Area (CEA) is also provided herein.

The M-5 Landfill consists of approximately 3.2 acres located on the western portion of the Main Post on the Eatontown/Oceanport Borough line. The site is bordered by Mill Creek and Parkers Creek to the west and is adjacent to the southern boundary of the M-8 Landfill.

A *Remedial Action Work Plan* (RAWP) was submitted by ATC Associates, Inc. (ATC) in February of 2000 and approved by the New Jersey Department of Environmental Protection (NJDEP) in March of 2001. The RAWP proposed enhanced natural attenuation with ground water monitoring as the site remedy for tetrachloroethene (PCE). PCE, trichloroethene (TCE), *cis*-1,2-dichloroethene (*cis*-1,2-DCE), and vinyl chloride have been identified as COCs in subsequent RAPRs submitted to the NJDEP.

Ground water monitoring conducted during the current reporting period identified PCE, TCE, and vinyl chloride at concentrations that exceeded the NJDEP's Ground Water Quality Standards (GWQS) for Class II-A aquifers. PCE was detected at concentrations greater than the NJDEP GWQS of 1 microgram per liter (µg/L) in five monitoring wells (M-5MW11, M-5MW16, M-5MW19, M-5MW20, and M-5MW23). TCE was detected at concentrations greater than the NJDEP GWQS of 1 µg/L in four monitoring wells (M-5MW16, M-5MW19, M-5MW20, and M-5MW23). *cis*-1,2-DCE was detected at concentrations exceeding the NJDEP GWQS of 70 µg/L in monitoring wells M5-MW16 and M5-MW20. Vinyl chloride was detected at concentrations greater than the NJDEP GWQS of 1 µg/L in monitoring well M-5MW16 only. In addition, two metals (arsenic and antimony) were detected at concentrations exceeding NJDEP GWQS. These metal detections are the direct result of acid leaching of suspended solids in ground water samples. Therefore, metals are not considered COCs at the M-5 Landfill. In addition, due to the extremely slow migration rates of metals in ground water, they pose little potential for migration.

During the current reporting period, surface water samples were collected from three locations along Mill Creek and Laferta Creek: SS-24 (upstream of M-5 Landfill), SS-5 (along the western boundary of M-5 Landfill), and SS-28 (downstream of M-5 Landfill). PCE concentrations exceeded NJDEP Surface Water Quality Standards (SWQS) in SS-5, SS-24, and SS-28. TCE concentrations exceeded NJDEP SWQS in SS-24. Although PCE and TCE were detected at concentrations exceeding NJDEP SWQS, the location and distribution of COCs suggests that the M-5 Landfill is not the probable source for these VOCs.

Future plans include collection of quarterly ground water and surface water samples until closure

of Fort Monmouth in September 2011. At that time, future sampling will be evaluated and discussed with NJDEP. The Army plans to prepare a Remedial Action Selection Report (RASR)/Feasibility Study (FS) as the next report submittal, which will include a final closure plan for the M-5 Landfill.

1.0 INTRODUCTION

An enhanced natural attenuation program to remediate VOC concentrations at the M-5 Landfill (FTMM-05) located at the Main Post Area of Fort Monmouth, New Jersey is being conducted in accordance with the RAWP prepared by ATC Associates, Inc. (ATC) in February of 2000 and approved by the NJDEP in March of 2001. This RAPR documents ground water and surface water monitoring conducted during the current reporting period of the 1st Quarter 2009 through the 3rd Quarter 2010.

1.1 Objectives

The objective of this RAPR is to document the implementation of the remedial action (RA) program performed at the M-5 Landfill during the current reporting period (1st Quarter 2009 through the 3rd Quarter 2010). HRC® injections were implemented by the Army from October of 2000 to December of 2005 as an RA based upon the recommendations in the RAWP prepared by ATC dated February 2000 and approved by the NJDEP in March of 2001. The purpose of the RA was to treat the COC-affected areas at the site using HRC® to reduce COC concentrations to comply with the NJDEP GWQS. The remedial activities were conducted in accordance with the NJDEP's *Technical Requirements for Site Remediation* (*Technical Requirements*), N.J.A.C. (New Jersey Administrative Code) 7:26E *et seq*. and the M-5 Landfill RAWP.

The RA and subsequent preparation of this RAPR encompassed the following:

- Conducting quarterly rounds of ground water and surface water sampling and documenting the results to evaluate the effectiveness of the RA;
- Comparing the results of ground water and surface water sampling with NJDEP GWQS and NJDEP SWQS;
- Identifying and discussing recommendations with the Army for the continuation of this RA; and
- Documenting remedial activities as required by the *Technical Requirements*.

1.2 Report Organization

Section 2.0 discusses site history and background information for the M-5 Landfill. Section 3.0 describes and summarizes the remedial activities conducted at the site. Section 4.0 discusses ground water and surface water monitoring and sampling activities at the site. Section 5.0 presents the laboratory analytical results of the ground water and surface water sampling. Sections 6.0 and 7.0 discuss the Background Metals Evaluation and Receptor Evaluation respectively. Section 8.0 discusses the effectiveness of the RA and provides recommendations to the Army for the M-5 Landfill. Section 9.0 is the Classification Exception Area (CEA) section and Section 10.0 provides a list of references used during generation of this report.

2.0 SITE BACKGROUND

The following sections describe the site background of the M-5 Landfill. Provided is a description of the site location, site history, background investigations, and previous technical reports.

2.1 Site Location and Description

Fort Monmouth is located in the central-eastern portion of New Jersey in Monmouth County, approximately 45 miles south of New York City and 70 miles northeast of Philadelphia. The M-5 Landfill is located on the western portion of the Main Post on the Eatontown/Oceanport Borough line and east of Mill Creek and Parkers Creek and consists of approximately 3.2 acres (Figure 2-1 – Site Location Map). The M-5 Landfill is adjacent to the southern boundary of the M-8 Landfill. According to a report prepared by the US Army Toxic and Hazardous Materials Agency (USATHAMA) entitled *Installation Assessment of Fort Monmouth, Report 171* dated May 1980, the M-5 Landfill was in use from 1952 to 1959 for the general disposal of domestic and industrial wastes in addition to automobiles. This site has reportedly been inactive since 1959. Since then there has been a steady growth and stabilization of vegetation (grass, trees, and bushes) on site. The environmental setting (regional/local geology and hydrogeology) of the M-5 Landfill is described in ATC's RAWP.

2.2 Site History and Background Investigations

The US Army Corps of Engineers (USACE), Baltimore District initially contracted Roy F. Weston, Inc. (Weston) to perform a site investigation (SI) at Fort Monmouth, New Jersey. Suspected hazardous waste sites were identified at Fort Monmouth in a report prepared by USATHAMA (1980). The USATHAMA report identified 37 sites with known or suspected waste materials on the Main Post and Charles Wood Area. Weston conducted a background investigation of the 37 sites plus eight additional sites that were identified by Fort Monmouth and the NJDEP. Weston's findings were described in a report entitled *Investigation of Suspected Hazardous Waste Sites at Fort Monmouth, New Jersey* (1993). The M-5 Landfill was one of the 37 sites identified.

In 1995, Weston conducted an SI of the M-5 Landfill and prepared an SI Report (December 1995). The Weston SI Report entitled *Final Site Investigation, Fort Monmouth, New Jersey, Main Post and Charles Wood Areas* (Appendix A) was used as the basis for subsequent remedial investigations (RIs), which progressed to the development of RAs, including the remediation program at the M-5 Landfill. The Army conducted an RI of the site from May of 1997 through September of 1999. ATC was contracted by the Army to evaluate the data collected during the RI and to prepare the RAWP.

2.2.1 SI Report, 1995 – Roy F. Weston, Inc.

The SI performed by Weston in 1995 (Appendix A) at the M-5 Landfill included installation and sampling of two ground water monitoring wells (M-5MW10 [downgradient] and M-5MW11). Surface water sampling was not performed for the M-5 Landfill although surface water had previously been sampled in conjunction with the M-2 Landfill, which is upgradient. Two rounds of ground water sampling were performed and samples were analyzed for Target Compound List (TCL) plus 30 parameters (TCL+30), TAL metals, sulfate, and cyanide.

A background study of the Main Post Area was conducted as part of the SI. Five soil borings on the Main Post were completed in areas believed to be unaffected by base activities, as specified by the 1993 Weston SI Report. Two soil samples were collected from each of the five soil borings. The soil borings were converted to monitoring wells and two ground water samples were collected from each well. Two sediment and surface water samples were also collected as part of the background study. Maximum background concentrations were then established and reported in the SI Report for soil, ground water, surface water and sediment for the Main Post Area of Fort Monmouth so they could be compared to any future laboratory analytical results.

Ground water analytical data for one ground water monitoring well indicated that PCE concentrations exceeding the NJDEP GWQS of 1 µg/L were identified at the M-5 Landfill in monitoring well M-5MW11. Concentrations of sulfate or cyanide did not exceed the NJDEP GWQS. Fourteen metals were detected in site ground water; however, only four (aluminum, iron, manganese, and sodium) were identified at concentrations exceeding the NJDEP GWQS, but were detected at concentrations less than the maximum background concentrations established in the 1995 Weston SI Report and were, therefore, not identified as COCs.

The Weston SI Report (1995) presented a proposal to the Army for the M-5 Landfill that was subsequently implemented. A long-term ground water and surface water monitoring program was proposed utilizing the existing ground water monitoring wells and surface water sampling locations to monitor and document downgradient surface water and ground water quality conditions with time.

As requested by the NJDEP, an expanded SI identified PCE as the only COC in ground water at the M-5 Landfill. In 1998, the Army installed three additional ground water monitoring wells (M-5MW12, M-5MW13, and M-5MW14) as part of the expanded SI. This resulted in the performance of an RI encompassing soil and ground water characterization to determine the extent of the impact of PCE at the site.

2.2.2 Remedial Action Work Plan (RAWP), 2000 – ATC Associates Inc.

ATC submitted an RAWP to Fort Monmouth in February of 2000 (Appendix A). The Army performed an RI of the M-5 Landfill from April 1995 through September 1999. ATC was contracted by the Army to install additional ground water monitoring wells, evaluate data

collected during the RI, and prepare an RAWP.

The following RI approach was established:

- Performance of a Geoprobe® investigation of the soils and ground water within the landfill and surrounding areas to characterize near surface and subsurface soils and shallow ground water and determine whether a source area existed for the PCE observed in ground water.
- Installation of additional ground water monitoring wells within the landfill and surrounding areas and performance of constant discharge pump tests to determine the aquifer characteristics of the shallow saturated zone at the M-5 Landfill.
- Incorporation of new wells into the quarterly ground water monitoring and sampling program.
- Continuation of quarterly surface water sampling to evaluate potential impact to the stream from the PCE detected in the soils and shallow ground water.

Geoprobe® Investigation

The RI involved the drilling of 261 Geoprobe® locations for the collection of soil and ground water samples. The results of the RI indicated that PCE was detected at concentrations greater than the method detection limit (MDL) in seven of the soil borings and at concentrations exceeding the NJDEP Impact to Ground Water Soil Cleanup Criteria (IGWSCC) of 1 milligram per kilogram (mg/kg) in five samples. PCE was detected in ground water samples collected from 105 boring locations at concentrations exceeding the NJDEP GWQS for PCE of 1 µg/L.

Eight VOCs (PCE, TCE, *cis*-1,2-DCE, chlorobenzene, benzene, toluene, ethylbenzene, and total xylenes) were detected in ground water samples; five of which (PCE, TCE, *cis*-1,2-DCE, chlorobenzene, and benzene) were identified in ground water at concentrations exceeding their respective NJDEP GWQS. PCE concentrations greater than the NJDEP GWQS were detected in 105 samples. TCE (six samples), *cis*-1,2-DCE (10 samples), chlorobenzene (five samples), and benzene (nine samples) were detected at concentrations greater than their respective NJDEP GWQS.

Monitoring Wells

A total of 15 ground water monitoring wells, consisting of three (M-5MW10, M-5MW11, and M-8MW12) installed by Weston (1995), three (M-5MW12, M-5MW13, and M-5MW14) installed by the Army (1998), and nine (M-5MW15, M-5MW16, M-5MW18, M-5MW19, M-5MW20, M-5MW23, M-5MW25, M-8MW23, and M-8MW24) installed by ATC (1999) have been incorporated into the ground water monitoring program at the M-5 Landfill. Monitoring well depths range from 14 to 20 feet below ground surface (bgs). Ground water analytical results from the permanent monitoring wells identified PCE as the only COC at the M-5 Landfill. Although PCE concentrations were expected to naturally attenuate and decrease to NJDEP

GWQS with time, the Army proposed to actively remediate the affected areas at the M-5 Landfill by targeting seven specific locations and applying HRC®.

2.2.3 Remedial Action Progress Report (RAPR), 1999-2002 – Versar, Inc.

After the first and second HRC® injections and 12 rounds of ground water monitoring well sampling (4th Quarter of 1999 through the 3rd Quarter of 2002), Versar prepared an RAPR dated April 2003 (Appendix A). The RAPR documented ground water quality conditions with time and evaluated the impact of the HRC® injection program.

The initial injection of HRC® was performed between October and December of 2000 and the second was performed between February and May of 2002. These injection events were completed with the prior approval of the NJDEP under the provisions of a Permit-by-Rule.

A decreasing trend in PCE concentrations and an increase in degradation byproduct concentrations in ground water were observed during the reporting period (4th Quarter of 1999 through the 3rd Quarter of 2002). Ground water analytical results supported the contention that COC degradation was occurring at the M-5 Landfill, presumably due to the effectiveness of the HRC® injection program which supported biodegradation processes.

Based upon the COC concentration in ground water following the HRC® injections, the HRC® subsurface injection program was continued by the Army.

2.2.4 Remedial Action Progress Report (RAPR), 2002-2003 – Versar, Inc.

The third HRC® injection round was performed by the Army between June and August of 2003. This injection event was completed with the prior approval of the NJDEP under the provisions of a Permit-by-Rule. Versar prepared a second RAPR dated September 2005 (Appendix A) following the third injection event for the reporting period (4th Quarter of 2002 through the 3rd Quarter of 2003) which documented ground water quality conditions with time and evaluated the effectiveness of the HRC® injection program.

A decreasing trend in PCE concentrations was observed in ground water at the site throughout the four quarters of ground water sampling. Ground water analytical results supported the contention that PCE degradation was occurring at the M-5 Landfill, presumably due to the effectiveness of the HRC® injection program at supporting biodegradation processes.

Based upon the decreasing concentrations of the COC and increased presence of degradation products in ground water during the reporting period, the HRC® subsurface injection program was continued.

2.2.5 Remedial Investigation Report (RIR) and Sediment Quality Evaluation (SQE), 2004 – Versar, Inc.

To determine potential polychlorinated biphenyl (PCB)-related impacts to sediments in Mill Creek from the adjacent M-5 Landfill, the Army collected 16 sediment samples, including three duplicate samples for quality assurance/quality Control (QA/QC) purposes, on April 13, 2000 from the surface and near surface of Mill Creek. The sediment samples were collected along the 570-foot section of the creek that borders the M-5 Landfill. All 16 sediment samples were analyzed for PCBs and compared to sediment sampling guidance concentrations defined in the NJDEP's November 1998 *Guidance for Sediment Quality Evaluations*.

Only one of the 16 sediment samples (0.054 mg/kg, B-2, zero to six inches bgs) had total PCBs detected greater than the laboratory MDL. This sampling result also exceeded the NJDEP's Effect Range-Low (ER-L) guidance concentration for total PCBs, which represents the concentration at which adverse benthic effects are found in approximately 10% of studies. Other guidance criteria were not exceeded. Analysis of the remaining 15 samples, including upgradient samples, did not indicate PCBs at concentrations exceeding the laboratory MDLs. Given that the result at boring B-2 exceeded only the ER-L guidance concentration and the proximal upgradient samples were ND for total PCBs, no long-term adverse benthic effects were expected in Mill Creek. The RIR and SQE dated January 26, 2004 are provided in Appendix A.

2.2.6 Remedial Investigation Report (RIR) for Near Surface Soils, 2004 – Versar, Inc.

The Army characterized the near surface soils using 254 borings installed at strategic locations throughout the site. The *RIR for Near-Surface Soils* dated March 16, 2004 is provided in Appendix A. The Army advanced soil borings and collected soil samples between September of 1998 and November of 1998. Soil samples were analyzed for TCL+30 parameters and TAL metals.

VOCs, semivolatile organic compounds (SVOCs), pesticides, PCBs, and metals were detected at concentrations exceeding the NJDEP's Residential Direct Contact Soil Cleanup Criteria (RDCSCC). An evaluation of the analytical results did not define a "source area" or level of contamination that necessitated the identification and evaluation of additional RAs. In most cases, either the calculated compliance average was less than the respective NJDEP RDCSCC or the exceedance was considered marginal. Due to the adoption of the Soil Remediation Standards in 2008, this item is further discussed in Section 3.1 of this report.

2.2.7 Remedial Action Progress Report (RAPR), 2003-2005 – VEETech P.C.

The fourth HRC® injection round was performed by the Army from June to August of 2004. This injection event was completed with the prior approval of the NJDEP under the provisions of a Permit-by-Rule. VEETech prepared another RAPR dated February 2009 for the reporting

period of the 4th Quarter of 2003 through the 3rd Quarter of 2005 which documented ground water quality conditions with time and evaluated the effectiveness of the HRC® injection program.

A decreasing trend in PCE concentrations was observed in ground water at the site throughout the eight quarters of ground water sampling. Ground water analytical results supported the contention that PCE degradation was occurring at the M-5 Landfill, presumably due to the effectiveness of the HRC® at supporting biodegradation processes.

Based upon the decreasing concentrations of the COC and increased presence of degradation products in ground water during the reporting period, the HRC® subsurface injection program was continued.

2.2.8 Remedial Action Progress Report (RAPR), 2005-2006 – VEETech P.C.

The fifth HRC® injection event was performed by the Army from September to December of 2005. This injection event was completed with the prior approval of the NJDEP under the provisions of a Permit-by-Rule. VEETech prepared another RAPR dated April 2009 (Appendix A) for the reporting period of the 4th Quarter of 2005 through the 3rd Quarter of 2006 which documented ground water quality conditions with time and evaluated the effectiveness of the HRC® injection program.

Overall, a decreasing trend of PCE concentrations was observed in ground water at the site throughout the four quarters of ground water sampling. The results supported the contention that PCE degradation was occurring at the M-5 Landfill, presumably due to the effectiveness of the HRC® at supporting biodegradation processes.

2.2.9 Remedial Action Progress Report (RAPR), 2006-2008 – VEETech P.C.

During the reporting period of the 1st Quarter of 2006 through the 4th Quarter of 2008, ground water monitoring identified concentrations of PCE, TCE, and vinyl chloride greater than NJDEP GWQS. PCE was detected greater than the NJDEP GWQS of 1 µg/L in five monitoring wells (M-5MW11, M-5MW16, M-5MW19, M-5MW20, and M-5MW23). TCE was detected greater than the NJDEP GWQS of 1 µg/L in four monitoring wells (M-5MW16, M-5MW19, M-5MW20, and M-5MW23); *cis*-1,2-DCE exceeded NJDEP GWQS in monitoring well M-5MW16 on September 13, 2006. Vinyl chloride was detected greater than the NJDEP GWQS of 1 µg/L in one monitoring well (M-5MW16).

During this reporting period, surface water samples were collected from three surface water locations used to monitor the M-5 Landfill and analyzed for VOCs. PCE and TCE were detected at one location, SS-15, exceeding NJDEP freshwater SWQS.

PCE concentrations have decreased in monitoring wells where concentrations were greater than

NJDEP GWQS prior to the first HRC® injection. VEETech recommended that the Army continue quarterly ground water and surface water monitoring and consider additional biological or chemical oxidation treatment events.

3.0 REMEDIAL ACTIVITIES

Sampling results documented in ATC's RAWP (February 2000) for the M-5 Landfill indicated shallow ground water concentrations of PCE exceeding NJDEP GWQS. Although the PCE concentrations in ground water were expected to decrease through natural degradation and attenuation, the Army implemented a HRC® injection program from October 2000 to December 2005 to actively remediate ground water contamination at the site. This bioremediation program involved treating seven areas identified in the RAWP where elevated concentrations of PCE were detected (Figure 3-1 – Bioremediation Area Map). HRC® injection was not conducted during the current reporting period of the 1st Quarter of 2009 through the 3rd Quarter of 2010.

No RAs were completed during this reporting period. In 2009, temporary monitoring point investigations were conducted on July 29, August 7 and 25, and September 8 and 9, when 12 ground water samples were collected from 11 locations. These locations were selected to determine the horizontal and vertical extent of dissolved COC concentrations exceeding NJDEP GWQS at monitoring wells M-5MW11 and M-5MW23.

Laboratory analyses indicated that three VOCs were identified as COCs: *cis*-1,2-DCE, PCE, and TCE. VOC concentrations exceeding NJDEP GWQS were detected in ground water samples collected from temporary monitoring points M-5TMP-6 and M-5TMP-7. These results indicate that the greatest concentrations of COCs are located near monitoring wells M-5MW05 and M-5MW11.

3.1 Landfill Cover Investigation

A landfill cover investigation was conducted to determine the dimensions of the M-5 Landfill. The study incorporated data concerning the redefined landfill area, depth of landfill cover, and the type and concentrations of COCs present as it relates to current applicable NJDEP Soil Remediation Standards (SRS). The complete M-5 *Landfill Cover Investigation Report* is included in Appendix B.

The majority of information summarized in the report was obtained from the *Remedial Investigation Report (RIR) for Near Surface Soils – M-5 Landfill*, Fort Monmouth, New Jersey, prepared by Versar, Inc. (Versar) dated March 15, 2004. The RIR summarizes a Remedial Investigation (RI) performed from April through August 1998 at the M-5 Landfill. Data presented in the Versar RIR were compared to the NJDEP's Residential Direct Contact Soil Cleanup Criteria (RDCSCC), in effect at that time. The same data were compared to the Nonresidential Direct Contact Soil Remediation Standards (NRDCSRS) due to the 2008 adoption of the SRS and the acknowledgement of the Fort that the landfill will be deed restricted for nonresidential uses.

The study was conducted in accordance with the NJDEP'S *Technical Requirements* to characterize near-surface soil and assess potential risks to human health and the environment.

The RI activities included the collection of 508 near-surface soil samples at 254 borings at the M-5 Landfill.

The majority of the M-5 Landfill boundaries were determined through the 1998 RI, a prior review of aerial photographs of the Post from 1940 to 1974, and a study conducted in 2009 that consisted of trenching. The 2009 investigation was undertaken in order to precisely delineate the perimeter of the M-5 Landfill. That effort involved trenching along the northern, eastern, and southern boundaries of the known landfill. The western boundary of the M-5 is Mill Creek; therefore, trenches were not performed along this boundary.

DEPTH OF COVER MATERIAL
Depth of cover material was derived from the logs for all 254 borings in 1998 and 11 trenches and one (1) boring excavated/performed between January and February 2009 for the primary purpose of delineating the boundaries of the M-5 Landfill. Soil boring logs and detailed trench logs show the depth of cover found at each boring and trench location.

Summary of Findings

a. The average depth of cover at the M-5 Landfill is 24.1 inches.
b. Depth of cover throughout the M-5 Landfill varies from a maximum of 72 inches (Trenches T-5, T-10 and T-11) to a minimum of zero cover (Borings 8, 9, 53, 66, 67, 75, 76, 162 and163).
c. 30.88% (80 out of 259) of boring/trench logs show depth of cover greater than 24 inches.
d. Approximately 34.36% of boring/trench locations (89 of 259) show cover greater than 20 inches.

Concentrations of SVOCs and metals exceeded the NJDEP NRDCSRS. A review of the analytical results did not define a “source area” or level of contamination that necessitated the identification and evaluation of potential remedial actions other than the permanent closure of the landfill.

3.2 Proposed Future Remedial Activities

In correspondence dated September 2, 2010 (provided in Appendix B), the Army requested authorization via Permit-by-Rule pursuant to the New Jersey Pollutant Discharge Elimination System, N.J.A.C. 7:14A-1 *et seq*., to permit the injection of RegenOx™ and HRC Advanced® into the subsurface in an effort to remediate COCs detected in ground water at the M-5 Landfill.

In an effort to reduce chlorinated hydrocarbon concentrations in ground water in the areas surrounding monitoring wells M-5MW11, M-5MW16, and M-5MW23, the Army proposes to conduct additional injections using RegenOx™. RegenOx™, a product manufactured by Regenesis, is an advanced chemical oxidation technology that directly oxidizes compounds while

its catalytic component generates a range of highly-oxidizing free radicals that destroy a range of target compounds including total petroleum hydrocarbons (TPHCs), chlorinated compounds, and oxygenates. RegenOx™ injections will generally follow the HRC® injection procedure described in the RIR/RAWP prepared by ATC Associates, and will be limited to areas encompassing only the three aforementioned ground water monitoring wells. The Army proposed the injection of RegenOx™ beginning at a depth of 15 feet bgs; injection rates will be greater than the rate of previous HRC® injections as previously approved by NJDEP. According to Regenesis, the rate of injection should be approximately 20-22 gallons/vertical foot.

The Army proposes to utilize RegenOx™ to treat the COCs in ground water. After treatment with RegenOx™, if COC concentrations exceed applicable NJDEP GWQS, the Army may opt to continue injections using RegenOx™ followed by low-cost accelerated bioremediation using Regenesis' controlled release compound product, namely HRC Advanced®.

HRC Advanced® contains a nontoxic food-grade polyactate ester which quickly undergoes a fermentation that produces hydrogen upon introduction into an aquifer. Hydrogen serves as an electron donor in a reductive dechlorination process. HRC Advanced® also contains fatty acids which ferment more slowly than the polyactate ester, thereby providing a controlled release supply of hydrogen over a longer period of time. The Permit-by-Rule for the RegenOx™/HRC Advanced® request is provided in Appendix B.

4.0 MONITORING AND SAMPLING ACTIVITIES

Quarterly ground water monitoring and surface water sampling continued from the 1st Quarter 2009 through the 3rd Quarter 2010 as part of the long-term monitoring (LTM) at the M-5 Landfill. Ground water samples were collected from 10 monitoring wells (M-5MW10 through M-5MW14, M-5MW16, M-5MW18, M-5MW19, M-5MW20, and M-5MW23) at the M-5 Landfill during seven quarterly sampling events. Two monitoring wells, M-5MW15 and M-5MW25, were last sampled on July 30, 2003.

Surface water samples were collected over seven rounds of sampling from 15 locations (SS-03, SS-05, SS-09, SS-11 through SS-15, SS-19, SS-21, SS-22, SS-24, SS-26, SS-27 and SS-28). During the current reporting period, surface water samples were collected from three locations along Mill Creek and Laferta Creek: SS-24 (upstream of M-5 Landfill), SS-5 (along the western boundary of M-5 Landfill), and SS-28 (downstream of M-5 Landfill).

Sampling was conducted by the Army in accordance with the established protocols as described in the Fort Monmouth Standard Sampling Operating Procedure (SOP No. SAM-0205, August 1999, Revision #1 January 2003, Revision #2 September 2004, Revision #3 January 2006, and Revision #4 April 2008), (Appendix C), and the NJDEP's August 2005 *Field Sampling Procedures Manual*. Ground water samples were analyzed for VO+15 (VOCs with a 15-peak library search) and TAL metals. Laboratory analyses of the samples were conducted at Fort Monmouth's Environmental Testing Laboratory (FMETL), an NJDEP-certified laboratory (Certification No. 13461).

4.1 Ground Water Monitoring

During this reporting period at the M-5 Landfill (1st Quarter 2009 through 3rd Quarter 2010), ground water was encountered at elevations ranging from 1.29 to 11.36 feet above mean sea level (msl). Static depth to water from the top of the monitoring well casings was measured on February 26, 2009, June 12, 2009, September 19, 2009, December 28, 2009, March 29 and 30, 2010, June 29 and 30, 2010, and September 29, 2010. Separate phase product was not observed in the 10 monitoring wells during this reporting period. Figure 2-2 – Site Layout Map illustrates the locations of the monitoring wells. Ground water elevation contour maps have been generated from the 1st Quarter 2010 through the 3rd Quarter 2010. Post-wide depth-to-water measurements were taken in lieu of site-specific measurements beginning in 2010 in order to produce better representations of ground water conditions. The Army proposal and NJDEP response to the Post-wide depth to water collection is provided in Appendix H. Ground water contour maps can be found in Appendices H through J. Please note that ground water contour maps were not generated for the four quarters of 2009. These data indicate that ground water flows in a general west to northwest direction. Depth-to-water measurements are summarized quarterly in Appendices H through J. NJDEP Contour Map Reporting Forms are presented in Appendices H through J, for each quarterly sampling event.

The contour maps indicate that shallow ground water underlying the M-5 Landfill generally flows to the west - northwest toward Mill Creek and Parkers Creek. Variations in ground water flow conditions were not observed during the current monitoring period.

4.2 Ground Water Sampling

Quarterly ground water sampling was conducted by the Army. Quality control samples for the monitoring period provided 10 method blanks, 10 trip blanks, 10 field blanks, and 7 duplicate samples.

Sampling equipment was decontaminated before and after each use. Following collection, the ground water samples were immediately placed in laboratory-supplied bottleware. Sample containers were labeled, sealed, packed in ice, and transported to FMETL under proper chain-of-custody procedures.

Appendices D through J include all associated ground water data, tables and figures specific to each sampling event (i.e., Appendix D is dedicated to all 1st Quarter 2009 sampling data). Each appendix includes Ground Water Elevation Summaries, Ground Water Contour Maps, Contour Map Reporting Forms, Ground Water Contour Reporting Summaries, Isoconcentration Maps, Isoconcentration Summaries, and full laboratory analytical data. (No Ground Water Contour Maps were produced for the 2009 events as the depth-to-water sampling was not conducted on concurrent days. Depth-to-water measurements were collected on a Post-wide basis starting in the 1st Quarter 2010. Considering the much larger number of data points, the Post-wide data are considered to be a better representation of ground water conditions.) For ease of navigation, an item list is provided within each Appendix.

Table 4-1 (Ground Water Sampling Summary) provides a summary of the ground water sampling activities at the M-5 Landfill.

4.3 Surface Water Sampling

Surface water sampling was conducted by the Army for the current reporting period as part of a base-wide surface water sampling program. A total of 105 surface water samples were collected over seven rounds of sampling from 15 locations (SS-03, SS-05, SS-09, SS-11, SS-12, SS-13, SS-14, SS-15, SS-19, SS-21, SS-22, SS-24, SS-26, SS-27 and SS-28). A Surface Water Sampling Location Map is provided in Appendix K. The samples were analyzed by FMETL. The results of these analyses are discussed below in Section 5.2.

Sampling equipment was decontaminated before and after each use. Surface water samples were collected and immediately placed in laboratory-supplied bottleware. Sample containers were labeled, sealed, packed in ice, and transported to the FMETL under proper chain-of-custody procedures.

All surface water sampling data along with supporting data are presented in Appendix K, including copies of the chain-of-custody forms, laboratory analytical data, a summary of surface water sampling activities for Surface Water Rounds 1 through 56 for all sampling points, sampling rounds, sampling identification numbers, stream sampling locations, collection/analysis dates, analytical parameters, and analysis method.

4.4 Types of Waste Generated and Disposal Methods

Waste types generated by the remedial activities included three-gallon polyethylene pails, polyethylene tubing, Teflon® bailers, mason string, and personal protective equipment. The pails were recycled and the other materials were disposed of in accordance with the Fort Monmouth Solid Waste Management Plan.

5.0 SAMPLING ANALYTICAL RESULTS

This section includes a summary discussion of the chemical characterization of the M-5 Landfill based upon the samples collected and analyzed for the current reporting period, including seven quarterly rounds of ground water monitoring well samples and seven rounds of surface water samples. Analytes detected in ground water or surface water samples at concentrations greater than their respective NJDEP GWQS are bolded and highlighted in the tables.

5.1 Ground Water Sampling Results

Summaries of the analytical results from the monitoring wells at the M-5 Landfill from the inception of LTM are summarized in Tables 5-1 through 5-12. Monitoring wells M-5MW15 and M-5MW25 were last sampled in July of 2003. Ground water summary tables include detected analytical results for the M-5 Landfill and are divided by monitoring well numbers and sampling dates. The characterization of ground water quality at the M-5 Landfill contains 56 quarterly ground water sampling events conducted from May of 1997 through September of 2010. Ground water results are compared to NJDEP GWQS and are presented in three different tabs (electronically) reflecting changes to NJDEP criteria. The first set of data is compared against the January 7, 1993 criteria; the next is when criteria changes occurred on November 7, 2005, followed by further criteria changes on July 27, 2007.

The results in the ground water summary tables include analyte detections as well as exceedances of NJDEP GWQS, which are bolded and shaded. VOCs, SVOCs, pesticides/PCBs, and metals are presented as required to summarize results for detected parameters. Detections are presented in the ground water sampling result summary tables as follows:

- Xylenes are reported as total xylenes (the sum of *o*-xylene and *m*,*p*-xylenes).
- Tentatively Identified Compounds (TICs) are added and reported as total concentrations for the sum of TICs detected for VOCs and SVOCs.
- Duplicate samples are provided after the respective primary sample.
- Low Flow sampling method results are identified as “LF”.
- A “J” value is a concentration exceeding the MDL but less than the reporting limit (RL) for VOCs, SVOCs, and pesticides/PCBs.
- Estimated Results (“ER”) are concentrations exceeding the MDL and less than the RL for metals.
- A “B” value is a compound detected in the sample and the associated blank sample.
- Sample suites that were discontinued are recorded in the footnotes along with a date of NJDEP Case Manager approval.
- If a particular sample suite or analyte was not detected in a monitoring well, the suite/analyte is not presented in the monitoring well summary table.

Ten monitoring wells (M-5MW10 through M-5MW14, M-5MW16, M-5MW18 through M-5MW20, and M-5MW23) at the M-5 Landfill were sampled during the current reporting period

(1st Quarter 2009 through the 3rd Quarter 2010) and analyzed for VOCs and TAL metals. Analyses for SVOCs, pesticides and PCBs were discontinued for monitoring wells at the M-5 Landfill starting with Round 26.

5.1.1 Volatile Organic Compounds (VOCs) and Semivolatile Organic Compounds (SVOCs)

During seven quarterly sampling events for the current reporting period from February 2009 through September 2010, four VOCs (*cis*-1,2-DCE, PCE, TCE, and vinyl chloride) were detected at concentrations exceeding their respective NJDEP GWQS.

Analytical results for five monitoring wells (M-5MW11, M-5MW16, M-5MW19, M-5MW20 and M-5MW23) sampled during the current reporting period exceeded NJDEP GWQS for PCE. Analytical results for four monitoring wells (M-5MW16, M-5MW19, M-5MW20, and M-5MW23) sampled during the current reporting period exceeded NJDEP GWQS for TCE. The concentration of vinyl chloride exceeded NJDEP GWQS in one monitoring well (M-5MW16), as did *cis*-1,2-DCE in M-5MW20. PCE was initially identified as the COC in the RAWP. PCE degradation byproducts, TCE, *cis*-1,2 DCE, and vinyl chloride have been identified as COCs in subsequent RAPRs submitted to the NJDEP.

A summary of results exceeding NJDEP GWQS in the current reporting period is presented on Table 5-13. Figure 5-1 – Ground Water Contaminant Distribution Map summarizes the analytical results for COCs on a site map.

SVOCs were not analyzed during the current reporting period.

5.1.2 Tentatively Identified Compounds (TICs)

During this reporting period, VO TIC concentrations in ground water did not exceed the NJDEP GWQS of 100 µg/L for individual compounds or 500 µg/L for total TIC concentrations. Table 5-14 summarizes the analytical results for the ground water VO TICs during this reporting period.

The only TIC detection during this reporting period was in the 3rd Quarter 2010 in M-5MW20 (7 µg /L). No other TICs were detected during this reporting period.

5.1.3 Metals

During the current reporting period, ground water was sampled and analyzed for metals in the 1st, 2nd and 3rd Quarters of 2010. Eleven metals were detected in the M-5 Landfill ground water samples. Two metals (antimony and arsenic) were detected at concentrations greater than their respective NJDEP GWQS. Nine metals (barium, beryllium, cadmium, chromium, copper, lead, nickel, mercury and thallium) were detected at concentrations in compliance with the

NJDEP GWQS.

Arsenic concentrations were detected greater than the NJDEP GWQS in monitoring wells M-5MW12, M-5MW13, M-5MW16, M-5MW18 and M-5MW19. The greatest arsenic exceedance was 6.40 µg/L, which is less than the maximum background concentration (89.3µg/L) for ground water established in the Weston (1995) Report.

Antimony concentrations were detected greater than NJDEP GWQS in all monitoring wells during the current reporting period. Antimony concentrations were below the maximum background concentration (20.7 µg/L) for ground water established in the Weston (1995) Report with the exception of M-5MW12 and M-5MW13 in the 3rd Quarter 2010 which had exceedances of 27.5 and 30.1 µg/L, respectively.

In the 1st Quarter 2010, the Army began sampling for metals utilizing low flow sampling methods. Low flow sampling is the preferred method of sampling for metals by the NJDEP as it causes minimal disturbance to water and sediments in the well and generally produces samples with lower turbidity compared to standard purge methods.

Due to quality control issues in the FMETL during the analysis of selenium throughout this reporting period, no results have been reported for this metal. Please note that metals were not analyzed for in 2009.

5.1.4 Pesticides/Polychlorinated Biphenyls (PCBs)

Pesticides/PCBs were not analyzed for during the current reporting period.

5.1.5 Ground Water Contaminants of Concern (COCs)

Volatile Organic Compounds (VOCs) - The following summarizes VOC concentrations detected greater than NJDEP GWQS during the current reporting period:

- PCE concentrations in M-5MW11 ranged from 0.69 (1st Quarter 2010) to 2.74 µg/L (2nd Quarter 2009). PCE concentrations exceeded the NJDEP GWQS of 1 µg/L in five of seven sampling rounds for the current reporting period. Figure 5-2 illustrates the PCE concentrations with time in monitoring well M-5MW11, including all quarters of LTM since May of 1997.
- PCE concentrations in M-5MW16 ranged from 1.36 (1st Quarter 2010) to 4.9 µg/L (4th Quarter 2009). PCE concentrations exceeded the NJDEP GWQS of 1 µg/L in all seven sampling rounds for the current reporting period. Figure 5-3A illustrates the PCE concentrations with time throughout the LTM in monitoring well M-5MW16.
- PCE concentrations in M-5MW19 ranged from ND (3rd Quarter 2009 and 2nd and 3rd Quarters 2010) to 3.17 µg/L (2nd Quarter 2009). PCE concentrations exceeded the NJDEP GWQS of 1 µg/L in two of seven sampling rounds for the current reporting

period. Figure 5-4A illustrates the PCE concentrations with time throughout the LTM in monitoring well M-5MW19.

- PCE concentrations in M-5MW20 ranged from 0.96 (4th Quarter 2009) to 11.13 µg/L (2nd Quarter 2010). PCE concentrations exceeded the NJDEP GWQS of 1 µg/L in six of seven sampling rounds for the current reporting period. Figure 5-5A illustrates the PCE concentrations with time throughout the LTM in monitoring well M-5MW20.
- PCE concentrations in M-5MW23 ranged from 1.76 (4th Quarter 2009) to 46.64 µg/L (3rd Quarter 2010). PCE concentrations exceeded the NJDEP GWQS of 1 µg/L in all seven sampling rounds for the current reporting period. Figure 5-6A illustrates the PCE concentration with time throughout the LTM in monitoring well M-5MW23.
- TCE concentrations in M-5MW16 ranged from ND (3rd and 4th Quarters 2009) to 1.84 µg/L (1st Quarter 2010). TCE concentrations exceeded the NJDEP GWQS of 1 µg/L in three of seven sampling rounds for the current reporting period. Figure 5-3B illustrates the TCE concentrations with time throughout the LTM in monitoring well M-5MW16.
- TCE concentrations in M-5MW19 ranged from ND (3rd Quarter 2009 and 3rd Quarter 2010) to 2.9 µg/L (1st Quarter 2009). TCE concentrations exceeded the NJDEP GWQS of 1 µg/L in one of seven sampling rounds for the current reporting period. Figure 5-4B illustrates the TCE concentrations with time throughout the LTM in monitoring well M-5MW19.
- TCE concentrations in M-5MW20 ranged from 0.30J (4th Quarter 2009) to 51.25 µg/L (2nd Quarter 2010). TCE concentrations exceeded the NJDEP GWQS of 1 µg/L in five of seven sampling rounds for the current reporting period. Figure 5-5B illustrates the TCE concentrations with time throughout the LTM in monitoring well M-5MW20.
- TCE concentrations in M-5MW23 ranged from ND (1st, 2nd, 3rd and 4th Quarters of 2009) to 2.62 µg/L (3rd Quarter 2010). TCE concentrations exceeded the NJDEP GWQS of 1 µg/L in three of seven sampling rounds for the current reporting period. Figure 5-6B illustrates the TCE concentrations with time throughout the LTM in monitoring well M-5MW23.
- *cis*-1,2-DCE concentrations in M-5MW20 ranged from 1.44 µg/L (4th Quarter 2009) to 111.95 µg/L (2nd Quarter 2010); cis-1,2-DCE concentrations exceeded the NJDEP GWQS of 70 µg/L in one of seven sampling rounds for the current reporting period. Figure 5-5C illustrates the *cis*-1,2-DCE concentrations with time throughout the LTM in monitoring well M-5MW20.
- Vinyl chloride concentrations in M-5MW16 ranged from ND (2nd, 3rd and 4th Quarters of 2009 and 1st and 3rd Quarters of 2010) to 1.28J µg/L (1st Quarter 2009). Vinyl chloride concentrations exceeded the NJDEP GWQS of 1 µg/L in two of seven sampling rounds for the current reporting period. Figure 5-3C illustrates the vinyl chloride concentrations with time throughout the LTM in monitoring well M-5MW16.

All other monitoring wells had *cis*-1,2-DCE, PCE, TCE, and vinyl chloride concentrations that were ND or less than their respective NJDEP GWQS.

Metals - The metals identified as exceedances of NJDEP GWQS are not considered to be COCs

as they are naturally occurring metals within the soils on the Fort and no source areas are apparent. A discussion of background metals concentrations is provided in Section 6.0 of this RAPR.

5.1.6 Ground Water - Quality Assurance/Quality Control (QA/QC)

To verify the reliability of ground water analytical results, a review of the holding times for each sample and the results of the analyses for 10 method blanks, 10 trip blanks, 10 field blanks, and seven field duplicate samples was conducted. The discussion below is based upon QA/QC for the ground water samples. Samples were analyzed by the FMETL within the prescribed holding time requirements for the analytical method.

Method Blanks

Laboratory method blanks accompanied each batch of samples for the M-5 Landfill. These method blanks consisted of laboratory-grade water that was processed identically to the samples and analyzed with the sample batch. A total of 10 method blanks were analyzed with the M-5 Landfill samples.

No VOCs were detected in the method blanks.

Trip Blanks

A total of 10 trip blanks were provided as part of the M-5 Landfill sampling program to document that VOCs were not introduced into the samples during the handling process. The trip blanks were prepared by the FMETL and consisted of sample bottles filled with laboratory-deionized water. The trip blanks remained with the sample bottles in coolers and were returned to the laboratory for analyses along with the ground water samples.

Chloroform was detected in one of the 10 trip blanks at a concentration of 5.12 µg/L during the 3rd Quarter 2009. This detection did not exceed the NJDEP GWQS of 70 µg/L. Chloroform is a common laboratory contaminant and this single detection is not indicative of a widespread laboratory contamination problem. The detection of chloroform indicates that sample handling procedures, including sample containers, may have introduced contamination into the sampling and analysis processes.

No other VOCs or COCs were detected in the trip blank samples.

Field Blanks

One field blank sample was collected during each day's sampling activities to check for potential introduction of contaminants from the field sampling and equipment decontamination procedures. A total of 10 field blanks were collected during this reporting period of the M-5 Landfill sampling program. The field blanks were collected by pouring laboratory-deionized

water over the sampling equipment used for daily activities. The water was collected in clean laboratory-supplied containers and submitted for analysis along with the M-5 Landfill ground water samples.

Chloroform was detected in one of the 10 trip blanks at a concentration of 2.46 µg/L during the 3rd Quarter 2009. This detection did not exceed the NJDEP GWQS of 70 µg/L. Chloroform is a common laboratory contaminant and this single detection is not indicative of a widespread laboratory contamination problem. The detection of chloroform indicates that sample handling procedures, including sample containers, may have introduced contamination into the sampling and analysis processes.

No other VOCs or COCs were detected in the field blank samples.

Duplicate Samples

Ten field duplicate samples were also collected during the current reporting period for the M-5 Landfill sampling events to verify the consistency of the entire sampling and analytical procedure. The Relative Percent Differences (RPDs) for the duplicate sample analyses for VOCs ranged from zero (0) percent to 31.37 percent; and for metals, zero (0) percent to 13.70 percent (Table 5-15). The average RPDs for duplicate analyses for VOCs were 8.80 percent; and for metals, 8.68 percent. The RPDs for all sampling categories ranged from zero (0) percent to 31.37 percent with an average of 9.74 percent.

M-5 Ground Water Data Validation

Tetra Tech EM Inc. (Tetra Tech) conducted data validation for the M-5 Landfill. Data were evaluated for the following criteria: data completeness, sample preservation, receipt and holding times, gas chromatography and mass spectrometry (GC/MS) instrument performance checks, initial and continuing calibration, calibration verification, field, trip, and laboratory blanks, inductively coupled plasma–interference check sample (ICP-ICS), system monitoring compounds (surrogates), matrix spike/matrix spike duplicates (MS/MSDs), laboratory duplicate sample analysis, ICP serial dilution, field duplicates, laboratory control samples (LCSs), dilution, re-extraction and reanalysis, internal standards, target analyte identification, analyte quantitation, and reported detection limits. Data validation packages are provided in their respective appendices.

- Tetra Tech conducted data validation of the analytical results for 10 ground water samples, one field duplicate, one field blank, and one trip blank that were collected at the M-5 Landfill on December 28, 2009. The overall quality of this data package was acceptable. Rejection of data was not required for this data package. The VOC data were qualified because of minor calibration irregularities and results less than the laboratory RLs but greater than the MDLs. All data can be used as qualified.

- Tetra Tech conducted data validation of the analytical results for 10 ground water samples, one field duplicate, two trip blanks, and two field blanks, which were collected at the M-5 Landfill on June 29 and 30, 2010 as part of the 2nd Quarter 2010 LTM project. The overall quality of the data was acceptable. For sample M-5MW20, the undiluted result for *cis*-1,2-DCE and the diluted results for the remaining VOCs were rejected as unusable for the reason that in the initial VOC analysis of Sample M-5MW20 the concentration of *cis*-1,2-DCE exceeded the calibration range. The sample was reanalyzed at a five-fold dilution, which brought the concentration of that compound within the calibration range. Both sets of results are given in the written report (Appendix I), but the original (undiluted) result for *cis*-1,2-DCE is rejected (flagged "R") and the diluted results for all other analytes are rejected. This leaves one reported result for each VOC analyte in that sample. All data, except for the rejected VOC results, may be used as qualified.

5.2 Surface Water Sampling Results

Quarterly surface water samples were collected at 15 locations during the current sampling period (Surface Water Sampling Rounds 50 through 56). Results for surface water samples from the inception of the LTM are summarized in Appendix K. Surface water summary tables include detected analytical results for the surface water sample locations and are divided by surface water sample numbers and sampling dates.

A total of seven quarterly surface water sampling events were conducted from March of 2009 through September of 2010. The surface water sampling results from the base-wide sampling program were compared to NJDEP freshwater SWQS. Concentrations of VOCs, metals, and wet chemistry exceeding their respective NJDEP freshwater SWQS are summarized in Appendix K. Surface water COC distributions with time are presented in Appendix K. The results of the current surface water sampling events are discussed below.

The results in the surface water summary tables include analyte detections as well as exceedances of NJDEP freshwater SWQS, which are bolded and shaded. VOCs, metals, and wet chemistry parameters are presented as required to summarize results for detected parameters. Detections are presented in the surface water sampling result summary tables as follows:

- Xylenes are reported as total xylenes (the sum of *o*-xylene and *m*,*p*-xylenes).
- TICs are added and reported as a total concentration for the sum of TICs detected for VOCs.
- Duplicate samples are provided after the respective primary sample.
- A "J" value is a concentration exceeding the MDL but less than the RL for VOCs.
- Estimated Results ("ER") are concentrations exceeding the MDL and less than the RL for metals.
- A "B" value is a compound detected in the sample and its associated field blank sample.
- If a particular sample suite or analyte was not detected in a surface water sample location,

the suite/analyte is not presented in the summary table.

5.2.1 Volatile Organic Compounds (VOCs)

During seven quarterly sampling events for the current reporting period, four VOCs (bromodichloromethane, PCE, TCE, and vinyl chloride) were detected at concentrations exceeding their respective NJDEP SWQS.

Appendix K includes a summary of the analytical results which exceeded NJDEP SWQS during the current reporting period.

5.2.2 Tentatively Identified Compounds (TICs)

During this reporting period, VO TICs were periodically detected at low level concentrations at seven of the 15 total locations. For purposes of comparison, concentrations were compared to NJDEP GWQS as there are no NJDEP SWQS for VO TICs.

Surface water TICs did not exceed either the NJDEP GWQS of 100 µg/L for an individual compound or 500 µg/L for total TIC concentrations during the current reporting period (Appendix K).

5.2.3 Metals

Four metals (antimony, arsenic, lead, and mercury) were detected at concentrations exceeding their respective NJDEP SWQS.

Appendix K includes a summary of the analytical results which exceeded NJDEP SWQS during the current reporting period.

5.2.4 Pesticides

Pesticides were not analyzed for during the current reporting period.

5.2.5 Surface Water Contaminants of Concern (COCs)

During the current reporting period, surface water samples were collected from three locations along Mill Creek and Laferta Creek: SS-24 (upstream of M-5 Landfill), SS-5 (along the western boundary of M-5 Landfill), and SS-28 (downstream of M-5 Landfill). PCE concentrations exceeded NJDEP SWQS in SS-5, SS-24, and SS-28. TCE concentrations exceeded NJDEP SWQS in SS-24. Although PCE and TCE were detected at concentrations exceeding NJDEP SWQS, the location and distribution of COCs suggests that the M-5 Landfill is not the probable source for these VOCs.

5.2.6 Surface Water – Quality Assurance/Quality Control (QA/QC)

To verify the reliability of surface water analytical results, a review of the holding times for each sample and the results of the analyses of nine method blanks, seven trip blanks, seven field blanks, and seven field duplicate samples was conducted. The discussion below is based upon QA/QC for the VOC surface water samples. Samples were analyzed by the FMETL within the prescribed holding time requirements for the analytical method.

Method Blanks

Laboratory method blanks accompanied each batch of surface water samples for each Main Post surface water sampling event. These method blanks consisted of laboratory-deionized water that is processed identically to the samples and analyzed with the sample batch. A total of nine VOC method blanks were analyzed with the base-wide surface water samples.

No VOCs were detected in the method blank samples.

Trip Blanks

A total of seven trip blanks were provided as part of the base-wide surface water sampling program to document that VOCs were not introduced into the samples during the handling process. The trip blanks were prepared by the FMETL and consisted of sample bottles filled with laboratory-deionized water. The trip blanks remained with the sample bottles in coolers and were returned to the laboratory for analyses along with the surface water samples.

Methylene chloride was detected in one of the seven trip blanks at a concentration of 15.28 µg/L, which is greater than the NJDEP Freshwater SWQS of 2.5 µg/L and less than the NJDEP saline SWQS of 310 µg/L. Methylene chloride is a common laboratory contaminant and its detection is not indicative of a widespread laboratory contamination problem. The detection of methylene chloride indicates that sample handling procedures, including sample containers, may have introduced contamination into the sampling and analysis processes.

No COCs were detected in the trip blank samples.

Field Blanks

One field blank sample was obtained during each day's sampling activities to document equipment decontamination procedures. A total of seven field samples (e.g., field blanks) were collected during the base-wide surface water sampling program. The field blanks were collected by pouring laboratory-deionized water over the sampling equipment used for daily activities. The water was collected in clean laboratory-supplied containers and submitted for analysis along with the surface water samples.

Methylene chloride was detected in one of seven trip blanks at a concentration of 2.18 µg/L, which is less than the NJDEP Freshwater SWQS of 2.5 µg/L and NJDEP saline SWQS of 310 µg/L. As noted for the trip blanks, the detection of methylene chloride may indicate that sample handling procedures, including sample containers, may have introduced contamination into the sampling and analysis processes.

No COCs were detected in the field blank samples.

Duplicate Samples

A total of seven field duplicate samples were also collected during the base-wide surface water sampling events to verify the consistency of the entire sampling and analytical procedures.

The results for the duplicate samples were similar to those obtained for the original samples. The RPDs for the duplicate sample analyses ranged from 0 to 21.51%; however, the average RPD for the seven duplicates was 13.65%. Based upon average RPDs, the QA/QC sampling results indicate a high level of precision.

Surface Water Data Validation

Tetra Tech conducted data validation for the Main Post surface water sampling results. Data was evaluated for the following criteria: data completeness, sample preservation, receipt and holding times, GC/MS instrument performance checks, initial and continuing calibration, calibration verification, field, trip, and laboratory blanks, ICP-ICS, system monitoring compounds (surrogates), MS/MSDs, laboratory duplicate sample analysis, ICP serial dilution, field duplicates, LCSs, dilution, reextraction and reanalysis, internal standards, target analyte identification, analyte quantitation, and reported detection limits.

- Tetra Tech conducted data validation of the analytical results for 15 surface water samples, one field duplicate, one field blank, and one trip blank that were collected at various Stream Sites (abbreviated to "SS" in the sample designations) on December 7, 2009. The overall quality of this data package was acceptable. Rejection of data was not required for this data package. The VOC data were qualified because of minor calibration irregularities and results less than the laboratory RLs but greater than the MDLs. Metals results were qualified for calibration verification irregularities, blank contamination, a result greater than the linear range of the instrument, and results less than the laboratory RLs but greater than the MDLs. All data can be used as qualified.

- Tetra Tech conducted data validation of the analytical results for 15 surface water samples, one field duplicate, one trip blank, and one field blank, that were collected on June 22, 2010 as part of the 2nd Quarter 2010 LTM project. Tetra Tech concluded that the overall quality of the data was acceptable. No results were rejected. All data can be used as qualified.

6.0 BACKGROUND METALS EVALUATION

Historically, ground water samples from monitoring wells throughout Fort Monmouth's Main Post and the Charles Wood Area have periodically displayed concentrations of metals that exceed NJDEP GWQS. Some of the metals have been retained as COCs while characterization has continued. However, it has long been believed that the metal detections represent materials derived from the native soil as a background condition in the local region.

Brinkerhoff Environmental Services (2011) noted the likelihood that metal results reflected the presence of high turbidity in samples (see Appendix L). In addition, the analysis of glauconitic clay (see Appendix L) indicates that the clay contains a metal fingerprint that mirrors that found in turbid ground water samples, suggesting the fines from the native clays are the source of the turbidity and that the metals are derived from acid extraction of the metals on those fines when subjected to the preservatives added to the sample vials.

The Army has conducted additional analysis of available data and concludes that the metals heretofore designated as COCs in ground water are, in fact, native materials associated with clay fines in the samples. The following describes the approach taken and the conclusions drawn from the results of the analyses.

6.1 Evaluation Approach

In the past, each site at Fort Monmouth has been evaluated on its own merits with respect to COCs and risk. However, it has become very clear that the apparent metals issue is ubiquitous and would benefit from a base-wide analysis. Pursuant to that, a review was made of all historical groundwater sampling data to help put metal results in perspective. In the Brinkerhoff background analysis (2011), it was concluded that there were no sources for any of the metals observed in ground water, with the possible exception of lead. Because there were potential sources of lead present at Fort Monmouth (but not specifically associated with any individual site), Brinkerhoff chose not to rule out the possibility that some of the metals found in ground water could be the direct result of a release. At the same time, Brinkerhoff found a direct correlation between arsenic concentrations and lead concentrations, despite there being no potential source of arsenic releases. The obvious implication of that finding is that lead, as well as arsenic, arises from its presence in native soil. As a consequence, the Army has focused its analysis primarily on lead.

The review focused on the following areas:

- Nature of apparent sources
- Relationship of metals levels to turbidity
- Extreme variability in field duplicate results
- History of atypical spikes

6.1.1 Nature of Apparent Sources

A review of monitoring data over the life of the environmental restoration program at Fort Monmouth reveals that virtually every monitoring well at one time or another has had a metal concentration that has exceeded NJDEP GWQS. Given the diverse nature of activities and the location of the monitoring wells, this suggests a common factor across sites other than the activities that might have resulted in releases. Specific to lead contamination, sites with heating oil tanks and lime pits are unlikely sources of a release. Not only is lead not present as an additive in heating oil, but the characteristics of the lime pit should reduce the solubility of lead, not increase it. Lead is mobilized by acidity, not by basic conditions.

When the review is expanded to all metals, there is a consistent pattern of observations despite the nature of the Army's activities as seen in Table 6-1. Moreover, the metals observed (antimony – Sb; arsenic – As; beryllium – Be, cadmium – Cd, chromium – Cr; lead – Pb; and nickel – Ni) are all present in glauconitic clay. Metal observations in ground water are consistent, despite the disparate nature of the Army's activities at the sites being monitored.

Table 6-1
Metal Observations in Ground Water Are Consistent, Despite the Disparate Nature of the Army's Activities At the Sites Being Monitored

Site	Release Type	Location	Other COCs	Metals > NJGWQS (Bkgd)
FTMM-14, M-14 Landfill	Landfill	Main Base, Central		Sb, As, Be, Cd, Pb, Th
FTMM-03, Landfill M-3	Landfill	Main Base, North Central	VOC	Sb, As, Cd, Pb
Building 750	Heating Oil USTs	Main Base. South Central		Sb, As, Be, Cd, Cr, Pb, Ni
FTMM-18, 54, 55, 62	Landfill, USTs, Fuel area	Main Base, North Central	Benzene	Sb, As, Be, Cd, Pb
FTMM-25, Landfill CW-3A	Landfill	Charles Wood, South		Sb, As, Be, Cd, Cr, Pb
FTMM-28, Pesticide Spill Location	Pesticide Spill, USTs Fuel Area	Charles Wood, Central		As, Pb, Cd, Sb, Sl, Th
FTMM-04, Landfill M-4	Landfill	Main Base, West Central		Sb, As, Be, Cd, Pb, Th
FTMM-12, M-12 Landfill	Landfill	Main Base, Central		Sb, As, Be, Cd, Pb, Th
FTMM-66, Building 866	Heating Oil AST	Main Base, South Central	Methyl Napthalene,	Sb, As, Cd, Pb

			Benzene, BEHP	
FTMM-58, Building 2567	Active Gas Station	Charles Wood, East Central	Tert Butyl Alcohol	Sb, As, Pb
FTMM-56, Buildings 80-166	Heating Oil UST	Main Base, East	Chlordane, DDD, DDE	Sb, As, Be, Cd, Pb, Th
FTMM-22, Building CW-1	Lime Pit	Charles Wood, West	TCE	Sb, As, Pb
FTMM-57, Building 108	Heating Oil UST	Main Base, East		Sb, AS, Pb

6.1.2 Relationship of Metal Levels to Turbidity

Brinkerhoff Environmental Services' *Report on Background Metals* (2011) notes in Section 4.2 that there has been a historic problem with turbid samples and the subsequent dissolution of metals from native soil by the nitric acid preservative used on samples intended for metals analysis. In a background study of the glauconite-rich soil at Fort Monmouth, researchers noted concentrations of 16 mg/kg lead (March 9, 2011 letter from U.S. Army to Larry Quinn). Turbidity is exacerbated by purge techniques in formations with fine soil particles, but can also be a problem with low-flow sampling as noted in Tetra Tech's January 2010 Data Validation Report in which some field duplicates had RPDs for metals that exceeded QC criteria (e.g., 80MW03 on 2/24/2010).

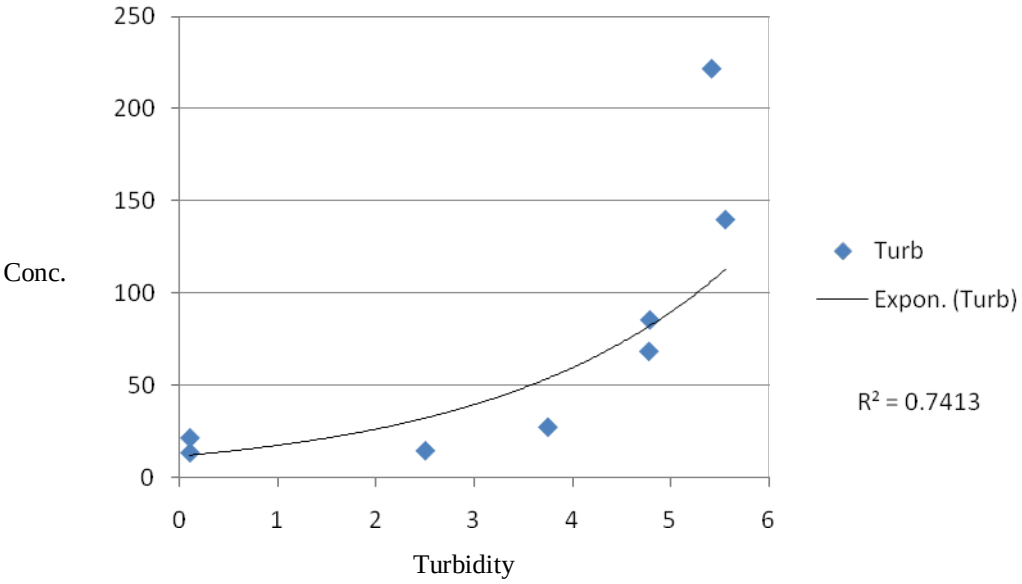
Turbidity data have not been reported for most historic samples. However, turbidity has been measured since implementation of low-flow sampling techniques in 2010. In general, samples should have turbidity < 5 units for a sample to yield results representative of dissolved metals. The data presented in Table 6-2 summarize turbidity levels for samples taken from various sites at Fort Monmouth in 2010. Clearly, turbidity remains a problem, despite the use of low-flow sampling. Occurrence of turbidity in excess of 5 NTU in 2010 samples have continued despite the use of low-flow sampling techniques.

Table 6-2
Occurrence of Turbidity In Excess of 5 JTU in 2010 Samples Have Continued, Despite Use of Low Flow Sampling Techniques

Site	Turbidity (NTU) **Bold XX** – Value is in excess of 5 NTU										
	MW01	MW02	MW03	MW04	MW05	MW06	MW07	MW08	MW09	MW10	MW11
FTMM-57 (Q2)	**9.16**	**10.3**	4.16	**37.4**							
FTMM-03 (Q1)				0.28	**15.6**	4.64	**7.63**	4.83	**12.4**	**10.8**	2.28
FTMM-03 (Q2)				3.61	**11.7**	**10.3**	**6.02**	**11.5**	**7.54**	2.13	1.82
FTMM-18/54/55/62 (Q2)	2.14	**16.8**	1.67	**11.3**		**6.17**	**34.5**	**13.3**			
FTMM-04 (Q1)							3.65	**36.6**	**7.68**	1.43	
FTMM-04 (Q2)							2.81	**24.3**	**6.17**	2.7	
FTMM-66 (Q2, RW wells)	**14.4**	**222**	13.3	**140**	**85.5**	**68.4**	**21.4**	**27.2**			
FTMM-58 (Q1)	**38.1**	**11.5**	**8.67**	**22**	**9.4**	**21.6**	**6.88**				
FTMM-58 (Q2)	0.58	**6.17**	**10.2**	**5.54**	**35.7**	**16.8**	**8.17**				
Well	MW16	MW17	MW18	MW19	MW20	MW21	MW22	MW23	MW24	MW25	MW26
FTMM-12	3.06	**5.65**	1.2	0.75	0.33	4.34	2.05	**5.61**	3.36	**5.22**	**9.72**

When the turbidity is high, there is a direct correlation between turbidity and lead concentrations as is evident from the data from Site FTMM-66 samples collected in May 2010 (Figure 6-1).

Figure 6-1
There is a Direct Correlation Between Turbidity and Lead Concentrations at FTMM-66 Using Low Flow Sampling Techniques



As one would expect, the introduction of low-flow sampling techniques has reduced metal concentrations reported in ground water samples at Fort Monmouth. A comparison of lead concentrations prior to and after implementation of the low-flow techniques is provided in Table 6-3. As is evident, lead concentrations decreased when low flow sampling was implemented. However, as presented in Table 6-2, turbidity issues are still present with low flow sampling and can still cause an apparent elevation in lead levels.

Table 6-3
There Has Been a Clear Reduction in Lead with Use of Low Flow Sampling Techniques, Despite Continued Presence of High Turbidity

Site	Lead Concentration (ug/L) Pre-Low Ave/Low Flow Ave										
	MW 01	MW 02	MW 03	MW 04	MW 05	MW 06	MW 07	MW 08	MW 09	MW 10	MW 11
FTMM-57 (10/08 to 8/10)	16./6.9	9/4.2	5.4/3.7	8.6/4.7		7.6/6.0					
FTMM-03 (12/08 to 9/10)				ND/1.9	ND/ 4.4	ND/3.7	48/3.3	ND/6.4	ND/3.3	ND/6.2	ND/3.3
Bldg 750 (10/08 to 8/10)	0.9/ND	61/6.5	6.7/ND	1.9/ND							

FTMM-18/54/55/62 283 wells (10/08 to 9/10)					8.1/ND	3.9/ND					
FTMM-18/54/55/62 290 and 296 wells (10/08 to 9/10)	10.7/ND	5.6/1.2	15/3.8*	4.5/4.5	5.7/7.2	5.2/4.5	5/ND	9.2/6			
FTMM-25 (10/08 to 7/10)	5.9/ND	7.2/3.4	8.2/2.4	9/3.5							
FTMM-04 (10/8 to 7/10)							3.5/ND	12/ND	4/ND	6.7/ND	
FTMM-66 (12/8 to 8/10)	5.1/3.7	2.9/1.5	5.2/6.1	ND/ND	28/2.8						
FTMM-58 (11/08 to 9/10)	ND/ND	3.4/ND	1.5/ND	2.2/5.5	30/9.2	1.9/ND					
FTMM-56 (2/09 to 8/10)	3.8/4.7	2.9/ND	5.2/ND	ND/2.8	19/3.6						
FTMM-56 Well 166 (2/09 to 8/10)	7.3/3.4										
Well	MW 16	MW 17	MW 18	MW 19	MW 20	MW 21	MW 22	MW 23	MW 24	MW 25	MW 26
FTMM-12 (10/8 to 9/10)	10/2.6	4.4/3.2	5.7/5.3	9.8/ND	4.1/4.9	2.9/ND	7.7/6.6	2.9/4.1	4.7/ND	2.1/ND	5.6/2.8
FTMM-12 14MW wells (10/8 to 9/10)				3.7/3.7	1.9/ND	ND/ND	6.2/9.2	1.3/3.6	5.4/ND		

*Average does not include the 1060 value reported in 1/2010 that was an outlier

6.1.3 Extreme Variability in Metal Content of Field Duplicate Samples

In accordance with standard quality control/quality assurance protocol, field duplicate samples were collected throughout the performance of monitoring work at Fort Monmouth. Pursuant to the Quality Assurance Project Plan for Fort Monmouth, whenever samples are found to have a

relative percent difference (RPD) of greater than 25% for metals, the data quality is suspect. An examination of the RPD values for ground water samples at Fort Monmouth reveals that a significant number of the duplicates collected from wells across the installation have RPD values well in excess of 25%.

Table 6-4
A Significant Percentage of the Field Duplicates Collected at Fort Monmouth Yielded RPD for Lead in Excess of the Quality Control/Quality Assurance Threshold Value of 25%

Site	Well	Date	Lead Concentration (ug/L)		RPD (%)
			Sample #1	Sample #2	
FTMM-57	MW01	11/2000	8.14	15.6	63
		5/2001	4.2	5.33	24
		10/2008	30.8	20.9	38
	MW04	5/2000	ND	67.2	194
		9/2001	2.45	3.65	39
		12/2001	5.03	5.18	2.9
		2/2009	1.71	9.74	140
		6/2009	25.1	22.7	10
		8/2009	5.26	4.04	26
		11/2009	2.98	3.55	17
FTMM-22	MW26	8/1998	ND	149	197
		8/1999	ND	2.89	97
		2/2001	1.47	2.06	33
	MW31	5/2001	10.7	2.65	52
		11/2001	18.3	1.91	32
	MW38	11/2002	6.11	ND	144
	MW281	3/1999	6.22	4.98	22
		5/2000	33.1	ND	188
		11/2001	ND	2.05	69
	MW282	6/1998	5.5	3.9	169
		8/2000	66.6	ND	118
FTMM-03	MW04	6/2010	ND	3.68	85
FTMM-18/54/55/62	290MW01	9/2010	2.48	ND	85
	296MW01	8/2000	3.69	4.43	18
		11/2000	ND	63.3	194
		5/2001	4.07	6.89	51
		3/2009	7.06	5.9	18
		5/2009	ND	9.32	161
	296MW06	8/2001	17	1.34	171
	296MW07	2/2001	3.15	2.76	13
FTMM-25	MW01	8/1999	ND	4.16	122

		11/1999	3.82	3.55	7
		10/4/2000	ND	2.12	72
		10/16/2000	ND	231	198
		5/2002	6.54	1.93	109
		8/2003	3.82	ND	117
	MW02	4/2001	1.89	1.6	17
	MW03	1/1998	16	ND	176
		4/2003	2.65	2.18	19
		10/2005	ND	5.56	139
		7/2009	9.51	ND	162
		1/2010	ND	4.86	132
	MW04	4/2010	3.14	2.82	11
		7/2010	2.53	5.46	73
FTMM-12	14MW19	6/2009	6.79	3.97	52
		9/2009	4.72	ND	130
		11/2009	3.11	ND	103
FTMM-66	80MW01	11/2001	19.7	3.08	146
	166MW01	3/2000	4.21	2.93	36
		10/2000	16.4	36.5	76
		4/2001	31	6.44	131
		8/2001	15.9	15.2	5

The presence of turbidity is the most common cause of poor RPD performance when metals are the analyte. Simply put, suspended solids that cause turbidity in water samples are heterogeneous by nature and when the sample is split, there is no way to divide them evenly so that both samples obtain the same amount of solids, let alone an evenly divided sampling of the different solid particle types that may be present. A single particle of mineral origin can have sufficient metal content to dramatically affect the RPD.

6.1.4 Occurrence of Atypical Spikes

Metals generally move slowly in ground water, both because of the slow velocity of the water itself and because of interactions with the soil that retard their movement. As such, time frames are sufficient for dispersion and diffusion to give rise to classic Gaussian plumes that display first order concentration gradients. When samples collected in sequential quarters differ in concentration by more than an order of magnitude, it suggests that at least one of the two values does not represent dissolved metal content and is more likely to be the result of acid extraction from suspended solids in the sample. Atypical spikes noted in historic monitoring results are presented in Table 6-5.

Table 6-5
Historical Data from Fort Monmouth Show Rapid Increases and Decreases in Lead Concentrations That Cannot Be Attributed to Dissolved Metals

Site	Well	Date	Lead Concentration (ug/L)		
			Preceding	Spike	Succeeding
FTMM-57	MW01	3-9/1999	90	125	11.2
		5-10/2002	6.91	28.3	4.88
		8/2008 – 6/2009	2.45	30.6 and 16.1	2.9
	MW02	7-8/1993		137	ND
		6/1997-3/1998	4.2	17	ND
		2-9/2003	ND	15.4	2.87
	MW03	6/1997-3/1998	4.2	17	ND
		2-9/2003	ND	15.4	2.87
	MW04	4-11/1997	24	122	35
		5-11/1998	34.4	99 and 163	7.18
		8-11/2000	13.2	143	1.26
FTMM-22	MW38	11/2000-2/2001		90.8	ND
	MW40	9/2002-2/2003	ND	13.2	ND
Bldg 750	MW01	4/1993-11/1994	ND	23	3.2
		9/1997-3/1998	3.3	12	5
		5-12/1998	ND	14	5.2
		5-11/2000	ND	31.2	ND
		2-8/2004	ND	20.5	ND
	MW02	11/1996-2/1997		23.8	ND
		5-12/1998	ND	69	ND
		12/1998-7/1999	ND	111 and 612	7.84
		5/2000-2/2001	15.7	114 and 68.4	ND
		5-11/2002	5.41	44.8	9.25
		11/2004-4/2005	7	59.2	ND
		8/2008-	ND	232	2.03

		3/2009			
	MW03	12/1998-6/1999	ND	17.3	ND
		10/1999-5/2000	ND	19.4	ND
		1-7/2005	ND	22.7	ND
	MW04	11/8-30/1994		201	4.7
		2-8/2001	ND	66.7	2.92
		1-7/2005	ND	33.4	ND
FTMM-18/54/55/62	296MW01	3-8/2000	ND	20.5	4.06
	296MW02	11/1997-5/1998	30	836	16.5
		3-8/2000	6.3	28.3	7.74
		5-12/2002	1.5	177	ND
		2-8/2005	17.3	52	ND
		5-11/2009	ND	36.1	2.73
		11/2009-5/2010	2.73	1060	ND
	296MW04	12/2001-5/2002	5.54	31.4	9.93
	296MW06	5-8/2001	2.18	17	1.34
		11/2003-5/2004	ND	31.8	ND
	296MW07	8/2001-3/2002	5.69	18.2	3.36
		11/2003-5/2004	ND	17.9	ND
		7/2004-2/2005	ND	14.5	ND
	296MW08	5-12/2001	13.1	80.6	16
FTMM-25	MW01	1-3/1998	ND	16	ND
	MW02	10/2001-5/2002	2.37	34.1	1.29
	MW03	8/1999-2/2000	ND	1010	ND
		5-8/2000	2.35	26.5	1.7
	MW04	5-8/2000	ND	104	ND
		10/2000-4/2001	ND	32.4	ND
		1-7/2002	1.73	23	7.4
		10/2003-5/2004	6.06	86.6	ND

FTMM-04	MW08	7/2009-1/2010	ND	31.1	ND
FTMM-12	14MW22	10/2008-6/2009	ND	9.96	ND
		6-9/2010	ND	9.23	
FTMM-66	80MW01	6-11/1998	3.3	10.4	2.86
		3-8/2000	3.67	10.4	2.86
		2-8/2005	ND	18.3	6.5
	80MW04	2-8/2005	ND	19.4	ND
	80MW05	1-12/2002	13.4	47.2 and 70.1	4.31
		2-8/2009	ND	28.4	ND
	166MW01	8/1997-2/1998	1.6	15	ND
		6-11/1998	2.3	12.4	4.23
		3-8/2000	2.93	17.3	5.12
		3-9/2003	1.62	10.2	3.43
FTMM-58	MW02	4-1993-3/1994	ND	260	ND
		8/1997-3/1998	ND	20	8
FTMM-56	80MW05	2-8/2009	ND	28.4	ND
	166MW01	6-11/2009	ND	7.25	ND

6.2 Conclusion of Base-Wide Evaluation of Metals As Contaminants of Concern

The only consistent explanation for lead findings to date (and other metals as well) is that fine particles of glauconitic clay are suspended in many of the samples and yield metals when contacted with the acid preservative used for ground water samples. The applicability of each of these factors to individual sites at Fort Monmouth is summarized in Table 6-6.

Table 6-6
All Sites with Historic Lead Occurrences Have One or More Clear Markers Suggesting Turbidity is the Source of the Lead

Site and Use	Most Recent Lead Con Range in ug/L (date)	Percent of Low Flow Samples with Turbidity > 5 NTU	Affect of Low Flow (Ave Post/Pre)*	% of RPD** > 25 (Maximum RPD)*	# Atypical Spikes (Max Value in ug/L)
FTMM-12, M-14 Landfill	ND-9.23 (9/9/2010)			60% (194)	2 (9.96)
FTMM-03, Landfill M-3	ND-8.37 (9/7/2010)	50% (Q1) 62.5% (Q2)	0.59	100% (85)	
Building 750 – Heating Oil UST	ND (8/18/2010)		0.13		18 (612)
FTMM-18, 54, 55, 62 Landfill, USTs, and Fuel Area	ND-8.89 (9/29/2010)	71.4%	0.17 (#283) 0.48 (#290/6)	62.5% (194)	14 (1060)
FTMM-25, Landfill CW-3A	ND-4 (7/26/2010)		0.34	71.4% (198)	7 (110)
FTMM-04, Landfill M-4	ND (7/21/2010)	50% (Q1) 50% (Q2)	0.15	50% (73)	1 (31.1)
FTMM-12, M-12 Landfill	ND-9.23 (9/9/2010)	36.3%	0.56 1 (#14MW)	100% (130)	
FTMM-66, Building 866, Heating Oil AST	ND-7.09 (8/5/2010)	100%	0.36	80% (146)	10 (70.1)
FTMM-58, Building 2567, Gas Station	ND (1/16/2004)	100% (Q1) 87.4% (Q2)	0.47		2 (260)
FTMM-56, Buildings 80-166, Heating	ND-6.43 (8/31/2010)		0.41		2 (28.4)

Oil UST					
FTMM-22, Building CW-1, Lime Pit	ND-2.45 (8/24/2010)			91% (197)	2 (90.8)
FTMM-57, Building 108, Heating Oil UST	ND-6.91 (8/19/2010)	75%	0.55	70% (197)	11 (163)

*Based on setting ND samples at 1 ug/kg
**If both duplicates were ND or if one was ND and the other <2 ug/L, the duplicate was not evaluated

Given the weight of evidence, the Army has concluded that metal detections in general, and lead specifically, are the direct result of acid leaching of suspended solids in ground water samples. Therefore, metals are not considered COCs. This is further supported by the location of the Wenonah Mount Laurel aquifer, which is approximately 125 feet bgs - too deep to be affected by the presence of these metals near ground surface. In addition, the sensitive receptor survey (Appendix M) indicated no domestic or irrigation wells are close enough to be adversely impacted by COC migration.

7.0 RECEPTOR EVALUATION

7.1 Sensitive Receptor and Well Search

A visual and documentary search of sensitive populations was performed the Army and their subcontractor to identify potentially sensitive populations within 200 feet of the FTMM boundary. The identification of said populations is in accordance with NJDEP statutory requirements. The Receptor Evaluation Report, NJDEP Sensitive Receptor Survey Form, and Sensitive Receptor Survey figure are provided in Appendix M.

Although the identified populations are within 200 feet of the FTMM boundary, all of the environmentally-impacted locations are an appreciable distance from the fence line and in all cases exceed the 200-foot buffer established by NJDEP. In addition, site-specific utility maps were reviewed to identify any preferential pathways which could affect site contamination plumes. These maps are provided in Appendix M.

In addition to the sensitive receptors, the Army has included all identified off-site wells within 2,000 feet of the FTMM perimeter. No production wells were identified within 2,000 feet of the FTMM boundary. The majority of off-site wells are monitoring wells associated with various remedial activities. A ground water model has been developed for FTMM, with the overall ground water flow pattern for the Main Post being easterly with a localized northeasterly component. FTMM is bounded by surface water bodies to the east and northeast. Domestic and/or irrigation wells to the east or northeast of the Main Post would not be impacted by activities on FTMM property.

Surface water bodies interact with ground water at FTMM. The interaction takes place in three basic ways: streams gain water from inflow of ground water through the streambed, streams lose water to ground water by outflow through the streambed, or both, gaining in some reaches and losing in other reaches. When ground water discharges into a surface water body, the elevation of the ground water table in the vicinity of the surface water body must be higher than the elevation of the stream water surface. Conversely, for surface water to seep to ground water, the elevation of the water table in the vicinity of the stream must be lower than the elevation of the stream water surface. The surface water bodies at FTMM (Oceanport and Parkers Creeks) may be gaining or losing depending upon the tidal cycle. Throughout the entire tidal cycle however, net results are that ground water inflows into the creeks, albeit at low flow rates. Figures depicting the surface water features, wetland areas, and stream bank stabilization areas in the vicinity of the Site are included in Appendix M.

7.2 Vapor Intrusion (VI) Investigation

FTMM evaluated the requirements for a VI assessment in accordance with the NJDEP's October 2005 Vapor Intrusion Guidance (VIG) and *Technical Requirements.* FTMM utilized the three-stage assessment criteria as detailed in the VIG decision framework to determine the

applicability of VI regulations. Site-specific ground water data from the seven most recent quarterly ground water sampling events were compared to the NJDEP Ground Water Screening Levels (GWSLs). Given that PCE, TCE, and vinyl chloride concentrations exceeded applicable NJDEP GWSLs and were identified within 100 feet of surrounding building(s), a vapor intrusion evaluation is warranted. All supporting documentation regarding the VI evaluation, including a figure depicting groundwater concentrations and distances are included in Appendix M.

7.3 Baseline Ecological Evaluation (BEE)

Shaw Environmental, Inc. was contracted by the Army to conduct a Baseline Ecological Evaluation (BEE) for Fort Monmouth's Main Post and Charles Wood Areas. Sampling of multiple media was conducted in 2010. The draft BEE was submitted in May 2011 and will be updated once comments are resolved with NJDEP.

7.4 Public Notification

In accordance with Public Notification requirements in the *Technical Requirements* (N.J.A.C. 7:26E-1.4), the Army submitted a request to the NJDEP Site Remediation Program dated June 17, 2010 to conduct an alternative Public Notification Plan. This request was approved by the NJDEP in correspondence dated June 24, 2010, a copy of which is provided in Appendix M.

The alternative Public Notification Plan includes newspaper advertisements being placed in local and county newspapers through the Asbury Park Press and Link, all public notification documents being sent to the Municipal Clerk for each municipality in which the contaminated site is located, and to the local designated health officials. FTMM has also established a local document repository for all reports produced regarding the site remediation areas of concern (AOCs) at Fort Monmouth. The repository is located at the Monmouth County Library in Shrewsbury, New Jersey, where all reports are available for public review. Said reports are also available online at https:/cecom100.monmouth.army.mil/usagfmima/sites/local/brac.asp.

The Fort conducted two Open Houses in January of 2008 and January of 2009, during which time figures and data regarding all of the Fort's site remediation AOCs were on display; environmental personnel from the Fort were available to answer questions from the public. The Fort will conduct a third Open House should the need arise.

The Fort also operates a Fort Restoration Advisory Board (RAB) which holds quarterly public meetings held by RAB members who are public citizens, not elected officials, selected from all of the surrounding towns. They review and comment on technical documents and plans relative to ongoing environmental investigations and restoration activities at the Fort. Members serve as liaisons with the community and are available to meet with community members and groups. The meetings are open to the public and notification of all meetings is provided in local newspapers as well as by mail to all interested parties. All environmental projects subject to the *Technical Requirements* are presented to the RAB via this public forum. Examples of the

newspaper advertisement and Affidavit of Publication placed in the Asbury Park Press are provided in Appendix M.

8.0 REMEDIAL ACTION PROGRESS

Long-term ground water monitoring results indicate that PCE concentrations have decreased in monitoring wells where concentrations were greater than NJDEP GWQS at the onset of the first HRC® injection. Concentrations of PCE have continued to decrease in certain monitoring wells, notably M-5MW11 and M-5MW16, through the current reporting period (1st Quarter 2009 through the 3rd Quarter 2010). Concentrations of PCE in other monitoring wells, notably M-5MW19 and M-5MW20, appeared to stabilize. Concentrations of PCE degradation byproducts appear to have stabilized, but continue to increase in some wells.

Concentrations of PCE and breakdown byproducts (TCE and vinyl chloride) continued to exceed NJDEP GWQS in monitoring wells M-8MW23, M-8MW12, M-5MW11, M-5MW16, M-5MW20, M-5MW19 and M-5MW23. The greatest concentrations of PCE remain in hydraulically upgradient monitoring well M-5MW16. At the time of report preparation, additional rounds of chemical injections have been planned. The effectiveness of these injections will be covered in subsequent RAPRs.

8.1 Costs of Remediation Incurred to Date

Total costs to date for the annual implementation of the RAs performed at the M-5 Landfill are approximately $1,961K (Appendix N). This includes the Preliminary Assessment (PA) Phase, SI, RI, Remedial Design, RA, LTM, and reporting.

8.2 Ground Water Conclusions

Figures 5-2 through Figure 5-6 illustrate the trends in concentrations of PCE and degradation byproducts with time for monitoring wells M-5MW11, M-5MW16, M-5MW19, M-5MW20 and M-5MW23 where these chlorinated VOCs were detected greater than their respective NJDEP GWQS. During this reporting period, PCE and/or degradation byproducts were not detected in four of the 13 monitoring wells (M-5MW10, M-5MW12, M-5MW13 and M-5MW14).

PCE was detected at concentrations greater than NJDEP GWQS in M-5MW11. PCE concentrations in M-5MW11 ranged from 0.69 (1st Quarter 2010) to 2.74 µg/L (2nd Quarter 2009). PCE concentrations exceeded NJDEP GWQS in five of seven sampling rounds during the current reporting period.

PCE was detected at concentrations greater than NJDEP GWQS in M-5MW16. PCE concentrations in M-5MW16 ranged from 1.36 µg/L (1st Quarter 2010) to 4.9 µg/L (4th Quarter 2009). PCE concentrations exceeded the NJDEP GWQS in all seven sampling rounds during the current reporting period.

PCE was detected at concentrations greater than NJDEP GWQS in M-5MW19 [3.17 µg/L (2nd Quarter 2009) and 3.03 µg/L (1st Quarter 2009)]. PCE concentrations were either ND or

detected at less than NJDEP GWQS for the remaining five rounds of the current reporting period.

PCE was detected at concentrations greater than NJDEP GWQS in M-5MW20, ranging from 0.96 (4th Quarter 2009) to 11.13 µg/L (2nd Quarter 2010). PCE was detected at concentrations less than NJDEP GWQS in M-5MW20 in the 4th Quarter 2009 and greater than NJDEP GWQS in all other sampling events during this reporting period.

PCE was detected at concentrations greater than NJDEP GWQS in M-5MW23, ranging from 1.76 µg/L (4th Quarter 2009) to 46.64 µg/L (3rd Quarter 2010). PCE concentrations exceeded NJDEP GWQS for all seven sampling rounds during the current reporting period.

TCE was detected at concentrations greater than NJDEP GWQS in M-5MW16, ranging from ND (3rd and 4th Quarters of 2009) to 1.84 µg/L (1st Quarter 2010). The NJDEP GWQS for TCE is 1 µg/L. TCE was detected at concentrations less than NJDEP GWQS in M-5MW16 in four of the sampling events conducted during this reporting period (2nd, 3rd, and 4th Quarters of 2009 and 3rd Quarter 2010).

TCE was detected at concentrations greater than NJDEP GWQS in M-5MW19, ranging from ND (3rd Quarter 2009 and 3rd Quarter 2010) to 2.9 µg/L (1st Quarter 2009). TCE was detected at concentrations in compliance with the NJDEP GWQS in M-5MW19 in the 2nd and 4th Quarters of 2009 and 1st and 2nd Quarters of 2010, and was ND in the 3rd Quarters of 2009 and 2010.

TCE was detected at concentrations greater than NJDEP GWQS in M-5MW20, ranging from 0.30J (4th Quarter 2009) to 51.25 µg/L (2nd Quarter 2010). TCE was detected at concentrations less than NJDEP GWQS for the 2nd and 4th Quarters of 2009, but detected at concentrations greater than NJDEP GWQS for the remaining five rounds of sampling in the current reporting period.

TCE was detected at concentrations greater than NJDEP GWQS in M-5MW23 at 1.77 µg/L, 2.15 µg/L, and 2.62 µg/L during the 1st, 2nd and 3rd Quarters of 2010, respectively. TCE was not detected throughout the remaining sampling events during the current reporting period (1st, 2nd, 3rd and 4th Quarters of 2009).

cis-1,2-DCE concentrations in M-5MW20 ranged from 1.44 (4th Quarter 2009) to 111.95 µg/L (2nd Quarter 2010); *cis*-1,2-DCE concentrations exceeded the NJDEP GWQS of 70 µg/L in one of seven sampling rounds for the current reporting period and were either ND or detected below NJDEP GWQS in the remaining nine monitoring wells associated with the M-5 Landfill.

Vinyl chloride was detected at concentrations greater than NJDEP GWQS in M-5MW16, ranging from 1.15 (2nd Quarter 2010) to 1.28J µg/L (1st Quarter 2009). Vinyl chloride was ND in M-5MW16 in the remaining rounds of sampling for the current reporting period. Vinyl

chloride was not detected in the other nine monitoring wells associated with the M-5 Landfill throughout the current reporting period.

Ground Water Discussion

Ground water monitoring conducted during the current reporting period identified PCE, TCE, and vinyl chloride at concentrations that exceeded the NJDEP's GWQS for Class II-A aquifers. PCE was detected at concentrations greater than the NJDEP GWQS of 1 µg/L in five monitoring wells (M-5MW11, M-5MW16, M-5MW19, M-5MW20, and M-5MW23). TCE was detected at concentrations greater than the NJDEP GWQS of 1 µg/L in four monitoring wells (M-5MW16, M-5MW19, M-5MW20, and M-5MW23). *cis*-1,2-DCE was detected at concentrations exceeding the NJDEP GWQS of 70 µg/L in monitoring wells M-5MW16 and M-5MW20. Vinyl chloride was detected at concentrations greater than the NJDEP GWQS of 1 µg/L in monitoring well M-5MW16 only.

In addition, two metals (arsenic and antimony) were detected at concentrations exceeding NJDEP GWQS. As detailed in Section 6.0 of this RAPR, these metal detections are the direct result of acid leaching of suspended solids in ground water samples. Therefore, metals are not considered COCs at the M-5 Landfill. In addition, due to the extremely slow migration rates of metals in ground water, they pose little potential for migration.

8.3 Surface Water Conclusions

During this reporting period, surface water samples were collected from a total of 15 locations used to monitor the Main Post Area. All locations were monitored for VOCs, with select locations monitored for arsenic and lead or the full suite of TAL metals.

During the current reporting period, surface water samples were collected from three locations along Mill Creek and Laferta Creek: SS-24 (upstream of M-5 Landfill), SS-5 (along the western boundary of M-5 Landfill), and SS-28 (downstream of M-5 Landfill). PCE concentrations exceeded NJDEP Surface Water Quality Standards (SWQS) in SS-5, SS-24, and SS-28. TCE concentrations exceeded NJDEP SWQS in SS-24. Although PCE and TCE were detected at concentrations exceeding NJDEP SWQS, the location and distribution of COCs suggests that the M-5 Landfill is not the probable source for these VOCs.

8.4 Future Plans

The following actions are planned:

- Prepare a Remedial Action Selection Report (RASR)/Feasibility Study (FS) that will include a final closure plan for the M-5 Landfill.

- Continue quarterly ground water and surface water sampling until closure of Fort Monmouth in September 2011. At that time, future sampling will be evaluated and discussed with NJDEP.

- Discontinue analysis of ground water samples for metals.

8.5 Remedial Action (RA) Schedule

The table and Gantt chart provided in Appendix N represent a scheduled summary for remedial activities at the M-5 Landfill from the PA phase through the end of this reporting period and estimated into the future. Said table and chart include actual costs and schedule to date and estimated/anticipated costs and projected schedule for future activities.

9.0 CLASSIFICATION EXCEPTION AREA (CEA)

Brinkerhoff Environmental Services, Inc. (Brinkerhoff) completed a proposed CEA in accordance with current NJDEP guidelines, specifically the procedures described in the *Final Guidance on Designation of CEAs* and the *Technical Requirements for Site Remediation* (*Technical Requirements*), New Jersey Administrative Code (N.J.A.C.) 7:26E-8.4, last amended on November 4, 2009.

A combined M5/M8 CEA was generated based on the COCs present at both landfills. The CEA is based upon current ground water conditions and the prediction of future ground water conditions. Therefore, only the most recent analytical data set from the September 2010 sampling event was used to estimate the extent of the CEA. Data from the most recent sampling rounds (2009 and 2010) indicate that eleven constituents: three volatile organic compounds (VOCs), six pesticides, and two metals, exceeded NJDEP GWQS.

Arsenic and antimony were detected in ground water samples collected during the September 2010 sampling event at concentrations exceeding NJDEP GWQS. Metals are known to migrate slowly and to not degrade. Metals in ground water throughout Fort Monmouth were evaluated using statistical analyses and published literature information (Brinkerhoff, 2011 *Background Metals Evaluation*). It was concluded that the metals detections in ground water are likely a combination of a natural dissolved component along with input from sample turbidity and thus are not included in the CEA.

Pesticides are also not included in the CEA as pesticide concentrations detected in shallow groundwater are indicative of proper pesticide application in a residential setting and do not represent a release/spill of pesticides. Input from sample turbidity, as seen base-wide with metals concentrations in ground water, is seen as a contributing factor to the pesticide detections historically observed in M-5/M-8 Landfill ground water. Therefore, VOCs (PCE, TCE, and VC) are the only compounds on which the fate and transport modeling included in this report are based. Fate and transport modeling results for PCE are presented for the well with the highest detected concentrations, along with historical measured data. The decreasing 2000 to 2010 modeled results show the fate and transport model calibration, and from 2010 to the year when the concentration in the “hot spot” decreases to comply with NJDEP GWQS.

The CEA duration for PCE is 20 years (September 2010 to September 2030). The CEA duration for pesticides is indeterminate. The September 2010 CEA extent is approximately three acres.

The vertical extent of the Site CEA includes the shallow part of the aquifer beneath the Site and it extends from the water table, five feet below ground surface (bgs) to approximately 20 feet bgs, which represents the total depth of the wells at both landfills.

10.0 REFERENCES

USATHAMA (US Army Toxic and Hazardous Materials Agency), May 1980, *Installation Assessment of Fort Monmouth. Report 171*

US Geological Survey, Photorevised 1989, *Long Branch Quadrangle Map*

Roy F. Weston, Inc., December 1993, *Investigation of Suspected Hazardous Waste Sites at Fort Monmouth, New Jersey*

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ATC Associates, Inc., February 2000, *Remedial Action Work Plan – Landfill M-5, Main Post, Fort Monmouth, New Jersey*

New Jersey Department of Environmental Protection, 2005, *Technical Requirements for Site Remediation*, NJAC 7:26E

New Jersey Department of Environmental Protection, *Field Sampling Procedures Manual*, 1992 and 2005

US Army Garrison, Fort Monmouth, New Jersey, Directorate of Public Works (DPW), August 1999, Revised January 2003, September 2004, January 2006, and April 2008, *Fort Monmouth Standard Sampling Operating Procedure (SOP No. SAM-0205)*.

Versar, Inc., August 2003, U.S. Army Garrison, Fort Monmouth, New Jersey, *M-5 Landfill - Final Remedial Action Progress Report (4th Quarter 1999 through 3rd Quarter 2002)*

Versar, Inc., January 26, 2004, *Remedial Investigation Report and Sediment Quality Evaluation, M-5 Landfill, U.S. Army Installation Fort Monmouth, Fort Monmouth, New Jersey*

Versar, Inc., March 15, 2004, *Remedial Investigation Report for Near Surface Soils, M-5 Landfill, U.S. Army Installation Fort Monmouth, Fort Monmouth, New Jersey*

Versar, Inc., September 2005, U.S. Army Garrison, Fort Monmouth, New Jersey, *M-5 Landfill - Final Remedial Action Progress Report (4th Quarter 2002 through 3rd Quarter 2003)*

VEETech, P.C., March 2009, U.S. Army Garrison, Fort Monmouth, New Jersey, *M-5 Landfill (FTMM-05) - Remedial Action Progress Report (4th Quarter 2003 through 3rd Quarter 2005)*

VEETech, P.C., April 2009, U.S. Army Garrison, Fort Monmouth, New Jersey, *M-5 Landfill (FTMM-05) - Remedial Action Progress Report (4th Quarter 2005 through 3rd Quarter 2006)*

FIGURES

TABLES

APPENDIX A

Electronic Documents Library

Item 1: **Roy F. Weston, Inc., December 1995, Final Site Investigation, Fort Monmouth, New Jersey, Main Post and Charles Wood Areas**

Item 2: **ATC Associates, Inc., February 2000, Remedial Action Work Plan – M-5 Landfill, Main Post, Fort Monmouth, New Jersey**

Item 3: **Versar, Inc, April 2003, Remedial Action Progress Report for 1999-2002 – M-5 Landfill, Fort Monmouth, New Jersey**

Item 4: **Versar, Inc, September 2005, Remedial Action Progress Report for 2002-2003 – M-5 Landfill, Fort Monmouth, New Jersey**

Item 5: **Versar, Inc., January 26, 2004, Remedial Investigation Report and Sediment Quality Evaluation, M-5 Landfill, Fort Monmouth, New Jersey**

Item 6 **Versar, Inc., March 15, 2004, Remedial Investigation Report for Near Surface Soils, M-5 Landfill, Fort Monmouth, New Jersey**

Item 7: **VEETech, Inc, February 2009, Remedial Action Progress Report for 2003-2005 – M-5 Landfill, Fort Monmouth, New Jersey**

Item 8: **VEETech, Inc, April 2009, Remedial Action Progress Report for 2005-2006 – M-5 Landfill, Fort Monmouth, New Jersey**

Item 9: **VEETech, Inc, September 2010, Remedial Action Progress Report for 2006-2008 – M-5 Landfill, Fort Monmouth, New Jersey**

APPENDIX B

Remedial Action Documents

Item 1: **M-5 Landfill – Remedial Investigation Of Landfill Cover Requirements**

Item 2: **Request for Permit-by-Rule for RegenOx™ and HRC Advanced® Advanced Injections. M-5 Landfill, Fort Monmouth, New Jersey. September 2, 2010**

Item 3: **Approval of Discharge to Ground Water Permit-By-Rule, M-5 Landfill – Injection of RegenOx™ and HRC Advanced®, Fort Monmouth, New Jersey, November 10, 2010**

APPENDIX C

Fort Monmouth Directorate of Public Works Standard Operating Procedure

Item 1:	**Decontamination Procedures for Field Equipment, Revised April 14, 2008**
Item 2:	**Field Sampling, Revised March 29, 2010**
Item 3:	**Geoprobe® Sampling Methods, Revised, March 29, 2010**
Item 4:	**Oxygen Release Compound (ORC®)/ Hydrogen Release Compound (HRC®) Injections, Revised March 29, 2010**
Item 5:	**Monitoring Well Sampling for IRP Sites at Fort Monmouth, Revised April 17, 2008**
Item 6:	**Low Flow Monitor Well Sampling, Revised October 13, 2010**

APPENDIX D

1st Quarter 2009 Ground Water Sampling

Item 1: **Contaminant Isoconcentration Maps**

Item 2: **Contaminant Isoconcentration Summary Table**

Item 3: **Laboratory Analytical Data**

Note: Contaminant Isoconcentration Maps have been generated for the combined M-5 and M-8 Landfills. Contaminant Isoconcentration Summary Tables are provided herein for both landfill sites. Laboratory analytical data are provided only in each Landfill's respective RAPR.

APPENDIX E

2nd Quarter 2009 Ground Water Sampling

Item 1: **Contaminant Isoconcentration Maps**

Item 2: **Contaminant Isoconcentration Summary Table**

Item 3: **Laboratory Analytical Data**

Note: Contaminant Isoconcentration Maps have been generated for the combined M-5 and M-8 Landfills. Contaminant Isoconcentration Summary Tables are provided herein for both Landfill sites. Laboratory analytical data are provided only in each Landfill's respective RAPR.

APPENDIX F

3rd Quarter 2009 Ground Water Sampling

Item 1: **Contaminant Isoconcentration Map**

Item 2: **Contaminant Isoconcentration Summary Table**

Item 3: **Laboratory Analytical Data**

Note: Contaminant Isoconcentration Maps have been generated for the combined M-5 and M-8 Landfills. Contaminant Isoconcentration Summary Tables are provided herein for both Landfill sites. Laboratory analytical data are provided only in each Landfill's respective RAPR.

APPENDIX G

4th Quarter 2009 Ground Water Sampling

Item 1: **Contaminant Isoconcentration Map**

Item 2: **Contaminant Isoconcentration Summary Table**

Item 3: **Laboratory Analytical Data**

Item 4: **Tetra Tech EM, Inc. *Laboratory Data Validation Report for the M-5 Landfill 4th Quarter 2009*, January 27, 2010**

Note: Contaminant Isoconcentration Maps have been generated for the combined M-5 and M-8 Landfills. Contaminant Isoconcentration Summary Tables are provided herein for both Landfill sites. Laboratory analytical data are provided only in each Landfill's respective RAPR.

APPENDIX H

1st Quarter 2010 Ground Water Sampling

Item 1:	**Ground Water Contour Map**
Item 2:	**MODFLOW Ground Water Contour Map**
Item 3:	**Ground Water Contour Summary Table**
Item 4:	**Contour Map Reporting Form**
Item 5:	**Army Proposal and NJDEP Response for Postwide Depth to Water Collection**
Item 6:	**Contaminant Isoconcentration Maps**
Item 7:	**Contaminant Isoconcentration Summary Table**
Item 8:	**Laboratory Analytical Data**

Note: Contaminant Isoconcentration Maps have been generated for the combined M-5 and M-8 Landfills. Contaminant Isoconcentration Summary Tables are provided herein for both Landfill sites. Laboratory analytical data are provided only in each Landfill's respective RAPR.

APPENDIX I

2nd Quarter 2010 Ground Water Sampling

Item 1:	**Ground Water Contour Map**
Item 2:	**MODFLOW Ground Water Contour Map**
Item 3:	**Ground Water Contour Summary Table**
Item 4:	**Contour Map Reporting Form**
Item 5:	**Contaminant Isoconcentration Maps**
Item 6:	**Contaminant Isoconcentration Summary Table**
Item 7:	**Laboratory Analytical Data**
Item 8:	**Tetra Tech EM, Inc. *Laboratory Data Validation Report for the M-5 Landfill 2nd Quarter 2010,* January 17, 2011**

Note: Contaminant Isoconcentration Maps have been generated for the combined M-5 and M-8 Landfills. Contaminant Isoconcentration Summary Tables are provided herein for both Landfill sites. Laboratory analytical data are provided only in each Landfill's respective RAPR.

APPENDIX J

3rd Quarter 2010 Ground Water Sampling

Item 1: **Ground Water Contour Map**

Item 2: **MODFLOW Ground Water Contour Map**

Item 3: **Ground Water Contour Summary Table**

Item 4: **Contour Map Reporting Form**

Item 5: **Contaminant Isoconcentration Maps**

Item 6: **Contaminant Isoconcentration Summary Table**

Item 7: **Laboratory Analytical Data**

Note: Contaminant Isoconcentration Maps have been generated for the combined M-5 and M-8 Landfills. Contaminant Isoconcentration Summary Tables are provided herein for both Landfill sites. Laboratory analytical data are provided only in each Landfill's respective RAPR.

APPENDIX K

1st Quarter 2009 through 3rd Quarter 2010 Surface Water Sampling

Item 1: **Surface Water Sampling Location Map**

Item 2: **Surface Water Contaminant Distribution Map**

Item 3: **Surface Water Sampling Summary**

Item 4: **Surface Water Long Term Monitoring Tables (Tables 5-1 through 5-28)**

Item 5: **Surface Water Exceedance Summary**

Item 6: **Surface Water Tentatively Identified Compounds (TICs) Summary**

Item 7: **Laboratory Analytical Data**

Item 8: **Tetra Tech EM, Inc. *Laboratory Data Validation Report for the Fort Monmouth Surface Water Sampling, 2nd Quarter 2010,* January 19, 2011**

Item 9: **Tetra Tech EM, Inc. *Laboratory Data Validation Report for the Fort Monmouth Surface Water Sampling, 4th Quarter 2009,* February 1, 2010**

APPENDIX L

Background Metals Evaluation

APPENDIX M

Receptor Evaluation

Item 1: ***Offsite Receptor Evaluation Report for Fort Monmouth, Main Post and Charles Wood Area,*** **Tetra Tech, Inc., November 2, 2010**

Item 2: **Sensitive Receptor Survey Figure**

Item 3: **Utility Map**

Item 4: **Well Search**

Item 5: **Vapor Intrusion Investigation**

Item 6: **Public Notification Documents**

APPENDIX N

Costs and Schedule for the M-5 Landfill

APPENDIX O

Classification Exception Area (CEA) Documents

DEPARTMENT OF THE ARMY
HEADQUARTERS, U.S. ARMY GARRISON FORT MONMOUTH
FORT MONMOUTH, NEW JERSEY 07703-5000

REPLY TO
ATTENTION OF

Directorate of Public Works

OCT 22 2010

Mr. Larry Quinn, Site Manager
New Jersey Department of Environmental Protection
Bureau of Investigation, Design and Construction
401 East State Street, P.O. Box 413
Trenton, New Jersey 08625-0413

Re: M-5 Landfill Site (FTMM-05) Remedial Action Progress Report
October 2006 through December 2008 (4th Quarter 2006 – 4th Quarter 2008)
Dated: September 2010
Fort Monmouth, New Jersey

Dear Mr. Quinn:

U.S. Army Fort Monmouth, New Jersey is pleased to submit the *Remedial Action Progress Report* (RAPR) for the M-5 Landfill Site (FTMM-05), Fort Monmouth, New Jersey. This RAPR was prepared in accordance with the voluntary cleanup agreement between U.S. Army and the New Jersey Department of Environmental Protection (NJDEP) dated August 2000, and the NJDEP's *Technical Requirements for Site Remediation*, New Jersey Administrative Code 7:26E-6.5 (February 2002). Enclosed please find the Electronic Data Delivery (EDD) documents and the completed RAPR Checklist.

Should you have any questions or require any additional information, please contact Mr. Charles Appleby, Environmental Protection Specialist, at 732-532-2692 or email: **Charles.Appleby@US.Army.mil**

Sincerely,

Joseph M. Fallon

Joseph M. Fallon, CHMM
Chief, Environmental Division

Encl. 1: RAPR, (4th Quarter 2006 through 4th Quarter 2008)
Encl. 2: Completed RAPR Checklist
Encl. 3: EDD, one disk

Encl. 2, Completed RAPR Checklist

SRP CHECKLIST:		REMEDIAL ACTION PROGRESS REPORT 4th Quarter 2006 through 4th Quarter 2008 M-5 Landfill Site (FTMM-05)		
	N.J.A.C. 7:26E-	Use this checklist to assure that the remedial action progress report is complete and meets all technical requirements.	Included: Yes/No/NA	Page #
	6.6(a)	Have progress reports been submitted as required?	NA	
	6.6(b)1	Is a description of each remedial action included and adequate?	Yes	3-1
	6.6(b)2	Is a discussion of problems and proposal for correction included and adequate?	NA	
	6.6(b)3	Are proposals for deviation from approved WP adequately addressed?	NA	
		6.3(e)3iii If requesting to reduce sampling frequency have the requirements at 6.3(e)3iii and in Appendix C been met?	NA	
	6.6(b)4	Is a revised schedule included and adequate?	Yes	6-4 & App.H
	6.6(b)5	Is the status of permit applications included and adequate?	Yes	3-1
	6.6(b)6	Is a list of upcoming remedial actions included and adequate?	Yes	6-4 & App.H
	6.6(b)7	Is the cost of each remedial action adequately documented?	Yes	6-1 & App.H
	6.6(b)8	Is a table of sampling results, summary of data and conclusions included and adequate?	Yes	6-1 & Tables Section
	6.6(b)9	Is information for active GW remediation included and adequate?	NA	
		6.6(b)9i Has a ground water Contour Map Reporting Form (Appendix G) been completed and included?	Yes	Figures Section
	6.6(b)10	Is information for natural GW remediation included and adequate?	Yes	4-1 & 5-1
	6.6(b)11	Is a description of wastes generated included and adequate?	Yes	4-2
	6.6(b)12	Has other important information been included:	NA	
		If not previously provided, has a map of the CEA been included along with a CEA Factsheet from Appendix F?	NA	
		If the RAPR includes a proposal to revise the CEA, has all the necessary information per 6.3 and Appendix F been included?	NA	
		Does the report indicate whether biennial certifications have been submitted for CEAs &/or DERs?	NA	

U. S. Army Garrison
Fort Monmouth
Directorate of Public Works
Fort Monmouth, New Jersey

M-5 Landfill Site (FTMM-05)
Remedial Action Progress Report
(4th Quarter 2006 through 4th Quarter 2008)

Prepared by:

VEETech, P.C.

113 Centrewest Court
Cary, N.C. 27513
919-388-0037

Work Order Number: 1042-06-017

September 2010

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TABLE OF CONTENTS

EXECUTIVE SUMMARY……..……..i
1.0 INTRODUCTION **1-1**
1.1 Objectives 1-1
1.2 Report Organization 1-1
2.0 SITE BACKGROUND **2-1**
2.1 Site Location and Description 2-1
2.2 Site History and Background Investigations 2-1
2.2.1 SI Report, 1995 – Weston 2-1
2.2.2 RAWP, 2000 – ATC 2-2
2.2.3 RAPR, 1999-2002 – Versar 2-3
2.2.4 RAPR, 2002-2003 – Versar 2-4
2.2.5 Remedial Investigation Report and Sediment Quality Evaluation, 2004 – Versar 2-4
2.2.6 Remedial Investigation Report for Near Surface Soils, 2004 – Versar 2-4
2.2.7 RAPR, 2003-2005 – VEETech 2-5
2.2.8 RAPR, 2005-2006 – VEETech 2-5
3.0 REMEDIAL ACTIVITIES **3-1**
3.1 Hydrogen Release Compound® 3-1
3.2 Discharge to Ground Water Permit 3-1
4.0 MONITORING AND SAMPLING ACTIVITIES **4-1**
4.1 Ground Water Monitoring 4-1
4.2 Ground Water Sampling 4-2
4.3 Surface Water Sampling 4-2
4.4 Types of Waste Generated and Disposal Methods 4-2
5.0 SAMPLING ANALYTICAL RESULTS **5-1**
5.1 Ground Water Sampling Results 5-1
5.1.1 Ground Water Contaminants of Concern 5-2
5.2 Surface Water Sampling Results 5-4
5.2.1 Surface Water Contaminants of Concern 5-5
5.3 Tentatively Identified Compounds (TICs) 5-5
5.4 Ground Water Sampling - Quality Assurance/Quality Control (QA/QC) 5-6
5.5 Surface Water Sampling - QA/QC 5-7
6.0 REMEDIAL ACTION PROGRESS **6-1**
6.1 Cost of Remediation Incurred To Date 6-1
6.2 Conclusions 6-1
6.3 Recommendations 6-3
6.3.1 Sampling Program 6-3
6.4 Remedial Action Schedule 6-4
7.0 REFERENCES **7-1**

FIGURES

Figure 2-1 Site Location Map
Figure 2-2 Site Layout Map
Figure 2-3 Surface Water Sample Location Map
Figure 3-1 Bioremediation Areas
Figure 4-1 Ground Water Contour Map (November 16 & 17, 2006) (omitted)
Figure 4-2 Ground Water Contour Map (March 7 & 8, 2007) (omitted)
Figure 4-3 Ground Water Contour Map (June 6, 7 & 8, 2007) (omitted)
Figure 4-4 Ground Water Contour Map (August 14, 2007)
Figure 4-5 Ground Water Contour Map (December 5, 2007)
Figure 4-6 Ground Water Contour Map (March 11, 2008)
Figure 4-7 Ground Water Contour Map (June 3, 2008)
Figure 4-8 Ground Water Contour Map (August 25, 2008)
Figure 4-9 Ground Water Contour Map (November 10, 2008)
Figure 5-1A Ground Water Contaminant Distribution Map
Figure 5-1B Surface Water Contaminant Distribution Map
Figure 5-2 Tetrachloroethene Concentrations vs. Time at M-5MW11
Figure 5-3A Tetrachloroethene Concentrations vs. Time at M-5MW16
Figure 5-3B Trichloroethene Concentrations vs. Time at M-5MW16
Figure 5-3C Vinyl Chloride Concentrations vs. Time at M-5MW16
Figure 5-4A Tetrachloroethene Concentrations vs. Time at M-5MW19
Figure 5-4B Trichloroethene Concentrations vs. Time at M-5MW19
Figure 5-5A Tetrachloroethene Concentrations vs. Time at M-5MW20
Figure 5-5B Trichloroethene Concentrations vs. Time at M-5MW20
Figure 5-6 Tetrachloroethene Concentrations vs. Time at M-5MW23
Figure 5-7A Tetrachloroethene Concentrations vs. Time at M-8MW12
Figure 5-7B Trichloroethene Concentrations vs. Time at M-8MW12
Figure 5-8 Vinyl Chloride Concentrations vs. Time at M-8MW23

TABLES

Table 4-1 Ground Water Elevation Summary
Table 4-2 Ground Water Sampling Summary
Table 4-3 Surface Water Sampling Summary
Table 5-1 M-5MW10 Ground Water Sampling Results
Table 5-2 M-5MW11 Ground Water Sampling Results
Table 5-3 M-5MW12 Ground Water Sampling Results
Table 5-4 M-5MW13 Ground Water Sampling Results
Table 5-5 M-5MW14 Ground Water Sampling Results
Table 5-6 M-5MW15 Ground Water Sampling Results
Table 5-7 M-5MW16 Ground Water Sampling Results
Table 5-8 M-5MW18 Ground Water Sampling Results
Table 5-9 M-5MW19 Ground Water Sampling Results
Table 5-10 M-5MW20 Ground Water Sampling Results
Table 5-11 M-5MW23 Ground Water Sampling Results

TABLES

Table 5-12 M-5MW25 Ground Water Sampling Results
Table 5-13 M-8MW12 Ground Water Sampling Results
Table 5-14 M-8MW23 Ground Water Sampling Results
Table 5-15 M-8MW24 Ground Water Sampling Results
Table 5-16 Ground Water Exceedance Summary
Table 5-17 SS-04 Summary of Surface Water Quality Results
Table 5-18 SS-05 Summary of Surface Water Quality Results
Table 5-19 SS-15 Summary of Surface Water Quality Results
Table 5-20 SS-16 Summary of Surface Water Quality Results
Table 5-21 SS-27 Summary of Surface Water Quality Results
Table 5-22 Surface Water Exceedance Summary
Table 5-23 M-5 Ground Water VOC Tentatively Identified Compounds
Table 5-24 M-5 Surface Water VOC Tentatively Identified Compounds

APPENDICES

Appendix A Roy F. Weston, Inc., December 1995, *Final Site Investigation, Fort Monmouth, New Jersey, Main Post and Charles Wood Areas*
Appendix B ATC Associates, Inc., February 2000, *Remedial Action Work Plan – Landfill M-5, Main Post, Fort Monmouth, New Jersey*
Appendix C Versar, Inc. (Versar), January 26, 2004, *Remedial Investigation Report and Sediment Quality Evaluation, M-5 Landfill Site, Fort Monmouth, New Jersey*
Appendix D Versar, Inc. (Versar), March 15, 2004, *Remedial Investigation Report for Near Surface Soils, M-5 Landfill Site, Fort Monmouth, New Jersey*
Appendix E Fort Monmouth Directorate of Public Works Analytical Sampling Standard Operating Procedures
Appendix F Ground Water Monitoring Well Laboratory Analytical Data, 4th Quarter 2006 through 4th Quarter 2008
Appendix G Surface Water Laboratory Analytical Data, 4th Quarter 2006 through 4th Quarter 2008
Appendix H Costs and Schedule for the M-5 Landfill Site

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EXECUTIVE SUMMARY

This Remedial Action Progress Report (RAPR) documents the quarterly sampling of 13 monitoring wells [10 located at the M-5 Landfill Site (FTMM-05) and three located at the adjacent M-8 Landfill Site (FTMM-08)] from the 4th Quarter 2006 through the 4th Quarter 2008 (Rounds 39 through 47) to monitor the progress of the enhanced natural attenuation program [Hydrogen Release Compound® (HRC®)] in reducing contaminant levels in ground water.

The M-5 Landfill Site consists of approximately 3.2 acres located on the western portion of the Main Post, on the Eatontown/Oceanport Borough line. The site is bordered by Mill Creek and Parkers Creek to the west and is adjacent to the southern boundary of the M-8 Landfill Site.

A *Remedial Action Work Plan (RAWP)* was submitted by ATC Associates, Inc. (ATC) in February 2000 and approved by the New Jersey Department of Environmental Protection (NJDEP) in March 2001. The *RAWP* proposed enhanced natural attenuation with ground water monitoring as the site remedy for the Contaminant of Concern (COC), tetrachloroethene (PCE). PCE, trichloroethene (TCE), *cis*-1,2-dichloroethene (*cis*-1,2-DCE), and vinyl chloride, have been identified as COCs in follow-up *RAPRs* submitted to the NJDEP.

Ground water monitoring of the site during the current reporting period identified concentrations of PCE, TCE, and vinyl chloride above the NJDEP Ground Water Quality Standards (GWQS) for Class II-A aquifers. PCE was detected above the GWQS of 1.0 microgram per liter (µg/L) in six monitoring wells (M-5MW11, M-5MW16, M-5MW19, M-5MW20, M-5MW23, and M-8MW12). TCE was detected above the GWQS of 1.0 µg/L in four monitoring wells (M-5MW16, M-5MW19, M-5MW20, and M-8MW12). *cis*-1,2-DCE was either not detected or detected below the NJDEP GWQS in the monitoring wells associated with M-5 Landfill Site and the three monitoring wells associated with the M-8 Landfill Site. Vinyl chloride was detected above the GWQS of 1.0 µg/L in two monitoring wells (M-5MW16 and M-8MW23).

During this reporting period, surface water samples were collected from three surface water locations used to monitor the M-5 Landfill Site and analyzed for Volatile Organic Compounds (VOCs). PCE and TCE were detected at one location, SS-15, exceeding freshwater Surface Water Quality Standards (SWQS).

PCE concentrations have decreased in monitoring wells where concentrations were above the GWQS prior to the first HRC® injection. VEETech, PC (VEETech) recommends that the Directorate of Public Works (DPW) continue quarterly ground water and surface water monitoring and consider additional biological or chemical oxidation treatment events.

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1.0 INTRODUCTION

An enhanced natural attenuation program to remediate the PCE at the M-5 Landfill Site (FTMM-05), located at the Main Post Area of Fort Monmouth, New Jersey, is being conducted in accordance with the *RAWP*, prepared by ATC, Inc. in February 2000 and approved by the NJDEP in March 2001.

The U.S. Army Garrison Fort Monmouth, Directorate of Public Works (DPW), and Chenega Technology Services Corporation issued the contract under Chenega purchase order number C06-02456 to VEETech to prepare this RAPR. This RAPR documents ground water (Rounds 39 through 47) and surface water (Surface Water Rounds 41 through 49) monitoring during the current reporting period of the 4th Quarter 2006 through the 4th Quarter 2008.

1.1 Objectives

The objective of this RAPR is to document the implementation of the remedial action program performed at the M-5 Landfill Site during the current reporting period of the 4th Quarter 2006 through the 4th Quarter 2008. HRC® injections were implemented from October 2000 to December 2005 by the DPW as a Remedial Action (RA) based on the recommendations found in the *RAWP*, prepared by ATC, dated February 2000, and approved by the NJDEP in March 2001. The purpose of the RA was to treat the contaminant-affected areas at the site using HRC® to reduce the contaminant concentrations to comply with the NJDEP Class II-A aquifer GWQS. The remedial activities were conducted in accordance with the NJDEP *Technical Requirements for Site Remediation* (2005), NJAC 7:26E *et seq.* and the M-5 Landfill Site *RAWP*.

The RA and subsequent preparation of this RAPR encompassed the following:

- Conducting quarterly rounds of ground water and surface water sampling and documenting the results to evaluate the effectiveness of the RA,
- Comparing the results of the ground water and surface water sampling with the NJDEP GWQS and SWQS,
- Identifying and discussing recommendations with the DPW for the continuation of this RA, and
- Documenting remedial activities as required by the NJDEP *Technical Requirements for Site Remediation* NJAC 7:26E *et seq*.

1.2 Report Organization

Section 2.0 discusses the site history and background information for the M-5 Landfill Site. Section 3.0 describes and summarizes the remedial activities at the M-5 Landfill Site. Section 4.0 discusses ground water and surface water monitoring and sampling activities at the site. Section 5.0 presents the analytical results of the ground water and surface water sampling. Section 6.0 discusses the effectiveness of the RA and provides recommendations to the DPW for the M-5 Landfill Site. Section 7.0 is the reference section.

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2.0 SITE BACKGROUND

The following sections describe the site background of the M-5 Landfill Site. Included is a description of the site location, site history, background investigations, and previous *RAPRs*.

2.1 Site Location and Description

Fort Monmouth is located in the central-eastern portion of New Jersey in Monmouth County, approximately 45 miles south of New York City and 70 miles northeast of Philadelphia (Figure 2-1). The M-5 Landfill Site is located on the western portion of the Main Post, on the Eatontown/Oceanport Borough line and east of Mill Creek and Parkers Creek, and consists of approximately 3.2 acres (Figure 2-2). The M-5 Landfill Site is adjacent to the southern boundary of the M-8 Landfill Site. According to a report prepared by the U.S. Army Toxic and Hazardous Materials Agency (USATHAMA) titled, *Installation Assessment of Fort Monmouth, Report 171*, dated May 1980, the M-5 Landfill was in use between 1952 and 1959 for general disposal of domestic and industrial wastes, in addition to automobiles. This site has reportedly been inactive since 1959. Since 1959, there has been a steady growth and stabilization of vegetation (grass, trees, and bushes) on the site. The environmental setting (regional/local geology and hydrogeology) of the M-5 Landfill Site is described in ATC's *RAWP*.

2.2 Site History and Background Investigations

The U.S. Army Corps of Engineers (USACE), Baltimore District, initially contracted Roy F. Weston, Inc. (Weston) to perform a Site Investigation (SI) at Fort Monmouth, New Jersey. Suspected hazardous waste sites were initially identified at Fort Monmouth in a report prepared by USATHAMA (1980). The USATHAMA report identified 37 sites with known or suspected waste materials on the Main Post and a sub-post (Charles Wood Area). Weston conducted a background investigation of the 37 sites, as well as eight additional sites that were identified by Fort Monmouth and the NJDEP. Weston's findings were described in a report titled *Investigation of Suspected Hazardous Waste Sites at Fort Monmouth, New Jersey* (1993). The M-5 Landfill Site was one of the 37 sites identified.

In 1995, Weston conducted a SI of the M-5 Landfill Site and prepared a *SI Report* (December 1995). The Weston *SI Report, Final Site Investigation, Fort Monmouth, New Jersey, Main Post and Charles Wood Areas* (Appendix A) was used as the basis for subsequent remedial investigations, which progressed to the development of remedial actions, including the remediation program at the M-5 Landfill Site. From May 1997 through September 1999, the DPW conducted a Remedial Investigation (RI) of the site. ATC was contracted by the DPW to evaluate the data collected during the RI and prepare the *RAWP*.

2.2.1 SI Report, 1995 – Weston

The Site Investigation (SI), performed by Weston in 1995 (Appendix A) at the M-5 Landfill Site included installation and sampling of two ground water monitoring wells [M-5MW10 (downgradient) and M-5MW11]. Surface water sampling was not performed for the M-5 Landfill Site, although surface water had previously been sampled in conjunction with the M-2 Landfill Site, which is upgradient. Two rounds of ground water sampling were performed and samples were analyzed for Target Compound List (TCL) plus 30 parameters (TCL+30), Target Analyte List (TAL) metals, sulfate, and cyanide.

A background study of the Main Post was conducted as part of the site investigation reported in 1995. Five soil borings on the Main Post were placed in areas believed to be unaffected by base activities, as specified by the 1993 *Investigation of Suspected Hazardous Waste Sites at Fort Monmouth, New Jersey Report.* Two soil samples were collected from each of the five soil borings. The soil borings were converted to monitoring wells and two ground water samples were collected from each well. Two sediment and surface water samples were also collected as part of the background study. Maximum background concentrations were then established and reported in the SI for soil, ground water, surface water, and sediment for the Main Post Area of Fort Monmouth so that they could be compared to the analytical results from the SI (Weston, 1995).

Ground water analytical data for one ground water monitoring well indicated that PCE concentrations exceeding the NJDEP GWQS of 1.0 µg/L were present at the M-5 Landfill Site in well M-5MW11. There were no detections of sulfate or cyanide above the NJDEP GWQS. Fourteen metals were detected in site ground water; however, only four (aluminum, iron, manganese, and sodium) were found at concentrations exceeding the NJDEP GWQS, but were detected at concentrations below the maximum background concentrations established in the *SI Report* (Weston, 1995), and were therefore not identified as COCs.

The Weston *SI Report* (1995) presented a proposal to the DPW for the M-5 Landfill Site that was subsequently implemented. A long-term ground water and surface water monitoring program was proposed that utilized the existing ground water monitoring wells and surface water sampling locations to monitor and document the downgradient surface water and ground water quality conditions over time.

An expanded SI, requested by the NJDEP, identified PCE as the only COC in ground water at the M-5 Landfill Site. The DPW installed three additional wells (M-5MW12, M-5MW13, and M-5MW14) in 1998 as part of the expanded SI. This resulted in the performance of a Remedial Investigation (RI) encompassing soil and ground water characterization to determine the extent of the impacts of PCE at the site.

2.2.2 RAWP, 2000 – ATC

ATC submitted a *RAWP* to Fort Monmouth in February 2000 (Appendix B). From April 1995 through September 1999, the DPW performed a RI of the M-5 Landfill Site. ATC was contracted by the DPW to install additional ground water monitoring wells, evaluate the data collected during the RI, and prepare a *RAWP*.

The following RI approach was established:

- Perform a Geoprobe® investigation of the soils and ground water within the landfill and surrounding areas to characterize the near-surface and subsurface soils and shallow ground water and determine whether a source area existed for the PCE observed in the ground water.
- Install additional ground water monitoring wells within the landfill and surrounding areas and perform constant discharge pump tests to determine the aquifer characteristics of the shallow saturated zone beneath the M-5 Landfill Site.
- Incorporate the new wells into the quarterly ground water monitoring program.

- Continue quarterly surface water sampling to evaluate the potential impact to the stream from the PCE detected in the soils and shallow ground water.

Geoprobe® Investigation

The RI involved the drilling of 261 Geoprobe® locations to facilitate the collection of soil and ground water samples. The results of the RI indicated that PCE was detected at concentrations above the Method Detection Limit (MDL) in seven of the soil borings and at concentrations that exceeded the NJDEP Impact to Ground Water Soil Cleanup Criteria (IGWSCC) of 1.0 milligram per kilogram (mg/Kg) in five samples. PCE was detected in ground water samples collected from 105 boring locations at concentrations that exceeded the NJDEP GWQS for PCE of 1.0 µg/L.

Eight VOCs)PCE, TCE, *cis*-1,2-DCE, chlorobenzene, benzene, toluene, ethylbenzene, and total xylenes) were detected in ground water samples above their respective MDL. Of these, PCE, TCE, *cis*-1,2-DCE, chlorobenzene, and benzene were identified in ground water at concentrations that exceeded their respective GWQS. PCE concentrations above the GWQS were detected in 105 samples. TCE (6 samples), *cis*-1,2-DCE (10 samples), chlorobenzene (5 samples), and benzene (9 samples) were detected at concentrations above their respective GWQS.

Monitoring Wells

A total of 15 ground water monitoring wells, three (M-5MW10, M-5MW11, and M-8MW12) installed by Weston (1995), three (M-5MW12, M-5MW13, and M-5MW14) installed by the DPW (1998), and nine monitoring wells (M-5MW15, M-5MW16, M-5MW18, M-5MW19, M-5MW20, M-5MW23, M-5MW25, M-8MW23, and M-8MW24) installed by ATC (1999), have been incorporated into the ground water monitoring program at the M-5 Landfill Site. Monitoring well depths range from 14 to 20 feet below ground surface (bgs). Ground water analytical results from the permanent monitoring wells identified PCE as the only COC at the M-5 Landfill Site. Although PCE concentrations were expected to naturally attenuate to acceptable levels over time, the DPW proposed to actively remediate the affected areas at the M-5 Landfill Site by targeting seven specific locations and applying HRC®.

2.2.3 RAPR, 1999-2002 – Versar

After the first and second HRC® injection and twelve rounds of ground water monitoring well sampling (4th Quarter 1999 through the 3rd Quarter 2002), Versar prepared a *RAPR*, dated August 2003. The *RAPR* documented the ground water quality conditions over time and evaluated the impact of the HRC® injection program.

The initial injection of HRC® was performed between October and December 2000 and the second was performed between February and May 2002. These injection events were completed with the prior approval of the NJDEP under the provisions of a Permit-by-Rule agreement.

A decreasing trend in PCE concentrations and an increase in degradation byproduct concentrations in ground water were observed during the reporting period (4th Quarter 1999 through the 3rd Quarter 2002). Ground water analytical results supported the contention that COC degradation was occurring at the M-5 Landfill Site, presumably due to the effectiveness of the HRC® injection program that supported the biodegradation processes.

Based on the concentrations of the COC in ground water following the HRC® injections, the HRC® subsurface injection program was continued by the DPW.

2.2.4 RAPR, 2002-2003 – Versar

The third HRC® injection round was performed by the DPW between June and August 2003. This injection event was completed with the prior approval of the NJDEP under the provisions of a Permit-by-Rule agreement. Versar prepared a second *RAPR*, dated September 2005, following the third injection event for the reporting period 4th Quarter 2002 through the 3rd Quarter 2003. Said *RAPR* documented the ground water quality conditions over time and evaluated the effectiveness of the HRC® injection program.

A decreasing trend in PCE concentrations was observed in ground water at the site throughout the four quarters of ground water sampling. Ground water analytical results supported the contention that PCE degradation was occurring at the M-5 Landfill Site, presumably due to the effectiveness of the HRC® to support the biodegradation processes.

Based on the decreasing concentrations of the COC and the increased presence of degradation products in ground water during the reporting period, the HRC® subsurface injection program was continued.

2.2.5 Remedial Investigation Report and Sediment Quality Evaluation, 2004 – Versar

To determine potential polychlorinated biphenyl (PCB)-related impacts to sediments in Mill Creek from the adjacent M-5 Landfill site, the DPW obtained 16 sediment samples, including three duplicate samples for Quality Assurance/Quality Control (QA/QC) purposes, on April 13, 2000 from the surface and near-surface of Mill Creek. The sediment samples were obtained along the 570-foot section of the creek that borders the M-5 Landfill site. All 16 sediment samples were analyzed for PCBs and compared to sediment sampling guidance concentrations defined in the NJDEP *Guidance for Sediment Quality Evaluations* (November 1998). Only one of the 16 samples (0.054 mg/Kg, B-2 0-6" bgs) had total PCBs detected above the laboratory MDL. This sample result also exceeded the NJDEP Effect Range - Low (ER-L) guidance concentration for total PCBs, which represents the concentration at which adverse benthic effects are found in approximately 10% of studies. Other guidance criteria were not exceeded. Analysis of the remaining 15 samples, including upgradient samples, did not indicate PCBs above laboratory MDLs. Because the result at Boring B-2 exceeded only the ER-L guidance concentration, and the proximal upgradient samples were non-detect (ND) for Total PCBs, no long-term adverse benthic effects were expected in Mill Creek. The *Remedial Investigation Report and Sediment Quality Evaluation* dated January 26, 2004 is included in Appendix C.

2.2.6 Remedial Investigation Report for Near Surface Soils, 2004 – Versar

DPW characterized the near surface soils using 254 borings installed at strategic locations throughout the site. *The Remedial Investigation Report for Near Surface Soils* dated March 16, 2004 is included in Appendix D. The DPW performed soil borings and obtained soil samples between September 1998 and November 1998. Soil samples were analyzed for TCL+30 parameters and TAL metals.

VOCs, Semi-Volatile Organic Compounds (SVOCs), pesticides, PCBs, and metals were detected at concentrations exceeding the NJDEP Residential Direct Contact Soil Cleanup Standards (RDCSCS). Further analysis of the analytical results did not define a “source area” or level of

contamination that necessitated the identification and evaluation of additional remedial actions. In most cases, either the calculated compliance average was below the respective RDCSCS or the exceedance was considered marginal.

2.2.7 RAPR, 2003-2005 – VEETech

The fourth HRC® injection round was performed by the DPW between June and August 2004. This injection event was completed with the prior approval of the NJDEP under the provisions of a Permit-by-Rule agreement. VEETech prepared another *RAPR*, dated March 2009, for the reporting period 4th Quarter 2003 through the 3rd Quarter 2005. Said *RAPR* documented the ground water quality conditions with time and evaluated the effectiveness of the HRC® injection program.

A decreasing trend in PCE concentrations was observed in ground water at the site throughout the eight quarters of ground water sampling. Ground water analytical results supported the contention that PCE degradation was occurring at the M-5 Landfill Site, presumably due to the effectiveness of the HRC® to support the biodegradation processes.

Based on the decreasing concentrations of the COC and increased presence of degradation products in ground water during the reporting period, the HRC® subsurface injection program was continued.

2.2.8 RAPR, 2005-2006 – VEETech

The fifth HRC® injection event was performed by the DPW between September and December 2005. This injection event was completed with the prior approval of the NJDEP under the provisions of a Permit-by-Rule agreement. VEETech prepared another *RAPR*, dated April 2009, for the reporting period 4th Quarter 2005 through the 3rd Quarter 2006. Said *RAPR* documented the ground water quality conditions with time and evaluated the effectiveness of the HRC® injection program.

A generally decreasing trend of PCE concentrations was observed in ground water at the site throughout the four quarters of ground water sampling. The results supported the contention that PCE degradation was occurring at the M-5 Landfill Site, presumably due to the effectiveness of the HRC® supporting the biodegradation processes.

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3.0 REMEDIAL ACTIVITIES

Sampling results documented in ATC's *RAWP* (February 2000) for the M-5 Landfill Site indicated that the shallow ground water contained PCE at concentrations that exceeded the NJDEP GWQS. Although the PCE concentrations in ground water were expected to gradually decrease through natural attenuation, the DPW implemented an HRC® injection program from October 2000 to December 2005 to actively address the ground water contamination at the site. This bioremediation program involved treating seven areas identified in the *RAWP* where elevated concentrations of PCE were detected (Figure 3-1).

3.1 Hydrogen Release Compound®

HRC® is a slow-release compound that provides a steady hydrogen source for up to one year and has proven to enhance the natural attenuation of chlorinated dissolved solvents in ground water at different study sites. HRC® is a proprietary, food quality, polylactate ester that, upon being deposited into the subsurface, creates or enhances anaerobic aquifer conditions and causes the release of hydrogen. Under anaerobic conditions, naturally occurring microorganisms use the hydrogen to progressively remove chlorine atoms from chlorinated hydrocarbons via reductive dechlorination.

HRC® applications were conducted in accordance with the M-5 Landfill Site *RAWP*. Varying numbers of boring locations within each of the seven delineated areas (from 6 to 59) were selected for HRC® injections. Figure 3-1 illustrates the seven treatment areas.

HRC® injection was not conducted during the current reporting period of the 4th Quarter 2006 through the 4th Quarter 2008.

3.2 Discharge to Ground Water Permit

The purpose of the New Jersey Pollutant Discharge Elimination System (NJPDES) Discharge to Ground Water (DGW) Permit is to request a formal approval of the HRC® subsurface injection program at the M-5 Landfill Site as described in the *RAWP*. The fifth injection of HRC® was completed with the prior approval of the NJDEP under the provisions of a Permit-by-Rule agreement. As described in the *RAWP*, the HRC® injections do not result in the discharge of hazardous compounds.

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4.0 MONITORING AND SAMPLING ACTIVITIES

As part of the Long Term Monitoring (LTM) program at the M-5 Landfill Site, quarterly ground water monitoring (Rounds 39 through 47) and surface water sampling (Rounds 41 through 49) continued from the 4th Quarter 2006 through the 4th Quarter 2008. Ground water samples were collected from 10 monitoring wells (M-5MW10, M-5MW11, M-5MW12, M-5MW13, M-5MW14, M-5MW16, M-5MW18, M-5MW19, M-5MW20, and M-5MW23) at the M-5 Landfill Site and three monitoring wells (M-8MW12, M-8MW23, and M-8MW24) at the northern adjacent M-8 Landfill Site during nine quarterly sampling events. Two monitoring wells, M-5MW15 and M-5MW25, were last sampled on July 30, 2003. Surface water samples were collected from three locations (SS-05, SS-15, and SS-27) along Mill and Parkers Creeks from the 4th Quarter 2006 through the 4th Quarter 2008. Sampling at SS-04 and SS-16 was discontinued after the 3rd Quarter 2004 (Round 32).

Sampling was conducted by the DPW in accordance with the established protocols as described in the *Fort Monmouth Standard Sampling Operating Procedure* (SOP No.: SAM-0205, August 1999, Revision #1 January 2003, Revision #2 September 2004, Revision #3 January 2006, and Revision #4 April 2008, Appendix E) and the *NJDEP Field Sampling Procedures Manual (*August 2005). Both ground water and surface water samples were analyzed for VOCs + 15. Surface water samples collected at SS-15 and SS-27 were also analyzed for TAL metals. Laboratory analyses of the samples were conducted at the Fort Monmouth Environmental Testing Laboratory (FMETL), a New Jersey-certified laboratory (Certification No. 13461).

4.1 Ground Water Monitoring

During the current ground water sampling program at the M-5 Landfill Site, ground water was encountered at elevations ranging from 1.86 to 13.14 feet above mean sea level (msl). Static depth to water measurements were collected from monitoring wells on November 16 & 17, 2006; March 7 & 8, 2007; June 6, 7, & 8, 2007; August 14, 2007; December 5, 2007; March 11, 2008; June 3, 2008; August 25, 2008; and November 10, 2008. Depths were reported for monitoring well M-5MW15 for only two quarterly sampling events (4th Quarter 2006 and the 2nd Quarter 2007). Depths were reported for monitoring well M-5MW25 for only four quarterly sampling events (4th Quarter 2006, 2nd Quarter 2007, 4th Quarter 2007, and 4th Quarter 2008). Separate-phase product was not observed in any of the monitoring wells during this reporting period. Figure 2-2 shows the locations of the monitoring wells. Depth to water measurement results are summarized in Table 4-1. Ground water elevation contour maps were generated based on ground water elevations calculated for the wells. Ground water elevation contour maps were not constructed for the 4th Quarter 2006 (Round 39) through the 2nd Quarter 2007 (Round 41), as the depth to ground water for these sampling events were measured on two or three separate days. Contour maps are presented in Figure 4-1 through Figure 4-9 along with the required NJDEP contour map reporting forms.

The contour maps indicate that shallow ground water underlying the M-5 Landfill Site consistently flows to the west towards Mill Creek and Parkers Creek. Significant variations in ground water flow conditions were not observed through the current monitoring period.

4.2 Ground Water Sampling

Quarterly ground water sampling was conducted by the DPW. Quality control samples for the monitoring period included 12 method blanks, 11 trip blanks, 11 field blanks, and 10 duplicate samples.

Sampling equipment was thoroughly decontaminated before and after each use. Following collection, the ground water samples were immediately placed in laboratory supplied bottleware. Sample containers were labeled, sealed, packed in ice, and transported to the FMETL under proper chain-of-custody procedures.

Copies of the chain-of-custody forms and the laboratory analytical data sheets are presented in Appendix F. Table 4-2 presents a summary of the ground water sampling activities for the remediation monitoring (Rounds 1 through 47); including round numbers, well IDs, sample IDs, sample locations, collection/analysis dates, analytical parameters, and analysis methods. Figure 2-2 shows the locations of the monitoring wells. The analytical results are discussed in Section 5.1.

4.3 Surface Water Sampling

Surface water sampling was conducted by the DPW for the current reporting period as part of a base wide surface water sampling program. A total of 29 surface water samples were collected over nine rounds of sampling from three locations (SS-05, SS-15, and SS-27) along Mill and Parkers Creeks. Sampling from SS-04 and SS-16 was discontinued after the 3rd Quarter 2004. Figure 2-3 shows the locations of surface water sample collection points. SS-05 is located adjacent to the site, SS-15 is located upstream, and SS-27 is located downstream of the M-5 Landfill Site. The samples were analyzed by the FMETL for VOCs. The results of these analyses are discussed in Section 5.2.

Sampling equipment was decontaminated before and after each use. Surface water samples were collected and immediately placed in laboratory supplied bottleware. Sample containers were labeled, sealed, packed in ice, and transported to the FMETL under proper chain-of-custody procedures.

Copies of the chain-of-custody forms and the laboratory analytical data for surface water analyses are presented in Appendix G. Table 4-3 presents a summary of surface water sampling activities for Rounds 1 through 49 for sampling points SS-04, SS-05, SS-15, SS-16, and SS-27; including sampling rounds, sample IDs, stream sampling locations, collection/analysis dates, analytical parameters, and analysis methods. Sampling locations SS-04 and SS-16 were last sampled in August 2004.

4.4 Types of Waste Generated and Disposal Methods

The waste types generated by the sampling activities included polyethylene tubing, Teflon® bailers, mason string, and personal protective equipment (PPE). The tubing, bailers, string, and PPE were disposed of as non-hazardous waste.

5.0 SAMPLING ANALYTICAL RESULTS

This section includes a summary discussion of the chemical characterization of the site based on the samples collected and analyzed for the current reporting period, including nine quarterly rounds of ground water monitoring well samples and nine rounds of surface water samples. Analytes detected in ground water or surface water samples at concentrations above their respective NJDEP GWQS are bolded and highlighted in the tables.

5.1 Ground Water Sampling Results

Summaries of the analytical results from the monitoring wells at the M-5 Landfill Site and three monitoring wells at the M-8 Landfill Site from inception of LTM are summarized in Tables 5-1 through Table 5-15. Monitoring wells M-5MW15 and M-5MW25 were last sampled in July 2003. Ground water summary tables include detected analytical results for the M-5 Landfill Site and are divided by monitoring well number and sampling date. The characterization of ground water quality at the M-5 Landfill Site contains 47 quarterly ground water sampling events conducted from May 1997 through November 2008. The ground water results are compared to the NJDEP GWQS and are presented in three different tabs (electronically) reflecting changes to the NJDEP criteria. The first set of data is compared against the January 7, 1993 criteria; the next is when a criteria change occurred on November 7, 2005; followed by another criteria change on July 27, 2007.

The results in the ground water summary tables include analyte detections as well as exceedances of the NJDEP GWQS, which are bolded and shaded. VOCs, SVOCs, pesticides/PCBs, and metals are presented as required to summarize results for detected compounds. Detections are presented in the ground water sampling result summary tables as follows:

- Xylenes are reported as total xylenes (the sum of *o*-xylene and *m*,*p*-xylenes).
- Tentatively Identified Compounds (TICs) are added and reported as a total concentration for the sum of TICs detected for VOCs and SVOCs.
- Duplicate samples are included after the respective primary sample.
- Low Flow sampling method results are identified as “LF”.
- A “J” value is a concentration exceeding the MDL but less than the Reporting Limit (RL) for VOCs, SVOCs, and pesticides/PCBs.
- Estimated Results “ER” are concentrations exceeding the MDL and less than the RL for metals.
- A “B” value is a compound detected in the sample and the associated blank sample.

- Sample suites that were discontinued are recorded in the footnotes along with a date of NJDEP case manager approval.
- If a particular sample suite or analyte was not detected in a monitoring well, the suite/analyte is not presented in the monitoring well summary table.

Ten monitoring wells (M-5MW10 through M-5MW14, M-5MW16, M-5MW18 through M-5MW20, and M-5MW23) at the M-5 Landfill Site and three monitoring wells (M-8MW12, M-8MW23, and M-8MW24) at the northern adjacent M-8 Landfill Site were sampled during the current reporting period (4th Quarter 2006 through the 4th Quarter 2008) and analyzed for VOCs. Analysis for SVOCs, pesticides/PCBs, and metals was discontinued for monitoring wells at the M-5 Landfill Site starting with Round 26. Analysis for SVOCs, pesticides/PCBs, and metals was discontinued for monitoring wells at the M-8 Landfill Site starting with Round 28.

During nine quarterly sampling events for the current reporting period from November 2006 through November 2008, eleven VOCs were detected in the ten M-5 and three M-8 ground water wells. Three VOCs (PCE, TCE, and vinyl chloride) were detected at concentrations that exceeded their respective GWQS. Eight VOCs (1,3-Dichlorobenzene (DCB), 1,4-DCB, *cis*-1,2-DCE, acetone, benzene, chlorobenzene, methylene chloride, and toluene) were detected below their respective GWQS. Six VOCs (benzene, chlorobenzene, methylene chloride, toluene, 1,3-DCB and 1,4-DCB) were identified only in the M-8 wells. Benzene and chlorobenzene are COCs at the M-8 Landfill Site.

Analytical results for six monitoring wells (M-5MW11, M-5MW16, M-5MW19, M-5MW20, M-5MW23, and M-8MW12) sampled during the current reporting period exceeded the NJDEP GWQS for PCE. Analytical results for four monitoring wells (M-5MW16, M-5MW19, M-5MW20, and M-8MW12) sampled during the current reporting period exceeded the NJDEP GWQS for TCE. The concentration of vinyl chloride exceeded the NJDEP GWQS in two monitoring wells (M-5MW16 and M-8MW23). PCE was initially identified as the COC in the *RAWP*. PCE degradation byproducts, TCE, *cis*-1,2-DCE, and vinyl chloride have been identified as COCs in follow-up RAPRs submitted to NJDEP.

A summary of results exceeding GWQS in the current reporting period is presented in Table 5-16. Figure 5-1A summarizes the analytical results for COCs on a site map.

5.1.1 Ground Water Contaminants of Concern

The following paragraphs summarize the results of the COCs detected above the GWQS during the current reporting period:

- PCE concentrations in M-5MW11 ranged from ND to 5.24 µg/L (Round 42). PCE concentrations exceeded the GWQS of 1.0 µg/L in seven of nine sampling rounds for the current reporting period. Figure 5-2 illustrates the PCE concentration over time in monitoring well M-5MW11, including all quarters of LTM since May 1997.
- PCE concentrations in M-5MW16 ranged from 4.42 µg/L (Round 45) to 86.18 µg/L (Round 39). PCE concentrations exceeded the GWQS of 1.0 µg/L in all nine sampling rounds for the current reporting period. Figure 5-3A illustrates the PCE concentration over time throughout the LTM in monitoring well M-5MW16.

- TCE concentrations in M-5MW16 ranged from 0.74 J µg/L (Round 44) to 37.11 µg/L (Round 39). TCE concentrations exceeded the GWQS of 1.0 µg/L in seven of nine sampling rounds for the current reporting period. Figure 5-3B illustrates the TCE concentration over time throughout the LTM in monitoring well M-5MW16.
- Vinyl chloride concentrations in M-5MW16 ranged from ND to 7.33 µg/L (Round 42). Vinyl chloride concentrations exceeded the GWQS of 1.0 µg/L in six of nine sampling rounds for the current reporting period. Figure 5-3C illustrates the vinyl chloride concentration over time throughout the LTM in monitoring well M-5MW16.
- PCE concentrations in M-5MW19 ranged from ND to 2.36 µg/L (Round 43). PCE concentrations exceeded the GWQS of 1.0 µg/L in two of nine sampling rounds for the current reporting period. Figure 5-4A illustrates the PCE concentration over time throughout the LTM in monitoring well M-5MW19.
- TCE concentrations in M-5MW19 ranged from ND to 5.01 µg/L (Round 43). TCE concentrations exceeded the GWQS of 1.0 µg/L in five of nine sampling rounds for the current reporting period. Figure 5-4B illustrates the TCE concentration over time throughout the LTM in monitoring well M-5MW19.
- PCE concentrations in M-5MW20 ranged from ND to 2.41 µg/L (Round 46). PCE concentrations exceeded the GWQS of 1.0 µg/L in six of nine sampling rounds for the current reporting period. Figure 5-5A illustrates the PCE concentration over time throughout the LTM in monitoring well M-5MW20.
- TCE concentrations in M-5MW20 ranged from ND to 1.65 J µg/L (Round 46). TCE concentrations exceeded the GWQS of 1.0 µg/L in two of nine sampling rounds for the current reporting period. Figure 5-5B illustrates the TCE concentration over time throughout the LTM in monitoring well M-5MW20.
- PCE concentrations in M-5MW23 ranged from ND to 16.0 µg/L (Round 41). PCE concentrations exceeded the GWQS of 1.0 µg/L in eight of nine sampling rounds for the current reporting period. Figure 5-6 illustrates the PCE concentration over time throughout the LTM in monitoring well M-5MW23.
- PCE concentrations in M-8MW12 ranged from ND to 9.83 µg/L (Round 47). PCE concentrations exceeded the GWQS of 1.0 µg/L in four of nine sampling rounds for the current reporting period. Figure 5-7A illustrates the PCE concentration over time throughout the LTM in monitoring well M-8MW12.
- TCE concentrations in M-8MW12 ranged from ND to 5.12 µg/L (Round 47). TCE concentrations exceeded the GWQS of 1.0 µg/L in two of nine sampling rounds for the current reporting period. Figure 5-7B illustrates the TCE concentration over time throughout the LTM in monitoring well M-8MW12.
- Vinyl chloride concentrations in M-8MW23 ranged from ND to 2.73 µg/L (Round 46). Vinyl chloride concentrations exceeded the GWQS of 1.0 µg/L in one of the nine sampling rounds. Figure 5-8 illustrates the vinyl chloride concentration over time throughout the LTM in monitoring well M-8MW23.

All other monitoring wells had PCE, TCE, and vinyl chloride concentrations that were non-detect or below their respective NJDEP GWQS. *cis*-1,2-DCE concentrations did not exceed the GWQS in any of the 13 wells reported in this RAPR during this reporting period.

5.2 Surface Water Sampling Results

Quarterly surface water samples were collected at three locations (SS-15 upstream on Mill Creek, SS-05 adjacent along Mill Creek, and SS-27 downgradient on Parkers Creek) during the current sampling period (Surface Water Sampling Rounds 41 through 49). SS-04 and SS-16 were not sampled during this period and were last sampled 3rd Quarter 2004 (Surface Water Round 32). Results for surface water samples from inception of LTM are summarized in Table 5-17 through Table 5-21. Surface water summary tables include detected analytical results for the surface water sample locations and are divided by surface water sample number and sampling date. A total of nine quarterly surface water sampling events were conducted from December 2006 through December 2008. The surface water sampling results from SS-05, SS-15, and SS-27 were compared to the appropriate freshwater NJDEP SWQS. Concentrations of VOCs and metals that exceeded their respective SWQS are summarized in Table 5-22. Surface water contaminant distributions over time are presented in Figure 5-1B. The results of the current surface water sampling events are discussed below.

The results in the surface water summary tables include analyte detections as well as exceedances of the NJDEP SWQS, which are bolded and shaded. VOCs, metals and wet chemistry parameters are presented as required to summarize results for detected compounds. Detections are presented in the surface water sampling result summary tables as follows:

- Xylenes are reported as total xylenes (the sum of *o*-xylene and *m,p*-xylenes).
- TICs are added and reported as a total concentration for the sum of TICs detected for VOCs.
- Duplicate samples are included after the respective primary sample.
- A "J" value is a concentration exceeding the MDL but less than the Reporting Limit (RL) for VOCs.
- Estimated Results "ER" are concentrations exceeding the MDL and less than the RL for metals.
- A "B" value is a compound detected in the sample and its associated field blank sample.
- If a particular sample suite or analyte was not detected in a surface water sample location, the suite/analyte is not presented in the summary table.

One surface water sample location (SS-05) sampled during the current reporting period (4th Quarter 2006 through the 4th Quarter 2008) was analyzed for VOCs and wet chemistry parameters. Two surface water sample locations (SS-15 and SS-27) sampled during the current reporting period (4th Quarter 2006 through the 4th Quarter 2008) were analyzed for VOCs, metals, and wet chemistry. Analysis for metals was started for both surface water sample locations (SS-15 and SS-27) from Round 33.

VOCs

During nine quarterly sampling events for the current reporting period, six VOCs were detected in the three surface water locations. Two VOCs (PCE and TCE) were detected at concentrations

that exceeded their respective freshwater SWQS. The remaining four VOCs [acetone, *cis*-1,2-DCE, methyl *tert*-butyl ether (MTBE), and *tert*-butyl alcohol (TBA)] were detected below their respective freshwater SWQS.

Analytical results for one surface water sample location (SS-15) sampled during the current reporting period exceeded the NJDEP freshwater SWQS for PCE and TCE. Surface water sampling point SS-15 is located upstream of the M-5 Landfill Site and outside of the Fort Monmouth property boundary. Surface water sampling point SS-05, immediately adjacent to the M-5 Landfill Site and downstream, exceeded the NJDEP freshwater SWQS for PCE during the current reporting period.

Metals

Two metals (arsenic and lead) were detected at concentrations that exceeded their respective SWQS. The concentration of arsenic exceeded the NJDEP freshwater SWQS in surface water sample locations SS-15 and SS-27. The concentration of lead exceeded the NJDEP freshwater SWQS in surface water sample location SS-15. Lead was detected below the maximum background concentration for surface water established in the *Weston (1995) report*. Arsenic was detected greater than the maximum background concentration.

5.2.1 Surface Water Contaminants of Concern

The following paragraphs summarize the results of the COCs detected above the SWQS during the current reporting period:

- PCE concentrations in SS-05 ranged from ND to 1.86 µg/L (Round 42). PCE concentrations exceeded the freshwater SWQS of 0.34 µg/L in six of nine sampling rounds for the current reporting period.
- PCE concentrations in SS-15 ranged from ND to 2.42 µg/L (Round 46). PCE concentrations exceeded the freshwater SWQS of 0.34 µg/L in six of nine sampling rounds for the current reporting period.
- TCE concentrations in SS-15 ranged from ND and 1.02 J µg/L (Round 46). TCE concentrations exceeded the freshwater SWQS of 1.0 µg/L in two of nine sampling rounds for current reporting period.

5.3 Tentatively Identified Compounds (TICs)

During this reporting period, VOC TIC concentrations in ground water did not exceed the NJDEP GWQS of 100 µg/L for individual compounds or 500 µg/L for total TIC concentrations. Table 5-23 summarizes the analytical results for the ground water VOC TICs during this reporting period.

During this reporting period, all three surface water sample locations had VOC TICs detected at very low level concentrations of one single TIC ranging from 7 µg/L to 11 µg/L. None of the three surface water sample locations had VOC TIC concentrations that exceeded either the NJDEP SWQS of 100 µg/L for an individual compound or 500 µg/L for total TIC concentrations. Table 5-24 summarizes the analytical results for the surface water VOC TICs during this reporting period.

5.4 Ground Water Sampling - Quality Assurance/Quality Control (QA/QC)

To verify the reliability of the ground water analytical results, VEETech reviewed the holding times for each sample and the results of the analyses of 12 method blanks, 11 trip blanks, 11 field blanks, and 10 field duplicate samples for the ground water samples. The discussion below is based on QA/QC for the ground water samples. Samples were analyzed by the FMETL within the prescribed holding time requirements for the analytical method.

Method Blanks

Laboratory method blanks accompanied each batch of samples for the M-5 Landfill Site. These method blanks consisted of laboratory-grade water that was processed identically to the samples and analyzed with the sample batch. A total of 12 method blanks were analyzed with the M-5 Landfill Site samples.

Acetone was detected in two of the method blanks at concentrations of 1.35 µg/L (Round 40) and 0.99 µg/L (Round 41), below the NJDEP GWQS of 6,000 µg/L for acetone.

Methylene chloride was detected in one of the method blanks at a concentration of 3.5 µg/L (Round 46), above the NJDEP GWQS of 2.5 µg/L for methylene chloride.

Acetone and methylene chloride are common laboratory contaminants, and detection in method blank samples is not indicative of a widespread laboratory contamination problem. COCs were not detected in the method blank samples.

Trip Blanks

A total of 11 trip blanks were included as part of the M-5 Landfill Site sampling program to document that volatile organics were not introduced into the samples during the handling process. The trip blanks were prepared by the FMETL and consisted of sample bottles filled with laboratory deionized water. The trip blanks remained with the sample bottles in coolers and were returned to the laboratory for analysis along with the ground water samples.

Acetone was detected in two of the trip blanks at concentrations of 1.14 µg/L (Round 44) and 11.87 µg/L (Round 46), below the NJDEP GWQS of 6,000 µg/L for acetone.

Chloroform was detected in one of the trip blank samples at a concentration of 0.46 µg/L (Round 40), below the NJDEP GWQS of 70 µg/L for chloroform.

Acetone and chloroform are common laboratory contaminants and detection is not indicative of a widespread laboratory contamination problem. COCs were not detected in the trip blank samples.

Field Blanks

One field blank sample was obtained during each day's sampling activities to check for potential introduction of contaminants from the field sampling and equipment decontamination procedures. A total of 11 field blanks were collected during this reporting period of the M-5 Landfill Site sampling program. The field blanks were collected by rinsing deionized water, supplied by the laboratory, over the sampling equipment used for daily activities. The water was collected in clean laboratory supplied containers and submitted for analysis along with the M-5 Landfill Site ground water samples.

Acetone was detected in two of the field blanks at concentrations of 1.39 µg/L (Round 44) and 12.33 µg/L (Round 46), below the NJDEP GWQS of 6,000 µg/L for acetone.

Chloroform was detected in one of the trip blank samples at a concentration of 0.38 µg/L (Round 40), below the NJDEP GWQS of 70 µg/L for chloroform.

Acetone and chloroform are common laboratory contaminants. COCs were not detected in the field blanks.

Duplicate Samples

A total of 10 field duplicate samples were also collected during this reporting period for the M-5 Landfill Site sampling events to verify the consistency of the entire sampling and analytical procedure. One of the field duplicates collected (Round 44) was not analyzed. Two field duplicate samples were collected for two days of sampling for Round 40. A total of 10 duplicate analyses results were available for comparison. The Relative Percent Differences (RPDs) for the duplicate sample analyses ranged from 0.00 percent to 9.04 percent. The average RPD for the total set of duplicate analyses was 1.45 percent. The duplicate sample analyses indicate a high level of precision relative to typical environmental laboratory analytical result data sets.

5.5 Surface Water Sampling - QA/QC

Surface water sampling activities were conducted base wide for each stream sampling location every quarter in a single sampling event. To verify the reliability of surface water analytical results, VEETech reviewed the holding times for each sample and the results of the analyses of 16 method blanks, 11 trip blanks, 11 field blanks, and nine field duplicate samples for the surface water samples. The discussion below is based on QA/QC for the VOC surface water samples. Samples were analyzed by the FMETL within the prescribed holding time requirements for the analytical method.

Method Blanks

Laboratory method blanks accompanied each batch of surface water samples for the M-5 Landfill Site. These method blanks consisted of laboratory-grade water that is processed identically to the samples and analyzed with the sample batch. A total of 16 VOC method blanks were analyzed with the base wide surface water samples.

Acetone was detected in three of the 16 method blank samples at concentrations ranging from 0.82 to 1.59 µg/L. NJDEP did not establish a SWQS for acetone for freshwater. Acetone is a common laboratory contaminant and detection in three method blank samples is not indicative of a widespread laboratory contamination problem.

Methylene chloride was detected in one of the 16 method blank samples at a concentration of 0.66 µg/L, below the freshwater SWQS of 2.5 µg/L. Methylene chloride is also a common laboratory contaminant.

COCs were not detected in the method blank samples.

Trip Blanks

A total of 11 trip blanks were included as part of the base wide surface water sampling program to document that volatile organics were not introduced into the samples during the handling process. The trip blanks were prepared by the FMETL and consisted of sample bottles filled

with laboratory deionized water. The trip blanks remained with the sample bottles in coolers and were returned to the laboratory for analysis along with the surface water samples.

Chloroform was detected in two of the 11 trip blanks at concentrations of 0.74 and 082 µg/L, below the freshwater SWQS of 68 µg/L. Acetone was detected in two of the 11 trip blanks at concentrations of 13.50 and 22.34 µg/L. As previously stated, chloroform and acetone are common laboratory contaminants, and the detections are not indicative of a widespread laboratory contamination problem. COCs were not detected in the trip blanks.

Field Blanks

One field blank sample was obtained during each day's sampling activities to document the equipment decontamination procedures. A total of 11 field blank samples were collected during the base wide surface water sampling program. The field blanks were collected by rinsing deionized water, supplied by the laboratory, over the sampling equipment used for daily activities. The water was collected in clean laboratory supplied containers and submitted for analysis along with the surface water samples.

Chloroform was detected in two of the 11 field blanks at concentrations of 0.73 and 0.75 µg/L, below the freshwater SWQS of 68 µg/L. Acetone was detected in two of the 11 field blank samples at concentrations of 0.95 and 12.52 µg/L. Methylene chloride was detected in one of the 11 method blank samples at a concentration of 0.52 µg/L, below the freshwater SWQS of 2.5 µg/L. COCs were not detected in the field blanks.

Duplicate Samples

A total of nine field duplicate samples were also collected during the base wide surface water sampling events to verify the consistency of the entire sampling and analytical procedure. Results from two of the field duplicates collected for Round 46 were not analyzed by the laboratory and therefore were not reported in the analytical data report for that quarter. Two field duplicate samples were collected for two days of sampling for Round 43.

The results for the duplicate samples were close to those obtained for the original samples. The RPDs for the duplicate sample analyses ranged from 0.0 percent to 50 percent; however, the average RPD for the nine duplicates was 12.95 percent. Based on average RPDs, the QA/QC sample results indicate a reasonable level of precision.

6.0 REMEDIAL ACTION PROGRESS

The long-term ground water monitoring results indicate that the concentrations of PCE have decreased in monitoring wells where concentrations were above the GWQS at the onset of the first HRC® injection. Concentrations of PCE have continued to decrease in some monitoring wells, notably M-5MW11 and M-5MW16, through the current reporting period (4th Quarter 2006 through the 4th Quarter 2008). Concentrations of PCE in other wells appeared to stabilize, notably M-5MW19 and M-5MW20, and increased in M-8MW12 through the current reporting period. Concentrations of PCE degradation byproducts appear to have stabilized but continue to increase in some wells. Concentrations of PCE and breakdown byproducts (TCE and vinyl chloride) continued to exceed the NJDEP GWQS in monitoring wells located in the former HRC® injection areas during the current reporting period (M-8MW23 located in HRC-1, M-8MW12 located in HRC-2, M-5MW23 located in HRC-3, M-5MW11 located in HRC-4, M-5MW20 located in HRC-5, M-5MW19 located in HRC-6, and M-5MW16 located in HRC-7, illustrated in Figure 3-1). The highest concentrations of PCE remain in the upgradient monitoring well M-5MW16 located in HRC-7.

The long-term surface water sampling results indicate that the source of the chlorinated VOCs impacting Landfill Site M-5 is not currently impacting Mill Creek or Parkers Creek.

6.1 Cost of Remediation Incurred To Date

The total cost to date for the annual implementation of the remedial actions performed at the M-5 Landfill Site is approximately $1,277K (Appendix H). This includes the Preliminary Assessment Phase, Site Investigation, RI, Remedial Design (RD), RA, LTM, and reporting.

6.2 Conclusions

Figure 5-2 through Figure 5-8 illustrate the trend in concentrations of PCE and degradation byproducts over time at monitoring wells M-5MW11, M-8MW12, M-5MW16, M-5MW19, M-5MW20, M-5MW23, and M-8MW23 where these chlorinated VOCs were detected above their respective GWQS. During this reporting period, PCE and/or degradation byproducts were not detected in five of the 13 monitoring wells (M-5MW10, M-5MW12, M-5MW13, M-5MW14, and M-5MW18). Two wells, M-8MW23 and M-8MW24, had detections of PCE degradation byproducts below their respective GWQS; PCE was not detected during this reporting period.

PCE was detected above NJDEP GWQS in M-5MW11. PCE concentrations in M-5MW11 ranged from ND to 5.24 µg/L (Round 42). The NJDEP GWQS for PCE is 1 µg/L. PCE was ND in M-5MW11 in two rounds of sampling (Round 43 and 46). The other seven rounds exceeded the GWQS.

PCE was detected above NJDEP GWQS in M-5MW16. PCE concentrations in M-5MW16 ranged from 4.42 µg/L (Round 45) to 86.18 µg/L (Round 39). PCE was detected above NJDEP GWQS for all nine rounds in the current reporting period.

PCE was detected above NJDEP GWQS in M-5MW19 at concentrations of 2.01 µg/L (Round 47) and 2.36 µg/L (Round 43). PCE was either not detected or detected below the NJDEP GWQS for the remaining seven rounds in the current reporting period.

PCE was detected above NJDEP GWQS in M-5MW20 at concentrations ranging from 1.28J µg/L (Round 45) to 2.41 µg/L (Round 46). PCE was detected below NJDEP GWQS in M-5MW20 in Rounds 41, 43 and 44.

PCE was detected above NJDEP GWQS in M-5MW23 at concentrations ranging from 1.54J µg/L (Round 40) to 16.0 µg/L (Round 41). PCE was ND in M-5MW23 in one round of sampling (Round 43).

PCE was detected above NJDEP GWQS in M-8MW12 at concentrations ranging from 1.49J µg/L (Round 42) to 9.83 µg/L (Round 47). PCE was detected below NJDEP GWQS in M-5MW20 in Round 45 and was ND in Rounds 40, 41, 43, and 44.

PCE was either ND or detected below NJDEP GWQS in M-5MW10, M-5MW12 through M-5MW14, M-5MW18, M-8MW23, and M-8MW24 during this reporting period.

TCE was detected above NJDEP GWQS in M-5MW16 at concentrations ranging from 1.36J µg/L (Round 47) to 37.11 µg/L (Round 39). The NJDEP GWQS for TCE was 1 µg/L. TCE was detected below the NJDEP GWQS in M-5MW16 in two rounds of sampling (Rounds 44 and 45).

TCE was detected above NJDEP GWQS in M-5MW19 at concentrations ranging from 1.01J µg/L (Round 40) to 5.01 µg/L (Round 43). TCE was detected below NJDEP GWQS in M-5MW19 in Round 46 and was ND in Rounds 41, 42, and 45.

TCE was detected above NJDEP GWQS in M-5MW20 at concentrations of 1.41J µg/L (Round 40) and 1.65J µg/L (Round 46). TCE was either not detected or detected below the NJDEP for the remaining seven rounds in the current reporting period.

TCE was detected above NJDEP GWQS in M-8MW12 at concentrations of 3.12 µg/L (Round 39) and 5.12 µg/L (Round 47). TCE was detected below the NJDEP GWQS in Rounds 42 and 46 and was ND for Rounds 40, 41, 43, 44, and 45.

TCE was either not detected or detected below NJDEP GWQS in M-5MW10 through M-5MW14, M-5MW18, M-5MW23, M-8MW23, and M-8MW24.

cis-1,2-DCE was either not detected or detected below NJDEP GWQS in the 10 monitoring wells associated with the M-5 Landfill Site and the three monitoring wells associated with M-8 Landfill Site.

Vinyl chloride was detected above NJDEP GWQS in M-5MW16 at concentrations ranging from 1.17J µg/L (Round 41) to 7.33 µg/L (Round 42). The NJDEP GWQS for vinyl chloride was 1 µg/L. Vinyl chloride was ND in M-5MW16 in three rounds of sampling (Rounds 44, 45, and 47).

Vinyl Chloride was detected above NJDEP GWQS in M-8MW23 at a concentration of 2.73 µg/L in only one round of sampling (Round 46). Vinyl chloride was detected below the NJDEP GWQS in M-8MW23 in two rounds (Rounds 39 and 47) and was ND for the remaining six rounds.

Vinyl Chloride was either not detected or detected below NJDEP GWQS in M-5MW10 through M-5MW14, M-5MW18 through M-5MW20, M-5MW23, M-8MW12, and M-8MW24.

Concentrations of PCE and breakdown byproducts (TCE and vinyl chloride) continued to exceed the NJDEP GWQS in monitoring wells located in the former HRC® injection areas during the current reporting period (M-8MW23 located in HRC-1, M-8MW12 located in HRC-2, M-5MW23 located in HRC-3, M-5MW11 located in HRC-4, M-5MW20 located in HRC-5, M-5MW19 located in HRC-6, and M-5MW16 located in HRC-7, illustrated in Figure 3-1). The highest concentrations of PCE remain in the upgradient monitoring well M-5MW16 located in HRC-7.

COCs were not detected above SWQS at the surface water sampling location immediately adjacent to and downgradient of the M-5 Landfill Site on Mill Creek (SS-05) or at the surface water sampling location downstream on Parker's Creek (SS-27) during this reporting period.

6.3 Recommendations

Although COC concentrations (PCE in particular) have decreased since the first HRC® injection, COC concentrations appear to have stabilized. VEETech recommends continued quarterly ground water and surface water monitoring activities. Additionally, if increased reduction in COCs is desired, additional biological or chemical oxidation treatment events may be warranted. The last HRC® injection event was performed between September and December 2005. The ground water monitoring wells that continue to exceed the GWQS are those within the existing HRC® injection areas (Figure 3-1).

Due to lack of detections of COCs and lack of exceedances of GWQS in six of the ground water monitoring wells currently being sampled during this reporting period, a modification to the monitoring program is required. Future sampling and analysis recommendations are summarized by well in the following section. Remedial action progress will be monitored and reported to the NJDEP periodically.

The Fort Monmouth DPW is currently reviewing soil and ground water data for the M-5 Landfill to determine if any additional delineation monitoring wells and/or soil borings will need to be installed prior to the calculation and submittal of a Classification Exception Area (CEA). In the next RAPR, if determined to be necessary, the Fort Monmouth DPW will include a delineation proposal for soil and ground water.

The Fort Monmouth DPW acknowledges receipt of the NJDEP's most recent correspondence letter (December 16, 2009). The DPW will prepare a response to the December 16, 2009 correspondence letter for inclusion in the next RAPR. As referenced in the December 16, 2009 NJDEP letter, the next RAPR will also include a comparison of all surface soil sampling analytical results to the NJDEP's *Non-Residential Direct Contact Soil Remediation Standards*. Previously, soil sampling results were compared to the NJDEP's *Residential Direct Contact Soil Remediation Standards*.

6.3.1 Sampling Program

The following table provides a summary of the current quarterly ground water and surface water sampling program at the M-5 Landfill Site along with recommendation for reduced sampling and analyses. While it is recommended to discontinue sampling for M-5MW10, DPW proposes to continue to collect liquid level measurements from the well to aid in the generation of ground water contour maps.

Monitoring Well	Analysis	Recommended Future Sampling	Reason
M-5MW10	VOCs	Discontinue Sampling.	COCs not detected since inception of monitoring. Redundant well with sentinel monitoring well M-5MW12.
M-5MW11	VOCs	Continue VOCs Quarterly	Exceedances of PCE.
M-5MW12	VOCs	Continue Sampling	Need as sentinel well for CEA.
M-5MW13	VOCs	Continue Sampling	Need as sentinel well for CEA.
M-5MW14	VOCs	Continue Sampling	Need as sentinel well for CEA.
M-5MW16	VOCs	Continue VOCs Quarterly	Exceedances of PCE, TCE, and vinyl chloride.
M-5MW18	VOCs	Continue Sampling	Need well sampled for CEA calculations.
M5-MW19	VOCs	Continue VOCs Quarterly	Exceedances of PCE and TCE.
M-5MW20	VOCs	Continue VOCs Quarterly	Exceedances of PCE and TCE.
M-5MW23	VOCs	Continue VOCs Quarterly	Exceedances of PCE.
M-8MW12	VOCs	Continue VOCs Quarterly	Exceedances of PCE and TCE.
M-8MW23	VOCs	Continue VOCs Quarterly	Exceedances of vinyl chloride.
M-8MW24	VOCs	Continue Monitoring for Landfill Site M-5	Needed as clean sidegradient well.

Surface Water Location	Analysis	Recommended Future Sampling	Reason
SS-05	VOCs	Continue VOCs Quarterly	Adjacent to site.
SS-15	VOCs	Continue VOCs Quarterly	Upstream location.
SS-27	VOCs	Continue VOCs Quarterly	Downstream location.

6.4 Remedial Action Schedule

The table and Gantt chart provided in Appendix H is a schedule summary for remedial activities at the M-5 Landfill Site from the Preliminary Assessment phase through the end of this reporting period and estimated into the future. This table/chart includes actual costs and schedule to date and estimated/anticipated costs and schedule projected for future activities.

7.0 REFERENCES

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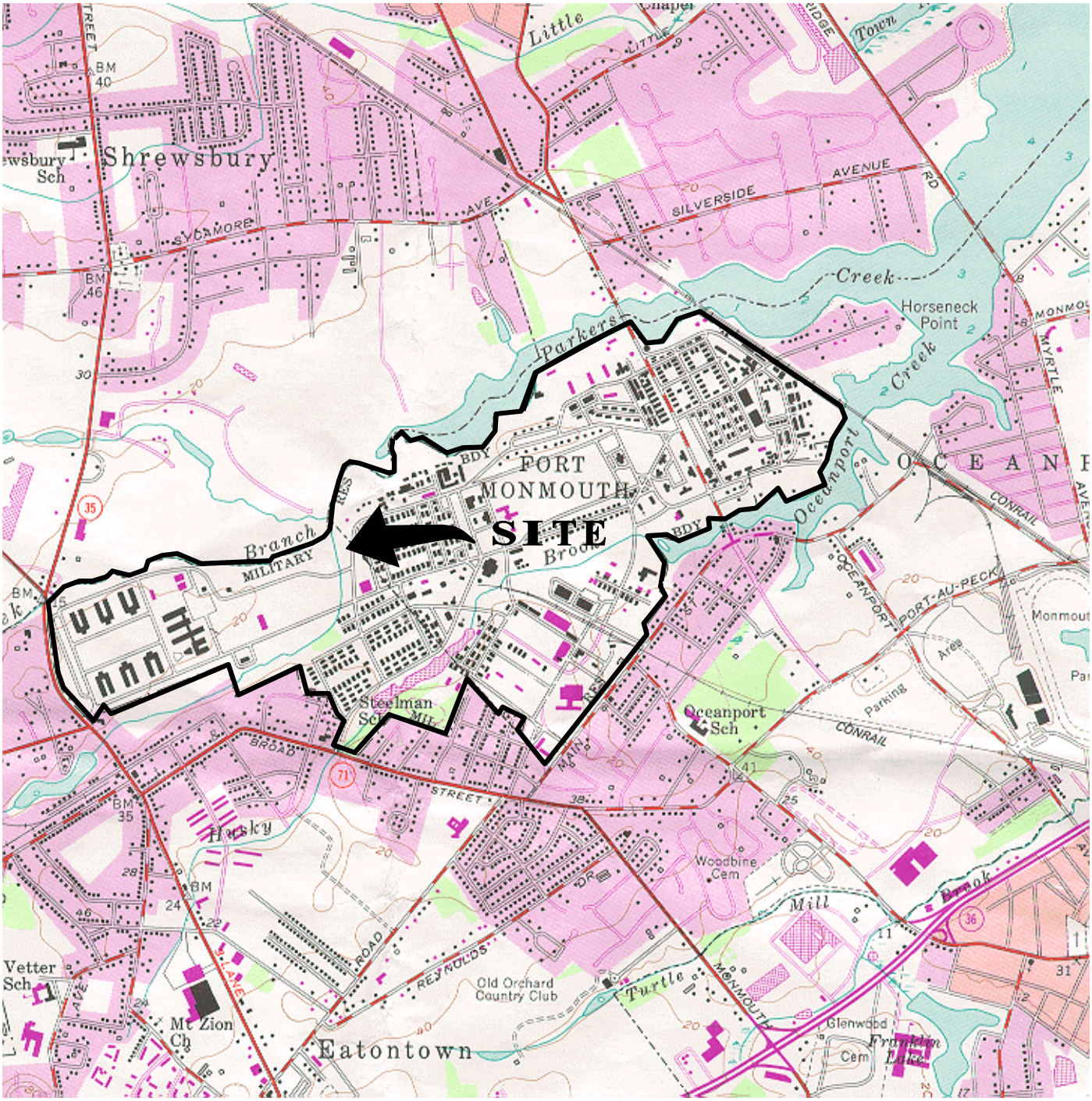
FIGURES



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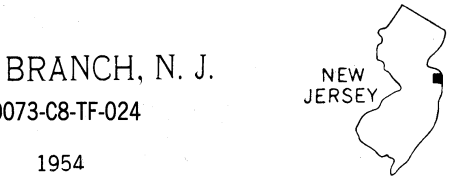
40073-C8-TF-024
1954
PHOTOREVISED 1981
DMA 6164 I SE-SERIES V822



QUADRANGLE LOCATION

2000 Feet

Mapped, edited and published by the U.S. Geological Survey

Figure 2-1
M-5 Landfill (FTMM-05)
Site Location Map
Fort Monmouth, New Jersey

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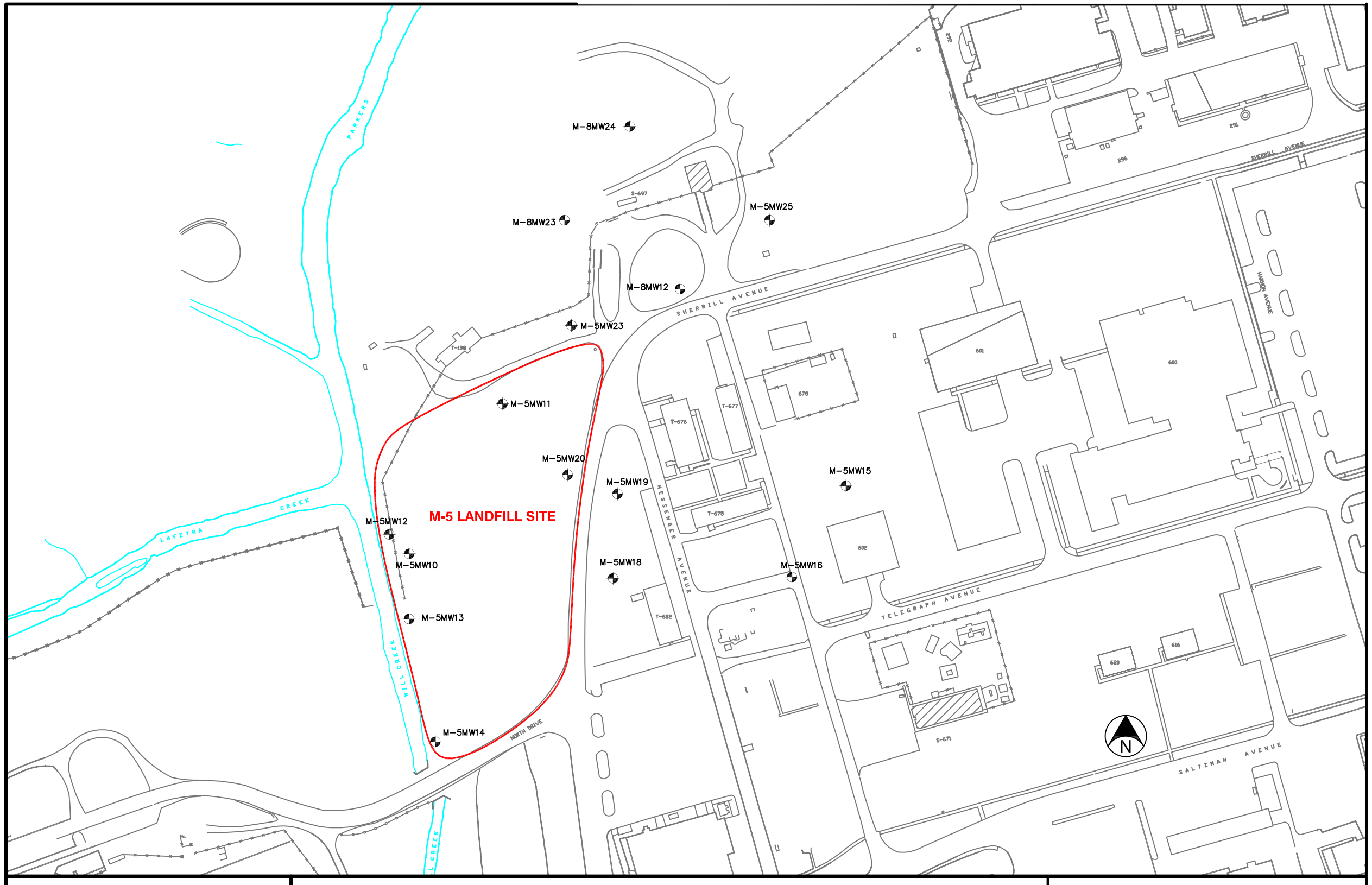

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FIGURE 2-2
SITE LAYOUT MAP

M-5 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

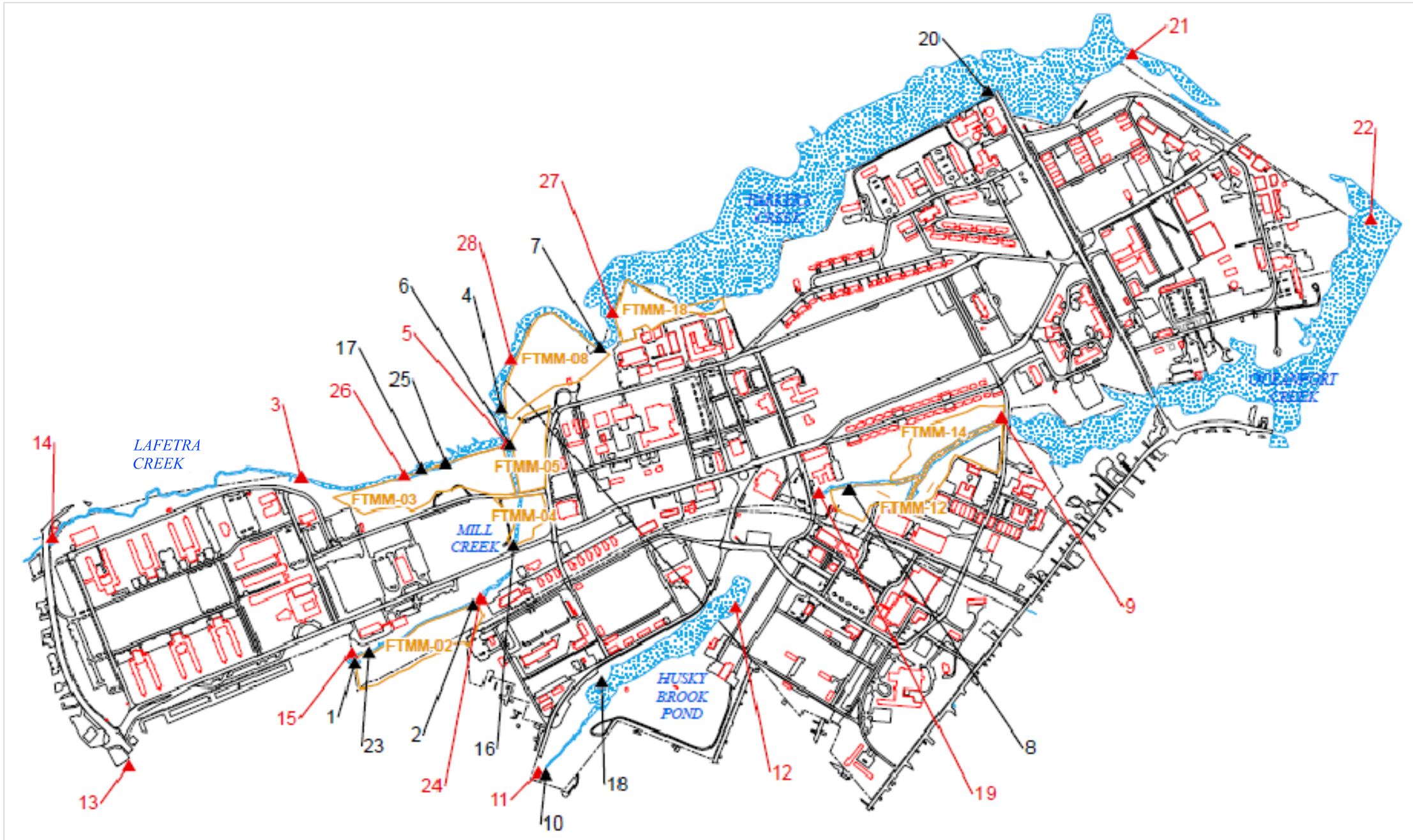
PROJECT NO.: 1042-06-017

FIGURE NO.: 2-2

SCALE
0 40 80 160

15-JAN-10

FIGURE NO.
2-2



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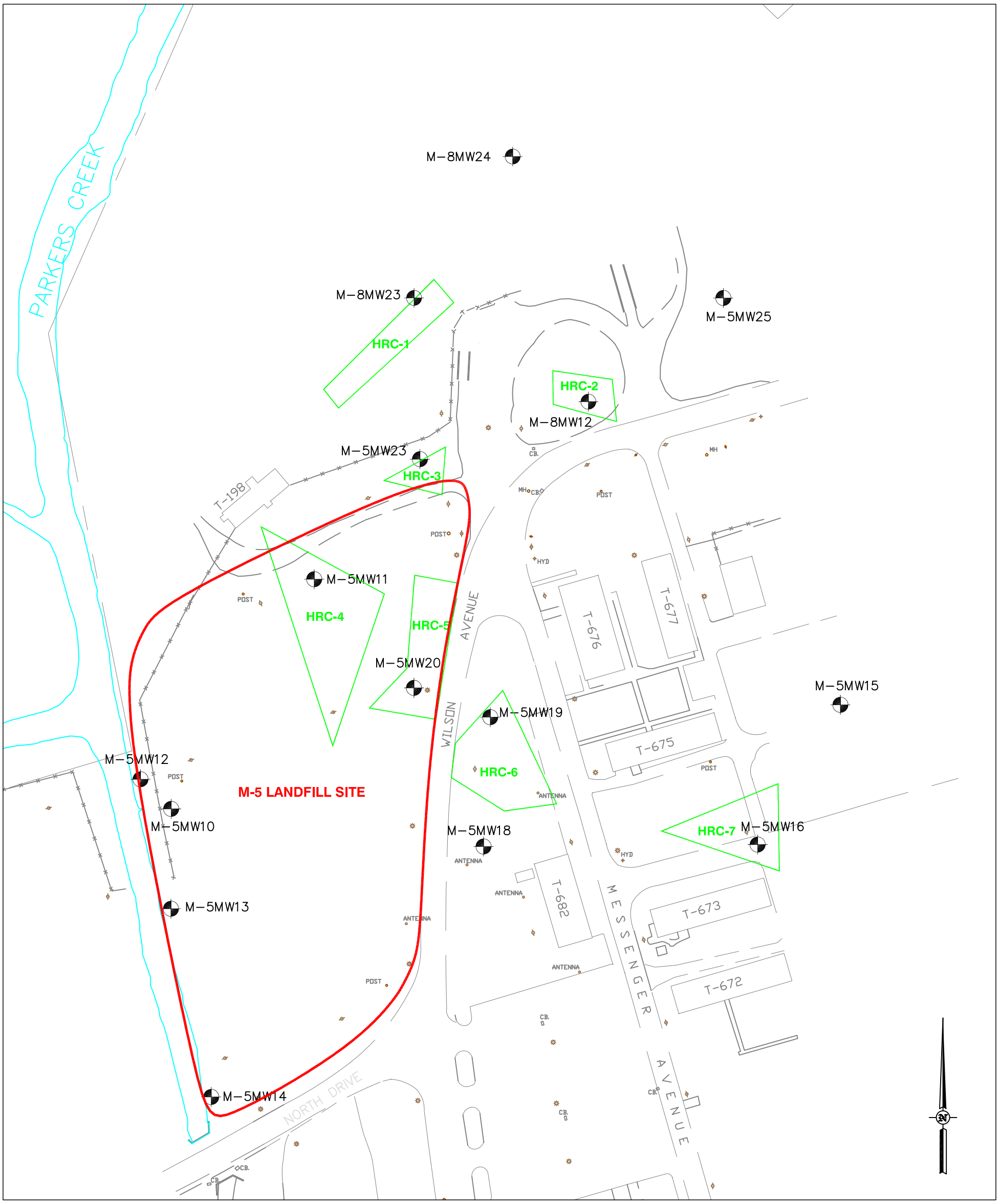
SURFACE WATER SAMPLE LOCATION MAP

M–5 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

PROJECT NO.: 1042–06–017
SCALE: 1"=1000'
DATE: 8/25/2010
REVISION
FIGURE NO. 2-3



Treatment Area	Area (square feet)	Number of Injection Points
HRC-1	3,200	22
HRC-2	1,800	13
HRC-3	900	6
HRC-4	8,500	59
HRC-5	7,000	49
HRC-6	6,000	42
HRC-7	6,000	42

100 50 0 100

SCALE IN FEET

LEGEND

MONITORING WELL LOCATION

HRC-3 HYDROGEN RELEASING COMPOUND TREATMENT AREA

SOURCE: ATC ASSOCIATES, INC., 1998, REMEDIAL ACTION WORK PLAN M-5 LANDFILL SITE, FORT MONMOUTH, NEW JERSEY

REV.	REVISIONS	APPROVED	DATE	DRAWN BY

TITLE:

FIGURE 3-1
BIOREMEDIATION AREAS
M-5 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

DRAWN BY: TJK	DATE DRAWN: 04 MAY 06
CHECKED BY: SM	DATE CHECKED: 14 APRIL 10
APPROVED BY:	DATE APPROVED:
VEETech, P.C. 513 Centrewest Court Cary, NC 27513 Ph. 919-388-0037 Fx. 919-388-0038 www.veetechpc.com Technologists, Engineers and Designers For a Cleaner Environment	FIGURE No.: 3-1
	PROJECT No.: 2011-09-011
	SCALE: 1" = 100'
	SHEET 1 OF 1 REV.:

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APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

M-5 Landfill Site Figure 4-1 (contour map not constructed) (November 16 & 17, 2006)

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No X. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes___ No X. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes X No___. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

Due to the ground water gauging event occurring on separate days, a contour map has not been generated.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No X. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No___. If yes, show the formula used to correct the water table elevation.

5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No___. If yes, discuss the reasons for the change. N/A

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6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No___. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

N/A

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided_X_, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

N/A

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APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

M-5 Landfill Site Figure 4-2 (contour map not constructed) (March 7 & 8, 2007)

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X_. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes___ No_X_. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes_X_ No___. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

Due to the ground water gauging event occurring on separate days, a contour map has not been generated.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No_X_. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No___. If yes, show the formula used to correct the water table elevation.

5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No___. If yes, discuss the reasons for the change. N/A

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6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No_X_. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

N/A

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided___, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

N/A

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APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

M-5 Landfill Site Figure 4-3 (contour map not constructed) (June 6, 7 & 8, 2007)

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X_. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes___ No_X_. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes_X_ No___. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

Due to the ground water gauging event occurring on separate days, a contour map has not been generated.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No_X_. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No___. If yes, show the formula used to correct the water table elevation.

5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No___. If yes, discuss the reasons for the change. N/A

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6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No___. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

N/A

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided___, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

N/A

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APPENDIX G
Contour Map Reporting Form

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M-5 Landfill Site Figure 4-4 (August 14, 2007)

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X_. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes___ No_X_. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes___ No_X_. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No_X_. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No___. If yes, show the formula used to correct the water table elevation.

5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No_X_. If yes, discuss the reasons for the change.

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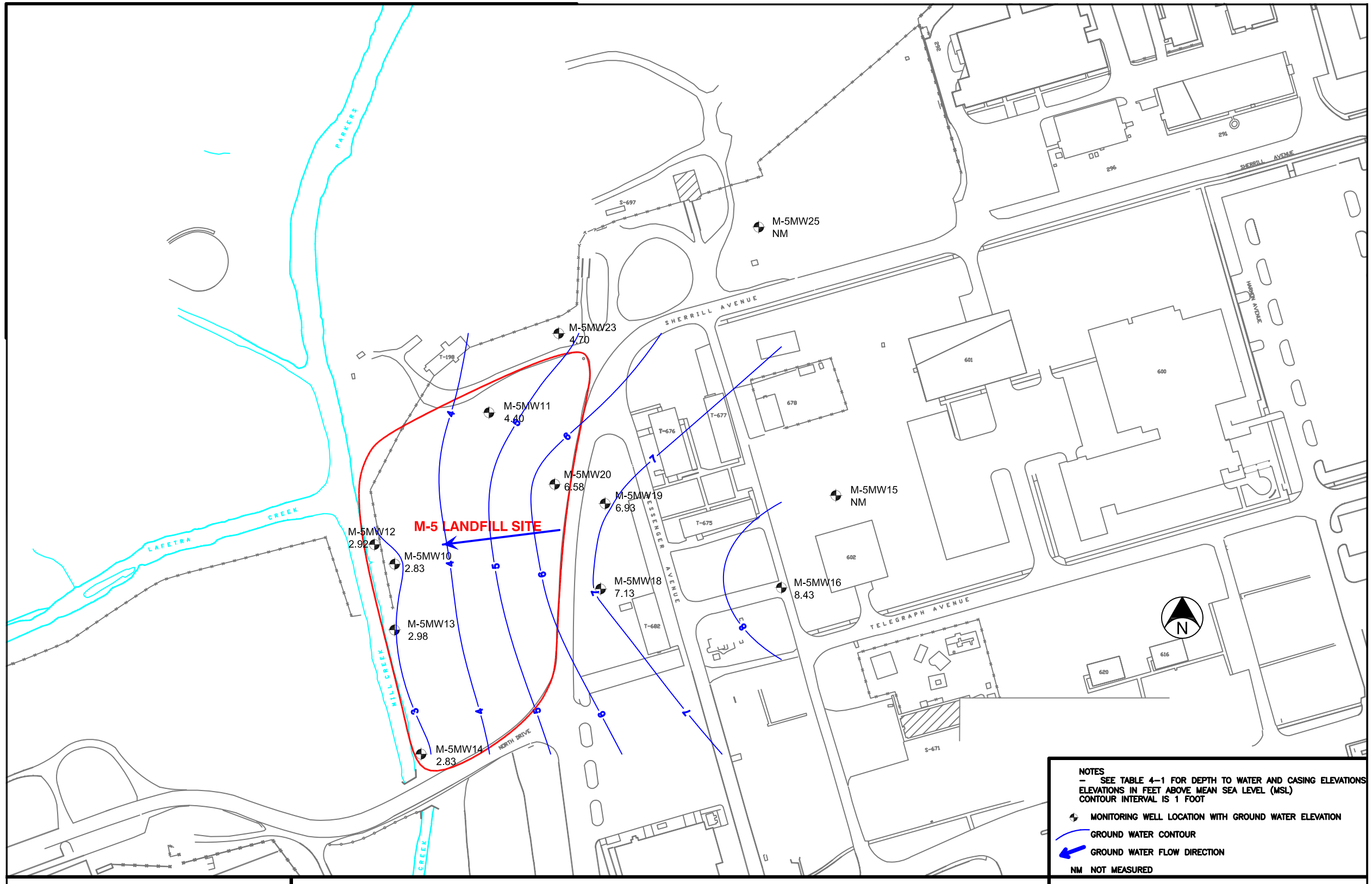
6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No_X_. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided_X_, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

Surfer Contouring Program



NOTES
– SEE TABLE 4–1 FOR DEPTH TO WATER AND CASING ELEVATIONS
ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL (MSL)
CONTOUR INTERVAL IS 1 FOOT

MONITORING WELL LOCATION WITH GROUND WATER ELEVATION

GROUND WATER CONTOUR

GROUND WATER FLOW DIRECTION

NM NOT MEASURED

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GROUND WATER CONTOUR MAP (AUGUST 14, 2007)

M–5 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

PROJECT NO.: 1042–06–017

FIGURE NO.: 4–4

SCALE
0 40 80 160

18–JAN–10

FIGURE NO.
4-4

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APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

M-5 Landfill Site Figure 4-5 (December 5, 2007)

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X_. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes___ No_X_. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes___ No_X_. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No_X_. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No___. If yes, show the formula used to correct the water table elevation.

5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No_X_. If yes, discuss the reasons for the change.

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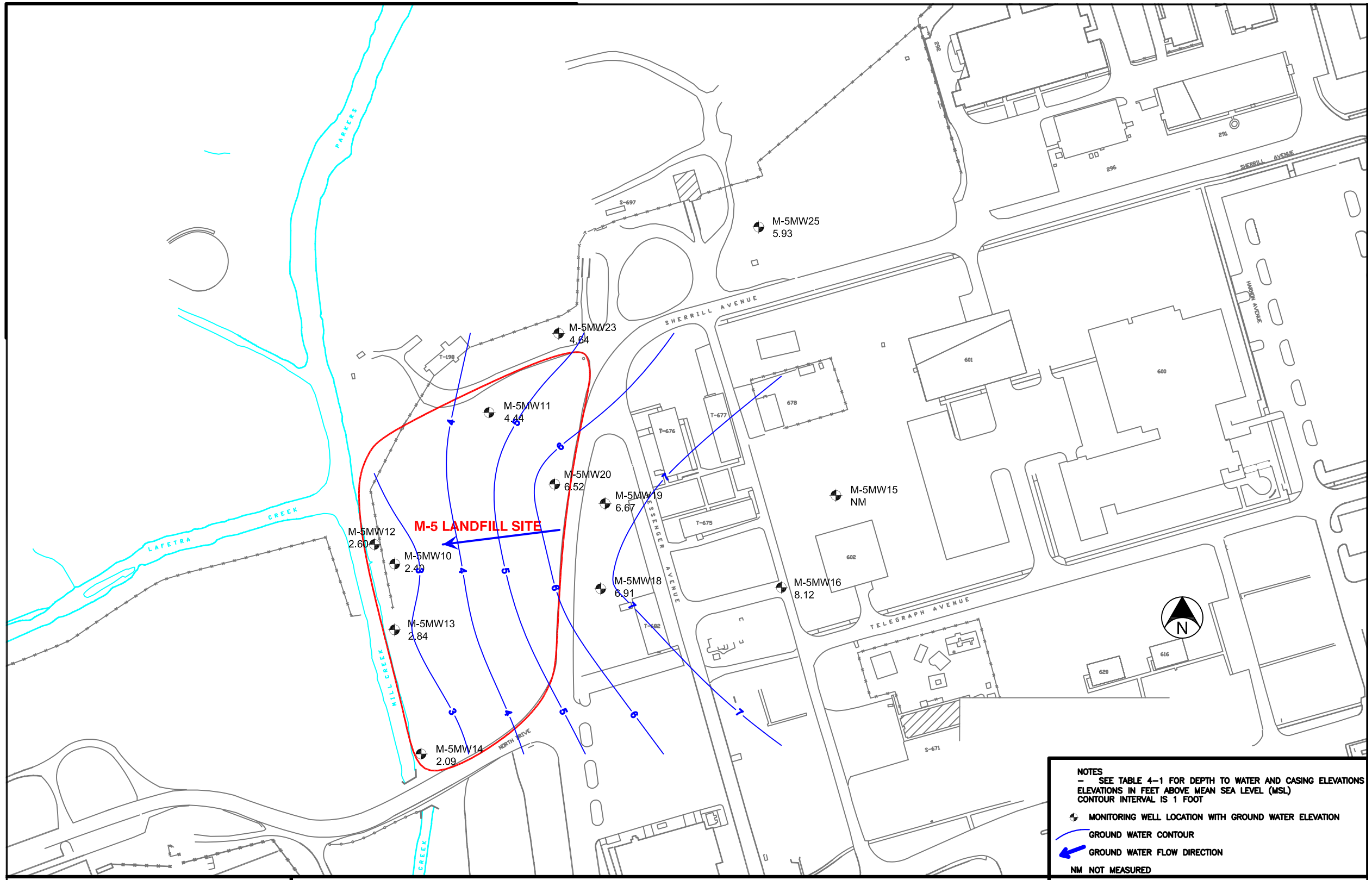
6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No_X_. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided_X_, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

Surfer Contouring Program



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GROUND WATER CONTOUR MAP (DECEMBER 5, 2007)

M–5 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

PROJECT NO.: 1042–06–017

FIGURE NO.: 4–5

SCALE
0 40 80 160

18–JAN–10

FIGURE NO.
4-5

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APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

M-5 Landfill Site Figure 4-6 (March 11, 2008)

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X_. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes___ No_X_. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes___ No_X_. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No_X_. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No___. If yes, show the formula used to correct the water table elevation.

5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No_X_. If yes, discuss the reasons for the change.

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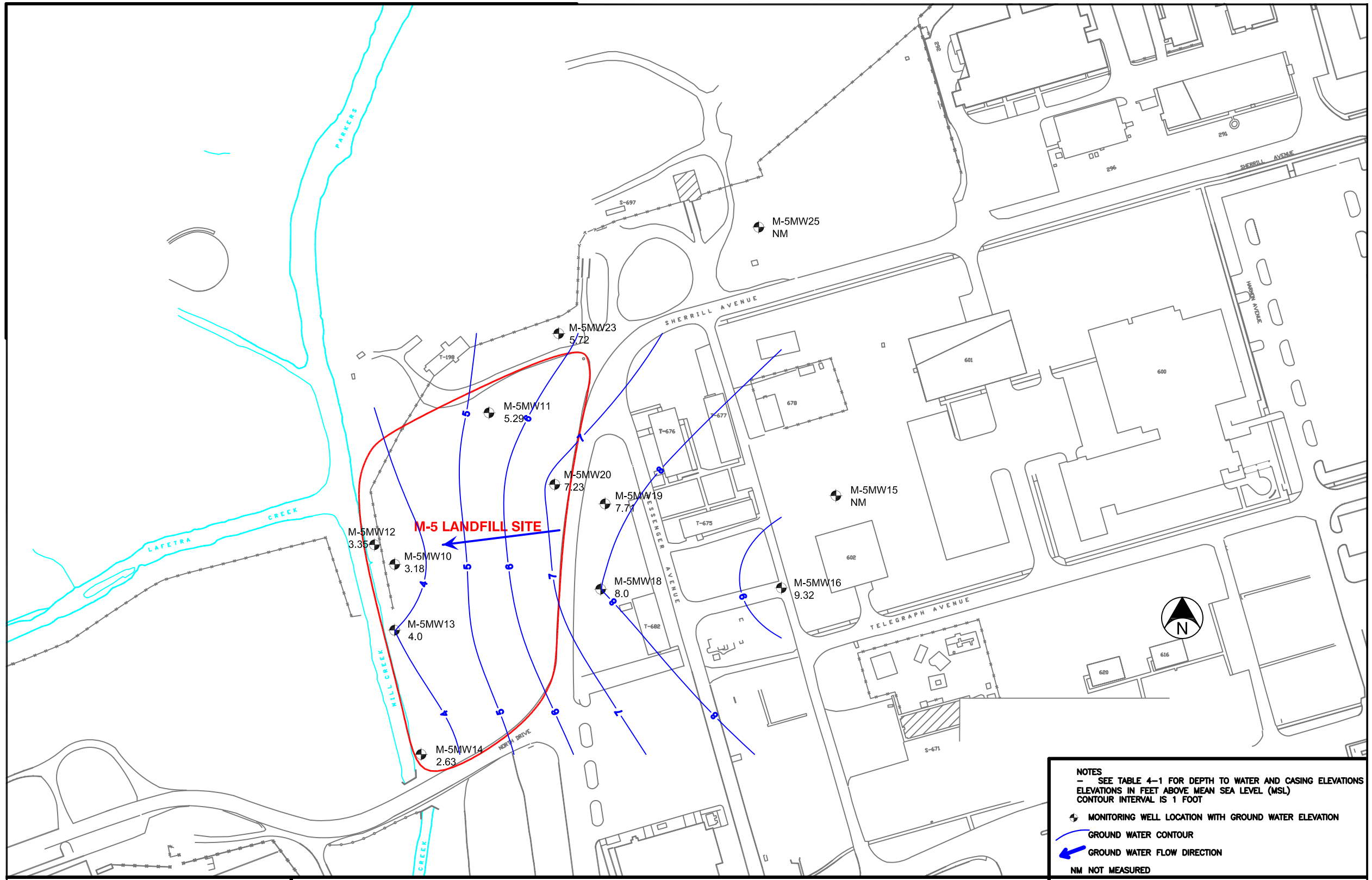
6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No_X_. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided_X_, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

Surfer Contouring Program



NOTES
– SEE TABLE 4–1 FOR DEPTH TO WATER AND CASING ELEVATIONS ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL (MSL)
CONTOUR INTERVAL IS 1 FOOT

MONITORING WELL LOCATION WITH GROUND WATER ELEVATION

GROUND WATER CONTOUR

GROUND WATER FLOW DIRECTION

NM NOT MEASURED

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GROUND WATER CONTOUR MAP (MARCH 11, 2008)

M–5 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

PROJECT NO.: 1042–06–017

FIGURE NO.: 4–6

SCALE
0 40 80 160

18–JAN–10

FIGURE NO.
4-6

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APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

M-5 Landfill Site Figure 4-7 (June 3, 2008)

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X_. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes___ No_X_. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes___ No_X_. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No_X_. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No___. If yes, show the formula used to correct the water table elevation.

5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No_X_. If yes, discuss the reasons for the change.

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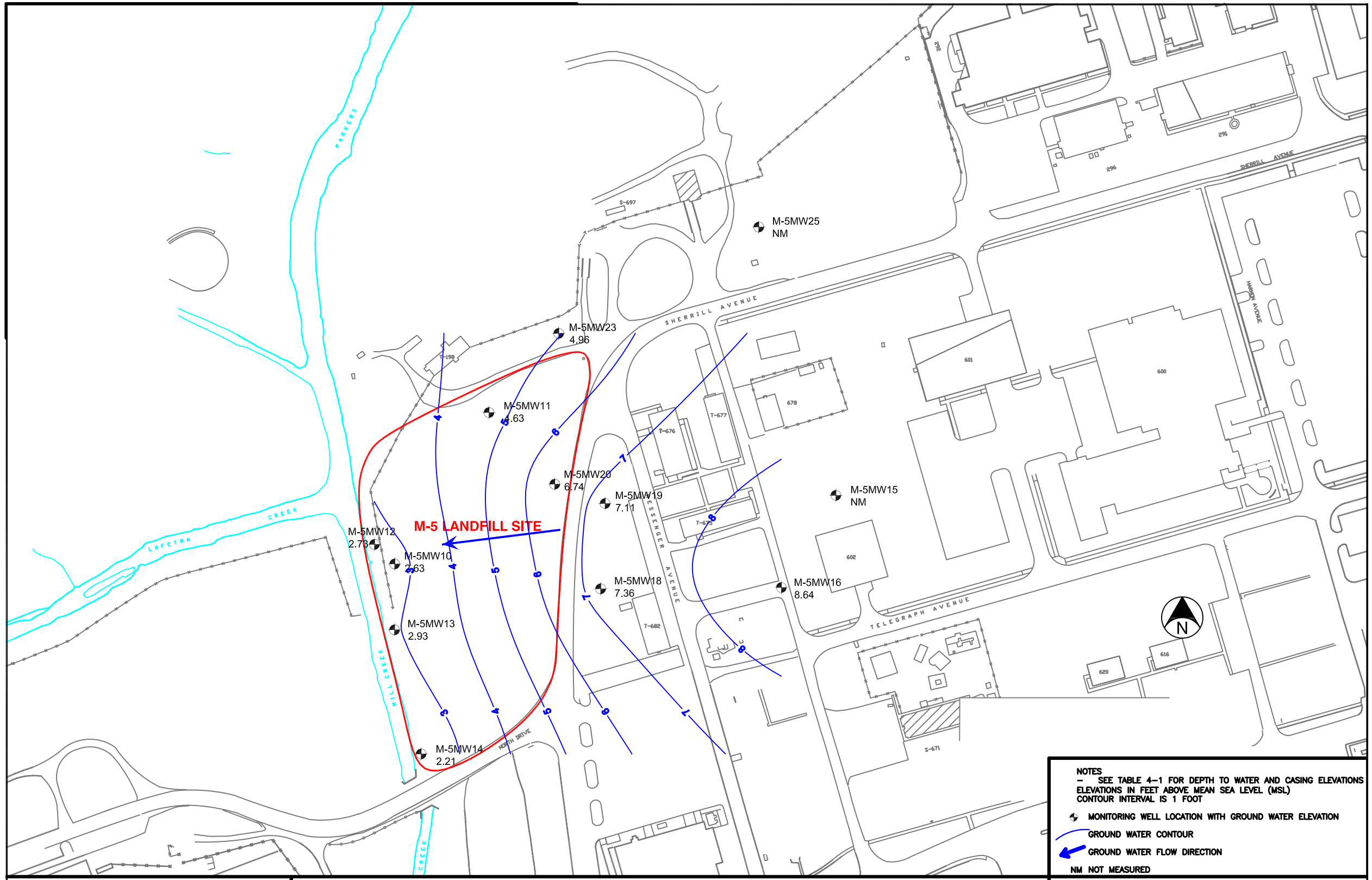
6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No_X_. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided_X_, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

Surfer Contouring Program



NOTES
– SEE TABLE 4–1 FOR DEPTH TO WATER AND CASING ELEVATIONS ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL (MSL)
CONTOUR INTERVAL IS 1 FOOT

MONITORING WELL LOCATION WITH GROUND WATER ELEVATION

GROUND WATER CONTOUR

GROUND WATER FLOW DIRECTION

NM NOT MEASURED

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GROUND WATER CONTOUR MAP (JUNE 03, 2008)

M–5 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

PROJECT NO.: 1042–06–017

FIGURE NO.: 4–7

SCALE
0 40 80 160

18–JAN–10

FIGURE NO.
4-7

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APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

M-5 Landfill Site Figure 4-8 (August 25, 2008)

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X_. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes___ No_X_. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes___ No_X_. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No_X_. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No___. If yes, show the formula used to correct the water table elevation.

5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No_X_. If yes, discuss the reasons for the change.

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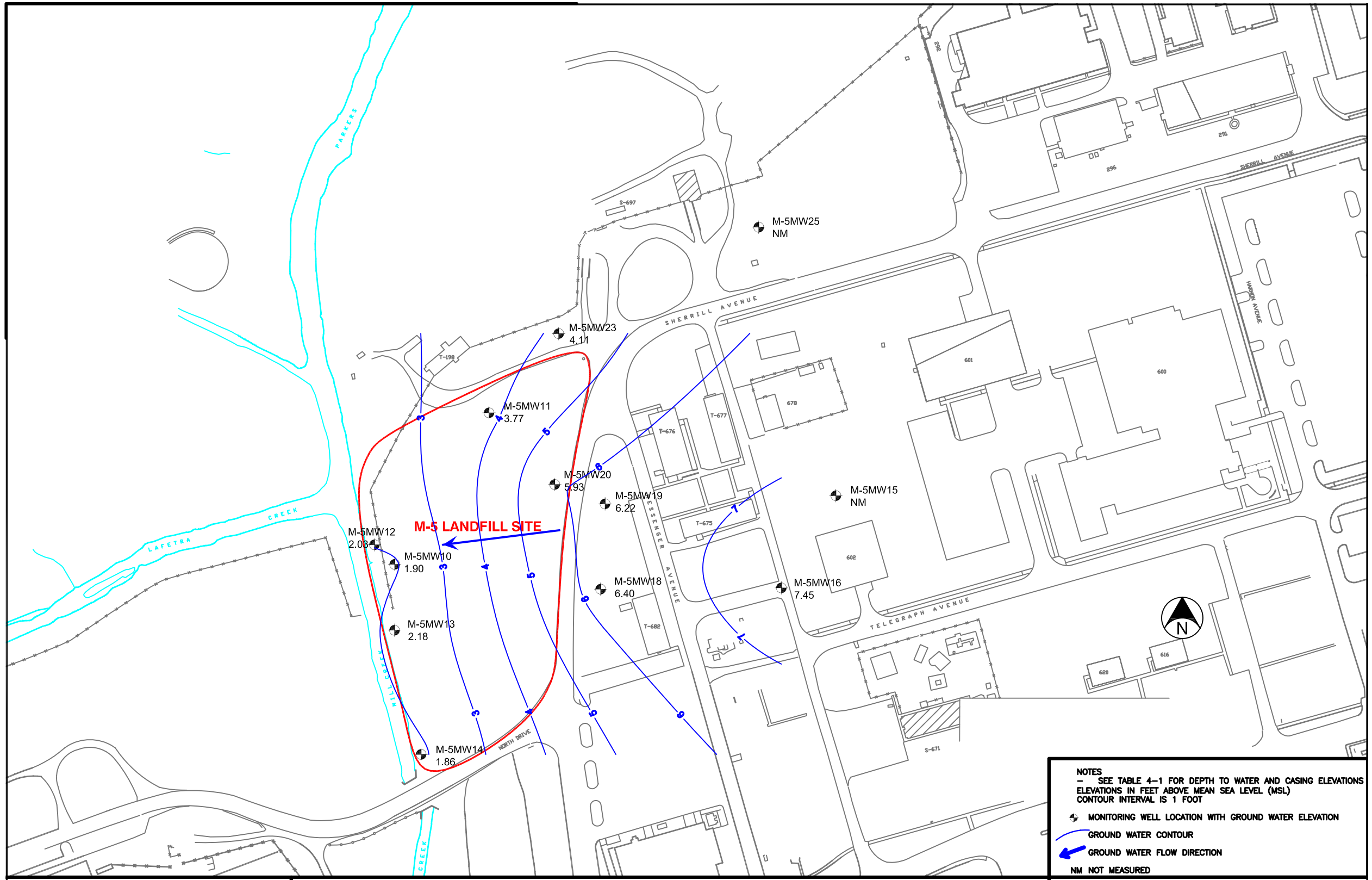
6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No_X_. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided_X_, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

Surfer Contouring Program



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GROUND WATER CONTOUR MAP (AUGUST 25, 2008)

M–5 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

PROJECT NO.: 1042–06–017

FIGURE NO.: 4–8

SCALE
0 40 80 160

18–JAN–10

FIGURE NO.
4-8

NOTE: THIS IS A COURTESY COPY OF THIS RULE. ALL OF THE DEPARTMENT'S RULES ALL COMPILED IN TITLE 7 OF THE NJ ADMINISTRATIVE CODE.

APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

M-5 Landfill Site Figure 4-9 (November 10, 2008)

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X_. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes___ No_X_. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes___ No_X_. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No_X_. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No___. If yes, show the formula used to correct the water table elevation.

5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No_X_. If yes, discuss the reasons for the change.

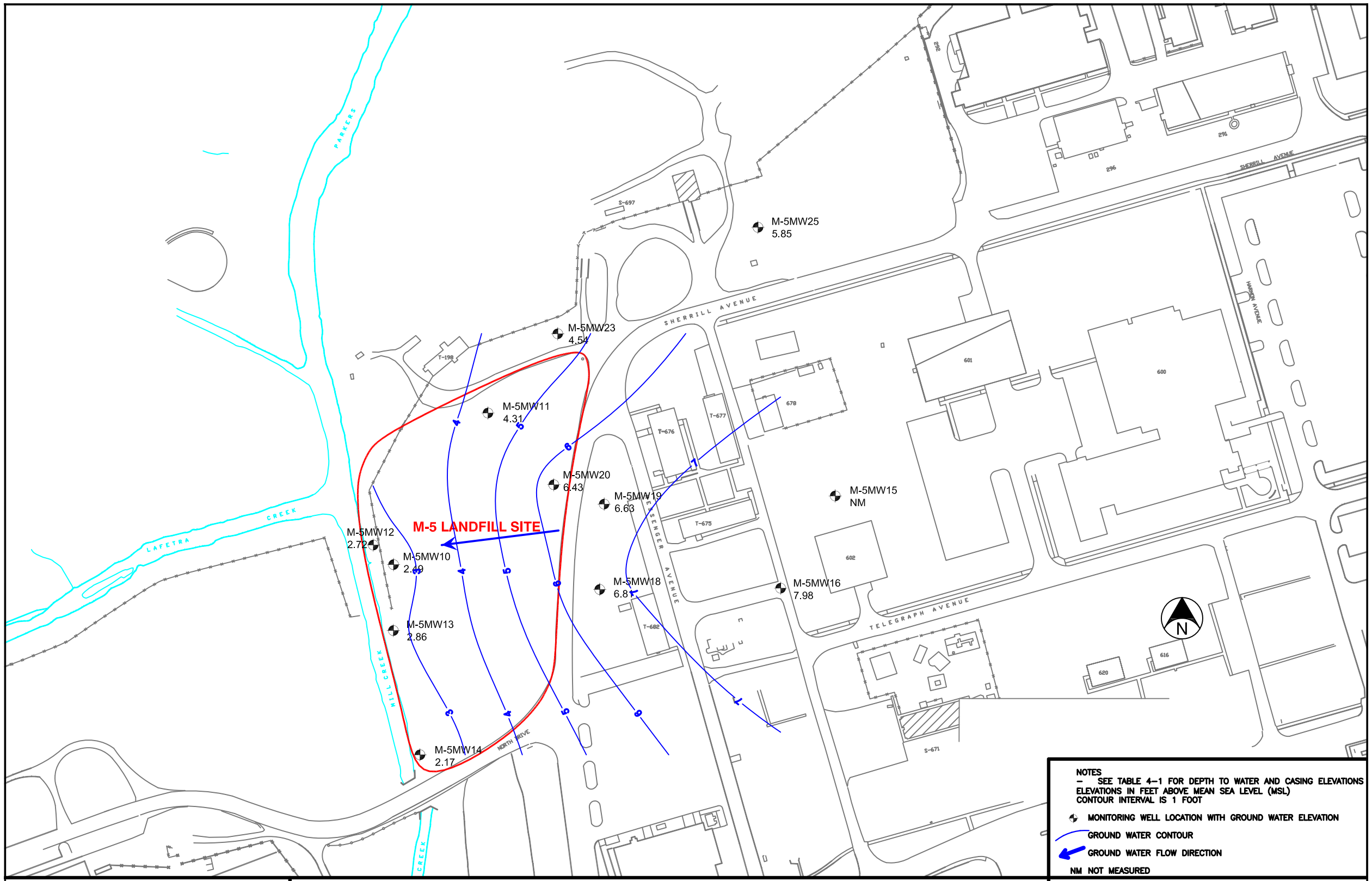
NOTE: THIS IS A COURTESY COPY OF THIS RULE. ALL OF THE DEPARTMENT'S RULES ALL COMPILED IN TITLE 7 OF THE NJ ADMINISTRATIVE CODE.

6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No_X_. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided_X_, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

Surfer Contouring Program



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GROUND WATER CONTOUR MAP (NOVEMBER 10, 2008)

M–5 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

PROJECT NO.: 1042–06–017

FIGURE NO.: 4–9

SCALE
0 40 80 160

18–JAN–10

FIGURE NO.
4-9

Site: M5 Well #: MW13

Date Collected	Tetrachloroethene (µg/L)	Trichloroethene (µg/L)	cis-1,2-Dichloroethene (µg/L)
NJDEP Criteria	1	1	10
10/7/1998	ND	ND	ND
10/21/1998	ND	ND	ND
12/23/1998	NA	NA	NA
2/2/1999	ND	ND	ND
4/13/1999	ND	ND	ND
4/27/1999	ND	ND	ND
9/13/1999	ND	ND	ND
11/15/1999	ND	ND	ND
3/6/2000	ND	ND	ND
5/31/2000	ND	ND	ND
8/21/2000	ND	ND	ND
12/11/2000	ND	ND	ND
2/13/2001	ND	ND	ND
3/19/2001	ND	ND	ND
6/5/2001	ND	ND	ND
9/5/2001	ND	ND	ND
10/4/2001	ND	ND	ND
1/14/2002	ND	ND	ND
4/23/2002	ND	ND	ND
8/21/2002	ND	ND	ND
10/28/2002	ND	ND	ND
1/22/2003	ND	ND	ND
4/21/2003	ND	ND	ND
7/30/2003	ND	ND	ND
10/8/2003	ND	ND	ND
1/14/2004	ND	ND	ND
5/13/2004	ND	ND	ND
8/20/2004	ND	ND	ND
12/16/2004	ND	ND	ND
3/15/2005	ND	ND	ND
6/6/2005	ND	ND	ND
9/16/2005	ND	ND	ND
Criteria Changed 11/05	1	1	70
12/21/2005	ND	ND	ND
3/1/2006	ND	ND	ND
5/5/2006	ND	ND	ND
9/13/2006	ND	ND	ND
11/17/2006	ND	ND	ND
3/6/2007	ND	ND	ND
6/6/2007	ND	ND	ND
8/14/2007	ND	ND	ND
12/5/2007	ND	ND	ND
3/11/2008	ND	ND	ND
6/5/2008	ND	ND	ND
8/25/2008	ND	ND	ND
11/10/2008	ND	ND	ND

Site: M5 Well #: MW12

Date Collected	Tetrachloroethene (µg/L)	Trichloroethene (µg/L)	cis-1,2-Dichloroethene (µg/L)
NJDEP Criteria	1	1	10
4/13/1999	ND	ND	ND
4/27/1999	ND	ND	ND
9/13/1999	ND	ND	ND
11/15/1999	ND	ND	ND
3/6/2000	NO	ND	ND
5/31/2000	NO	ND	ND
8/21/2000	NO	ND	ND
12/11/2000	NO	ND	ND
2/13/2001	NO	ND	ND
3/19/2001	NO	ND	ND
6/5/2001	NO	ND	ND
9/5/2001	NO	ND	ND
10/4/2001	NO	ND	ND
1/14/2002	NO	ND	ND
4/23/2002	NO	ND	ND
8/21/2002	NO	ND	ND
10/28/2002	NO	ND	ND
1/22/2003	NO	ND	ND
4/21/2003	NO	ND	ND
7/30/2003	NO	ND	ND
10/8/2003	NO	ND	ND
1/14/2004	NO	ND	ND
5/13/2004	NO	ND	ND
8/20/2004	NO	ND	ND
12/16/2004	NO	ND	ND
3/15/2005	NO	ND	ND
6/6/2005	NO	ND	ND
9/16/2005	NO	ND	ND
Criteria Changed 11/05	1	1	70
12/21/2005	ND	ND	ND
3/1/2006	ND	ND	ND
5/5/2006	ND	ND	ND
9/13/2006	ND	ND	ND
11/17/2006	ND	ND	ND
3/6/2007	ND	ND	ND
6/6/2007	ND	ND	ND
8/14/2007	ND	ND	ND
12/5/2007	ND	ND	ND
3/11/2008	ND	ND	ND
6/5/2008	ND	ND	ND
8/25/2008	ND	ND	ND
11/10/2008	ND	ND	ND

Site: M5 Well #: MW14

Date Collected	Tetrachloroethene (µg/L)	Trichloroethene (µg/L)	cis-1,2-Dichloroethene (µg/L)
NJDEP Criteria	1	1	10
10/7/1998	NO	NO	ND
10/23/1998	NO	NO	ND
2/2/1999	NO	NO	ND
4/13/1999	NO	NO	ND
4/27/1999	NO	NO	ND
9/13/1999	NO	NO	ND
11/15/1999	NO	NO	ND
3/6/2000	NO	NO	ND
5/31/2000	NO	NO	ND
8/21/2000	NO	NO	ND
12/11/2000	NO	NO	ND
2/13/2001	NO	NO	ND
3/19/2001	NO	NO	ND
6/5/2001	NO	NO	ND
9/5/2001	NO	NO	ND
10/4/2001	NO	NO	ND
1/14/2002	NO	NO	ND
4/23/2002	NO	NO	ND
8/21/2002	NO	NO	ND
10/28/2002	NO	NO	ND
1/22/2003	NO	NO	ND
4/21/2003	NO	NO	ND
7/30/2003	NO	NO	ND
10/8/2003	NO	NO	ND
1/14/2004	NO	NO	ND
5/13/2004	NO	NO	ND
8/20/2004	NO	NO	ND
12/16/2004	NO	NO	ND
3/15/2005	NO	NO	ND
6/6/2005	NO	NO	ND
9/16/2005	NO	NO	ND
Criteria Changed 11/05	1	1	70
12/21/2005	NO	NO	ND
3/1/2006	NO	NO	ND
5/5/2006	NO	NO	ND
9/13/2006	NO	NO	ND
11/17/2006	NO	NO	ND
3/6/2007	NO	NO	ND
6/6/2007	NO	NO	ND
8/14/2007	NO	NO	ND
12/5/2007	NO	NO	ND
3/11/2008	NO	NO	ND
6/5/2008	NO	NO	ND
8/25/2008	NO	NO	ND
11/10/2008	NO	NO	ND

Site: M5 Well #: MW11

Date Collected	Tetrachloroethene (µg/L)	Trichloroethene (µg/L)	cis-1,2-Dichloroethene (µg/L)
NJDEP Criteria	1	1	10
5/8/1997	62.85	ND	ND
8/8/1997	57.74	ND	ND
10/29/1997	64.96	ND	ND
2/25/1998	39.33	ND	ND
5/6/1998	24.39	ND	ND
8/4/1998	15.37	ND	ND
10/27/1998	52.64	ND	ND
2/2/1999	5.16	ND	ND
4/13/1999	33.38	ND	ND
4/27/1999	12.84	ND	ND
9/13/1999	49.25	ND	ND
11/16/1999	74.12	ND	ND
3/5/2000	30.42	ND	ND
5/31/2000	13.38	ND	ND
8/21/2000	18.79	ND	ND
12/11/2000	19.86	ND	ND
2/13/2001	12.42	ND	ND
3/19/2001	11.01	ND	ND
6/5/2001	11.27	ND	ND
9/5/2001	6.11	1.28	0.64
10/4/2001	15.13	1.05	ND
1/14/2002	19.04	1.4	ND
4/23/2002	14.43	ND	ND
8/21/2002	8.9	ND	7.39
10/28/2002	8.14	ND	ND
1/22/2003	5.2	1.06 J	ND
4/21/2003	4.5	ND	ND
7/30/2003	5.74	1.42 J	ND
10/8/2003	1.09 J	0.68 J	5.39
1/14/2004	2.01	0.91 J	1.66 J
5/13/2004	3.1	1.2 J	ND
8/20/2004	2.05	ND	2.29
12/16/2004	3.05	ND	ND
3/14/2005	2.3	ND	0.61 J
6/3/2005	2.86	ND	ND
9/19/2005	ND	ND	5.66
Criteria Changed 11/05	1	1	70
12/21/2005	0.72 J	ND	0.41 J
3/1/2006	2.04	ND	0.61 J
5/5/2006	ND	ND	ND
9/13/2006	7.4	ND	0.36 J
11/17/2006	4.57	ND	0.36 J
3/6/2007	1.5 J	ND	ND
6/6/2007	3.83	ND	ND
8/14/2007	5.34	ND	0.7 J
12/5/2007	ND	ND	ND
3/11/2008	2.02	ND	0.4 J
6/3/2008	2.93	ND	0.53 J
8/25/2008	ND	ND	8.4
11/10/2008	2.47	ND	6.93

Site: M5 Well #: MW10

Date Collected	Tetrachloroethene (µg/L)	Trichloroethene (µg/L)	cis-1,2-Dichloroethene (µg/L)
NJDEP Criteria	1	1	10
5/8/1997	ND	ND	ND
8/8/1997	ND	ND	ND
10/29/1997	ND	ND	ND
2/18/1998	ND	ND	ND
5/6/1998	ND	ND	ND
8/4/1998	ND	ND	ND
10/27/1998	ND	ND	ND
2/2/1999	ND	ND	ND
4/13/1999	ND	ND	ND
4/27/1999	ND	ND	ND
9/13/1999	ND	ND	ND
11/16/1999	ND	ND	ND
3/3/2000	ND	ND	ND
5/31/2000	ND	ND	ND
8/21/2000	ND	ND	ND
12/11/2000	ND	ND	ND
2/13/2001	ND	ND	ND
3/19/2001	ND	ND	ND
6/5/2001	ND	ND	ND
9/5/2001	ND	ND	ND
10/4/2001	ND	ND	ND
1/14/2002	ND	ND	ND
4/23/2002	ND	ND	ND
8/21/2002	ND	ND	ND
10/28/2002	ND	ND	ND
1/22/2003	ND	ND	ND
4/21/2003	ND	ND	ND
7/30/2003	ND	ND	ND
10/8/2003	ND	ND	ND
1/14/2004	ND	ND	ND
5/13/2004	ND	ND	ND
8/20/2004	ND	ND	ND
12/16/2004	NO	ND	ND
3/15/2005	NO	ND	ND
6/6/2005	NO	ND	ND
9/16/2005	NO	ND	ND
Criteria Changed 11/05	1	1	70
12/21/2005	ND	ND	ND
3/1/2006	ND	ND	ND
5/5/2006	ND	ND	ND
9/13/2006	ND	ND	ND
11/17/2006	ND	ND	ND
3/6/2007	ND	ND	ND
6/6/2007	ND	ND	ND
8/14/2007	ND	ND	ND
12/5/2007	ND	ND	ND
3/11/2008	ND	ND	ND
6/5/2008	ND	ND	ND
8/25/2008	ND	ND	ND
11/10/2008	ND	ND	ND

Site: M5 Well #: MW20

Date Collected	Tetrachloroethene (µg/L)	Trichloroethene (µg/L)	cis-1,2-Dichloroethene (µg/L)
NJDEP Criteria	1	1	10
4/13/1999	142.59	ND	ND
4/27/1999	169.54	ND	ND
9/13/1999	156.59	ND	ND
11/16/1999	143.93	ND	ND
3/3/2000	90.03	ND	ND
5/31/2000	49.44	ND	ND
8/21/2000	23.85	ND	ND
12/11/2000	110.95	ND	ND
2/13/2001	48.11	ND	ND
3/19/2001	65.73	ND	ND
6/5/2001	45.3	ND	ND
9/5/2001	111.58	1.18	1.22
10/4/2001	83.81	3.56	3.38
1/14/2002	85.31	4.27	3.09
4/23/2002	76.89	ND	ND
8/21/2002	79.41	ND	ND
10/28/2002	12.99	ND	ND
1/22/2003	27.67	ND	ND
4/21/2003	27.99	ND	ND
7/30/2003	15.26	ND	1.1 J
10/8/2003	43.56	4.83	5.33
1/14/2004	21.69	1.8 J	0.66 J
5/13/2004	13.74	0.82 J	ND
8/20/2004	7.51	2.05	4.12
12/13/2004	3.96	ND	2.77
3/14/2005	4.93	1.11 J	1.87 J
6/3/2005	13.75	8.35	13.2
9/16/2005	8.74	2.67	4.21
Criteria Changed 11/05	1	1	70
12/21/2005	0.67 J	1 J	1.56 J
3/1/2006	7.21	2.76	3.73
5/5/2006	7.69	2.45	3.55
9/13/2006	4.01	ND	1.67 J
11/17/2006	1.72 J	0.83 J	3.48
3/6/2007	1.83 J	1.41 J	4.83
6/6/2007	ND	ND	ND
8/14/2007	2.26	0.59 J	3.47
12/5/2007	ND	0.72 J	7.17
3/11/2008	0.95 J	ND	ND
6/5/2008	1.28 J	0.55 J	3.71
8/25/2008	2.41	1.05 J	21.55
11/10/2008	2.19	0.76 J	6.81

Site: M5 Well #: MW23

Date Collected	Tetrachloroethene (µg/L)	Trichloroethene (µg/L)	cis-1,2-Dichloroethene (µg/L)
NJDEP Criteria	1	1	10
4/13/1999	84.93	ND	ND
4/27/1999	44.43	ND	ND
9/13/1999	29.53	ND	ND
11/16/1999	59.02	ND	ND
3/3/2000	11.53	ND	ND
5/31/2000	23.13	ND	ND
8/21/2000	4.22	ND	ND
12/11/2000	14.27	ND	ND
2/13/2001	ND	ND	ND
3/19/2001	6.39	ND	ND
6/5/2001	33.84	ND	ND
9/5/2001	3.41	ND	1.48
10/4/2001	3.85	ND	1.77
1/14/2002	8.26	ND	1.77
4/23/2002	8.97	ND	3.31
8/21/2002	15.68	ND	ND
10/28/2002	ND	ND	ND
1/22/2003	79.46	3.97	ND
4/21/2003	17.35	3.15	1.37 J
7/30/2003	20	2.89	1.07 J
10/8/2003	20.45	2.51	4.8
1/14/2004	ND	ND	ND
5/13/2004	1.6 J	ND	0.69 J
8/20/2004	ND	ND	ND
12/13/2004	2.15	ND	ND
3/14/2005	13.75	ND	ND
6/3/2005	23.07	ND	ND
9/16/2005	7.24	0.89 J	1.42 J
Criteria Changed 11/05	1	1	70
12/21/2005	2.79	ND	ND
3/1/2006	26.49	ND	ND
5/5/2006	10.71	ND	ND
9/13/2006	3.61	ND	ND
11/17/2006	1.61 J	ND	ND
3/6/2007	1.54 J	ND	ND
6/6/2007	16	ND	ND
8/14/2007	3.91	ND	ND
12/5/2007	ND	ND	ND
3/11/2008	1.85 J	ND	ND
6/3/2008	4.5	ND	ND
8/25/2008	2.74	ND	0.29 J
11/10/2008	3.34	ND	ND

Site: M5 Well #: MW19

Date Collected	Tetrachloroethene (µg/L)	Trichloroethene (µg/L)	cis-1,2-Dichloroethene (µg/L)
NJDEP Criteria	1	1	10
4/13/1999	11.53	ND	ND
4/27/1999	3.72	ND	ND
9/13/1999	10.24	ND	ND
11/16/1999	69.22	ND	ND
3/6/2000	5.44	ND	ND
5/31/2000	ND	ND	ND
8/21/2000	4.77	ND	ND
12/11/2000	3.8	ND	ND
2/13/2001	ND	ND	ND
3/19/2001	2.43	ND	ND
6/5/2001	6.89	ND	ND
9/5/2001	34.94	1.66	3.67
10/4/2001	13.62	ND	1.64
1/14/2002	294.64	17.44	18.64
4/23/2002	18.2	2.8	5.93
8/21/2002	34.31	6.44	51.33
10/28/2002	5.1	1	2.28
1/22/2003	1.54 J	ND	ND
4/21/2003	1.73 J	ND	ND
7/30/2003	1.01 J	ND	ND
10/8/2003	5.42	1.82 J	3.04
1/14/2004	1.89 J	1.04 J	0.49 J
5/13/2004	ND	1.41 J	ND
8/20/2004	0.84 J	ND	0.81 J
12/13/2004	ND	1.33 J	ND
3/14/2005	ND	0.91 J	ND
6/3/2005	ND	ND	ND
9/16/2005	5.73	3.12	1.58 J
Criteria Changed 11/05	1	1	70
12/21/2005	ND	ND	0.67 J
3/1/2006	1.17 J	0.82 J	0.97 J
5/5/2006	ND	ND	0.83 J
9/13/2006	0.88	4.8	2.82
11/17/2006	0.97 J	1.17 J	1.55 J
3/6/2007	0.91 J	1.01 J	1.19 J
6/6/2007	ND	ND	ND
8/14/2007	0.82 J	ND	0.91 J
12/5/2007	2.39	5.01	9.3
3/11/2008	0.58 J	1.34 J	1.25 J
6/3/2008	ND	ND	1.11 J
8/25/2008	0.75 J	0.33 J	0.57 J
11/10/2008	2.01	3.68	8.5

Site: M5 Well #: MW18

Date Collected	Tetrachloroethene (µg/L)	Trichloroethene (µg/L)	cis-1,2-Dichloroethene (µg/L)
NJDEP Criteria	1	1	10
4/13/1999	ND	ND	ND
4/27/1999	ND	ND	ND
9/14/1999	ND	ND	ND
11/16/1999	ND	ND	ND
3/3/2000	ND	ND	ND
5/31/2000	ND	ND	ND
8/21/2000	ND	ND	ND
12/11/2000	ND	ND	ND
2/13/2001	ND	ND	ND
3/19/2001	ND	ND	ND
6/5/2001	ND	ND	ND
9/5/2001	ND	ND	ND
10/4/2001	2.95	ND	ND
1/14/2002	1.34	ND	ND
4/23/2002	ND	ND	ND
8/21/2002	ND	ND	ND
10/28/2002	ND	ND	ND
1/22/2003	ND	ND	ND
4/21/2003	ND	ND	ND
7/30/2003	ND	ND	ND
10/8/2003	ND	ND	ND
1/14/2004	ND	ND	ND
5/13/2004	ND	ND	ND
8/20/2004	ND	ND	ND
12/13/2004	ND	ND	ND
3/14/2005	ND	ND	ND
6/3/2005	ND	ND	ND
9/16/2005	ND	ND	ND
Criteria Changed 11/05	1	1	70
12/21/2005	ND	ND	ND
3/1/2006	ND	ND	ND
5/5/2006	ND	ND	ND
9/13/2006	ND	ND	ND
11/17/2006	ND	ND	ND
3/6/2007	ND	ND	ND
6/6/2007	ND	ND	ND
8/14/2007	ND	ND	ND
12/5/2007	ND	ND	ND
3/11/2008	ND	ND	ND
6/3/2008	ND	ND	ND
8/25/2008	ND	ND	ND
11/10/2008	ND	ND	ND

Site: M5 Well #: MW25

Date Collected	Tetrachloroethene (µg/L)	Trichloroethene (µg/L)	cis-1,2-Dichloroethene (µg/L)
NJDEP Criteria	1	1	10
4/14/1999	ND	ND	ND
4/29/1999	ND	ND	ND
9/14/1999	ND	ND	ND
11/18/1999	ND	ND	ND
3/3/2000	ND	ND	ND
5/31/2000	ND	ND	ND
8/21/2000	ND	ND	ND
12/11/2000	ND	ND	ND
2/13/2001	ND	ND	ND
3/19/2001	ND	ND	ND
6/5/2001	ND	ND	ND
9/5/2001	ND	ND	ND
10/4/2001	ND	ND	ND
1/14/2002	ND	ND	ND
4/23/2002	ND	ND	ND
8/21/2002	ND	ND	ND
10/28/2002	ND	ND	ND
1/22/2003	ND	ND	ND
4/21/2003	ND	ND	ND
7/30/2003	ND	ND	ND
Sampling Discontinued			

Site: M5 Well #: MW15

Date Collected	Tetrachloroethene (µg/L)	Trichloroethene (µg/L)	cis-1,2-Dichloroethene (µg/L)
NJDEP Criteria	1	1	10
10/7/1998	ND	ND	ND
10/23/1998	ND	ND	ND
2/2/1999	ND	ND	ND
2/4/1999	NA	NA	NA
4/14/1999	ND	ND	ND
4/28/1999	ND	ND	ND
9/14/1999	2.15	ND	ND
11/18/1999	ND	ND	ND
3/3/2000	ND	ND	ND
5/31/2000	ND	ND	ND
8/21/2000	ND	ND	ND
12/11/2000	ND	ND	ND
2/13/2001	ND	ND	ND
3/19/2001	ND	ND	ND
6/5/2001	ND	ND	ND
9/5/2001	ND	ND	ND
10/4/2001	ND	ND	ND
1/14/2002	ND	ND	ND
4/23/2002	ND	ND	ND
8/21/2002	ND	ND	ND
10/28/2002	ND	ND	ND
1/22/2003	ND	ND	ND
4/21/2003	ND	ND	ND
7/30/2003	ND	ND	ND
Sampling Discontinued			

Site: M5 Well #: MW16

Date Collected	Tetrachloroethene (µg/L)	Trichloroethene (µg/L)	cis-1,2-Dichloroethene (µg/L)
NJDEP Criteria	1	1	10
4/14/1999	96.37	ND	ND
4/29/1999	8.35	ND	ND
9/14/1999	639.74	ND	ND
11/18/1999	54.42	ND	ND
3/3/2000	37.76	ND	ND
5/31/2000	27.79	ND	ND
8/21/2000	20.36	ND	ND
12/11/2000	23.2	ND	ND
2/13/2001	14.94	ND	ND
3/19/2001	17.98	ND	ND
6/5/2001	24.47	ND	ND
9/5/2001	205.77	ND	ND
10/4/2001	620.81	ND	ND
1/14/2002	839.5	1.93	1.90
4/23/2002	213.53	35.84	69.44
8/21/2002	416.79	ND	3.38
10/28/2002	42.41	2.23	133.82
1/22/2003	31.06	1.36 J	22.02
4/21/2003	8.5	2.16	16.12
7/30/2003	18.57	5.61	20.3
10/8/2003	23.44	15.5	68.16
1/14/2004	34.59	13.1	93.88
5/13/2004	38.41	14.65	22.47
8/20/2004	7.53	9.48	66.66
12/16/2004	59.14	19.57	47.94
3/14/2005	6.22	2.8	32.37
6/3/2005	90.59	34.2	33.24
9/16/2005	9.51	34.1	283.79
Criteria Changed 11/05	1	1	70
12/21/2005	8.41	5.79	36.52
3/1/2006	30.42	11.65	38.04
5/5/2006	75.67	64.59	37.56
9/13/2006	334.54	86.75	77.14
11/17/2006	86.18	37.11	27.74
3/6/2007	32.4	19.59	9.25
6/6/2007	25.31	6.53	5.5
8/14/2007	53.02	23.4	29.47
12/5/2007	11.97	5.2	12.32
3/11/2008	5.93	0.74 J	8.48
6/3/2008	4.42	0.75 J	3.25
8/25/2008	5.92	1.99 J	13.2
11/10/2008	4.43	1.36 J	4.23

Parkers Creek

Shrewsbury Borough

Lafeter Creek

Mill Creek

M8MW22

M8MW23

M8MW12

M5MW25

M5MW23

M5MW11

M3MW07

M3MW07A

M3MW06

M5MW12

M5MW10

M5MW13

M5MW14

M5MW20

M5MW19

M5MW18

M5MW16

M5MW15

600AMW02

600AMW01

Approximate Groundwater Flow Direction

Sherrill Avenue

Wilson Avenue

Messenger Avenue

Battery Avenue

Telegraph Avenue

601

603

678

676

675

602

682

Legend

- Monitoring Well
- Landfill Area
- Existing Building
- Roadway & Parking
- Water Body
- Post Boundary
- 0.00 - Ground Water Quality Standard (GWQS) Exceedance
- - Approximate Groundwater Flow Direction

N W E S

Figure 5-1A
Groundwater Contaminants of Concern Distribution Map
Site M-5 (FTMM-05) - Main Post
Fort Monmouth, New Jersey
FOUO

30 Feet

Notes:

Exceedances of NJDEP GWQS are shaded and bolded.
J-Estimated concentration observed greater than the Method Detection Limit and less than the Reportable Limit.
NA - Not Analyzed
ND - Not Detected

Map created by:
Fort Monmouth Installation GIO,
Environmental Division
Fort Monmouth, New Jersey
Date: September 27, 2010
New Jersey State Plane Feet, NAD83

September 27, 2010 X:\GIS\GIS Maps\UT\Groundwater Contaminant Maps\Groundwater Historic\M5\Site M5 Groundwater Contamination Distribution.mxd

SS05

Date Collected	Tetrachloroethene	Trichloroethene
NJDEP Criteria	1	1
10/8/1996	2.76	0.81
11/25/1996	7.53	1.86
12/12/1996	2.98	0.75
1/29/1997	4.76	1.04
2/26/1997	5.32	ND
3/10/1997	2.42	ND
4/8/1997	2.28	ND
7/17/1997	3.54	ND
10/30/1997	1.70	ND
2/10/1998	6.34	ND
4/21/1998	4.48	ND
8/19/1998	3.39	1.27
11/17/1998	2.17	ND
11/17/1998	2.28	ND
2/25/1999	5.45	ND
6/29/1999	6.04	1.74
9/22/1999	1.82	ND
12/8/1999	3.63	ND
3/1/2000	6.62	1.34
6/12/2000	4.38	ND
8/24/2000	3.44	ND
11/20/2000	3.58	ND
3/8/2001	ND	ND
5/16/2001	4.09	ND
9/25/2001	ND	ND
11/14/2001	1.99	ND
2/11/2002	2.44	ND
6/18/2002	2.39	ND
9/18/2002	ND	ND
11/4/2002	ND	ND
3/13/2003	3.08	0.71 J
5/21/2003	3.54	ND
9/17/2003	1.23 J	ND
11/4/2003	ND	ND
3/17/2004	2.21	0.57 J
6/29/2004	1.31 J	ND
8/26/2004	1.09 J	0.73 J
11/23/2004	1.23 J	ND
3/3/2005	1.84 J	ND
6/15/2005	1.30 J	0.66 J
9/13/2005	ND	ND
Criteria Changed 11/05	1	1
12/1/2005	0.63 J	ND
2/22/2006	2.01	0.65 J
5/31/2006	ND	ND
9/20/2006	ND	ND
12/11/2006	1.47 J	0.49 J
3/13/2007	1.86 J	0.58 J
6/26/2007	ND	ND
9/13/2007	0.29	ND
12/19/2007	0.84 J	ND
3/25/2008	1.40 J	0.60 J
6/26/2008	1.15 J	0.55 J
9/30/2008	ND	ND
12/29/2008	0.97 J	ND

SS04

Date Collected	Tetrachloroethene	Trichloroethene
NJDEP Criteria	1	1
10/8/1996	2.35	0.64
11/25/1996	6.26	1.60
12/12/1996	2.28	0.75
1/29/1997	4.42	ND
2/26/1997	6.37	ND
3/10/1997	2.33	ND
4/8/1997	ND	ND
7/17/1997	1.61	ND
10/30/1997	1.24	ND
2/10/1998	6.61	ND
4/21/1998	ND	ND
8/19/1998	2.85	1.10
11/17/1998	1.62	ND
2/25/1999	5.61	ND
6/29/1999	5.27	1.56
9/22/1999	1.85	ND
12/8/1999	ND	ND
3/1/2000	6.18	1.24
6/12/2000	4.37	ND
8/24/2000	3.19	1.19
11/20/2000	3.7	ND
3/8/2001	2.52	ND
5/16/2001	2.95	ND
9/25/2001	ND	ND
11/14/2001	ND	ND
2/11/2002	1.64	ND
6/18/2002	1.97	ND
9/18/2002	ND	ND
11/4/2002	ND	ND
3/13/2003	2.33	0.51 J
5/21/2003	ND	ND
9/17/2003	1.13 J	ND
11/4/2003	ND	ND
3/17/2004	0.81 J	ND
6/29/2004	ND	ND
8/26/2004	0.61 J	ND

SS27

Date Collected	Arsenic	Beryllium	Tetrachloroethene
NJDEP Criteria	8	20	1
6/12/2000	NA	NA	ND
8/24/2000	NA	NA	1.72
11/20/2000	NA	NA	1.87
3/8/2001	NA	NA	ND
5/16/2001	NA	NA	ND
9/25/2001	NA	NA	ND
11/14/2001	NA	NA	ND
2/11/2002	NA	NA	ND
6/18/2002	NA	NA	ND
9/18/2002	NA	NA	ND
11/4/2002	NA	NA	ND
3/13/2003	NA	NA	1.71 J
5/21/2003	NA	NA	2.68
9/17/2003	NA	NA	1.16 J
11/4/2003	NA	NA	1.06 J
3/17/2004	NA	NA	0.85 J
6/29/2004	NA	NA	ND
8/26/2004	NA	NA	0.56 J
11/23/2004	ND	ND	ND
3/3/2005	ND	ND	1.06 J
6/14/2005	5.33	ND	0.58 J
9/13/2005	ND	ND	ND
Criteria Changed 11/05	3	1	1
12/1/2005	ND	ND	ND
2/22/2006	ND	ND	1.04 J
5/31/2006	ND	ND	ND
9/20/2006	ND	ND	ND
12/11/2006	ND	ND	0.44 J
3/13/2007	ND	ND	1.07 J
6/26/2007	3.05 ER	0.129 ER	ND
6/26/2007	ND	0.116 ER	ND
9/13/2007	ND	ND	ND
12/19/2007	ND	ND	ND
3/26/2008	ND	ND	1.03 J
6/26/2008	ND	39.4	0.69 J
9/30/2008	ND	0.164 ER	ND
12/29/2008	ND	0.203 ER	0.68 J

SS15

Date Collected	Arsenic	Lead	Tetrachloroethene	Trichloroethene
NJDEP Criteria	8	10	1	1
10/8/1996	NA	NA	8.41	2.58
11/25/1996	NA	NA	10.38	2.54
12/12/1996	NA	NA	5.63	1.31
1/29/1997	NA	NA	5.68	1.33
2/26/1997	NA	NA	7.84	ND
3/10/1997	NA	NA	3.39	ND
4/8/1997	NA	NA	6.00	1.6
7/17/1997	NA	NA	7.12	2.5
10/30/1997	NA	NA	2.72	ND
2/10/1998	NA	NA	6.90	1.63
4/21/1998	NA	NA	5.72	1.21
8/19/1998	NA	NA	5.39	2.06
11/18/1998	NA	NA	ND	ND
2/25/1999	NA	NA	7.33	ND
6/29/1999	NA	NA	7.86	2.4
9/21/1999	NA	NA	2.61	1.37
12/8/1999	NA	NA	4.08	ND
3/1/2000	NA	NA	6.95	1.39
6/12/2000	NA	NA	5.94	ND
8/24/2000	NA	NA	5.2	1.58
11/20/2000	NA	NA	6.29	ND
2/21/2001	NA	NA	7.19	ND
5/16/2001	NA	NA	6.64	ND
9/25/2001	NA	NA	ND	ND
11/14/2001	NA	NA	3.49	ND
2/11/2002	NA	NA	2.61	ND
6/18/2002	NA	NA	2.47	ND
9/18/2002	NA	NA	2.55	ND
11/5/2002	NA	NA	1.52	ND
3/24/2003	NA	NA	3.96	1.11 J
5/21/2003	NA	NA	3.84	ND
9/17/2003	NA	NA	1.60 J	ND
11/4/2003	NA	NA	1.49 J	0.53 J
3/17/2004	NA	NA	2.26	0.55 J
6/29/2004	NA	NA	1.28 J	ND
8/26/2004	NA	NA	1.25 J	0.78 J
11/23/2004	ND	ND	2.00	ND
3/3/2005	ND	ND	2.92	ND
6/14/2005	ND	ND	2.34	1.24 J
9/12/2005	ND	ND	1.25 J	0.91 J
Criteria Changed 11/05	3	5	1	1
11/30/2005	ND	ND	ND	ND
2/22/2006	ND	ND	2.54	0.85 J
5/30/2006	ND	ND	ND	ND
9/19/2006	ND	ND	ND	ND
12/11/2006	ND	ND	ND	ND
3/13/2007	ND	ND	2.21	0.65 J
6/26/2007	3.12 ER	ND	ND	ND
9/13/2007	ND	ND	1.54 J	ND
12/19/2007	ND	ND	0.93 J	ND
3/25/2008	ND	ND	2.42	1.02 J
6/26/2008	3.37 ER	1.49 ER	2.28	1.01 J
9/30/2008	3.52 ER	ND	ND	ND
12/29/2008	ND	5.74	1.55 J	ND

SS16

Date Collected	Tetrachloroethene	Trichloroethene
NJDEP Criteria	1	1
10/8/1996	NA	NA
11/25/1996	8.20	2.24
12/12/1996	3.82	1.00
1/29/1997	5.19	1.14
2/26/1997	6.75	1.20
3/10/1997	2.31	ND
4/8/1997	4.47	1.26
7/17/1997	4.72	ND
10/30/1997	1.86	ND
2/10/1998	6.23	ND
4/21/1998	4.58	ND
8/19/1998	4.33	1.63
11/18/1998	1.48	ND
2/25/1999	6.06	ND
6/29/1999	7.7	2.25
9/22/1999	2.63	ND
12/8/1999	4.13	ND
3/1/2000	ND	ND
6/12/2000	3.74	ND
8/24/2000	4.47	1.28
11/20/2000	4.49	ND
2/21/2001	6.25	ND
5/16/2001	4.91	ND
9/25/2001	6.47	1.27
11/14/2001	2.00	ND
2/11/2002	2.47	ND
6/18/2002	2.46	ND
9/18/2002	ND	ND
11/4/2002	1.49	ND
3/13/2003	3.21	0.74 J
5/21/2003	3.68	ND
9/17/2003	1.70 J	ND
11/4/2003	ND	ND
3/17/2004	2.26	0.56 J
6/29/2004	1.22 J	ND
8/26/2004	1.17 J	0.74 J

Legend

Sample Points
- Active
- Inactive
- Existing Building
- Landfill Area
- Roadway & Parking
- Water Body
- Post Boundary

N W E S

Figure 5-1B
Surface Water Contaminants of Concern Distribution Map
Site M-5 (FTMM-05) - Main Post
Fort Monmouth, New Jersey
FOUO

300 Feet

Notes:

Exceedances of NJDEP GWQS are shaded and bolded.
J - Estimated concentration observed greater than the Method Detection Limit and less than the Reportable Limit.
NA - Not Analyzed
ND - Not Detected
ER - Estimated Result

Map created by:
Fort Monmouth Installation GIO,
Environmental Division
Fort Monmouth, New Jersey
Date: October 13, 2010
New Jersey State Plane Feet, NAD83

October 13, 2010 Ft:\GIS\GIS Maps\Ft\Groundwater Contaminant Maps\Groundwater Historic\M-5\Site M5 Surface Water Sample Location Map.mxd

FIGURE 5-2
Tetrachloroethene Concentrations vs Time at M5MW11

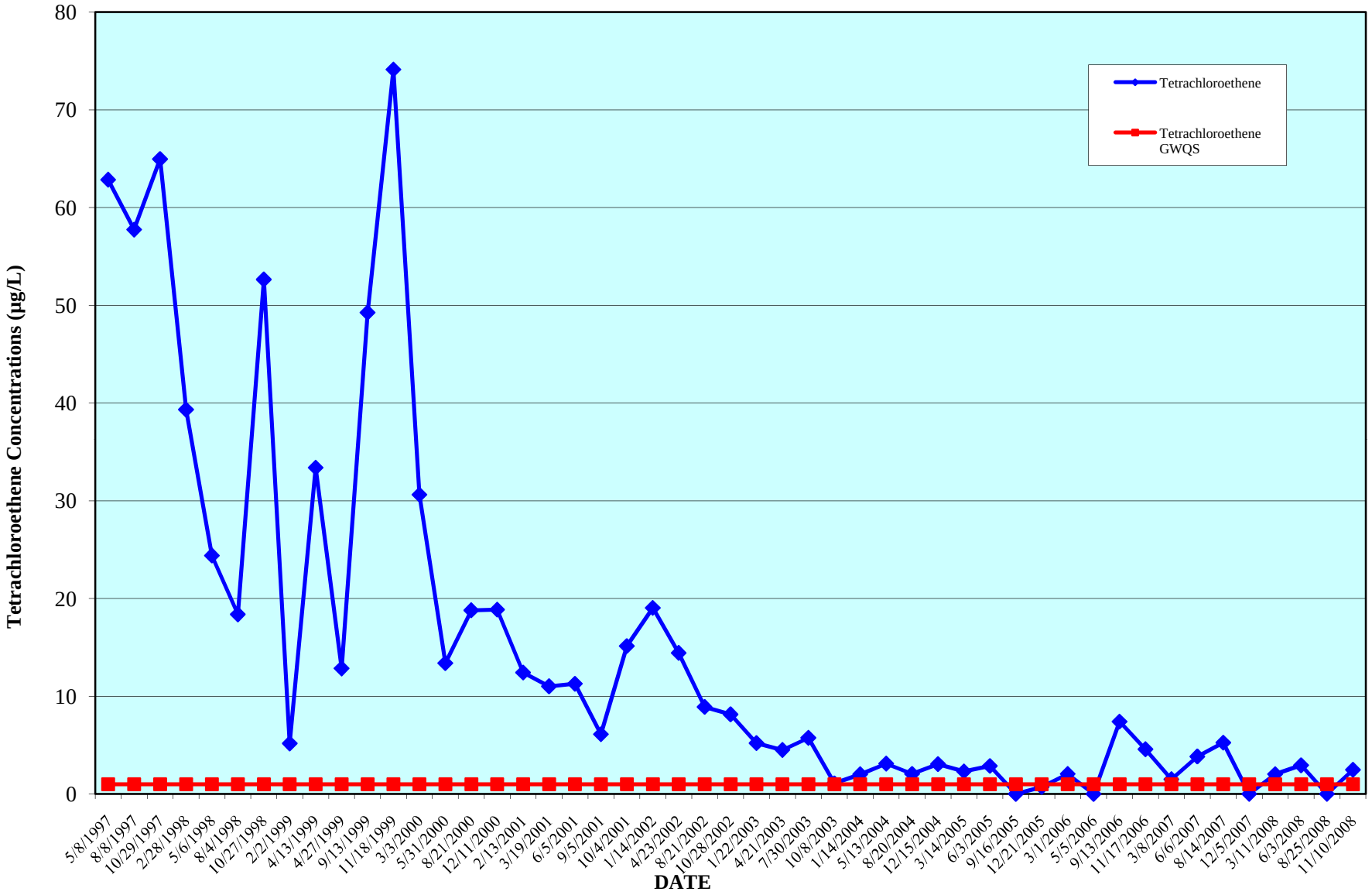


FIGURE 5-3A
Tetrachloroethene Concentrations vs Time at M5MW16

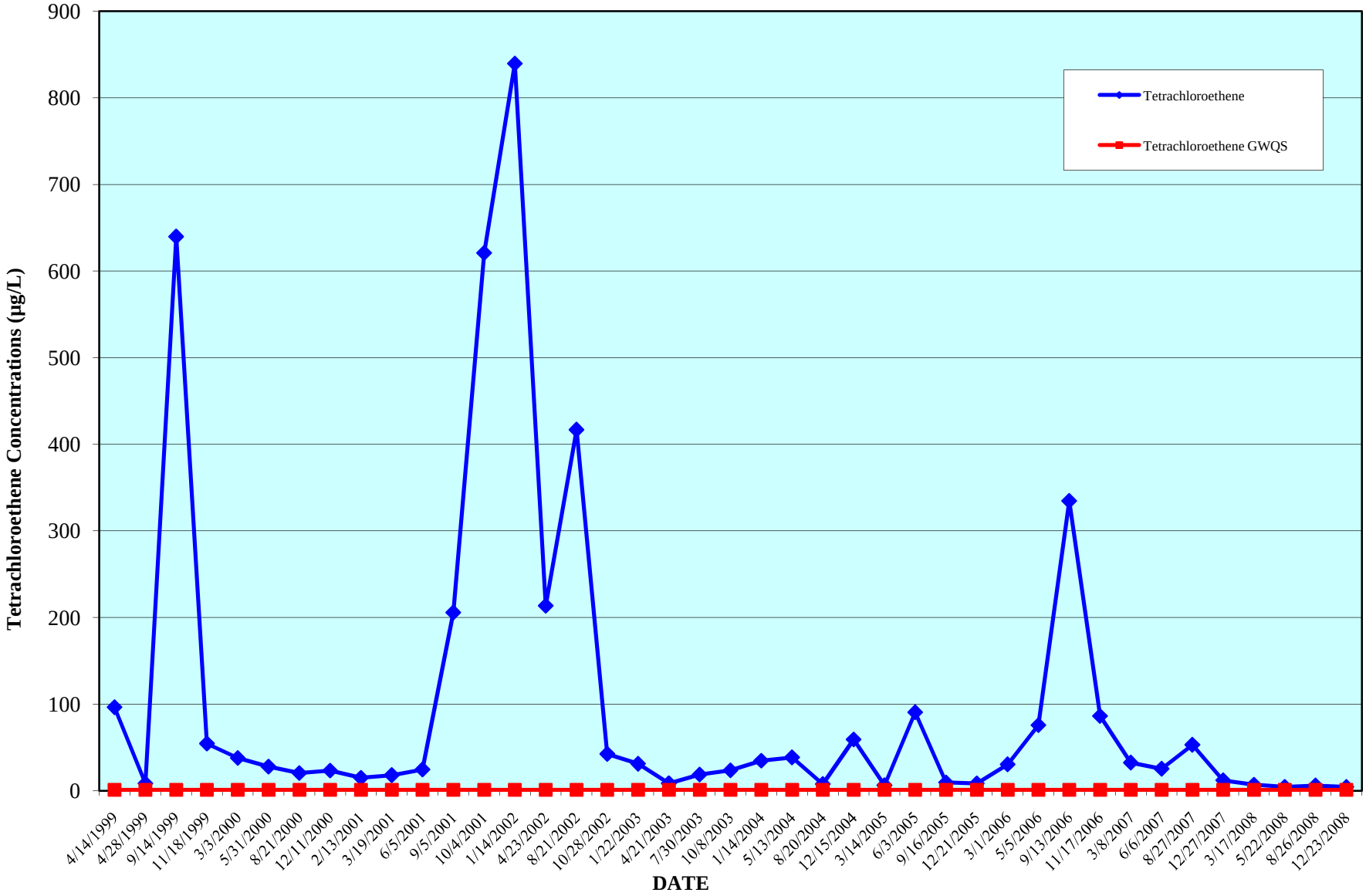


FIGURE 5-3B
Trichloroethene Concentrations vs Time at M5MW16

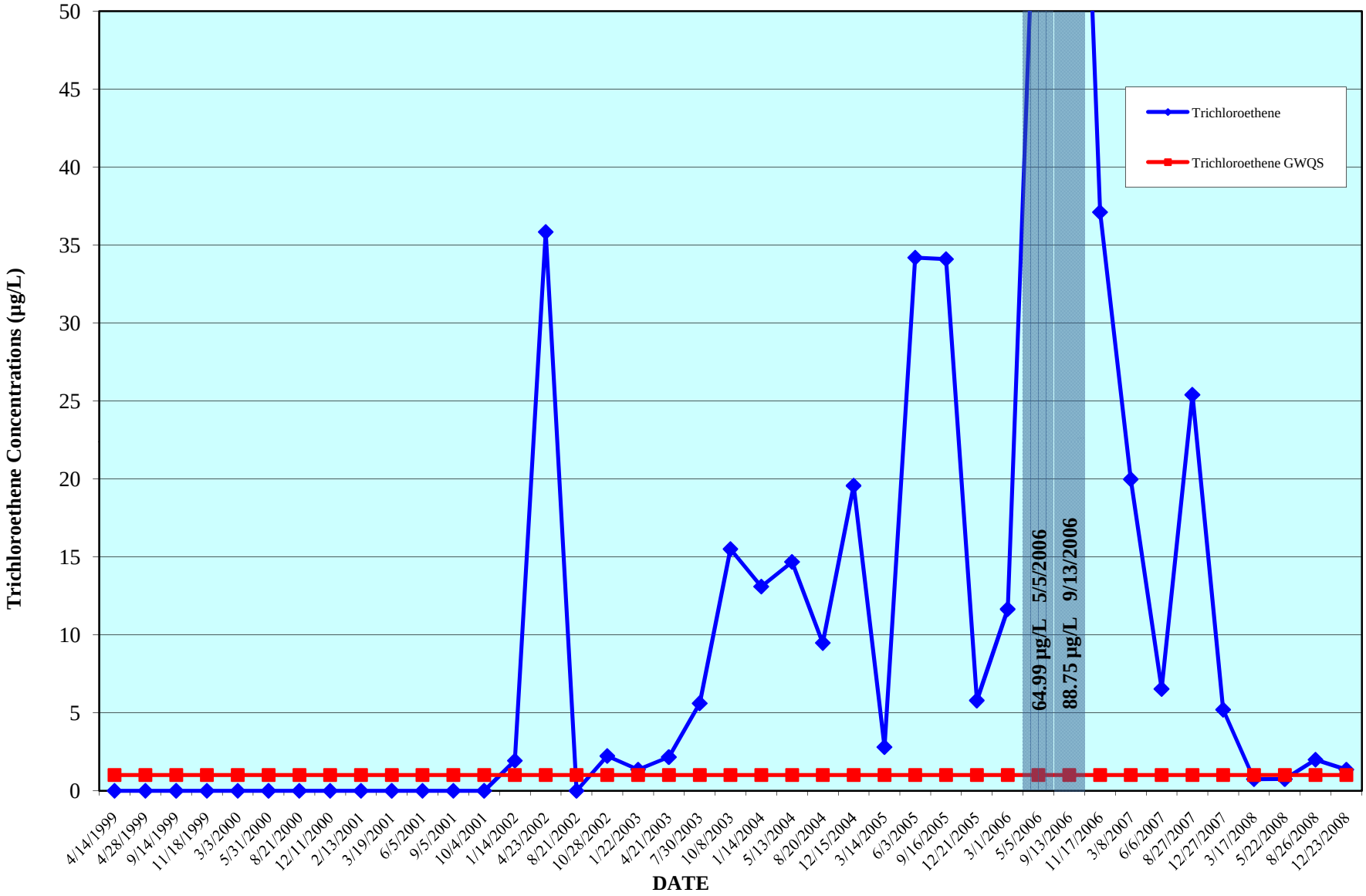


FIGURE 5-3C
Vinyl Chloride Concentrations vs Time at M5MW16

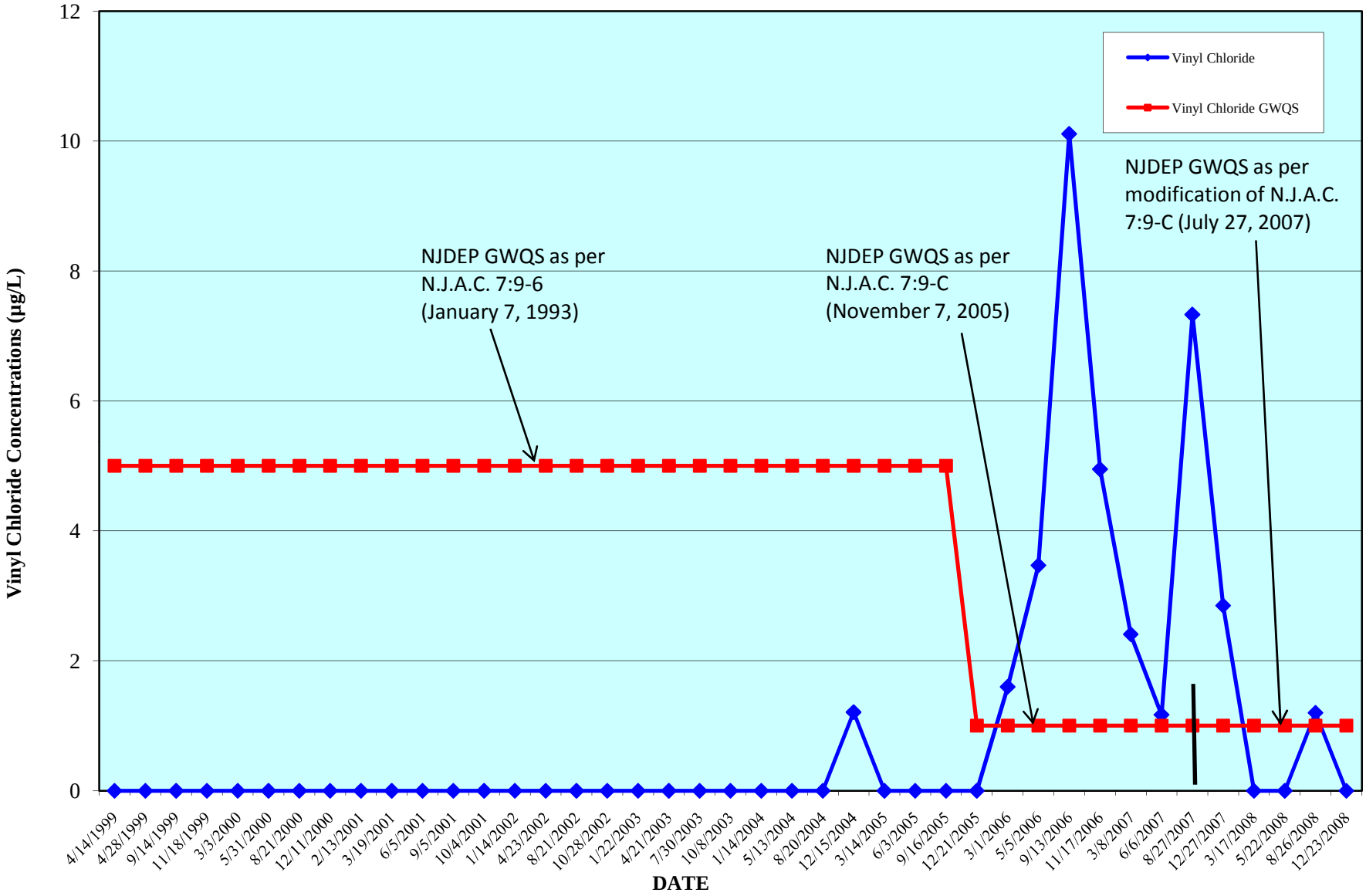


FIGURE 5-4A
Tetrachloroethene Concentrations vs Time at M5MW19

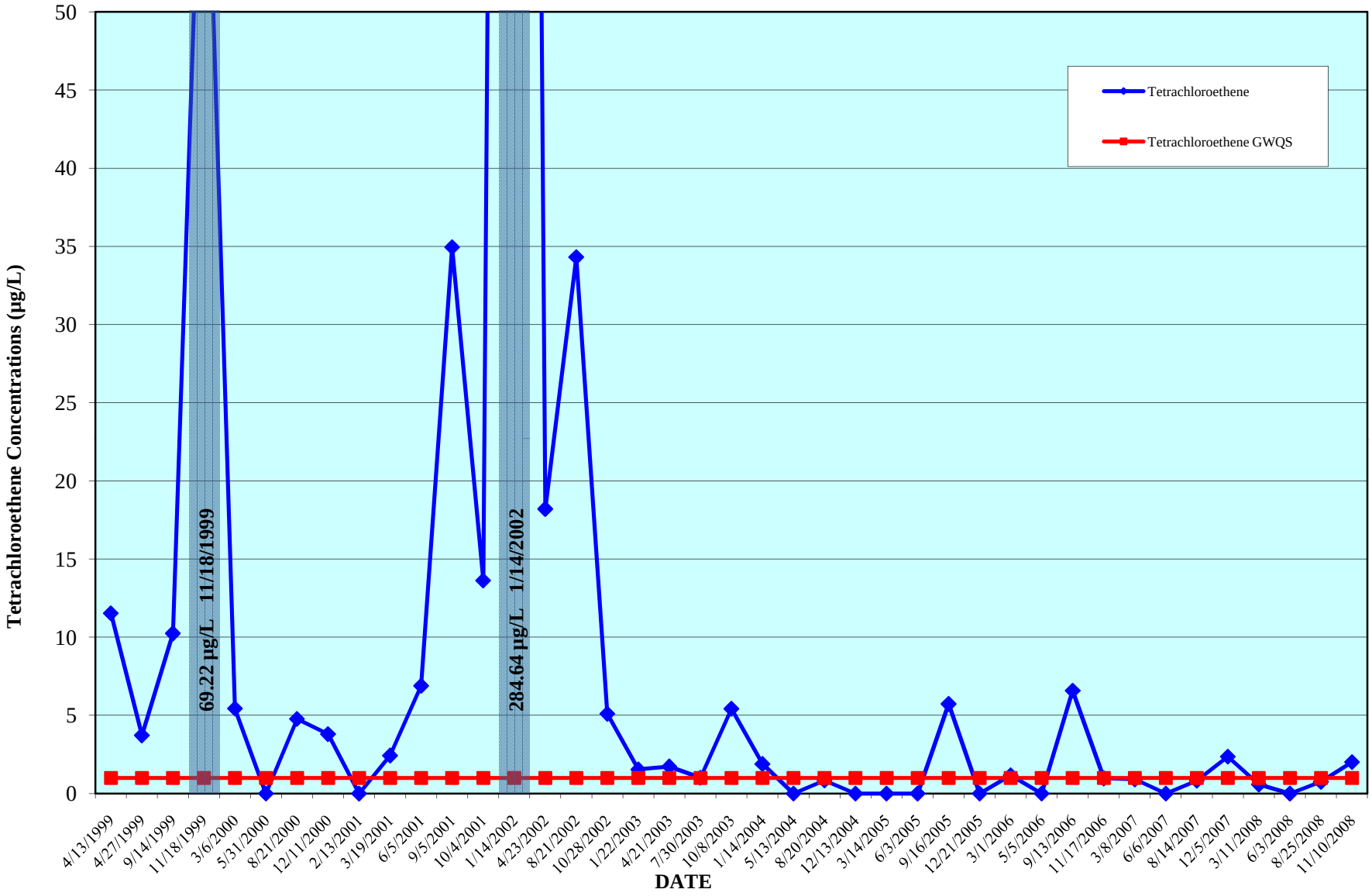


FIGURE 5-4B
Trichloroethene Concentrations vs Time at M5MW19

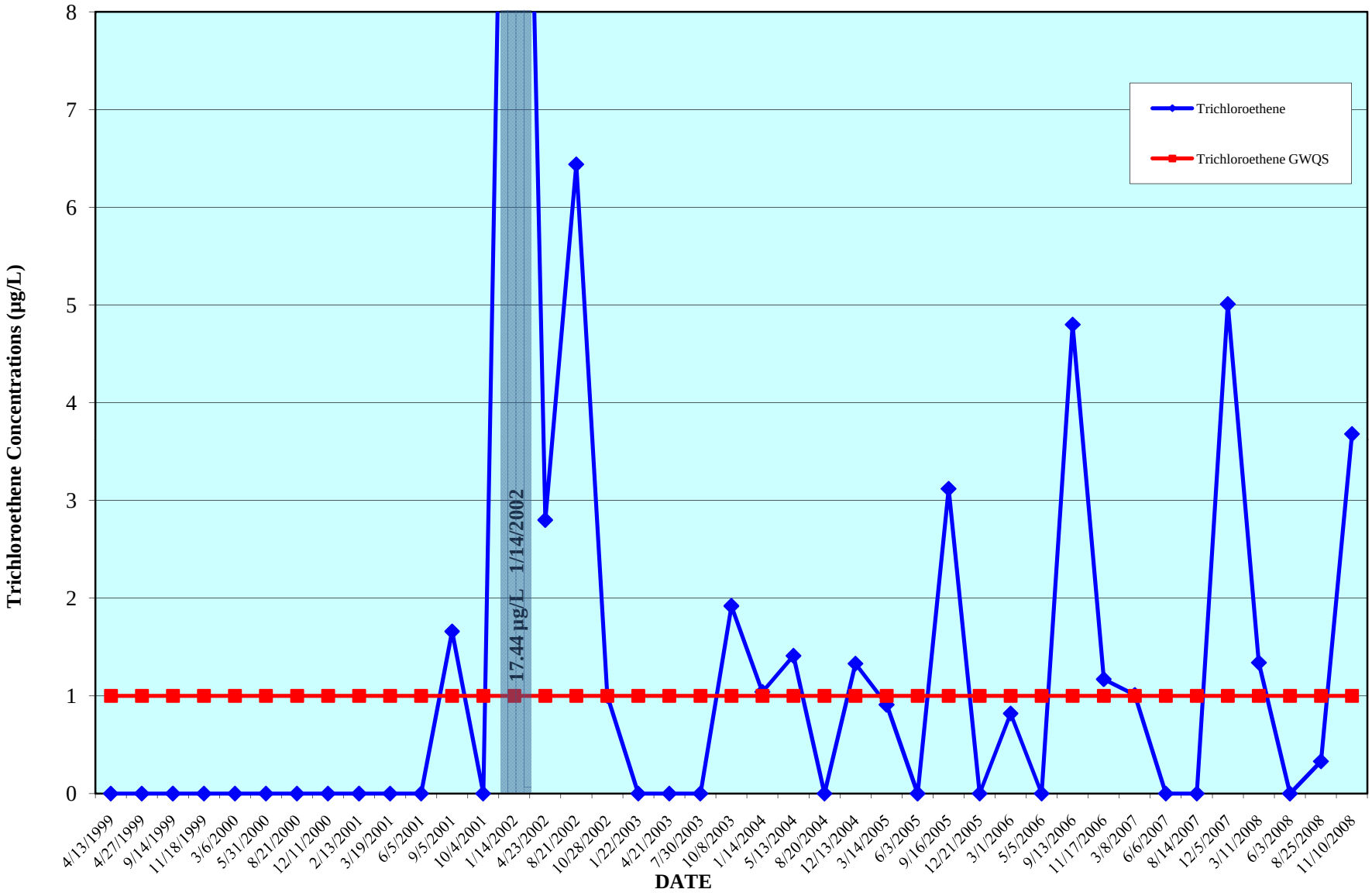


FIGURE 5-5A
Tetrachloroethene Concentrations vs Time at M5MW20

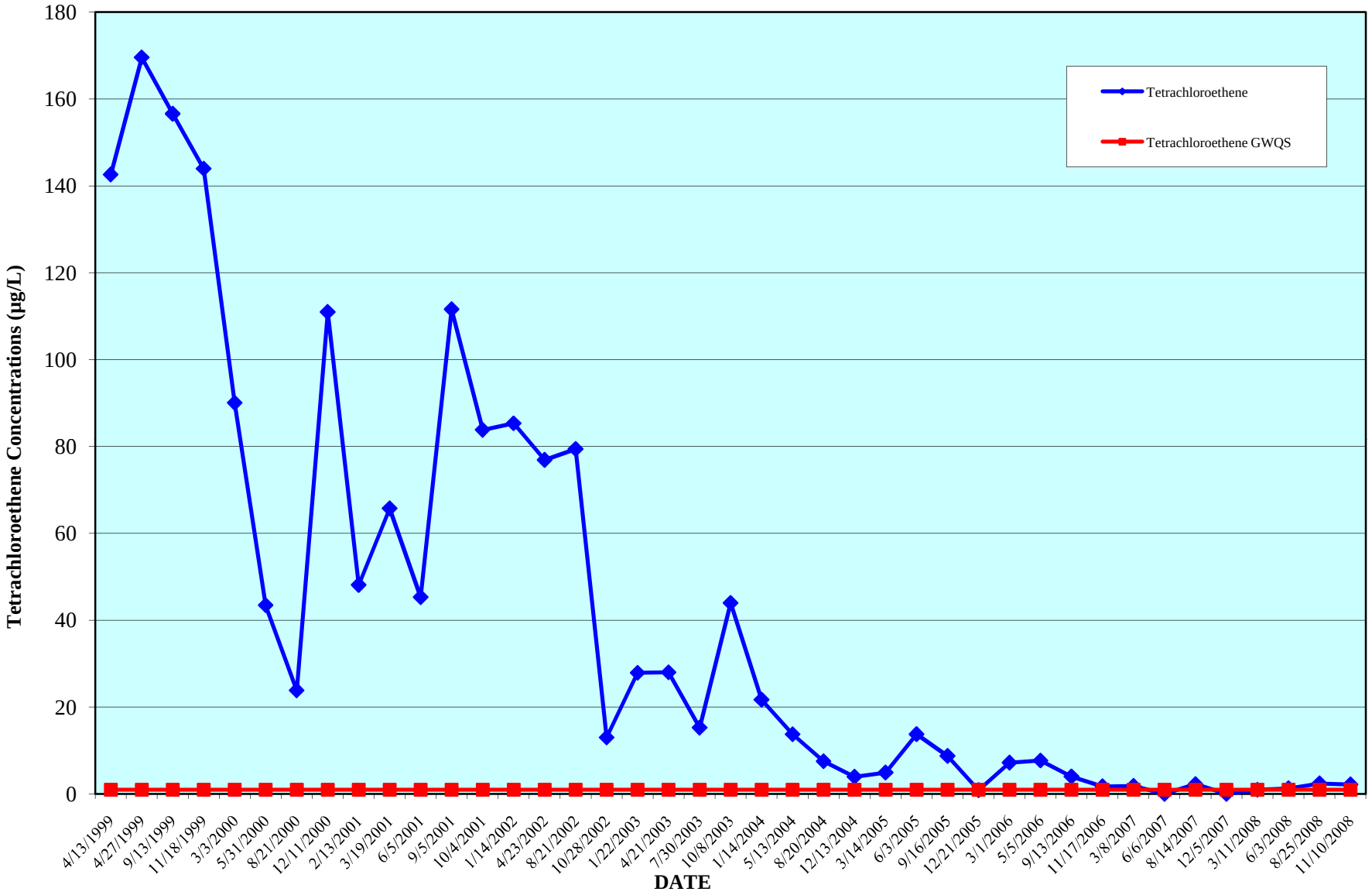


FIGURE 5-5B
Trichloroethene Concentrations vs Time at M5MW20

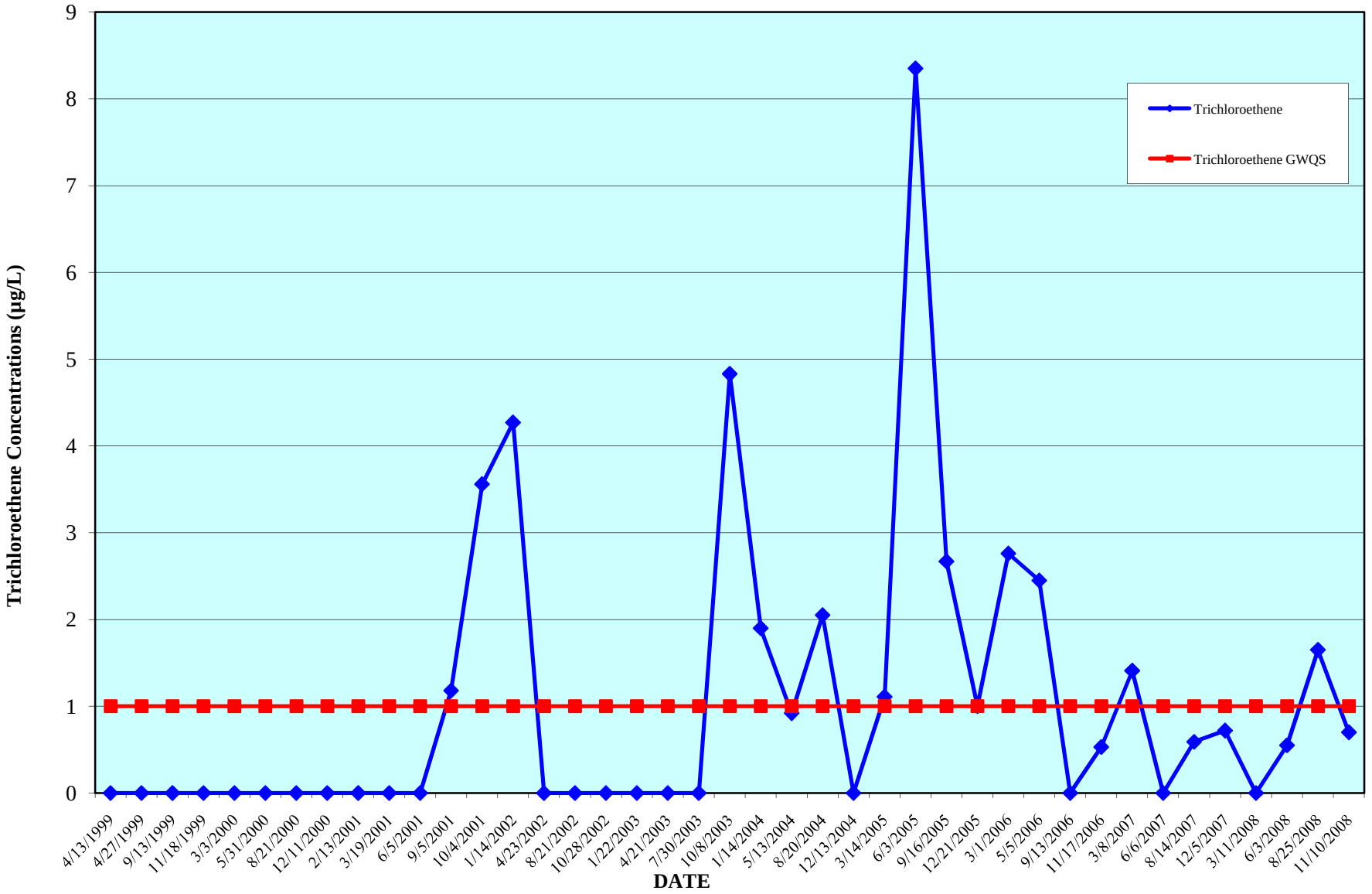


FIGURE 5-6
Tetrachloroethene Concentrations vs Time at M5MW23

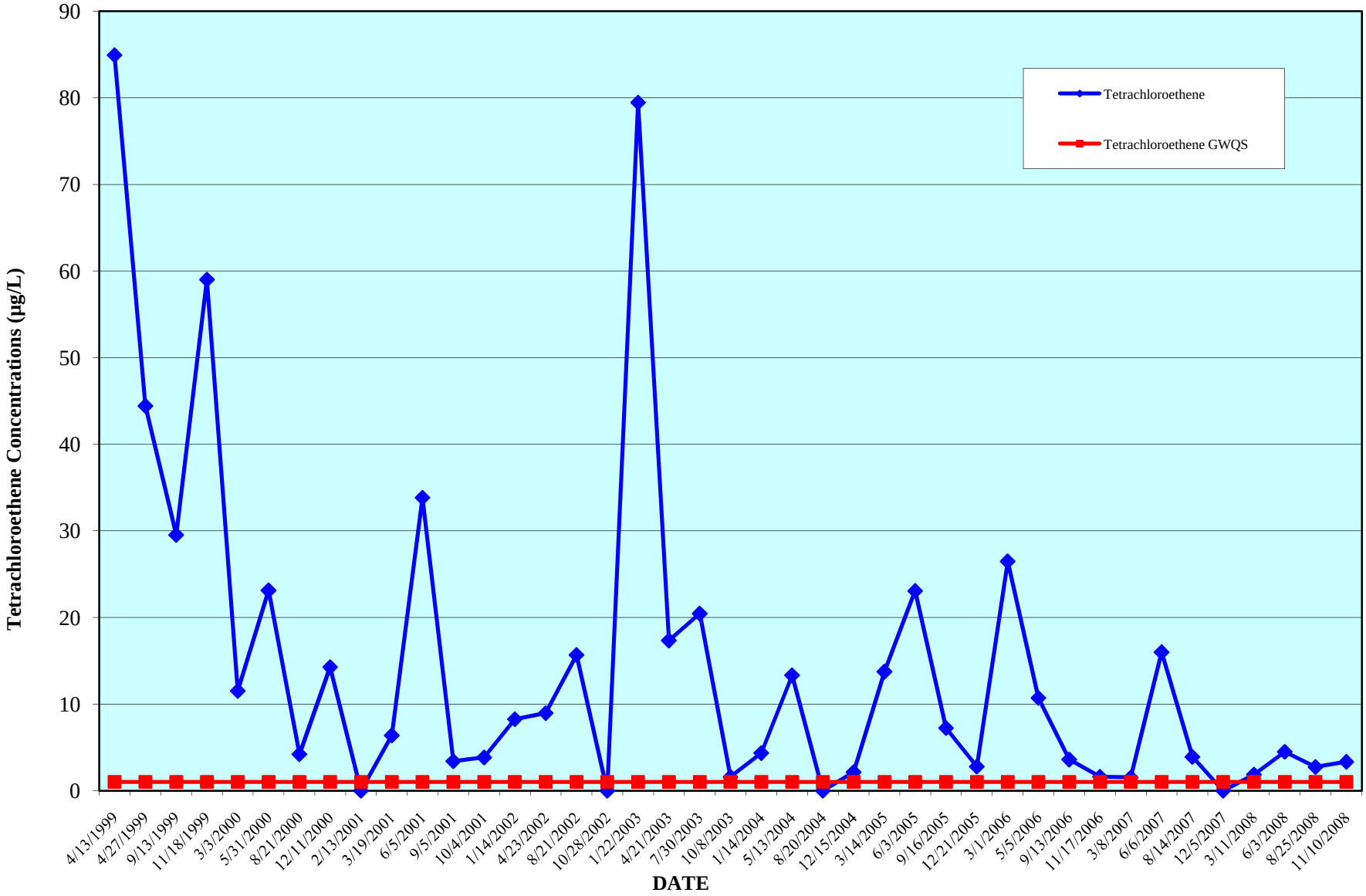


FIGURE 5-7A
Tetrachloroethene Concentrations vs Time at M8MW12

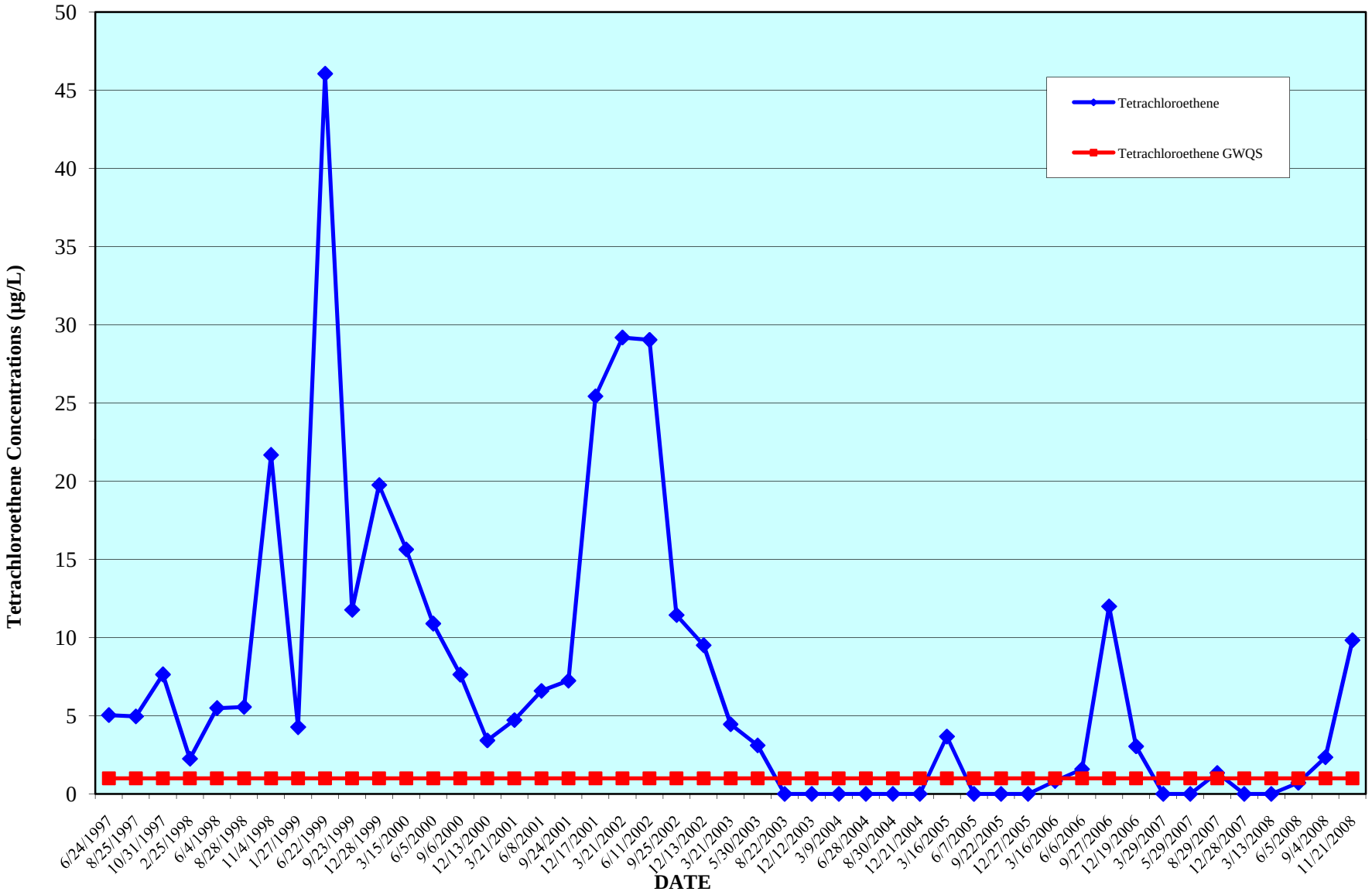


FIGURE 5-7B
Trichloroethene Concentrations vs Time at M8MW12

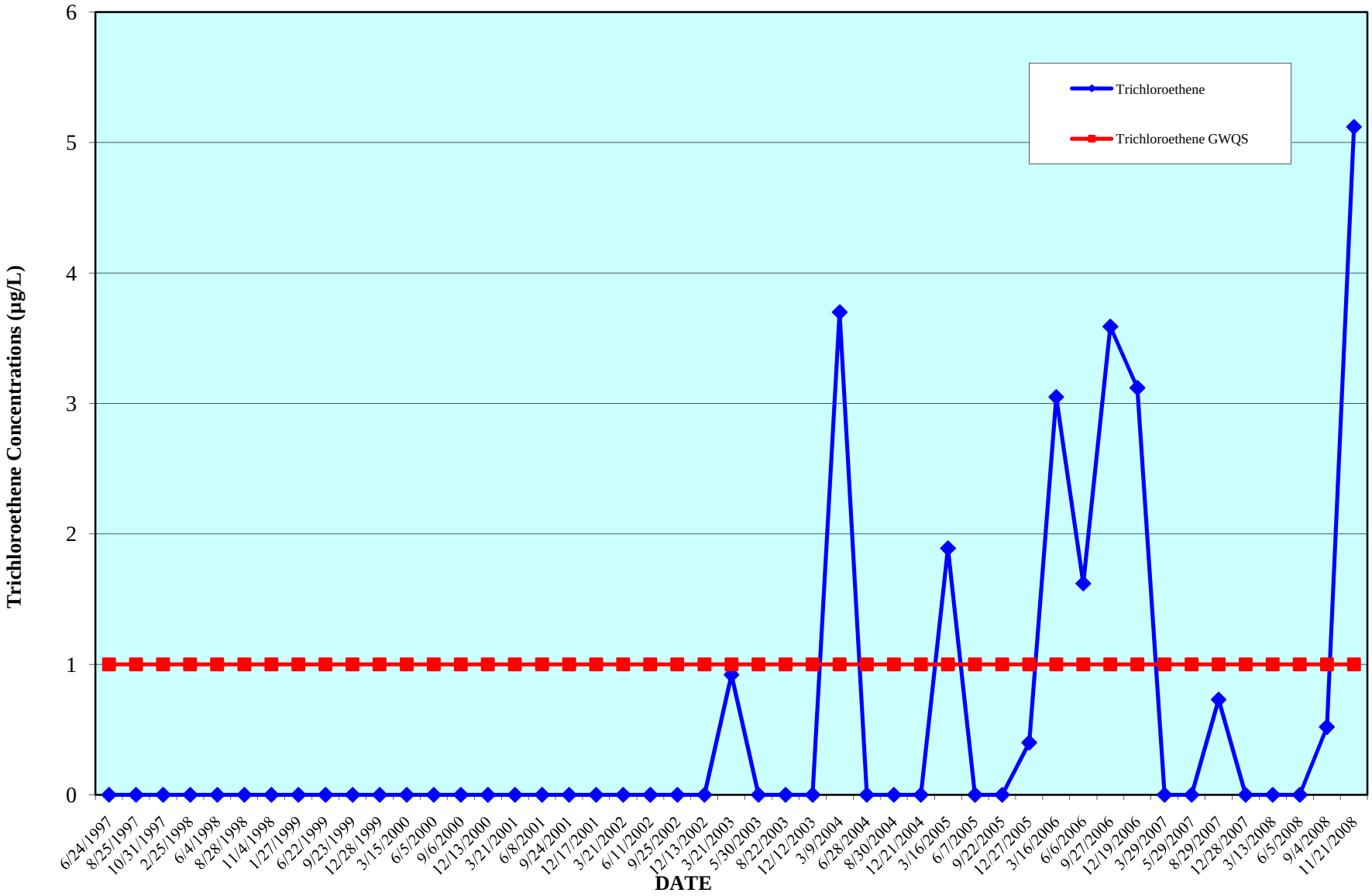
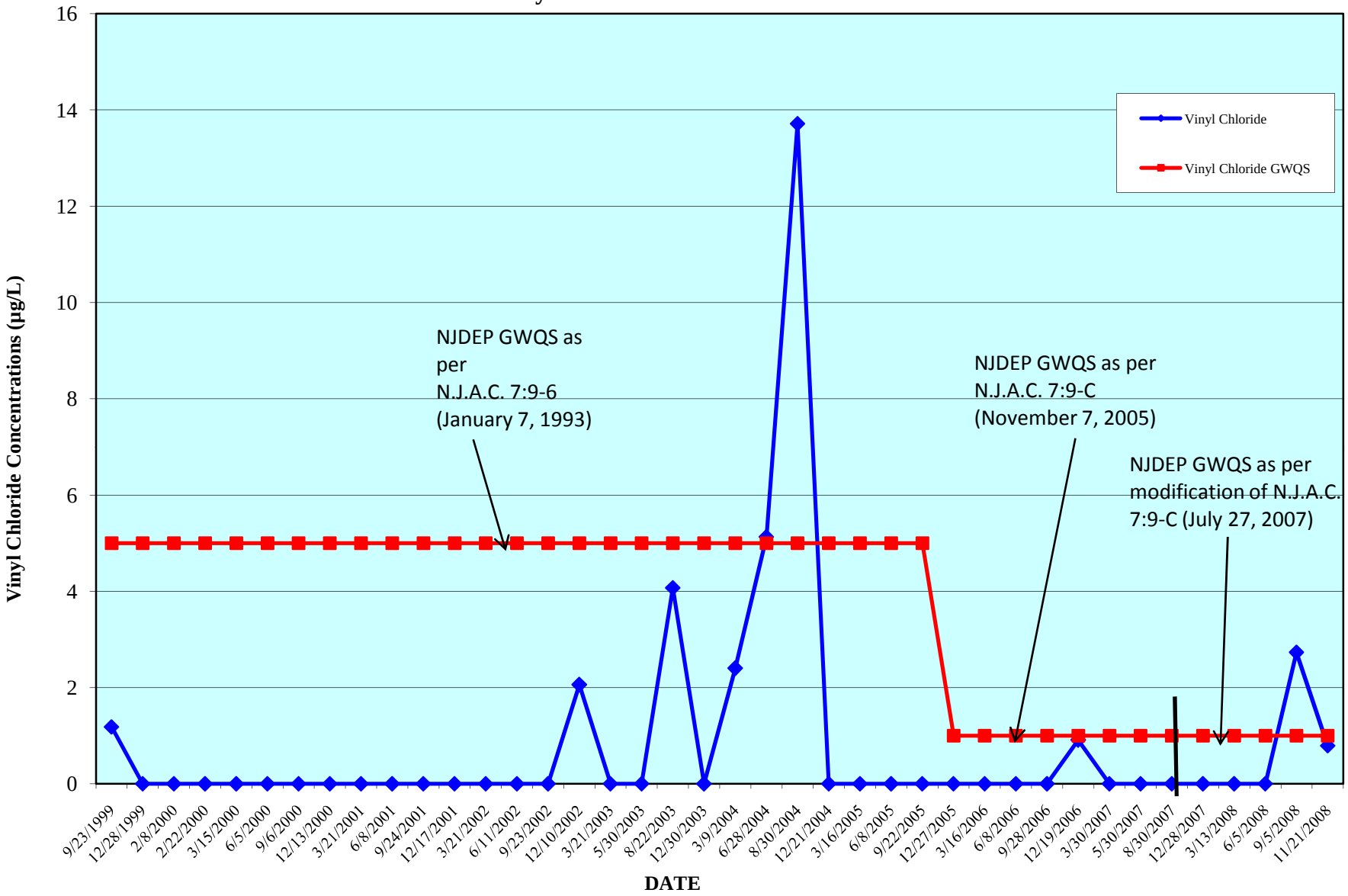


FIGURE 5-8
Vinyl Chloride Concentrations vs Time at M8MW23



TABLES

Table 4-1
Ground Water Elevation Summary
M-5 Landfill Site (FTMM-05)
Fort Monmouth, New Jersey

Ground Water Sampling Round			#39			#40			#41		
Well ID	Total Depth of Well (ft)	TOC[1]	Date [2]	Depth to Water[3]	Ground Water Elevation(4)	Date [2]	Depth to Water[3]	Ground Water Elevation(4)	Date [2]	Depth to Water[3]	Ground Water Elevation(4)
M-5MW10	17.25	6.91	11/17/06	3.35	3.56	03/08/07	4.17	2.74	06/06/07	4.18	2.73
M-5MW11	16.80	11.70	11/17/06	6.38	5.32	03/07/07	6.53	5.17	06/06/07	7.17	4.53
M-5MW12	16.10	8.58	11/17/06	5.03	3.55	03/08/07	5.53	3.05	06/06/07	5.53	3.05
M-5MW13	18.82	5.42	11/17/06	1.51	3.91	03/08/07	2.04	3.38	06/06/07	2.15	3.27
M-5MW14	20.17	5.74	11/17/06	2.91	2.83	03/08/07	3.11	2.63	06/06/07	2.68	3.06
M-5MW15	19.71	17.40	11/17/06	4.26	13.14	NM	NM	NM	06/07/07	8.45	8.95
M-5MW16	17.93	15.18	11/16/06	5.91	9.27	03/07/07	5.96	9.22	06/08/07	6.26	8.92
M-5MW18	20.17	14.47	11/16/06	6.61	7.86	03/07/07	6.65	7.82	06/06/07	7.06	7.41
M-5MW19	19.98	14.02	11/16/06	6.43	7.59	03/07/07	6.42	7.60	06/06/07	6.82	7.20
M-5MW20	16.07	12.64	11/17/06	5.28	7.36	03/07/07	5.56	7.08	06/06/07	5.72	6.92
M-5MW23	19.75	13.00	11/17/06	7.13	5.87	03/07/07	7.44	5.56	06/06/07	8.06	4.94
M-5MW25	19.94	18.01	11/17/06	10.87	7.14	NM	NM	NM	06/06/07	11.56	6.45
M-8MW12	17.25	15.20	12/19/06	8.93	6.27	03/29/07	8.53	6.67	05/29/07	8.95	6.25
M-8MW23	16.72	11.82	12/19/06	8.45	3.37	03/30/07	8.16	3.66	05/30/07	8.56	3.26
M-5MW24	46.32	21.81	12/19/06	19.08	2.73	03/30/07	18.94	2.87	05/29/07	19.37	2.44

Notes:

(1) Elevation of survey mark at top of casing (TOC).

(2) Depth to water (DTW) is collected on multiple days.

(3) Depth to water in feet from TOC.

(4) Ground water elevation in feet above mean sea level (msl).

NM = Not Measured.

Table 4-1
Ground Water Elevation Summary
M-5 Landfill Site (FTMM-05)
Fort Monmouth, New Jersey

Ground Water Sampling Round			#42			#43			#44		
Well ID	Total Depth of Well (ft)	TOC[1]	Date	Depth to Water[3]	Ground Water Elevation(4)	Date	Depth to Water[3]	Ground Water Elevation(4)	Date	Depth to Water[3]	Ground Water Elevation(4)
M-5MW10	17.25	6.91	08/14/07	4.08	2.83	12/05/07	4.51	2.40	03/11/08	3.73	3.18
M-5MW11	16.80	11.70	08/14/07	7.30	4.40	12/05/07	7.26	4.44	03/11/08	6.41	5.29
M-5MW12	16.10	8.58	08/14/07	5.66	2.92	12/05/07	5.98	2.60	03/11/08	5.23	3.35
M-5MW13	18.82	5.42	08/14/07	2.44	2.98	12/05/07	2.58	2.84	03/11/08	1.42	4.00
M-5MW14	20.17	5.74	08/14/07	2.91	2.83	12/05/07	3.65	2.09	03/11/08	2.49	3.25
M-5MW15	19.71	17.40	NM	NM	NM	NM	NM	NM	NM	NM	NM
M-5MW16	17.93	15.18	08/14/07	6.75	8.43	12/05/07	7.06	8.12	03/11/08	5.86	9.32
M-5MW18	20.17	14.47	08/14/07	7.34	7.13	12/05/07	7.56	6.91	03/11/08	6.47	8.00
M-5MW19	19.98	14.02	08/14/07	7.09	6.93	12/05/07	7.35	6.67	03/11/08	6.31	7.71
M-5MW20	16.07	12.64	08/14/07	6.06	6.58	12/05/07	6.12	6.52	03/11/08	5.41	7.23
M-5MW23	19.75	13.00	08/14/07	8.30	4.70	12/05/07	8.36	4.64	03/11/08	7.28	5.72
M-5MW25	19.94	18.01	NM	NM	NM	12/05/07	12.08	5.93	NM	NM	NM
M-8MW12	17.25	15.20	08/29/07	8.93	6.27	12/28/07	8.78	6.42	03/13/08	8.22	6.98
M-8MW23	16.72	11.82	08/30/07	8.48	3.34	12/28/07	8.14	3.68	03/13/08	7.87	3.95
M-5MW24	46.32	21.81	08/30/07	19.28	2.53	12/28/07	19.17	2.64	03/14/08	18.72	3.09

Notes:

(1) Elevation of survey mark at top of casing (TOC).

(2) Depth to water (DTW) is collected on multiple days.

(3) Depth to water in feet from TOC.

(4) Ground water elevation in feet above mean sea level (msl).

NM = Not Measured.

Table 4-1
Ground Water Elevation Summary
M-5 Landfill Site (FTMM-05)
Fort Monmouth, New Jersey

Ground Water Sampling Round			#45			#46			#47		
Well ID	Total Depth of Well (ft)	TOC[1]	Date	Depth to Water[3]	Ground Water Elevation(4)	Date	Depth to Water[3]	Ground Water Elevation(4)	Date	Depth to Water[3]	Ground Water Elevation(4)
M-5MW10	17.25	6.91	06/03/08	4.28	2.63	08/25/08	5.01	1.90	11/10/08	4.42	2.49
M-5MW11	16.80	11.70	06/03/08	7.07	4.63	08/25/08	7.93	3.77	11/10/08	7.39	4.31
M-5MW12	16.10	8.58	06/03/08	5.85	2.73	08/25/08	6.55	2.03	11/10/08	5.86	2.72
M-5MW13	18.82	5.42	06/03/08	2.49	2.93	08/25/08	3.24	2.18	11/10/08	2.56	2.86
M-5MW14	20.17	5.74	06/03/08	3.53	2.21	08/25/08	3.88	1.86	11/10/08	3.57	2.17
M-5MW15	19.71	17.40	NM	NM	NM	NM	NM	NM	NM	NM	NM
M-5MW16	17.93	15.18	06/03/08	6.54	8.64	08/25/08	7.73	7.45	11/10/08	7.20	7.98
M-5MW18	20.17	14.47	06/03/08	7.11	7.36	08/25/08	8.07	6.40	11/10/08	7.66	6.81
M-5MW19	19.98	14.02	06/03/08	6.91	7.11	08/25/08	7.80	6.22	11/10/08	7.39	6.63
M-5MW20	16.07	12.64	06/03/08	5.90	6.74	08/25/08	6.71	5.93	11/10/08	6.21	6.43
M-5MW23	19.75	13.00	06/03/08	8.04	4.96	08/25/08	8.89	4.11	11/10/08	8.46	4.54
M-5MW25	19.94	18.01	NM	NM	NM	NM	NM	NM	11/10/08	12.16	5.85
M-8MW12	17.25	15.20	06/05/08	8.61	6.59	09/04/08	9.99	5.21	11/21/08	9.20	6.00
M-8MW23	16.72	11.82	06/05/08	8.35	3.47	09/05/08	9.22	2.60	11/21/08	8.47	3.35
M-5MW24	46.32	21.81	06/05/08	19.09	2.72	09/05/08	19.77	2.04	11/21/08	19.03	2.78

Notes:

(1) Elevation of survey mark at top of casing (TOC).

(2) Depth to water (DTW) is collected on multiple days.

(3) Depth to water in feet from TOC.

(4) Ground water elevation in feet above mean sea level (msl).

NM = Not Measured.

Table 4-2
Ground Water Sampling Summary
M-5 Landfill Site (FTMM-05)
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#1	M5MW10	2516.02	5/8/97	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW11	2516.01	5/8/97	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW12	2731.03	6/24/97	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
#2	M5MW10	2885.04	8/8/97	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW11	2885.03	8/8/97	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW12	2930.06	8/25/97	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
#3	M5MW10	3116.04	10/29/97	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW11	3116.03	10/29/97	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW12	3125.06	10/31/97	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
#4	M5MW10	3348.01	2/18/98	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW11	3348.02	2/18/98	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW12	3366.03	2/25/98	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
#5	M5MW10	3552.01	5/6/98	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW11	3552.02	5/6/98	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW12	3619.03	6/4/98	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
#6	M5MW10	3784.03	8/4/98	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW11	3784.04	8/4/98	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW12	3843.07	8/28/98	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
#7	M5MW10	4010.04	10/27/98	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW11	4010.03	10/27/98	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW12	4029.03	11/4/98	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
#7A	M5MW12	2516.01	10/7/98	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW13	3967.04	10/7/98	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW14	3967.05	10/7/98	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
#7B	M5MW12	2885.03	10/21/98	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW13	4001.03	10/23/98	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW14	4001.04	10/23/98	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)

Notes:
VOCs = Volatile Organic Compounds.
SVOCs = Semi-Volatile Organic Compounds.
Pest/PCB = Pesticides/Polychlorinated Biphenyls.
Metals = Target Analyte List Metals.

Table 4-2
Ground Water Sampling Summary
M-5 Landfill Site (FTMM-05)
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#8	M5MW10	4237.03	2/2/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW11	4237.04	2/2/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW12	3116.03	2/2/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW13	4237.06	2/2/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW14	4237.07	2/2/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW12	4227.03	1/27/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
#9A	M5MW10	4416.03	4/13/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW11	4416.04	4/13/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW12	3348.02	4/13/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW13	4416.06	4/13/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW14	4416.07	4/13/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW15	4419.04	4/14/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW16	4419.05	4/14/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW18	4416.1	4/13/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW19	4416.09	4/13/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW20	4416.08	4/13/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW23	4419.08	4/13/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW25	4419.06	4/14/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW12	4419.07	4/14/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW23	4419.09	4/13/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW24	4419.03	4/14/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
#9B	M5MW10	4444.03	4/27/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW11	4444.04	4/27/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW12	3552.02	4/27/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW13	4444.06	4/27/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW14	4444.07	4/27/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW15	4447.06	4/28/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW16	4447.07	4/28/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW18	4444.1	4/27/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW19	4444.09	4/27/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW20	4444.08	4/27/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW23	4447.08	4/27/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)

Notes:
VOCs = Volatile Organic Compounds.
SVOCs = Semi-Volatile Organic Compounds.
Pest/PCB = Pesticides/Polychlorinated Biphenyls.
Metals = Target Analyte List Metals.

Table 4-2
Ground Water Sampling Summary
M-5 Landfill Site (FTMM-05)
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#9B	M5MW25	4447.04	4/28/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW12	4447.05	4/28/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW23	4447.09	4/27/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW24	4447.03	4/28/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
#10	M5MW10	4786.07	9/13/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW11	4786.08	9/13/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW12	3784.04	9/13/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW13	4786.05	9/13/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW14	4786.04	9/13/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW15	4788.05	9/14/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW16	4788.04	9/14/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW18	4788.06	9/14/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW19	4788.07	9/14/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW20	4447.09	9/13/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW23	4447.03	9/13/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW25	4788.08	9/14/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW12	4811.04	9/23/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW23	4811.16	9/23/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW24	4811.17	9/23/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
#11	M5MW10	4955.04	11/18/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW11	4955.05	11/18/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW12	4955.06	11/18/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW13	4955.07	11/18/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW14	4955.08	11/18/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW15	4955.09	11/18/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW16	4955.1	11/18/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW18	4955.15	11/18/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW19	4955.14	11/18/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW20	4955.11	11/18/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW23	4955.12	11/18/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW25	4955.13	11/18/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW12	5051.04	12/28/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)

Notes:
VOCs = Volatile Organic Compounds.
SVOCs = Semi-Volatile Organic Compounds.
Pest/PCB = Pesticides/Polychlorinated Biphenyls.
Metals = Target Analyte List Metals.

Table 4-2
Ground Water Sampling Summary
M-5 Landfill Site (FTMM-05)
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#11	M8MW23	5051.15	12/28/99	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW25			Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
#12	M5MW10	5220.07	3/3/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW11	5220.06	3/3/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW12	5222.02	3/6/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW13	5222.03	3/6/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW14	5222.04	3/6/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW15	5220.1	3/3/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW16	5220.09	3/3/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW18	5220.11	3/3/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW19	5222.01	3/6/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW20	5220.05	3/3/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW23	5220.04	3/3/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW25	5220.08	3/3/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW12	5250.04	3/15/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW23	5250.16	3/15/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW24	5250.17	3/15/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
#13	M5MW10	5445.04	5/31/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW11	5445.05	5/31/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW12	5445.06	5/31/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW13	5445.07	5/31/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW14	5445.08	5/31/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW15	5445.09	5/31/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW16	5445.1	5/31/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW18	5445.11	5/31/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW19	5445.12	5/31/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW20	5445.13	5/31/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW23	5445.14	5/31/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW25	5445.15	5/31/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW12	5454.04	6/5/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW23	5454.15	6/5/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW24	5454.16	6/5/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)

Notes:
VOCs = Volatile Organic Compounds.
SVOCs = Semi-Volatile Organic Compounds.
Pest/PCB = Pesticides/Polychlorinated Biphenyls.
Metals = Target Analyte List Metals.

Table 4-2
Ground Water Sampling Summary
M-5 Landfill Site (FTMM-05)
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#14	M5MW10	5644.04	8/21/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW11	5644.05	8/21/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW12	5644.06	8/21/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW13	5644.07	8/21/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW14	5644.08	8/21/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW15	5644.09	8/21/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW16	5644.1	8/21/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW18	5644.11	8/21/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW19	5644.12	8/21/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW20	5644.13	8/21/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW23	5644.14	8/21/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW25	5644.15	8/21/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW12	5693.04	9/6/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW23	5693.15	9/6/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW24	5693.16	9/6/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
#15	M5MW10	5903.04	12/11/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW11	5903.05	12/11/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW12	5903.06	12/11/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW13	5903.07	12/11/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW14	5903.08	12/11/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW15	5903.09	12/11/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW16	5903.1	12/11/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW18	5903.11	12/11/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW19	5903.12	12/11/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW20	5903.13	12/11/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW23	5903.14	12/11/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW25	5903.15	12/11/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW12	5906.04	12/13/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW23	5906.15	12/13/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW24	5919.01	12/26/00	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
#16	M5MW10	778	2/13/01	Aqueous	VOCs	Method 624
	M5MW11	779	2/13/01	Aqueous	VOCs	Method 624
	M5MW12	780	2/13/01	Aqueous	VOCs	Method 624

Notes:
VOCs = Volatile Organic Compounds.
SVOCs = Semi-Volatile Organic Compounds.
Pest/PCB = Pesticides/Polychlorinated Biphenyls.
Metals = Target Analyte List Metals.

Table 4-2
Ground Water Sampling Summary
M-5 Landfill Site (FTMM-05)
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#16	M5MW13	781	2/13/01	Aqueous	VOCs	Method 624
	M5MW14	782	2/13/01	Aqueous	VOCs	Method 624
	M5MW15	783	2/13/01	Aqueous	VOCs	Method 624
	M5MW16	784	2/13/01	Aqueous	VOCs	Method 624
	M5MW18	785	2/13/01	Aqueous	VOCs	Method 624
	M5MW19	786	2/13/01	Aqueous	VOCs	Method 624
	M5MW20	787	2/13/01	Aqueous	VOCs	Method 624
	M5MW23	788	2/13/01	Aqueous	VOCs	Method 624
	M5MW25	789	2/13/01	Aqueous	VOCs	Method 624
#16A	M8MW12	1601104	3/21/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW23	1601115	3/21/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW24	1601701	4/2/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
#16B	M5MW10	1600704	3/19/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW11	1600705	3/19/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW12	1600706	3/19/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW13	1600707	3/19/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW14	1600708	3/19/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW15	1600709	3/19/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW16	1600710	3/19/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW18	1600711	3/19/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW19	1600712	3/19/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW20	1600713	3/19/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW23	1600714	3/19/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW25	1600715	3/19/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
#17	M5MW10	16166.04	6/5/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW11	16166.05	6/5/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW12	16166.06	6/5/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW13	16166.07	6/5/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW14	16166.08	6/5/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW15	16166.09	6/5/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW16	16166.1	6/5/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW18	16166.11	6/5/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)

Notes:
VOCs = Volatile Organic Compounds.
SVOCs = Semi-Volatile Organic Compounds.
Pest/PCB = Pesticides/Polychlorinated Biphenyls.
Metals = Target Analyte List Metals.

Table 4-2
Ground Water Sampling Summary
M-5 Landfill Site (FTMM-05)
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#17	M5MW19	16166.12	6/5/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW20	16166.13	6/5/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW23	16166.14	6/5/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW25	16166.15	6/5/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW12	1617404	6/8/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW23	1617415	6/8/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW24	1620704	6/23/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
#18	M5MW10	16407.04	9/5/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW11	16407.05	9/5/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW12	16407.06	9/5/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW13	16407.07	9/5/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW14	16407.08	9/5/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW15	16407.09	9/5/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW16	16407.1	9/5/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW18	16407.11	9/5/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW19	16407.12	9/5/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW20	16407.13	9/5/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW23	16407.14	9/5/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW25	16407.15	9/5/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW12	1644804	9/24/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW23	1644815	9/24/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW24	1646001	9/26/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
#19	M5MW10	16491.04	10/4/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW11	16491.05	10/4/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW12	16491.06	10/4/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW13	16491.07	10/4/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW14	16491.08	10/4/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW15	16491.09	10/4/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW16	16491.1	10/4/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW18	16491.11	10/4/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW19	16491.12	10/4/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW20	16491.13	10/4/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW23	16491.14	10/4/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)

Notes:
VOCs = Volatile Organic Compounds.
SVOCs = Semi-Volatile Organic Compounds.
Pest/PCB = Pesticides/Polychlorinated Biphenyls.
Metals = Target Analyte List Metals.

Table 4-2
Ground Water Sampling Summary
M-5 Landfill Site (FTMM-05)
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#19	M5MW25	16491.15	10/4/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW12	1666204	12/17/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW23	1666215	12/17/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW24	1663401	12/10/01	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
#20	M5MW10	2002904	1/14/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW11	2002905	1/14/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW12	2002906	1/14/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW13	2002907	1/14/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW14	2002908	1/14/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW15	2002909	1/14/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW16	2002910	1/14/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW18	2002911	1/14/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW19	2002912	1/14/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW20	2002913	1/14/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW23	2002914	1/14/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW25	2002915	1/14/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW12	2016204	3/21/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW23	2016215	3/21/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW24	2017101	3/27/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
#21	M5MW10	2021904	4/23/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW11	2021905	4/23/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW12	2021906	4/23/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW13	2021907	4/23/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW14	2021908	4/23/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW15	2021909	4/23/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW16	2021910	4/23/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW18	2021911	4/23/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW19	2021912	4/23/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW20	2021913	4/23/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW23	2021914	4/23/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW25	2021915	4/23/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW12	2036104	6/11/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)

Notes:
VOCs = Volatile Organic Compounds.
SVOCs = Semi-Volatile Organic Compounds.
Pest/PCB = Pesticides/Polychlorinated Biphenyls.
Metals = Target Analyte List Metals.

Table 4-2
Ground Water Sampling Summary
M-5 Landfill Site (FTMM-05)
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#21	M8MW23	2036115	6/11/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW24	2039001	6/22/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
#22	M5MW10	2059404	8/21/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW11	2059405	8/21/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW12	2059406	8/21/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW13	2059407	8/21/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW14	2059408	8/21/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW15	2059409	8/21/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW16	2059410	8/21/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW18	2059411	8/21/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW19	2059412	8/21/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW20	2059413	8/21/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW23	2059414	8/21/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M5MW25	2059415	8/21/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW12	2067804	9/23/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW23	2067805	9/23/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW24	2068801	9/26/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
#23	M5MW10	2076004	10/28/2002	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW11	2076005	10/28/2002	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW12	2076006	10/28/2002	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW13	2076007	10/28/2002	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW14	2076008	10/28/2002	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW15	2076009	10/28/2002	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW16	2076010	10/28/2002	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW18	2076011	10/28/2002	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW19	2076012	10/28/2002	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW20	2076013	10/28/2002	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW23	2076014	10/28/2002	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW25	2076015	10/28/2002	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M8MW12	2088504	12/13/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW23	2087611	12/10/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW24	2088601	12/13/02	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)

Notes:
VOCs = Volatile Organic Compounds.
SVOCs = Semi-Volatile Organic Compounds.
Pest/PCB = Pesticides/Polychlorinated Biphenyls.
Metals = Target Analyte List Metals.

Table 4-2
Ground Water Sampling Summary
M-5 Landfill Site (FTMM-05)
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#24	M5MW10	3003204	1/22/2003	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW11	3003205	1/22/2003	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW12	3003206	1/22/2003	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW13	3003207	1/22/2003	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW14	3003208	1/22/2003	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW15	3003209	1/22/2003	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW16	3003210	1/22/2003	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW18	3003211	1/22/2003	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW19	3003212	1/22/2003	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW20	3003213	1/22/2003	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW23	3003214	1/22/2003	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW25	3003215	1/22/2003	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M8MW12	3013204	3/21/03	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW23	3013215	3/21/03	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW24	3012704	3/20/03	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
#25	M5MW10	3018004	4/21/03	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW11	3018005	4/21/03	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW12	3018006	4/21/03	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW13	3018007	4/21/03	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW14	3018008	4/21/03	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW15	3018009	4/21/03	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW16	3018010	4/21/03	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW18	3018011	4/21/03	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW19	3018012	4/21/03	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW20	3018013	4/21/03	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW23	3018014	4/21/03	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW25	3018015	4/21/03	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M8MW12	3025404	5/30/03	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW23	3025415	5/30/03	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW24	3032103	6/25/03	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
#26	M5MW10	3043904	7/30/03	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW11	3043905	7/30/03	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW12	3043906	7/30/03	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)

Notes:
VOCs = Volatile Organic Compounds.
SVOCs = Semi-Volatile Organic Compounds.
Pest/PCB = Pesticides/Polychlorinated Biphenyls.
Metals = Target Analyte List Metals.

Table 4-2
Ground Water Sampling Summary
M-5 Landfill Site (FTMM-05)
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#26	M5MW13	3043907	7/30/03	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW14	3043908	7/30/03	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW15	3043909	7/30/03	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW16	3043910	7/30/03	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW18	3043911	7/30/03	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW19	3043912	7/30/03	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW20	3043913	7/30/03	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW23	3043914	7/30/03	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M5MW25	3043915	7/30/03	Aqueous	VOCs, SVOCs, Metals	Methods 624, 625, 3120 & 3112 (mercury)
	M8MW12	3054104	8/22/03	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW23	3054115	8/22/03	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
	M8MW24	3058004	9/8/03	Aqueous	VOCs, SVOCs, Pest/PCBs, Metals	Methods 624, 625, 608, 3120 & 3112 (mercury)
#27	M5MW10	3063804	10/8/03	Aqueous	VOCs	Method 624
	M5MW11	3063805	10/8/03	Aqueous	VOCs	Method 624
	M5MW12	3063806	10/8/03	Aqueous	VOCs	Method 624
	M5MW13	3063807	10/8/03	Aqueous	VOCs	Method 624
	M5MW14	3063808	10/8/03	Aqueous	VOCs	Method 624
	M5MW16	3063809	10/8/03	Aqueous	VOCs	Method 624
	M5MW18	3063810	10/8/03	Aqueous	VOCs	Method 624
	M5MW19	3063811	10/8/03	Aqueous	VOCs	Method 624
	M5MW20	3063812	10/8/03	Aqueous	VOCs	Method 624
	M5MW23	3063813	10/8/03	Aqueous	VOCs	Method 624
	M8MW12	3080404	12/12/03	Aqueous	VOCs	Method 624
	M8MW23	3083107	12/30/03	Aqueous	VOCs	Method 624
	M8MW24	3075504	11/21/03	Aqueous	VOCs	Method 624
#28	M5MW10	4002904	1/14/04	Aqueous	VOCs	Method 624
	M5MW11	4002905	1/14/04	Aqueous	VOCs	Method 624
	M5MW12	4002906	1/14/04	Aqueous	VOCs	Method 624
	M5MW13	4002907	1/14/04	Aqueous	VOCs	Method 624
	M5MW14	4002908	1/14/04	Aqueous	VOCs	Method 624
	M5MW16	4002909	1/14/04	Aqueous	VOCs	Method 624
	M5MW18	4002910	1/14/04	Aqueous	VOCs	Method 624
	M5MW19	4002911	1/14/04	Aqueous	VOCs	Method 624

Notes:
VOCs = Volatile Organic Compounds.
SVOCs = Semi-Volatile Organic Compounds.
Pest/PCB = Pesticides/Polychlorinated Biphenyls.
Metals = Target Analyte List Metals.

Table 4-2
Ground Water Sampling Summary
M-5 Landfill Site (FTMM-05)
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#28	M5MW20	4002912	1/14/04	Aqueous	VOCs	Method 624
	M5MW23	4002913	1/14/04	Aqueous	VOCs	Method 624
	M8MW12	4015704	3/9/04	Aqueous	VOCs	Method 624
	M8MW23	4015708	3/9/04	Aqueous	VOCs	Method 624
	M8MW24	4014201	2/25/04	Aqueous	VOCs	Method 624
#29	M5MW10	4035904	5/13/04	Aqueous	VOCs	Method 624
	M5MW11	4035905	5/13/04	Aqueous	VOCs	Method 624
	M5MW12	4035906	5/13/04	Aqueous	VOCs	Method 624
	M5MW13	4035907	5/13/04	Aqueous	VOCs	Method 624
	M5MW14	4035908	5/13/04	Aqueous	VOCs	Method 624
	M5MW16	4035909	5/13/04	Aqueous	VOCs	Method 624
	M5MW18	4035910	5/13/04	Aqueous	VOCs	Method 624
	M5MW19	4035911	5/13/04	Aqueous	VOCs	Method 624
	M5MW20	4035912	5/13/04	Aqueous	VOCs	Method 624
	M5MW23	4035913	5/13/04	Aqueous	VOCs	Method 624
	M8MW12	4049404	6/28/04	Aqueous	VOCs	Method 624
	M8MW23	4049415	6/28/04	Aqueous	VOCs	Method 624
	M8MW24	40409901	6/28/04	Aqueous	VOCs	Method 624
#30	M5MW10	4061404	8/20/04	Aqueous	VOCs	Method 624
	M5MW11	4061405	8/20/04	Aqueous	VOCs	Method 624
	M5MW12	4061406	8/20/04	Aqueous	VOCs	Method 624
	M5MW13	4061407	8/20/04	Aqueous	VOCs	Method 624
	M5MW14	4061408	8/20/04	Aqueous	VOCs	Method 624
	M5MW16	4061409	8/20/04	Aqueous	VOCs	Method 624
	M5MW18	4061410	8/20/04	Aqueous	VOCs	Method 624
	M5MW19	4061411	8/20/04	Aqueous	VOCs	Method 624
	M5MW20	4061412	8/20/04	Aqueous	VOCs	Method 624
	M5MW23	4061413	8/20/04	Aqueous	VOCs	Method 624
	M8MW12	4063704	8/30/04	Aqueous	VOCs	Method 624
	M8MW23	4063715	8/30/04	Aqueous	VOCs	Method 624
	M8MW24	4063716	8/30/04	Aqueous	VOCs	Method 624
#31	M5MW10	4084603	12/16/04	Aqueous	VOCs	Method 624

Notes:
VOCs = Volatile Organic Compounds.
SVOCs = Semi-Volatile Organic Compounds.
Pest/PCB = Pesticides/Polychlorinated Biphenyls.
Metals = Target Analyte List Metals.

Table 4-2
Ground Water Sampling Summary
M-5 Landfill Site (FTMM-05)
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#31	M5MW11	4084504	12/16/04	Aqueous	VOCs	Method 624
	M5MW12	4084604	12/16/04	Aqueous	VOCs	Method 624
	M5MW13	4084605	12/16/04	Aqueous	VOCs	Method 624
	M5MW14	4084606	12/16/04	Aqueous	VOCs	Method 624
	M5MW16	4084505	12/15/04	Aqueous	VOCs	Method 624
	M5MW18	4083303	12/14/04	Aqueous	VOCs	Method 624
	M5MW19	4083302	12/14/04	Aqueous	VOCs	Method 624
	M5MW20	4083301	12/14/04	Aqueous	VOCs	Method 624
	M5MW23	4084506	12/15/04	Aqueous	VOCs	Method 624
	M8MW12	4086004	12/21/04	Aqueous	VOCs	Method 624
	M8MW23	4086005	12/21/04	Aqueous	VOCs	Method 624
	M8MW24	4086006	12/21/04	Aqueous	VOCs	Method 624
#32	M5MW10	5015404	3/15/05	Aqueous	VOCs	Method 624
	M5MW11	5015204	3/14/05	Aqueous	VOCs	Method 624
	M5MW12	5015405	3/15/05	Aqueous	VOCs	Method 624
	M5MW13	5015406	3/15/05	Aqueous	VOCs	Method 624
	M5MW14	5015407	3/15/05	Aqueous	VOCs	Method 624
	M5MW16	5015205	3/14/05	Aqueous	VOCs	Method 624
	M5MW18	5015206	3/14/05	Aqueous	VOCs	Method 624
	M5MW19	5015207	3/14/05	Aqueous	VOCs	Method 624
	M5MW20	5015208	3/14/05	Aqueous	VOCs	Method 624
	M5MW23	5015209	3/14/05	Aqueous	VOCs	Method 624
	M8MW12	5015704	3/16/05	Aqueous	VOCs	Method 624
	M8MW23	5015712	3/16/05	Aqueous	VOCs	Method 624
	M8MW24	5015807	3/17/05	Aqueous	VOCs	Method 624
#33	M5MW10	5028404	6/3/05	Aqueous	VOCs	Method 624
	M5MW11	5028405	6/3/05	Aqueous	VOCs	Method 624
	M5MW12	5028406	6/3/05	Aqueous	VOCs	Method 624
	M5MW13	5028407	6/3/05	Aqueous	VOCs	Method 624
	M5MW14	5028408	6/3/05	Aqueous	VOCs	Method 624
	M5MW16	5028409	6/3/05	Aqueous	VOCs	Method 624
	M5MW18	5028410	6/3/05	Aqueous	VOCs	Method 624
	M5MW19	5028411	6/3/05	Aqueous	VOCs	Method 624

Notes:
VOCs = Volatile Organic Compounds.
SVOCs = Semi-Volatile Organic Compounds.
Pest/PCB = Pesticides/Polychlorinated Biphenyls.
Metals = Target Analyte List Metals.

Table 4-2
Ground Water Sampling Summary
M-5 Landfill Site (FTMM-05)
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#33	M5MW20	5028412	6/3/05	Aqueous	VOCs	Method 624
	M5MW23	5028413	6/3/05	Aqueous	VOCs	Method 624
	M8MW12	5029104	6/7/05	Aqueous	VOCs	Method 624
	M8MW23	5029910	6/8/05	Aqueous	VOCs	Method 624
	M8MW24	5029109	6/17/05	Aqueous	VOCs	Method 624
#34	M5MW10	5047303	9/16/05	Aqueous	VOCs	Method 624
	M5MW11	5047304	9/16/05	Aqueous	VOCs	Method 624
	M5MW12	5047305	9/16/05	Aqueous	VOCs	Method 624
	M5MW13	5047306	9/16/05	Aqueous	VOCs	Method 624
	M5MW14	5047307	9/16/05	Aqueous	VOCs	Method 624
	M5MW16	5047308	9/16/05	Aqueous	VOCs	Method 624
	M5MW18	5047309	9/16/05	Aqueous	VOCs	Method 624
	M5MW19	5047310	9/16/05	Aqueous	VOCs	Method 624
	M5MW20	5047311	9/16/05	Aqueous	VOCs	Method 624
	M5MW23	5047312	9/16/05	Aqueous	VOCs	Method 624
	M8MW12	5048304	9/22/05	Aqueous	VOCs	Method 624
	M8MW23	5048312	9/22/05	Aqueous	VOCs	Method 624
	M8MW24	5048607	9/23/05	Aqueous	VOCs	Method 624
#35	M5MW10	5065504	12/21/05	Aqueous	VOCs	Method 624
	M5MW11	5065505	12/21/05	Aqueous	VOCs	Method 624
	M5MW12	5065506	12/21/05	Aqueous	VOCs	Method 624
	M5MW13	5065507	12/21/05	Aqueous	VOCs	Method 624
	M5MW14	5065508	12/21/05	Aqueous	VOCs	Method 624
	M5MW16	5065509	12/21/05	Aqueous	VOCs	Method 624
	M5MW18	5065510	12/21/05	Aqueous	VOCs	Method 624
	M5MW19	5065511	12/21/05	Aqueous	VOCs	Method 624
	M5MW20	5065512	12/21/05	Aqueous	VOCs	Method 624
	M5MW23	5065513	12/21/05	Aqueous	VOCs	Method 624
	M8MW12	5065804	12/27/05	Aqueous	VOCs	Method 624
	M8MW23	5065810	12/27/05	Aqueous	VOCs	Method 624
	M8MW24	5066009	12/28/05	Aqueous	VOCs	Method 624
#36	M5MW10	6009404	3/1/06	Aqueous	VOCs	Method 624

Notes:
VOCs = Volatile Organic Compounds.
SVOCs = Semi-Volatile Organic Compounds.
Pest/PCB = Pesticides/Polychlorinated Biphenyls.
Metals = Target Analyte List Metals.

Table 4-2
Ground Water Sampling Summary
M-5 Landfill Site (FTMM-05)
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#36	M5MW11	6009405	3/1/06	Aqueous	VOCs	Method 624
	M5MW12	6009406	3/1/06	Aqueous	VOCs	Method 624
	M5MW13	6009407	3/1/06	Aqueous	VOCs	Method 624
	M5MW14	6009408	3/1/06	Aqueous	VOCs	Method 624
	M5MW16	6009409	3/1/06	Aqueous	VOCs	Method 624
	M5MW18	6009410	3/1/06	Aqueous	VOCs	Method 624
	M5MW19	6009411	3/1/06	Aqueous	VOCs	Method 624
	M5MW20	6009412	3/1/06	Aqueous	VOCs	Method 624
	M5MW23	6009413	3/1/06	Aqueous	VOCs	Method 624
	M8MW12	6011304	3/16/06	Aqueous	VOCs	Method 624
	M8MW23	6011312	3/16/06	Aqueous	VOCs	Method 624
	M8MW24	6011607	3/17/06	Aqueous	VOCs	Method 624
#37	M5MW10	6020904	5/5/06	Aqueous	VOCs	Method 624
	M5MW11	6020905	5/5/06	Aqueous	VOCs	Method 624
	M5MW12	6020906	5/5/06	Aqueous	VOCs	Method 624
	M5MW13	6020907	5/5/06	Aqueous	VOCs	Method 624
	M5MW14	6020908	5/5/06	Aqueous	VOCs	Method 624
	M5MW16	6020909	5/5/06	Aqueous	VOCs	Method 624
	M5MW18	6020910	5/5/06	Aqueous	VOCs	Method 624
	M5MW19	6020911	5/5/06	Aqueous	VOCs	Method 624
	M5MW20	6020912	5/5/06	Aqueous	VOCs	Method 624
	M5MW23	6020913	5/5/06	Aqueous	VOCs	Method 624
	M8MW12	6026204	6/6/06	Aqueous	VOCs	Method 624
	M8MW23	6026607	6/8/06	Aqueous	VOCs	Method 624
	M8MW24	6026608	6/8/06	Aqueous	VOCs	Method 624
#38	M5MW10	6039504	9/13/06	Aqueous	VOCs	Method 624
	M5MW11	6039505	9/13/06	Aqueous	VOCs	Method 624
	M5MW12	6039506	9/13/06	Aqueous	VOCs	Method 624
	M5MW13	6039507	9/13/06	Aqueous	VOCs	Method 624
	M5MW14	6039508	9/13/06	Aqueous	VOCs	Method 624
	M5MW16	6039509	9/13/06	Aqueous	VOCs	Method 624
	M5MW18	6039510	9/13/06	Aqueous	VOCs	Method 624
	M5MW19	6039511	9/13/06	Aqueous	VOCs	Method 624

Notes:
VOCs = Volatile Organic Compounds.
SVOCs = Semi-Volatile Organic Compounds.
Pest/PCB = Pesticides/Polychlorinated Biphenyls.
Metals = Target Analyte List Metals.

Table 4-2
Ground Water Sampling Summary
M-5 Landfill Site (FTMM-05)
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#38	M5MW20	6039512	9/13/06	Aqueous	VOCs	Method 624
	M5MW23	6039513	9/13/06	Aqueous	VOCs	Method 624
	M8MW12	6042104	9/27/06	Aqueous	VOCs	Method 624
	M8MW23	6042207	9/28/06	Aqueous	VOCs	Method 624
	M8MW24	6042104	9/27/06	Aqueous	VOCs	Method 624
#39	M5MW10	6050304	11/17/06	Aqueous	VOCs	Method 624
	M5MW11	6050305	11/17/06	Aqueous	VOCs	Method 624
	M5MW12	6050306	11/17/06	Aqueous	VOCs	Method 624
	M5MW13	6050307	11/17/06	Aqueous	VOCs	Method 624
	M5MW14	6050308	11/17/06	Aqueous	VOCs	Method 624
	M5MW16	6050004	11/16/06	Aqueous	VOCs	Method 624
	M5MW18	6050005	11/16/06	Aqueous	VOCs	Method 624
	M5MW19	6050006	11/16/06	Aqueous	VOCs	Method 624
	M5MW20	6050309	11/17/06	Aqueous	VOCs	Method 624
	M5MW23	6050310	11/17/06	Aqueous	VOCs	Method 624
	M8MW12	6054004	12/19/06	Aqueous	VOCs	Method 624
	M8MW23	6054012	12/19/06	Aqueous	VOCs	Method 624
	M8MW24	6054013	12/19/06	Aqueous	VOCs	Method 624
#40	M5MW10	7008804	3/8/07	Aqueous	VOCs	Method 624
	M5MW11	7008704	3/7/07	Aqueous	VOCs	Method 624
	M5MW12	7008805	3/8/07	Aqueous	VOCs	Method 624
	M5MW13	7008806	3/8/07	Aqueous	VOCs	Method 624
	M5MW14	7008807	3/8/07	Aqueous	VOCs	Method 624
	M5MW16	7008705	3/7/07	Aqueous	VOCs	Method 624
	M5MW18	7008706	3/7/07	Aqueous	VOCs	Method 624
	M5MW19	7008707	3/7/07	Aqueous	VOCs	Method 624
	M5MW20	7008708	3/7/07	Aqueous	VOCs	Method 624
	M5MW23	7008709	3/7/07	Aqueous	VOCs	Method 624
	M8MW12	7011504	3/29/07	Aqueous	VOCs	Method 624
	M8MW23	7011809	3/30/07	Aqueous	VOCs	Method 624
	M8MW24	7011810	3/30/07	Aqueous	VOCs	Method 624
#41	M5MW10	7020404	6/6/07	Aqueous	VOCs	Method 624

Notes:
VOCs = Volatile Organic Compounds.
SVOCs = Semi-Volatile Organic Compounds.
Pest/PCB = Pesticides/Polychlorinated Biphenyls.
Metals = Target Analyte List Metals.

Table 4-2
Ground Water Sampling Summary
M-5 Landfill Site (FTMM-05)
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#41	M5MW11	7020405	6/6/07	Aqueous	VOCs	Method 624
	M5MW12	7020406	6/6/07	Aqueous	VOCs	Method 624
	M5MW13	7020407	6/6/07	Aqueous	VOCs	Method 624
	M5MW14	7020408	6/6/07	Aqueous	VOCs	Method 624
	M5MW16	7020409	6/8/07	Aqueous	VOCs	Method 624
	M5MW18	7020410	6/6/07	Aqueous	VOCs	Method 624
	M5MW19	7020411	6/6/07	Aqueous	VOCs	Method 624
	M5MW20	7020412	6/6/07	Aqueous	VOCs	Method 624
	M5MW23	7020413	6/6/07	Aqueous	VOCs	Method 624
	M8MW12	7019404	5/29/07	Aqueous	VOCs	Method 624
	M8MW23	7019407	5/30/07	Aqueous	VOCs	Method 624
	M8MW24	7019412	5/29/07	Aqueous	VOCs	Method 624
#42	M5MW10	7030704	8/14/07	Aqueous	VOCs	Method 624
	M5MW11	7030705	8/14/07	Aqueous	VOCs	Method 624
	M5MW12	7030706	8/14/07	Aqueous	VOCs	Method 624
	M5MW13	7030707	8/14/07	Aqueous	VOCs	Method 624
	M5MW14	7030708	8/14/07	Aqueous	VOCs	Method 624
	M5MW16	7030709	8/14/07	Aqueous	VOCs	Method 624
	M5MW18	7030710	8/14/07	Aqueous	VOCs	Method 624
	M5MW19	7030711	8/14/07	Aqueous	VOCs	Method 624
	M5MW20	7030712	8/14/07	Aqueous	VOCs	Method 624
	M5MW23	7030713	8/14/07	Aqueous	VOCs	Method 624
	M8MW12	7031904	8/29/07	Aqueous	VOCs	Method 624
	M8MW23	7032007	8/30/07	Aqueous	VOCs	Method 624
	M8MW24	7032008	8/30/07	Aqueous	VOCs	Method 624
#43	M5MW10	7050604	12/5/07	Aqueous	VOCs	Method 624
	M5MW11	7050605	12/5/07	Aqueous	VOCs	Method 624
	M5MW12	7050606	12/5/07	Aqueous	VOCs	Method 624
	M5MW13	7050607	12/5/07	Aqueous	VOCs	Method 624
	M5MW14	7050608	12/5/07	Aqueous	VOCs	Method 624
	M5MW16	7050609	12/5/07	Aqueous	VOCs	Method 624
	M5MW18	7050610	12/5/07	Aqueous	VOCs	Method 624
	M5MW19	7050611	12/5/07	Aqueous	VOCs	Method 624

Notes:
VOCs = Volatile Organic Compounds.
SVOCs = Semi-Volatile Organic Compounds.
Pest/PCB = Pesticides/Polychlorinated Biphenyls.
Metals = Target Analyte List Metals.

Table 4-2
Ground Water Sampling Summary
M-5 Landfill Site (FTMM-05)
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#43	M5MW20	7050612	12/5/07	Aqueous	VOCs	Method 624
	M5MW23	7050613	12/5/07	Aqueous	VOCs	Method 624
	M8MW12	7057104	12/28/07	Aqueous	VOCs	Method 624
	M8MW23	7057115	12/28/07	Aqueous	VOCs	Method 624
	M8MW24	7057116	12/28/07	Aqueous	VOCs	Method 624
#44	M5MW10	8007704	3/11/08	Aqueous	VOCs	Method 624
	M5MW11	8007705	3/11/08	Aqueous	VOCs	Method 624
	M5MW12	8007706	3/11/08	Aqueous	VOCs	Method 624
	M5MW13	8007707	3/11/08	Aqueous	VOCs	Method 624
	M5MW14	8007708	3/11/08	Aqueous	VOCs	Method 624
	M5MW16	8007709	3/11/08	Aqueous	VOCs	Method 624
	M5MW18	8007710	3/11/08	Aqueous	VOCs	Method 624
	M5MW19	8007711	3/11/08	Aqueous	VOCs	Method 624
	M5MW20	8007712	3/11/08	Aqueous	VOCs	Method 624
	M5MW23	8007713	3/11/08	Aqueous	VOCs	Method 624
	M8MW12	8008304	3/13/08	Aqueous	VOCs	Method 624
	M8MW23	8008312	3/13/08	Aqueous	VOCs	Method 624
	M8MW24	8008607	3/14/08	Aqueous	VOCs	Method 624
#45	M5MW10	8018504	6/3/08	Aqueous	VOCs	Method 624
	M5MW11	8018505	6/3/08	Aqueous	VOCs	Method 624
	M5MW12	8018506	6/3/08	Aqueous	VOCs	Method 624
	M5MW13	8018507	6/3/08	Aqueous	VOCs	Method 624
	M5MW14	8018508	6/3/08	Aqueous	VOCs	Method 624
	M5MW16	8018509	6/3/08	Aqueous	VOCs	Method 624
	M5MW18	8018510	6/3/08	Aqueous	VOCs	Method 624
	M5MW19	8018511	6/3/08	Aqueous	VOCs	Method 624
	M5MW20	8018512	6/3/08	Aqueous	VOCs	Method 624
	M5MW23	8018513	6/3/08	Aqueous	VOCs	Method 624
	M8MW12	8019304	6/5/08	Aqueous	VOCs	Method 624
	M8MW23	8019312	6/5/08	Aqueous	VOCs	Method 624
	M8MW24	8019313	6/5/08	Aqueous	VOCs	Method 624
#46	M5MW10	8030604	8/25/08	Aqueous	VOCs	Method 624

Notes:
VOCs = Volatile Organic Compounds.
SVOCs = Semi-Volatile Organic Compounds.
Pest/PCB = Pesticides/Polychlorinated Biphenyls.
Metals = Target Analyte List Metals.

Table 4-2
Ground Water Sampling Summary
M-5 Landfill Site (FTMM-05)
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#46	M5MW11	8030605	8/25/08	Aqueous	VOCs	Method 624
	M5MW12	8030606	8/25/08	Aqueous	VOCs	Method 624
	M5MW13	8030607	8/25/08	Aqueous	VOCs	Method 624
	M5MW14	8030608	8/25/08	Aqueous	VOCs	Method 624
	M5MW16	8030609	8/25/08	Aqueous	VOCs	Method 624
	M5MW18	8030610	8/25/08	Aqueous	VOCs	Method 624
	M5MW19	8030611	8/25/08	Aqueous	VOCs	Method 624
	M5MW20	8030612	8/25/08	Aqueous	VOCs	Method 624
	M5MW23	8030613	8/25/08	Aqueous	VOCs	Method 624
	M8MW12	8031504	9/4/08	Aqueous	VOCs	Method 624
	M8MW23	8031907	9/5/08	Aqueous	VOCs	Method 624
	M8MW24	8031908	9/5/08	Aqueous	VOCs	Method 624
#47	M5MW10	8040404	11/10/08	Aqueous	VOCs	Method 624
	M5MW11	8040405	11/10/08	Aqueous	VOCs	Method 624
	M5MW12	8040406	11/10/08	Aqueous	VOCs	Method 624
	M5MW13	8040407	11/10/08	Aqueous	VOCs	Method 624
	M5MW14	8040408	11/10/08	Aqueous	VOCs	Method 624
	M5MW16	8040409	11/10/08	Aqueous	VOCs	Method 624
	M5MW18	8040410	11/10/08	Aqueous	VOCs	Method 624
	M5MW19	8040411	11/10/08	Aqueous	VOCs	Method 624
	M5MW20	8040412	11/10/08	Aqueous	VOCs	Method 624
	M5MW23	8040413	11/10/08	Aqueous	VOCs	Method 624
	M8MW12	8043004	11/21/08	Aqueous	VOCs	Method 624
	M8MW23	8043015	11/21/08	Aqueous	VOCs	Method 624
	M8MW24	8043016	11/21/08	Aqueous	VOCs	Method 624

Notes:
VOCs = Volatile Organic Compounds.
SVOCs = Semi-Volatile Organic Compounds.
Pest/PCB = Pesticides/Polychlorinated Biphenyls.
Metals = Target Analyte List Metals.

Table 4-3
Surface Water Sampling Summary
M-5 Landfill Site (FTMM-05)
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#1A	SS-4	217804	10/8/96	Aqueous	VOCs	Method 624
	SS-5	217805	10/8/96	Aqueous	VOCs	Method 624
	SS-15	217815	10/8/96	Aqueous	VOCs	Method 624
#1B	SS-4	222312	11/25/96	Aqueous	VOCs	Method 624
	SS-5	222314	11/25/96	Aqueous	VOCs	Method 624
	SS-15	222309	11/25/96	Aqueous	VOCs	Method 624
	SS-16	222310	11/25/96	Aqueous	VOCs	Method 624
#1C	SS-4	224612	12/12/96	Aqueous	VOCs	Method 624
	SS-5	224614	12/12/96	Aqueous	VOCs	Method 624
	SS-15	224609	12/12/96	Aqueous	VOCs	Method 624
	SS-16	224610	12/12/96	Aqueous	VOCs	Method 624
#2A	SS-4	229812	1/29/97	Aqueous	VOCs	Method 624
	SS-5	229814	1/29/97	Aqueous	VOCs	Method 624
	SS-15	229809	1/29/97	Aqueous	VOCs	Method 624
	SS-16	229810	1/29/97	Aqueous	VOCs	Method 624
#2B	SS-4	236112	2/26/97	Aqueous	VOCs	Method 624
	SS-5	236113	2/26/97	Aqueous	VOCs	Method 624
	SS-15	236109	2/26/97	Aqueous	VOCs	Method 624
	SS-16	236110	2/26/97	Aqueous	VOCs	Method 624
#2C	SS-4	237512	3/10/97	Aqueous	VOCs	Method 624
	SS-5	237513	3/10/97	Aqueous	VOCs	Method 624
	SS-15	237509	3/10/97	Aqueous	VOCs	Method 624
	SS-16	237510	3/10/97	Aqueous	VOCs	Method 624
#3	SS-4	243912	4/8/97	Aqueous	VOCs	Method 624
	SS-5	243913	4/8/97	Aqueous	VOCs	Method 624
	SS-15	243909	4/8/97	Aqueous	VOCs	Method 624
	SS-16	243910	4/8/97	Aqueous	VOCs	Method 624
#4	SS-4	281012	7/17/97	Aqueous	VOCs	Method 624
	SS-5	281013	7/17/97	Aqueous	VOCs	Method 624
	SS-15	281009	7/17/97	Aqueous	VOCs	Method 624
	SS-16	281010	7/17/97	Aqueous	VOCs	Method 624
#5	SS-4	312112	10/30/97	Aqueous	VOCs	Method 624
	SS-5	312113	10/30/97	Aqueous	VOCs	Method 624
	SS-15	312109	10/30/97	Aqueous	VOCs	Method 624
	SS-16	312110	10/30/97	Aqueous	VOCs	Method 624
#6	SS-4	333112	2/10/98	Aqueous	VOCs	Method 624
	SS-5	333113	2/10/98	Aqueous	VOCs	Method 624
	SS-15	333109	2/10/98	Aqueous	VOCs	Method 624
	SS-16	333110	2/10/98	Aqueous	VOCs	Method 624
#7	SS-4	349912	4/21/98	Aqueous	VOCs	Method 624
	SS-5	349913	4/21/98	Aqueous	VOCs	Method 624
	SS-15	349909	4/21/98	Aqueous	VOCs	Method 624
	SS-16	349910	4/21/98	Aqueous	VOCs	Method 624
#8	SS-4	381612	8/19/98	Aqueous	VOCs	Method 624
	SS-5	381611	8/19/98	Aqueous	VOCs	Method 624
	SS-15	381609	8/19/98	Aqueous	VOCs	Method 624
	SS-16	381610	8/19/98	Aqueous	VOCs	Method 624
#9	SS-4	406909	11/17/98	Aqueous	VOCs	Method 624

Notes:
VOCs = Volatile Organic Compounds.
Pest/PCB = Pesticides/Polychlorinated Biphenyls.
Metals = Target Analyte List Metals.

Table 4-3
Surface Water Sampling Summary
M-5 Landfill Site (FTMM-05)
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
	SS-5	406010	11/17/98	Aqueous	VOCs	Method 624
#9	SS-16	406906	11/17/98	Aqueous	VOCs	Method 624
	SS-15	406908	11/18/98	Aqueous	VOCs	Method 624
#10	SS-4	430012	2/25/99	Aqueous	VOCs	Method 624
	SS-5	430013	2/25/99	Aqueous	VOCs	Method 624
	SS-15	430009	2/25/99	Aqueous	VOCs	Method 624
	SS-16	430010	2/25/99	Aqueous	VOCs	Method 624
#11	SS-4	457914	6/29/99	Aqueous	VOCs	Method 624
	SS-5	457915	6/29/99	Aqueous	VOCs	Method 624
	SS-15	457911	6/29/99	Aqueous	VOCs	Method 624
	SS-16	457912	6/29/99	Aqueous	VOCs	Method 624
#12	SS-4	480605	9/22/99	Aqueous	VOCs	Method 624
	SS-5	480606	9/22/99	Aqueous	VOCs	Method 624
	SS-15	480211	9/21/99	Aqueous	VOCs	Method 624
	SS-16	480603	9/21/99	Aqueous	VOCs	Method 624
#13	SS-4	499710	12/8/99	Aqueous	VOCs	Method 624
	SS-5	499711	12/8/99	Aqueous	VOCs	Method 624
	SS-16	499712	12/8/99	Aqueous	VOCs	Method 624
	SS-15	499717	12/8/99	Aqueous	VOCs	Method 624
#14	SS-4	521110	3/1/00	Aqueous	VOCs	Method 624
	SS-5	521111	3/1/00	Aqueous	VOCs	Method 624
	SS-16	521113	3/1/00	Aqueous	VOCs	Method 624
	SS-15	521117	3/1/00	Aqueous	VOCs	Method 624
#15	SS-4	546816	6/12/00	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-5	546815	6/12/00	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-15	546812	6/12/00	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-16	546814	6/12/00	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-27	546826	6/12/00	Aqueous	VOCs, PCBs	Methods 624, 608
#16	SS-4	565816	8/24/00	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-5	565815	8/24/00	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-15	565812	8/24/00	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-16	565814	8/24/00	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-27	565826	8/24/00	Aqueous	VOCs, PCBs	Methods 624, 608
#17	SS-4	586816	11/20/00	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-5	586815	11/20/00	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-15	586812	11/20/00	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-16	586814	11/20/00	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-27	586825	11/20/00	Aqueous	VOCs, PCBs	Methods 624, 608
#18	SS-4	1310	3/8/01	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-5	1309	3/8/01	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-15	962	2/21/01	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-16	963	2/21/01	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-27	1319	3/8/01	Aqueous	VOCs, PCBs	Methods 624, 608
#19	SS-4	1612016	5/16/01	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-5	1612015	5/16/01	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-15	1612012	5/16/01	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-16	1612014	5/16/01	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-27	1612026	5/16/01	Aqueous	VOCs, PCBs	Methods 624, 608
#20	SS-4	1644914	9/25/01	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-5	1644916	9/25/01	Aqueous	VOCs, PCBs	Methods 624, 608

Notes:
VOCs = Volatile Organic Compounds.
Pest/PCB = Pesticides/Polychlorinated Biphenyls.
Metals = Target Analyte List Metals.

Table 4-3
Surface Water Sampling Summary
M-5 Landfill Site (FTMM-05)
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
	SS-15	1644908	9/25/01	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-16	1644915	9/25/01	Aqueous	VOCs, PCBs	Methods 624, 608
#20	SS-27	1644905	9/25/01	Aqueous	VOCs, PCBs	Methods 624, 608
#21	SS-4	1657919	11/14/01	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-5	1657920	11/14/01	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-15	1657912	11/14/01	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-16	1657915	11/14/01	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-27	1657916	11/14/01	Aqueous	VOCs, PCBs	Methods 624, 608
#22	SS-4	2008619	2/11/02	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-5	2008620	2/11/02	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-15	2008612	2/11/02	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-16	2008615	2/11/02	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-27	2008616	2/11/02	Aqueous	VOCs, PCBs	Methods 624, 608
#23	SS-4	2037619	6/18/02	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-5	2037620	6/18/02	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-15	2037611	6/18/02	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-16	2037615	6/18/02	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-27	2037616	6/18/02	Aqueous	VOCs, PCBs	Methods 624, 608
#24	SS-4	2066610	9/18/02	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-5	2066622	9/18/02	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-15	2066607	9/18/02	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-16	2066623	9/18/02	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-27	2066613	9/18/02	Aqueous	VOCs, PCBs	Methods 624, 608
#25	SS-4	2078012	11/5/02	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-5	2078014	11/4/02	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-15	2078707	11/5/02	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-16	2078710	11/5/02	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-27	2078009	11/4/02	Aqueous	VOCs, PCBs	Methods 624, 608
#26	SS-4	3011817	3/13/03	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-5	3011818	3/13/03	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-16	3011813	3/13/03	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-15	3013404	3/24/03	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-27	3011814	3/13/03	Aqueous	VOCs, PCBs	Methods 624, 608
#27	SS-4	3024716	5/21/03	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-5	3024715	5/21/03	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-15	3024712	5/21/03	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-16	3024714	5/21/03	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-27	3024725	5/21/03	Aqueous	VOCs, PCBs	Methods 624, 608
#28	SS-4	3059215	9/17/03	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-5	3059216	9/17/03	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-16	3059217	9/17/03	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-15	3059220	9/17/03	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-27	3059212	9/17/03	Aqueous	VOCs, PCBs	Methods 624, 608
#29	SS-4	3070015	11/4/03	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-5	3070016	11/4/03	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-16	3070017	11/4/03	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-15	3070020	11/4/03	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-27	3070012	11/4/03	Aqueous	VOCs, PCBs	Methods 624, 608
#30	SS-4	4018215	3/17/04	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-5	4018216	3/17/04	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-16	4018217	3/17/04	Aqueous	VOCs, PCBs	Methods 624, 608

Notes:
VOCs = Volatile Organic Compounds.
Pest/PCB = Pesticides/Polychlorinated Biphenyls.
Metals = Target Analyte List Metals.

Table 4-3
Surface Water Sampling Summary
M-5 Landfill Site (FTMM-05)
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
	SS-15	4018220	3/17/04	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-27	4018212	3/17/04	Aqueous	VOCs, PCBs	Methods 624, 608
#31	SS-4	4050015	6/29/04	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-5	4050016	6/29/04	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-16	4050017	6/29/04	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-15	4050020	6/29/04	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-27	4050012	6/29/04	Aqueous	VOCs, PCBs	Methods 624, 608
#32	SS-4	4063215	8/26/04	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-5	4063216	8/26/04	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-16	4063217	8/26/04	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-15	4063220	8/26/04	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-27	4063212	8/26/04	Aqueous	VOCs, PCBs	Methods 624, 608
#33	SS-5	4080406	11/23/04	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-15	4080412	11/23/04	Aqueous	VOCs, PCBs, Metals	Methods 624, 608, 3120 & 3112 (mercury)
	SS-27	4080417	11/23/04	Aqueous	VOCs, PCBs, Metals	Methods 624, 608, 3120 & 3112 (mercury)
#34	SS-5	5011706	3/3/2005	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-15	5011712	3/3/2005	Aqueous	VOCs, PCBs, Metals	Methods 624, 608, 3120 & 3112 (mercury)
	SS-27	5011717	3/3/05	Aqueous	VOCs, PCBs, Metals	Methods 624, 608, 3120 & 3112 (mercury)
#35	SS-5	5011706	6/15/05	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-15	5011712	6/14/05	Aqueous	VOCs, PCBs, Metals	Methods 624, 608, 3120 & 3112 (mercury)
	SS-27	5031309	6/15/05	Aqueous	VOCs, PCBs, Metals	Methods 624, 608, 3120 & 3112 (mercury)
#36	SS-5	5046204	9/13/05	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-15	5046006	9/12/05	Aqueous	VOCs, PCBs, Metals	Methods 624, 608, 3120 & 3112 (mercury)
	SS-27	5046209	9/13/05	Aqueous	VOCs, PCBs, Metals	Methods 624, 608, 3120 & 3112 (mercury)
#37	SS-5	5062404	12/1/05	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-15	5062306	11/30/05	Aqueous	VOCs, PCBs, Metals	Methods 624, 608, 3120 & 3112 (mercury)
	SS-27	5062409	12/1/05	Aqueous	VOCs, PCBs, Metals	Methods 624, 608, 3120 & 3112 (mercury)
#38	SS-5	6008712	2/22/06	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-15	6008706	2/22/06	Aqueous	VOCs, PCBs, Metals	Methods 624, 608, 3120 & 3112 (mercury)
	SS-27	6008717	2/22/06	Aqueous	VOCs, PCBs, Metals	Methods 624, 608, 3120 & 3112 (mercury)
#39	SS-5	6025104	5/31/06	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-15	6024906	5/30/06	Aqueous	VOCs, PCBs, Metals	Methods 624, 608, 3120 & 3112 (mercury)
	SS-27	6025108	5/31/06	Aqueous	VOCs, PCBs, Metals	Methods 624, 608, 3120 & 3112 (mercury)
#40	SS-5	6040404	9/20/06	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-15	6040006	9/19/06	Aqueous	VOCs, PCBs, Metals	Methods 624, 608, 3120 & 3112 (mercury)
	SS-27	6040406	9/20/06	Aqueous	VOCs, PCBs, Metals	Methods 624, 608, 3120 & 3112 (mercury)
#41	SS-5	6052315	12/11/06	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-15	6052306	12/11/06	Aqueous	VOCs, PCBs, Metals	Methods 624, 608, 3120 & 3112 (mercury)
	SS-27	6052317	12/11/06	Aqueous	VOCs, PCBs, Metals	Methods 624, 608, 3120 & 3112 (mercury)
#42	SS-5	7009315	3/13/07	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-15	7009306	3/13/07	Aqueous	VOCs, PCBs, Metals	Methods 624, 608, 3120 & 3112 (mercury)
	SS-27	7009317	3/13/07	Aqueous	VOCs, PCBs, Metals	Methods 624, 608, 3120 & 3112 (mercury)
#43	SS-5	7023404	6/28/07	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-15	7023006	6/26/07	Aqueous	VOCs, PCBs, Metals	Methods 624, 608, 3120 & 3112 (mercury)
	SS-27	7023406	6/28/07	Aqueous	VOCs, PCBs, Metals	Methods 624, 608, 3120 & 3112 (mercury)
#44	SS-5	7033915	9/13/07	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-15	7033906	9/13/07	Aqueous	VOCs, PCBs, Metals	Methods 624, 608, 3120 & 3112 (mercury)

Notes:
VOCs = Volatile Organic Compounds.
Pest/PCB = Pesticides/Polychlorinated Biphenyls.
Metals = Target Analyte List Metals.

Table 4-3
Surface Water Sampling Summary
M-5 Landfill Site (FTMM-05)
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
	SS-27	7033917	9/13/07	Aqueous	VOCs, PCBs, Metals	Methods 624, 608, 3120 & 3112 (mercury)
#45	SS-5	7054115	12/19/07	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-15	7054106	12/19/07	Aqueous	VOCs, PCBs, Metals	Methods 624, 608, 3120 & 3112 (mercury)
#45	SS-27	7054117	12/19/07	Aqueous	VOCs, PCBs, Metals	Methods 624, 608, 3120 & 3112 (mercury)
#46	SS-5	8009405	3/25/08	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-15	8009411	3/25/08	Aqueous	VOCs, PCBs, Metals	Methods 624, 608, 3120 & 3112 (mercury)
	SS-27	8009508	3/25/08	Aqueous	VOCs, PCBs, Metals	Methods 624, 608, 3120 & 3112 (mercury)
#47	SS-5	8021315	6/26/08	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-15	8021306	6/26/08	Aqueous	VOCs, PCBs, Metals	Methods 624, 608, 3120 & 3112 (mercury)
	SS-27	8021317	6/26/08	Aqueous	VOCs, PCBs, Metals	Methods 624, 608, 3120 & 3112 (mercury)
#48	SS-5	8034606	9/30/08	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-15	8034612	9/30/08	Aqueous	VOCs, PCBs, Metals	Methods 624, 608, 3120 & 3112 (mercury)
	SS-27	8034617	9/30/08	Aqueous	VOCs, PCBs, Metals	Methods 624, 608, 3120 & 3112 (mercury)
#49	SS-5	7047806	12/29/08	Aqueous	VOCs, PCBs	Methods 624, 608
	SS-15	8047812	12/29/08	Aqueous	VOCs, PCBs, Metals	Methods 624, 608, 3120 & 3112 (mercury)
	SS-27	8047817	12/29/08	Aqueous	VOCs, PCBs, Metals	Methods 624, 608, 3120 & 3112 (mercury)

Notes:
VOCs = Volatile Organic Compounds.
Pest/PCB = Pesticides/Polychlorinated Biphenyls.
Metals = Target Analyte List Metals.

Table 5-1
Ground Water Sampling Results
M-5 Landfill Site - MW10 (May97-Sept05)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	1	2	3	4	5	6	7	8	9A	9B	10
WELL ID			M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10
Date Collected			5/8/1997	8/8/1997	10/29/1997	2/18/1998	5/6/1998	8/4/1998	10/27/1998	2/2/1999	4/13/1999	4/27/1999	9/13/1999
ANALYTE / Lab ID			2516.02	2885.04	3116.04	3348.01	3552.01	3784.03	4010.04	4237.03	4416.03	4444.03	4786.08
VOCs													
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	4.1	ND	ND	ND	ND
Acetone	700	µg/L	ND	ND	ND	ND	ND	5.08	9.43	ND	ND	ND	ND
Bromoform	4	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	3	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	ND	32.0	28.0	6.0	ND	ND	ND	ND	ND	ND	ND
SVOCs													
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	ND	ND	ND	ND	ND	5.57	ND	ND	ND
Di-*n* -butyl phthalate	900	µg/L	2.51	30.78	2.13	6.2 B	ND	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	186.0	51.0	35.0	38.0	ND	38.0	ND	ND	ND	20.0	4.0
Pest/PCBs													
4,4'-DDE	0.1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
gamma-Chlordane	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals													
Antimony	20	µg/L	ND	ND	ND	ND	ND	3.01	5.96	ND	ND	ND	ND
Arsenic	8	µg/L	3.0	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	67.49	ND	78.0	108.0	99.0	26.5	34.4	114.0	93.2	89.5	40.4
Beryllium	20	µg/L	0.19	0.24	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.28	0.56
Chromium	100	µg/L	0.7	76.0	2.6	ND	ND	3.33	3.98	3.17	4.09	3.51	5.11
Copper	1000	µg/L	9.0	7.0	11.0	10.0	10.0	ND	6.27	5.29	22.1	8.55	10.1
Lead	10	µg/L	1.8	1.0	8.0	ND	ND	ND	2.45	ND	3.79	ND	ND
Mercury	2	µg/L	ND	ND	ND	ND	ND	0.19	ND	0.17	ND	ND	ND
Nickel	100	µg/L	ND	ND	1.3	2.3	2.2	ND	1.53	1.81	0.584	1.16	ND
Selenium	50	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	3.91	ND	ND

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

** NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

J - Estimated Concentration observed is greater than the MDL and less than the RL.

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-1
Ground Water Sampling Results
M-5 Landfill Site - MW10 (May97-Sept05)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	11	12	13	14	15	16A	16B	17	18	19	20
WELL ID			M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10
Date Collected			11/18/1999	3/3/2000	5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001	6/5/2001	9/5/2001	10/4/2001	1/14/2002
ANALYTE / Lab ID			4955.04	5220.07	5445.04	5644.04	5903.04	778	16007.04	16166.04	16407.04	16491.04	20029.04
VOCs													
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	4	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	3	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs													
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	6.34	ND
Di-*n* -butyl phthalate	900	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND
*TICs	500	µg/L	43.0	5.0	31.0	94.0	79.0	NA	ND	ND	25.0	14.0	10.0
Pest/PCBs													
4,4'-DDE	0.1	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	0.003	ND
gamma-Chlordane	NLE	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	0.003	ND
Metals													
Antimony	20	µg/L	4.19	ND	2.86	ND	ND	NA	ND	ND	ND	ND	ND
Arsenic	8	µg/L	ND	ND	ND	ND	ND	NA	ND	2.93	3.72	ND	2.47
Barium	2000	µg/L	41.7	145.0	60.9	86.0	45.9	NA	189	97.5	28.5	553.0	181.0
Beryllium	20	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND
Cadmium	4	µg/L	ND	3.12	ND	ND	ND	NA	2.5	1.95	ND	**9.14**	2.81
Chromium	100	µg/L	4.68	6.39	8.43	ND	ND	NA	5.8	2.83	3.73	2.3	2.9
Copper	1000	µg/L	34.6	7.4	ND	7.39	ND	NA	11.0	16.7	17.1	10.4	5.11
Lead	10	µg/L	ND	**14.9**	8.36	3.56	ND	NA	ND	4.5	ND	3.33	3.42
Mercury	2	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	0.2	0.1
Nickel	100	µg/L	1.71	2.15	1.62	ND	ND	NA	ND	4.64	ND	9.96	ND
Selenium	50	µg/L	ND	ND	ND	ND	ND	NA	4.0	7.92	ND	4.58	11.4

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

** NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (January 7, 1993

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

J - Estimated Concentration observed is greater than the MDL and less than the RL.

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-1
Ground Water Sampling Results
M-5 Landfill Site - MW10 (May97-Sept05)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	21	22	22	23	24	25	26	27	28	29	29
WELL ID			M5MW10	M5MW10	MW10 Duplicate	M5MW10	M5MW10	M-5MW10	M-5MW10	M5MW10	M5MW10	M5MW10	MW10 Duplicate
Date Collected			4/23/2002	8/21/2002	8/21/2002	10/28/2002	1/22/2003	4/21/2003	7/30/2003	10/8/2003	1/14/2004	5/13/2004	5/13/2004
ANALYTE / Lab ID			20219.04	20594.04	20594.03	20760.04	30032.04	30180.04	30439.04	30638.04	40029.04	40359.04	40359.03
VOCs													
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	4	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.76 J
Methylene chloride	3	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND	3.0	ND	ND	ND	ND
SVOCs													
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA
Di-*n* -butyl phthalate	900	µg/L	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA
*TICs	500	µg/L	ND	22.0	18.0	14	7.0	10.0	9.0	NA	NA	NA	NA
Pest/PCBs													
4,4'-DDE	0.1	µg/L	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA
gamma-Chlordane	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA
Metals													
Antimony	20	µg/L	ND	ND	ND	ND	5.95 ER	ND	ND	NA	NA	NA	NA
Arsenic	8	µg/L	ND	ND	ND	4.68	2.65 ER	ND	ND	NA	NA	NA	NA
Barium	2000	µg/L	152.0	25.5	26.0	66.7	183	172	55.9	NA	NA	NA	NA
Beryllium	20	µg/L	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA
Cadmium	4	µg/L	ND	ND	ND	ND	1.13	1.49	0.545 ER	NA	NA	NA	NA
Chromium	100	µg/L	3.8	2.05	1.91	2.45	5.53 ER	1.46 ER	2.23 ER	NA	NA	NA	NA
Copper	1000	µg/L	10.1	14.9	11.8	10.8	6.26 ER	8.87 ER	3.78 ER	NA	NA	NA	NA
Lead	10	µg/L	3.07	ND	ND	4.45	3.39 ER	2.34 ER	ND	NA	NA	NA	NA
Mercury	2	µg/L	ND	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA
Nickel	100	µg/L	ND	2.21	1.5	ND	ND	3.59 ER	ND	NA	NA	NA	NA
Selenium	50	µg/L	8.46	6.97	7.63	7.86	ND	ND	6.64 ER	NA	NA	NA	NA

Notes:

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** NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (January 7, 1993

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J - Estimated Concentration observed is greater than the MDL and less than the RL.

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-1
Ground Water Sampling Results
M-5 Landfill Site - MW10 (May97-Sept05)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	30	31	32	32	33	33	34	34
WELL ID			M5MW10	M5MW10	M5MW10	MW10 Duplicate	M5MW10	MW10 Duplicate	M5MW10	MW10 Duplicate
Date Collected			8/20/2004	12/16/2004	3/15/2005	3/15/2005	6/3/2005	6/3/2005	9/16/2005	9/16/2005
ANALYTE / Lab ID			40614.04	40846.03	50154.04	50154.03	50284.04	50284.03	50473.03	50473.13
VOCs										
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	4	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	3	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs										
Bis(2-ethylhexyl) phthalate	30	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Di-*n* -butyl phthalate	900	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
*TICs	500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs										
4,4'-DDE	0.1	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	NLE	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Metals										
Antimony	20	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	8	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	20	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Lead	10	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	50	µg/L	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

** NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (January 7, 1993

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

J - Estimated Concentration observed is greater than the MDL and less than the RL.

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-1
Ground Water Sampling Results
M-5 Landfill Site - MW10 (Dec05-Jun07)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	35	35	36	36	37	37
WELL ID			M5MW10	MW10 Duplicate	M5MW10	MW10 Duplicate	M5MW10	MW10 Duplicate
Date Collected			12/21/2005	12/21/2005	3/1/2006	3/1/2006	5/5/2006	5/5/2006
ANALYTE / Lab ID			50655.04	50656.03	60094.04	60094.04	60209.04	60209.03
VOCs								
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND
Acetone	600	µg/L	ND	ND	ND	ND	ND	ND
Bromoform	4	µg/L	ND	ND	ND	ND	ND	ND
Methylene chloride	3	µg/L	ND	ND	0.32 J	ND	ND	ND
*TICs	500	µg/L	6.0	6.0	7.0	7.0	ND	ND
SVOCs								
Bis(2-ethylhexyl) phthalate	3	µg/L	NA	NA	NA	NA	NA	NA
*TICs	500	µg/L	NA	NA	NA	NA	NA	NA
Pest/PCBs								
4,4'-DDE	0.1	µg/L	NA	NA	NA	NA	NA	NA
gamma-Chlordane	NLE	µg/L	NA	NA	NA	NA	NA	NA
Heptachlor epoxide	0.2	µg/L	NA	NA	NA	NA	NA	NA
Metals								
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	NA	NA	NA	NA	NA	NA
Beryllium	20	µg/L	NA	NA	NA	NA	NA	NA
Cadmium	1	µg/L	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA

Notes:

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** NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-C (November 7, 2005)

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ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-1
Ground Water Sampling Results
M-5 Landfill Site - MW10 (Dec05-Jun07)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	38	38	39	40	40	41	41
WELL ID			M5MW10	MW10 Duplicate	M5MW10	M5MW10	MW10 Duplicate	M5MW10	MW10 Duplicate
Date Collected			9/13/2006	9/13/2006	11/17/2006	3/8/2007	3/8/2007	6/6/2007	6/6/2007
ANALYTE / Lab ID			60395.04	60395.03	60503.04	70088.04	70088.03	70204.04	70204.03
VOCs									
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND
Acetone	600	µg/L	ND	ND	ND	ND	ND	ND	ND
Bromoform	4	µg/L	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	3	µg/L	ND	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	15.0	8.0
SVOCs									
Bis(2-ethylhexyl) phthalate	3	µg/L	NA	NA	NA	NA	NA	NA	NA
*TICs	500	µg/L	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs									
4,4'-DDE	0.1	µg/L	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	NLE	µg/L	NA	NA	NA	NA	NA	NA	NA
Heptachlor epoxide	0.2	µg/L	NA	NA	NA	NA	NA	NA	NA
Metals									
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	NA	NA	NA	NA	NA	NA	NA
Beryllium	20	µg/L	NA	NA	NA	NA	NA	NA	NA
Cadmium	1	µg/L	NA	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA	NA

Notes:

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** NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-C (November 7, 2(

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

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ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-1
Ground Water Sampling Results
M-5 Landfill Site - MW10 (Aug07-Feb09)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	42	42	43	43	44	44
WELL ID			M5MW10	MW10 Duplicate	M5MW10	MW10 Duplicate	M5MW10	MW10 Duplicate
Date Collected			8/14/2007	8/14/2007	12/5/2007	12/5/2007	3/11/2008	3/11/2008
ANALYTE / Lab ID			70307.04	70307.03	70507.04	70507.03	80077.04	80077.03
VOCs								
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	NA
Acetone	6000	µg/L	ND	ND	ND	ND	ND	NA
Bromoform	4	µg/L	ND	ND	ND	ND	ND	NA
Methylene chloride	3	µg/L	ND	ND	ND	ND	ND	NA
*TICs	500	µg/L	ND	ND	ND	ND	ND	NA
SVOCs								
Bis(2-ethylhexyl) phthalate	3	µg/L	NA	NA	NA	NA	NA	NA
*TICs	500	µg/L	NA	NA	NA	NA	NA	NA
Pest/PCBs								
4,4'-DDE	0.1	µg/L	NA	NA	NA	NA	NA	NA
gamma-Chlordane	NLE	µg/L	NA	NA	NA	NA	NA	NA
Heptachlor epoxide	0.2	µg/L	NA	NA	NA	NA	NA	NA
Metals								
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA
Barium	6000	µg/L	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA

Notes:

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** NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-C (July 27, 2007)

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NLE-No Limit Established

Table 5-1
Ground Water Sampling Results
M-5 Landfill Site - MW10 (Aug07-Feb09)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	45	45	46	46	47	47
WELL ID			M5MW10	MW10 Duplicate	M5MW10	MW10 Duplicate	M5MW10	MW10 Duplicate
Date Collected			6/3/2008	6/3/2008	8/25/2008	8/25/2008	11/10/2008	11/10/2008
ANALYTE / Lab ID			80185.04	80185.03	80306.04	80306.03	80404.04	80404.03
VOCs								
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND
Bromoform	4	µg/L	ND	ND	ND	ND	ND	ND
Methylene chloride	3	µg/L	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND
SVOCs								
Bis(2-ethylhexyl) phthalate	3	µg/L	NA	NA	NA	NA	NA	NA
*TICs	500	µg/L	NA	NA	NA	NA	NA	NA
Pest/PCBs								
4,4'-DDE	0.1	µg/L	NA	NA	NA	NA	NA	NA
gamma-Chlordane	NLE	µg/L	NA	NA	NA	NA	NA	NA
Heptachlor epoxide	0.2	µg/L	NA	NA	NA	NA	NA	NA
Metals								
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA
Barium	6000	µg/L	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA

Notes:

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Table 5-2
Ground Water Sampling Results
M-5 Landfill Site - MW11 (May97-Sept05)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	1	2	3	4	5	6	6	7	8	9A	9A
WELL ID			M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	MW11 Duplicate	M5MW11	M5MW11	M5MW11	M5MW11
Date Collected			5/8/1997	8/8/1997	10/29/1997	2/28/1998	5/6/1998	8/4/1998	8/4/1998	10/27/1998	2/2/1999	4/13/1999	4/27/1999
ANALYTE / Lab ID			2516.01	2885.03	3116.03	3348.02	3552.02	3784.04	3784.05	4010.03	4237.04	4416.04	4444.04
VOCs													
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	2.92	4.53	ND	ND	ND	ND
Acetone	700	µg/L	ND	ND	ND	ND	ND	9.43	14.18	2.91	ND	ND	ND
Carbon disulfide	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	10	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	3	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl *tert*- butyl ether	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**62.85**	**57.74**	**64.96**	**39.33**	**24.39**	**18.37**	**18.87**	**52.64**	**5.16**	**33.38**	**12.84**
Trichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	ND	21.0	39.0	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs													
Bis(2-ethylhexyl) phthalate	3	µg/L	ND	ND	ND	ND	ND	ND	ND	5.28	ND	ND	ND
Di-*n* -butyl phthalate	700	µg/L	3.25	13.68	4.75	10.05 B	ND	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	**233.0**	62.0	61.0	44.0	ND	23.0	55.0	ND	ND	ND	14.0
Pest/PCBs													
gamma-Chlordane	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals													
Antimony	6	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	3	µg/L	3.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	6000	µg/L	12.23	ND	13.4	12.0	10.4	18.7	16.1	9.02	19.1	9.95	8.41
Beryllium	1	µg/L	0.16	0.14	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	ND	ND	ND	ND	1.0	1.35	1.04	ND	ND	ND	1.74
Chromium	70	µg/L	0.5	73.0	5.4	ND	ND	16.5	14.3	ND	3.34	1.72	1.39
Copper	1300	µg/L	4.0	4.0	16.0	17.0	6.8	3.37	ND	7.86	ND	8.28	5.55
Lead	5	µg/L	ND	ND	8.0	ND	ND	2.38	ND	ND	ND	ND	ND
Mercury	2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	0.18	ND	ND
Nickel	100	µg/L	ND	ND	3.9	4.9	4.3	3.19	2.48	3.87	2.94	2.62	2.28
Selenium	40	µg/L	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

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**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (January 7, 1993)

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NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-2
Ground Water Sampling Results
M-5 Landfill Site - MW11 (May97-Sept05)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	10	11	12	13	14	14	15	15	16A	16B	17
WELL ID			M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	MW11 Duplicate	M5MW11	MW11 Duplicate	M5MW11	M5MW11	M5MW11
Date Collected			9/13/1999	11/18/1999	3/3/2000	5/31/2000	8/21/2000	8/21/2000	12/11/2000	12/11/2000	2/13/2001	3/19/2001	6/5/2001
ANALYTE / Lab ID			4786.07	4955.05	5220.06	5445.05	5644.05	5644.03	5903.05	5903.03	779	1600705	16166.05
VOCs													
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	7.89	9.66	ND	ND	ND
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	14.91	16.53	ND	ND	ND
Carbon disulfide	NLE	µg/L	ND	ND	ND	ND	ND	ND	2.84	2.68	ND	ND	ND
cis -1,2-Dichloroethene	10	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	3	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl *tert*- butyl ether	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**49.25**	**74.12**	**30.62**	**13.38**	**18.79**	**19.64**	**18.86**	**17.98**	**12.42**	**11.01**	**11.27**
Trichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs													
Bis(2-ethylhexyl) phthalate	3	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND
Di-*n* -butyl phthalate	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND
*TICs	500	µg/L	ND	65.0	5.0	6.0	83.0	9.0	**251.0**	121.0	NA	ND	ND
Pest/PCBs													
gamma-Chlordane	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND
Metals													
Antimony	6	µg/L	ND	ND	ND	ND	3.36	3.02	ND	ND	NA	ND	ND
Arsenic	3	µg/L	ND	ND	ND	ND	ND	ND	3.14	3.18	NA	ND	5.06
Barium	6000	µg/L	11.0	0.649	12.2	5.7	18.9	20.0	14.4	17.6	NA	13.0	14.2
Beryllium	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND
Cadmium	4	µg/L	0.556	ND	ND	ND	ND	0.572	ND	ND	NA	0.7	1.2
Chromium	70	µg/L	2.11	ND	ND	2.72	ND	ND	4.63	4.22	NA	3.1	1.46
Copper	1300	µg/L	4.28	8.54	ND	ND	108.0	37.2	ND	ND	NA	8.0	8.21
Lead	5	µg/L	ND	ND	ND	ND	1.34	1.24	ND	ND	NA	ND	ND
Mercury	2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND
Nickel	100	µg/L	2.62	ND	3.0	3.01	6.05	11.3	ND	ND	NA	9.0	6.71
Selenium	40	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	8.39

Notes:

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**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (January 7, 1993)

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Table 5-2
Ground Water Sampling Results
M-5 Landfill Site - MW11 (May97-Sept05)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	18	19	20	21	22	23	24	25	26	27	28
WELL ID			M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11
Date Collected			9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002	10/28/2002	1/22/2003	4/21/2003	7/30/2003	10/8/2003	1/14/2004
ANALYTE / Lab ID			16407.05	16491.05	20029.05	20219.05	20594.05	20760.05	30032.05	30180.05	30439.05	30638.05	40029.05
VOCs													
2-Butanone	300	µg/L	ND	ND	ND	ND	**370.61**	ND	ND	ND	ND	**448.97**	ND
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.91	ND
Carbon disulfide	NLE	µg/L	ND	ND	ND	ND	9.0	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	10	µg/L	6.64	ND	ND	ND	7.39	ND	ND	ND	ND	5.39	1.56 J
Methylene Chloride	3	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl *tert*- butyl ether	NLE	µg/L	ND	ND	ND	ND	5.9	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**6.11**	**15.13**	**19.04**	**14.43**	**8.9**	**8.14**	**5.2**	**4.5**	**5.74**	**1.08 J**	**2.01**
Trichloroethene	1	µg/L	**1.28**	**1.05**	**1.4**	ND	ND	ND	**1.06 J**	ND	**1.42 J**	0.88 J	0.91 J
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.0	ND
SVOCs													
Bis(2-ethylhexyl) phthalate	3	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
Di-*n* -butyl phthalate	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
*TICs	500	µg/L	ND	4.0	7.0	ND	**381.0**	15.0	22.0	9.0	9.0	NA	NA
Pest/PCBs													
gamma-Chlordane	NLE	µg/L	ND	0.002	ND	ND	ND	ND	ND	ND	ND	NA	NA
Metals													
Antimony	6	µg/L	ND	ND	ND	3.21	ND	2.23	ND	ND	ND	NA	NA
Arsenic	3	µg/L	**11.8**	7.87	4.1	4.89	**9.25**	3.04	2.6 ER	2.8 ER	4.12 ER	NA	NA
Barium	6000	µg/L	6.55	10.2	11.0	9.09	5.82	15.4	5.68 ER	6.33 ER	8.91	NA	NA
Beryllium	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
Cadmium	4	µg/L	1.52	**5.95**	**10.8**	ND	ND	ND	ND	0.51 ER	0.759 ER	NA	NA
Chromium	70	µg/L	2.04	2.45	2.04	2.03	2.82	2.26	2.49 ER	1.75 ER	3.03 ER	NA	NA
Copper	1300	µg/L	68.4	2.7	2.25	3.17	ND	ND	ND	1.15 ER	1.54 ER	NA	NA
Lead	5	µg/L	6.36	ND	ND	ND	ND	1.84	ND	ND	0.804 ER	NA	NA
Mercury	2	µg/L	0.2	0.1	ND	ND	ND	ND	ND	ND	ND	NA	NA
Nickel	100	µg/L	4.1	2.17	3.85	1.75	ND	ND	ND	1.27 ER	2.78 ER	NA	NA
Selenium	40	µg/L	ND	ND	7.05	6.39	7.88	5.26	ND	ND	ND	NA	NA

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

J-Estimated Concentration observed greater than the MDL and less than the RL.

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-2
Ground Water Sampling Results
M-5 Landfill Site - MW11 (May97-Sept05)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	29	30	31	32	32	33	34
WELL ID			M5MW11	M5MW11	M5MW11	M5MW11	MW11 Duplicate	M5MW11	M5MW11
Date Collected			5/13/2004	8/20/2004	12/15/2004	3/14/2005	3/14/2006	6/3/2005	9/16/2005
ANALYTE / Lab ID			40359.05	40614.05	40845.04	50152.04	50152.03	50284.05	50473.04
VOCs									
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	10	µg/L	ND	2.29	ND	0.61 J	0.59 J	ND	5.66
Methylene Chloride	3	µg/L	ND	ND	ND	ND	ND	ND	ND
Methyl *tert*- butyl ether	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**3.1**	**2.05**	**3.05**	**2.3**	**2.38**	**2.86**	ND
Trichloroethene	1	µg/L	**1.2 J**	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND	ND
SVOCs									
Bis(2-ethylhexyl) phthalate	3	µg/L	NA	NA	NA	NA	NA	NA	NA
Di-*n* -butyl phthalate	700	µg/L	NA	NA	NA	NA	NA	NA	NA
*TICs	500	µg/L	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs									
gamma-Chlordane	NLE	µg/L	NA	NA	NA	NA	NA	NA	NA
Metals									
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA	NA
Barium	6000	µg/L	NA	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA	NA

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

J-Estimated Concentration observed greater than the MDL and less than the RL.

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-2
Ground Water Sampling Results
M-5 Landfill Site - MW11 (Dec05-Jun07)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	35	36	37	38	39	40	41
WELL ID			M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11
Date Collected			12/21/2005	3/1/2006	5/5/2006	9/13/2006	11/17/2006	3/8/2007	6/6/2007
ANALYTE / Lab ID			50655.05	60094.05	60209.05	60395.05	60503.05	70087.04	70204.05
VOCs									
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	700	µg/L	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	70	µg/L	0.41 J	0.61 J	ND	ND	0.36 J	ND	ND
Methylene Chloride	3	µg/L	ND	0.21	ND	ND	ND	ND	ND
Methyl *tert*- butyl ether	70	µg/L	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	0.72 J	**2.04**	ND	**7.4**	**4.57**	**1.5 J**	**3.83**
Trichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	6.0	7.0	ND	ND	ND	ND	ND
SVOCs									
Bis(2-ethylhexyl) phthalate	3	µg/L	NA	NA	NA	NA	NA	NA	NA
Di-*n* -butyl phthalate	700	µg/L	NA	NA	NA	NA	NA	NA	NA
*TICs	500	µg/L	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs									
gamma-Chlordane	NLE	µg/L	NA	NA	NA	NA	NA	NA	NA
Metals									
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	NA	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA	NA

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-C (November 7, 2005)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

J-Estimated Concentration observed greater than the MDL and less than the RL.

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-2
Ground Water Sampling Results
M-5 Landfill Site - MW11 (Aug07-Feb09)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	42	43	44	45	46	47
WELL ID			M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11
Date Collected			8/14/2007	12/5/2007	3/11/2008	6/3/2008	8/25/2008	11/10/2008
ANALYTE / Lab ID			70307.05	70507.05	80077.05	80185.05	80306.05	80404.05
VOCs								
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND
Carbon disulfide	700	µg/L	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	70	µg/L	0.7 J	ND	0.4 J	0.53 J	8.4	6.93
Methylene Chloride	3	µg/L	ND	ND	ND	ND	ND	ND
Methyl *tert*- butyl ether	70	µg/L	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**5.24**	ND	**2.02**	**2.93**	ND	**2.47**
Trichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND
SVOCs								
Bis(2-ethylhexyl) phthalate	3	µg/L	NA	NA	NA	NA	NA	NA
Di-*n* -butyl phthalate	700	µg/L	NA	NA	NA	NA	NA	NA
*TICs	500	µg/L	NA	NA	NA	NA	NA	NA
Pest/PCBs								
gamma-Chlordane	NLE	µg/L	NA	NA	NA	NA	NA	NA
Metals								
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA
Barium	6000	µg/L	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-C (July 27, 2007)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

J-Estimated Concentration observed greater than the MDL and less than the RL.

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-3
Ground Water Sampling Results
M-5 Landfill Site - MW12 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	9A	9B	10	11	12	13	14	15	16A	16B	17
WELL ID			M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12
Date Collected			4/13/1999	4/27/1999	9/13/1999	11/18/1999	3/6/2000	5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001	6/5/2001
ANALYTE / Lab ID			4416.05	4444.05	4786.06	4955.06	5222.02	5445.06	5644.06	5903.06	780	16007.06	16166.06
VOCs													
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs													
4-Methylphenol	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	ND	ND	ND	ND	ND	1.87	NA	ND	ND
*TICs	500	µg/L	21.0	25.0	4.0	10.0	12.0	15.0	162.0	177.0	NA	**160.0**	ND
Metals													
Antimony	20	µg/L	ND	ND	ND	2.97	ND	ND	ND	ND	NA	ND	ND
Arsenic	8	µg/L	ND	3.54	ND	ND	ND	ND	ND	ND	NA	ND	ND
Barium	2000	ug/L	103.0	67.8	243	17.1	21.5	4.04	15.6	11.3	NA	21.1	17.0
Beryllium	20	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND
Cadmium	4	µg/L	0.954	3.97	0.788	ND	ND	ND	ND	ND	NA	1.4	0.782
Chromium	100	µg/L	14.8	31.6	13.3	6.06	17.1	15.9	ND	1.88	NA	8.2	2.75
Copper	1000	µg/L	11.1	11.0	ND	19.2	3.71	82.6	ND	ND	NA	6.0	3.89
Lead	10	µg/L	7.66	**16.2**	ND	ND	6.78	**19.3**	1.83	4.85	NA	ND	ND
Mercury	2	µg/L	ND	ND	ND	0.1	0.2	ND	ND	ND	NA	ND	ND
Nickel	100	µg/L	3.79	4.43	ND	0.594	6.29	5.28	ND	ND	NA	ND	3.31
Selenium	50	µg/L	ND	ND	ND	ND	3.37	ND	ND	ND	NA	ND	13.6
Thallium	10	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND

Notes:

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**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (January 7, 1993)

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ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-3
Ground Water Sampling Results
M-5 Landfill Site - MW12 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	18	19	20	21	22	23	24	25	26	27	28
WELL ID			M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12
Date Collected			9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002	10/28/2002	1/22/2003	4/21/2003	7/30/2003	10/8/2003	1/14/2004
ANALYTE / Lab ID			16407.06	16491.06	20029.06	20219.06	20594.06	20760.06	30032.06	30180.06	30439.06	30638.06	40029.06
VOCs													
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs													
4-Methylphenol	NLE	µg/L	ND	ND	ND	ND	ND	1.3	ND	ND	ND	NA	NA
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	ND	ND	ND	ND	1.3 J	ND	ND	NA	NA
*TICs	500	µg/L	74.0	14.0	28.0	4.0	9.0	15.0	21.0	16.0	12.0	NA	NA
Metals													
Antimony	20	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
Arsenic	8	µg/L	ND	ND	ND	2.7	3.05	ND	ND	ND	ND	NA	NA
Barium	2000	ug/L	39.8	92.0	31.4	34.0	24.8	11.6	24.6	29.3	56.8	NA	NA
Beryllium	20	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	0.0923 ER	NA	NA
Cadmium	4	µg/L	0.651	**9.98**	0.71	ND	ND	ND	0.646 ER	1.07	1.01 ER	NA	NA
Chromium	100	µg/L	8.87	2.28	5.28	6.75	9.97	1.95	7.71 ER	6.11 ER	13.3	NA	NA
Copper	1000	µg/L	18.0	3.42	155	5.94	7.24	5.87	13.3	7.5 ER	3.01 ER	NA	NA
Lead	10	µg/L	4.43	1.3	**16.8**	2.64	2.4	2.12	4.16 ER	1.72 ER	2.15 ER	NA	NA
Mercury	2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
Nickel	100	µg/L	ND	ND	7.06	ND	ND	ND	ND	ND	1.47 ER	NA	NA
Selenium	50	µg/L	ND	ND	13.1	9.6	13.3	10.6	4.1 ER	ND	ND	NA	NA
Thallium	10	µg/L	ND	ND	5.53	ND	ND	ND	ND	ND	ND	NA	NA

Notes:

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NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-3
Ground Water Sampling Results
M-5 Landfill Site - MW12 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	29	30	31	32	33	34
WELL ID			M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12
Date Collected			5/13/2004	8/20/2004	12/16/2004	3/15/2005	6/3/2005	9/16/2005
ANALYTE / Lab ID			40359.06	40614.06	40846.04	50154.05	50284.06	50473.05
VOCs								
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND
Acetone	700	µg/L	ND	3.0	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	ND	14.0	ND	ND	ND	ND
SVOCs								
4-Methylphenol	NLE	µg/L	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl) phthalate	30	µg/L	NA	NA	NA	NA	NA	NA
*TICs	500	µg/L	NA	NA	NA	NA	NA	NA
Metals								
Antimony	20	µg/L	NA	NA	NA	NA	NA	NA
Arsenic	8	µg/L	NA	NA	NA	NA	NA	NA
Barium	2000	ug/L	NA	NA	NA	NA	NA	NA
Beryllium	20	µg/L	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA
Chromium	100	µg/L	NA	NA	NA	NA	NA	NA
Copper	1000	µg/L	NA	NA	NA	NA	NA	NA
Lead	10	µg/L	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA
Selenium	50	µg/L	NA	NA	NA	NA	NA	NA
Thallium	10	µg/L	NA	NA	NA	NA	NA	NA

Notes:

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**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (January 7, 1993)

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ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-3
Ground Water Sampling Results
M-5 Landfill Site - MW12 (Dec05-Jun07)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	35	36	37	38	39	40	41
WELL ID			M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12
Date Collected			12/21/2005	3/1/2006	5/5/2006	9/13/2006	11/17/2006	3/8/2007	6/6/2007
ANALYTE / Lab ID			50655.06	60094.06	60209.06	60395.06	60503.06	70088.05	70204.06
VOCs									
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	ND	ND	**2.75**	ND	ND	ND	ND
*TICs	500	µg/L	6.0	7.0	ND	ND	ND	ND	ND
SVOCs									
4-Methylphenol	NLE	µg/L	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl) phthalate	3	µg/L	NA	NA	NA	NA	NA	NA	NA
*TICs	500	µg/L	NA	NA	NA	NA	NA	NA	NA
Metals									
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA	NA
Barium	2000	ug/L	NA	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA	NA

Notes:

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ER - Estimated Result

J-Estimated Concentration observed is greater than the MDL and less than the RL.

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-3
Ground Water Sampling Results
M-5 Landfill Site - MW12 (Aug07-Feb09)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	42	43	44	45	46	47
WELL ID			M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12
Date Collected			8/14/2007	12/5/2007	3/11/2008	6/3/2008	8/25/2008	11/10/2008
ANALYTE / Lab ID			70307.06	70507.06	80077.06	80185.06	80306.06	80404.06
VOCs								
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND
SVOCs								
4-Methylphenol	NLE	µg/L	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl) phthalate	3	µg/L	NA	NA	NA	NA	NA	NA
*TICs	500	µg/L	NA	NA	NA	NA	NA	NA
Metals								
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA
Barium	6000	ug/L	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-C (July 27, 2007)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

J-Estimated Concentration observed is greater than the MDL and less than the RL.

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-4
Ground Water Sampling Results
M-5 Landfill Site - MW13 (Oct98-Sept05)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	7A	7B	7B	7B	8	9A	9B	10	11	12	13
WELL ID			M5MW13	M5MW13	MW13 Duplicate	M5MW13[(1)]	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13
Date Collected			10/7/1998	10/21/1998	10/21/1998	10/26/1998	2/2/1999	4/13/1999	4/27/1999	9/13/1999	11/18/1999	3/6/2000	5/31/2000
ANALYTE / Lab ID			3967.03	3994.06	3994.07	4006.01	4237.05	4416.06	4444.06	4786.05	4955.07	5222.03	5445.07
VOCs													
2-Butanone	300	µg/L	13.66	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Acetone	700	µg/L	9.0	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Methyl *tert*- butyl ether	NLE	µg/L	ND	ND	ND	NA	ND	ND	1.35	ND	ND	ND	ND
*TICs	500	µg/L	29.0	19.0	19.0	NA	ND	ND	ND	ND	ND	ND	ND
SVOCs													
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	ND	ND	NA	ND	23.0	ND	21.0	5.0	13.0	27.0	87.0
Pest/PCBs													
4,4'-DDE	0.1	µg/L	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
gamma-Chlordane	0.5	µg/L	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Metals													
Antimony	20	µg/L	ND	ND	ND	NA	ND	ND	ND	2.61	ND	ND	ND
Arsenic	8	µg/L	**10.0**	3.22	3.38	NA	ND	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	224.0	157.0	111.0	NA	112.0	24.2	48.3	193.0	51.8	220.0	67.6
Beryllium	20	µg/L	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	ND	ND	ND	NA	1.37	ND	2.06	0.716	0.736	ND	ND
Chromium	100	µg/L	28.5	5.87	6.49	NA	13.2	3.4	10.6	14.1	13.4	10.8	7.31
Copper	1000	µg/L	40.0	ND	ND	NA	ND	5.0	4.27	7.59	15.2	ND	ND
Lead	10	µg/L	7.0	ND	ND	NA	5.45	2.37	3.6	ND	3.04	3.62	ND
Mercury	2	µg/L	0.3	ND	ND	NA	0.16	ND	ND	ND	0.1	ND	ND
Nickel	100	µg/L	5.7	ND	ND	NA	8.54	0.743	1.05	2.75	1.8	4.7	1.79
Selenium	50	µg/L	ND	ND	ND	NA	ND	ND	ND	ND	3.52	ND	ND

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (January 7, 1993)

(1)- 4006.01 is the ABN resample of 3994.06 due to laboratory breakage.

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

J-Estimated Concentration observed greater than the MDL and less than the RL.

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-4
Ground Water Sampling Results
M-5 Landfill Site - MW13 (Oct98-Sept05)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	14	15	16A	16B	17	18	19	20	21	22	23
WELL ID			M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13
Date Collected			8/21/2000	12/11/2000	2/13/2001	3/19/2001	6/5/2001	9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002	10/28/2002
ANALYTE / Lab ID			5644.07	5903.07	781	1600707	16166.07	16407.07	16491.07	20029.07	20219.07	20594.07	20760.07
VOCs													
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl *tert*- butyl ether	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs													
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	1.45
*TICs	500	µg/L	64.0	391.0	NA	ND	ND	13.0	**217.0**	4.0	5.0	18.0	15.0
Pest/PCBs													
4,4'-DDE	0.1	µg/L	ND	ND	NA	ND	ND	0.003	ND	ND	ND	ND	ND
gamma-Chlordane	0.5	µg/L	ND	ND	NA	ND	ND	ND	0.004	ND	ND	ND	ND
Metals													
Antimony	20	µg/L	3.33	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	ND	ND	NA	ND	5.06	4.54	ND	ND	2.99	ND	ND
Barium	2000	µg/L	65.6	77.5	NA	154	70.0	71.9	236.0	216.0	150.0	62.7	105.0
Beryllium	20	µg/L	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	ND	ND	NA	2.2	1.3	0.606	**7.55**	1.02	ND	ND	ND
Chromium	100	µg/L	ND	ND	NA	6.7	2.26	10.2	1.84	2.69	6.75	4.33	1.94
Copper	1000	µg/L	ND	ND	NA	9.0	2.18	13.3	65.4	5.79	113	19.0	ND
Lead	10	µg/L	2.49	**11.7**	NA	ND	ND	5.36	**284.0**	1.81	**11.1**	ND	2.02
Mercury	2	µg/L	ND	ND	NA	ND	ND	0.1	ND	ND	ND	0.11	ND
Nickel	100	µg/L	2.11	ND	NA	ND	3.98	ND	ND	ND	3.85	ND	ND
Selenium	50	µg/L	ND	ND	NA	6.0	8.56	ND	ND	14.1	6.94	7.38	7.1

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (January 7, 1993)

(1)- 4006.01 is the ABN resample of 3994.06 due to laboratory breakage.

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

J-Estimated Concentration observed greater than the MDL and less than the RL.

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-4
Ground Water Sampling Results
M-5 Landfill Site - MW13 (Oct98-Sept05)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	24	25	26	27	28	29	30	31	32	33	34
WELL ID			M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13
Date Collected			1/22/2003	4/21/2003	7/30/2003	10/8/2003	1/14/2004	5/13/2004	8/20/2004	12/16/2004	3/15/2005	6/3/2005	9/16/2005
ANALYTE / Lab ID			30032.07	30180.07	30439.07	30638.07	40029.07	40359.07	40614.07	40846.05	50154.06	50284.07	50473.06
VOCs													
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	700	µg/L	2.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl *tert*- butyl ether	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs													
Bis(2-ethylhexyl) phthalate	30	µg/L	1.14 J	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
*TICs	500	µg/L	122.0	10.0	14.0	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs													
4,4'-DDE	0.1	µg/L	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	0.5	µg/L	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Metals													
Antimony	20	µg/L	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	8	µg/L	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	132.0	133.0	142.0	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	20	µg/L	ND	ND	0.375 ER	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	1.64	1.54	0.99 ER	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	100	µg/L	3.56 ER	1.64 ER	2.55 ER	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1000	µg/L	2.52 ER	ND	4.84 ER	NA	NA	NA	NA	NA	NA	NA	NA
Lead	10	µg/L	3.26 ER	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	ND	ND	15.4	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	50	µg/L	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (January 7, 1993)

(1)- 4006.01 is the ABN resample of 3994.06 due to laboratory breakage.

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

J-Estimated Concentration observed greater than the MDL and less than the RL.

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-4
Ground Water Sampling Results
M-5 Landfill Site - MW13 (Dec05-Jun07)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	35	36	37	38	39	40	41
WELL ID			M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13
Date Collected			12/21/2005	3/1/2006	5/5/2006	9/13/2006	11/17/2006	3/8/2007	6/6/2007
ANALYTE / Lab ID			50655.07	60094.07	60209.07	60395.07	60503.07	70088.06	70204.07
VOCs									
Acetone	6000	µg/L	ND	ND	ND	ND	ND	2.07	ND
*TICs	500	µg/L	7.0	6.0	ND	ND	ND	ND	14.0
SVOCs									
Bis(2-ethylhexyl) phthalate	3	µg/L	NA	NA	NA	NA	NA	NA	NA
*TICs	500	µg/L	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs									
4,4'-DDE	0.1	µg/L	NA	NA	NA	NA	NA	NA	NA
gamma-Chlordane	0.5	µg/L	NA	NA	NA	NA	NA	NA	NA
Metals									
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	NA	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA	NA

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-C (November 7, 2005)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

J-Estimated Concentration observed greater than the MDL and less than the RL.

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-4
Ground Water Sampling Results
M-5 Landfill Site - MW13 (Aug07-Feb09)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	42	43	44	45	46	47
WELL ID			M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13
Date Collected			8/14/2007	12/5/2007	3/11/2008	6/3/2008	8/25/2008	11/10/2008
ANALYTE / Lab ID			70307.07	70507.07	80077.07	80185.07	80306.07	80404.07
VOCs								
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND
SVOCs								
Bis(2-ethylhexyl) phthalate	3	µg/L	NA	NA	NA	NA	NA	NA
*TICs	500	µg/L	NA	NA	NA	NA	NA	NA
Pest/PCBs								
4,4'-DDE	0.1	µg/L	NA	NA	NA	NA	NA	NA
gamma-Chlordane	0.5	µg/L	NA	NA	NA	NA	NA	NA
Metals								
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA
Barium	6000	µg/L	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-C (July 27, 2007)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

J-Estimated Concentration observed greater than the MDL and less than the RL.

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-5
Ground Water Sampling Results
M-5 Landfill Site - MW14 (Oct98-Sept05)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	7A	7B	8	9A	9B	10	10	11	11	12	13
WELL ID			M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	MW14 Duplicate	M5MW14	MW14 Duplicate	M5MW14	M5MW14
Date Collected			10/7/1998	10/23/1998	2/2/1999	4/13/1999	4/27/1999	9/13/1999	9/13/1999	11/18/1999	11/18/1999	3/6/2000	5/31/2000
ANALYTE / Lab ID			3967.04	4001.03	4237.06	4416.07	4444.07	4786.04	4786.03	4955.08	4955.03	5222.04	5445.08
VOCs													
2-Butanone	300	µg/L	9.08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	700	µg/L	6.34	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	6.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs													
*TICs	500	µg/L	ND	ND	ND	ND	5.0	36.0	11.0	24.0	56.0	19.0	36.0
Metals													
Antimony	20	µg/L	ND	ND	ND	ND	ND	ND	3.46	ND	ND	ND	ND
Arsenic	8	µg/L	4.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	160.0	196.0	108.0	81.8	33.9	22.4	22.4	22.1	21.6	93.1	133.0
Beryllium	20	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	0.7	ND	0.886	0.67	1.15	0.655	ND	0.779	ND	ND	ND
Chromium	100	µg/L	12.1	5.25	5.8	9.65	3.37	3.31	3.47	2.92	3.02	5.06	4.45
Copper	1000	µg/L	5.0	ND	5.72	7.48	ND	10.5	27.2	9.21	13.9	ND	ND
Lead	10	µg/L	ND	ND	**17.6**	6.77	ND	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	ND	ND	0.17	ND	ND	ND	ND	ND	0.2	ND	ND
Nickel	100	µg/L	11.8	ND	3.35	2.7	ND	ND	ND	1.27	ND	3.66	5.55
Selenium	50	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	ND	ND	ND	ND	3.44	ND	ND	ND	6780	ND	ND

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-5
Ground Water Sampling Results
M-5 Landfill Site - MW14 (Oct98-Sept05)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	14	15	16A	16B	17	18	19	20	21	22	23
WELL ID			M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14
Date Collected			8/21/2000	12/11/2000	2/13/2001	3/19/2001	6/5/2001	9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002	10/28/2002
ANALYTE / Lab ID			5644.08	5903.08	782	1600708	16166.08	16407.08	16491.08	20029.08	20219.08	20594.08	20760.08
VOCs													
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs													
*TICs	500	µg/L	108.0	**165.0**	NA	ND	ND	6.0	18.0	15.0	12.0	15.0	19.0
Metals													
Antimony	20	µg/L	4.79	2.23	NA	ND	ND	ND	ND	ND	3.18	ND	ND
Arsenic	8	µg/L	ND	ND	NA	ND	ND	ND	ND	ND	2.56	ND	ND
Barium	2000	µg/L	34.3	104.0	NA	33.4	32.6	34.4	38.3	67.8	87.6	28.2	50.4
Beryllium	20	µg/L	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	ND	ND	NA	ND	ND	ND	**7.32**	ND	ND	ND	ND
Chromium	100	µg/L	ND	1.53	NA	2.6	0.986	1.04	1.16	1.99	2.4	ND	1.97
Copper	1000	µg/L	34.6	ND	NA	8.0	ND	8.84	10.5	2.82	3.52	11.8	ND
Lead	10	µg/L	**12.0**	ND	NA	ND	ND	ND	ND	ND	ND	1.81	ND
Mercury	2	µg/L	ND	0.44	NA	ND	0.19	0.1	0.1	ND	ND	ND	ND
Nickel	100	µg/L	4.85	ND	NA	ND	3.43	ND	ND	ND	1.59	ND	3.7
Selenium	50	µg/L	ND	ND	NA	ND	10.6	ND	ND	7.41	4.94	4.95	8.11
Thallium	10	µg/L	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-5
Ground Water Sampling Results
M-5 Landfill Site - MW14 (Oct98-Sept05)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	24	25	26	27	28	29	30	31	32	33	34
WELL ID			M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14
Date Collected			1/22/2003	4/21/2003	7/30/2003	10/8/2003	1/14/2004	5/13/2004	8/20/2004	12/16/2004	3/15/2005	6/3/2005	9/16/2005
ANALYTE / Lab ID			30032.08	30180.08	30439.08	30638.08	40029.08	40359.08	40614.08	40846.06	50154.07	50284.08	50473.07
VOCs													
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs													
*TICs	500	µg/L	20.0	17.0	22.0	NA	NA	NA	NA	NA	NA	NA	NA
Metals													
Antimony	20	µg/L	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	8	µg/L	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	217	210	75.5	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	20	µg/L	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	0.602 ER	1.15	ND	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	100	µg/L	2.35 ER	3.81 ER	ND	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1000	µg/L	2.96 ER	ND	1.22 ER	NA	NA	NA	NA	NA	NA	NA	NA
Lead	10	µg/L	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	1.46 ER	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	50	µg/L	ND	ND	7.05 ER	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	10	µg/L	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-5
Ground Water Sampling Results
M-5 Landfill Site - MW14 (Dec05-Jun07)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	35	36	37	38	39	40	41
WELL ID			M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14
Date Collected			12/21/2005	3/1/2006	5/5/2006	9/13/2006	11/17/2006	3/8/2007	6/6/2007
ANALYTE / Lab ID			50655.08	60094.08	60209.08	60395.08	60503.08	70088.07	70204.08
VOCs									
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	5.0	6.0	ND	ND	ND	ND	ND
SVOCs									
*TICs	500	µg/L	NA	NA	NA	NA	NA	NA	NA
Metals									
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	NA	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA	NA
Thallium	2	µg/L	NA	NA	NA	NA	NA	NA	NA

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-C (November 7, 2005)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-5
Ground Water Sampling Results
M-5 Landfill Site - MW14 (Aug07-Feb09)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	42	43	44	45	46	47
WELL ID			M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14
Date Collected			8/14/2007	12/5/2007	3/11/2008	6/3/2008	8/25/2008	11/10/2008
ANALYTE / Lab ID			70307.08	70507.08	80077.08	80185.08	80306.08	80404.08
VOCs								
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND
SVOCs								
*TICs	500	µg/L	NA	NA	NA	NA	NA	NA
Metals								
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA
Barium	6000	µg/L	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA
Thallium	2	µg/L	NA	NA	NA	NA	NA	NA

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-C (July 27, 2007)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-6
Ground Water Sampling Results
M-5 Landfill Site - MW15 (Feb99-Jul03)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	7A	7A	7B	8	8	8	9A	9B	10	11	12
WELL ID			M5MW15	MW15 Duplicate	M5MW15	M5MW15	MW15 Duplicate	M5MW15 [(1)]	M5MW15	M5MW15	M5MW15	M5MW15	M5MW15
Date Collected			10/7/1998	10/7/1998	10/23/1998	2/2/1999	2/2/1999	2/4/1999	4/14/1999	4/28/1999	9/14/1999	11/18/1999	3/3/2000
Date Collected			3967.05	3697.06	4001.04	4237.07	4237.08	4246.01	4419.04	4447.06	4788.05	4955.09	5220.1
VOCs													
2-Butanone	300	µg/L	2.97	2.99	3.18	ND	ND	NA	ND	ND	ND	ND	ND
Bromoform	4	µg/L	3.54	ND	4.87	ND	ND	NA	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	**2.15**	ND	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND
SVOCs													
*TICs	500	µg/L	ND	ND	ND	26.0	44.0	NA	15.0	16.0	5.0	11.0	5.0
Pest/PCBs													
4,4'-DDT	0.1	µg/L	ND	0.03	ND	ND	ND	ND	ND	ND	ND	ND	ND
alpha-BHC	0.02	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
delta-BHC	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals													
Antimony	20	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND
Arsenic	8	µg/L	ND	3.0	ND	ND	ND	NA	ND	ND	ND	ND	ND
Barium	2000	µg/L	33.4	36.7	23.5	31.2	26.1	NA	184.0	180.0	153.0	164.0	152.0
Beryllium	20	µg/L	ND	ND	ND	ND	ND	NA	0.734	0.788	1.37	1.1	0.862
Cadmium	4	µg/L	0.7	2.8	ND	ND	ND	NA	ND	1.98	1.13	ND	0.717
Chromium	100	µg/L	10.8	18.0	1.16	5.25	4.37	NA	2.98	1.97	5.3	2.72	ND
Copper	1000	µg/L	ND	ND	ND	8.6	ND	NA	ND	ND	5.18	7.64	6.47
Lead	10	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND
Mercury	2	µg/L	0.2	0.2	ND	0.22	0.27	NA	ND	0.27	ND	ND	ND
Nickel	100	µg/L	2.2	2.9	ND	1.96	0.562	NA	15.2	15.2	13.4	14.2	19.1
Selenium	50	µg/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND
Thallium	10	µg/L	5.0	5.0	ND	ND	ND	NA	ND	5.17	ND	ND	ND

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (January 7, 1993)

(1)- 4246.01 is the PCB/Pesticide resample of 4237.07

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-6
Ground Water Sampling Results
M-5 Landfill Site - MW15 (Feb99-Jul03)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	13	14	15	16A	16B	17	18	19	20	21	22
WELL ID			M5MW15	M5MW15	M5MW15	M5MW15	M5MW15	M5MW15	M5MW15	M5MW15	M5MW15	M5MW15	M5MW15
Date Collected			5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001	6/5/2001	9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002
Date Collected			5445.09	5644.09	5903.09	783	16007.09	16166.09	16407.09	16491.09	20029.09	20219.09	20594.09
VOCs													
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	4	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND	4.0	ND	ND	ND	ND
SVOCs													
*TICs	500	µg/L	15.0	92.0	**163.0**	NA	ND	ND	ND	ND	6.0	4.0	22.0
Pest/PCBs													
4,4'-DDT	0.1	µg/L	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
alpha-BHC	0.02	µg/L	ND	ND	ND	NA	ND	ND	ND	0.006	ND	ND	ND
delta-BHC	NLE	µg/L	ND	ND	ND	NA	ND	ND	ND	0.008	ND	ND	ND
Metals													
Antimony	20	µg/L	2.33	3.7	ND	NA	ND	ND	ND	ND	ND	3.09	ND
Arsenic	8	µg/L	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	2.87
Barium	2000	µg/L	124.0	149.0	129.0	NA	122.0	222.0	218.0	212.0	217.0	113.0	118.0
Beryllium	20	µg/L	1.03	1.35	1.16	NA	1.3	2.26	2.24	2.1	1.29	1.22	1.41
Cadmium	4	µg/L	ND	ND	ND	NA	0.6	0.528	ND	**6.02**	0.803	ND	ND
Chromium	100	µg/L	3.88	ND	ND	NA	2.9	2.27	6.92	3.6	2.04	1.78	0.633
Copper	1000	µg/L	ND	ND	ND	NA	20.0	ND	9.43	8.15	2.55	2.33	3.58
Lead	10	µg/L	ND	ND	ND	NA	ND	ND	1.64	3.22	ND	ND	ND
Mercury	2	µg/L	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	0.11
Nickel	100	µg/L	18.5	16.7	12.4	NA	25.0	36.0	23.9	21.5	21.3	19.4	16.2
Selenium	50	µg/L	ND	ND	ND	NA	ND	13.0	ND	ND	11.1	8.84	8.69
Thallium	10	µg/L	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (January 7, 1993)

(1)- 4246.01 is the PCB/Pesticide resample of 4237.07

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-6
Ground Water Sampling Results
M-5 Landfill Site - MW15 (Feb99-Jul03)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	23	24	25	26
WELL ID			M5MW15	M5MW15	M5MW15	M5MW15
Date Collected			10/28/2002	1/22/2003	4/21/2003	7/30/2003
Date Collected			20760.09	30032.09	30180.09	30439.09
VOCs						
2-Butanone	300	µg/L	ND	ND	ND	ND
Bromoform	4	µg/L	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	ND	ND	ND	ND
*TICs	500	µg/L	ND	ND	ND	ND
SVOCs						
*TICs	500	µg/L	16.0	24.0	11.0	35.0
Pest/PCBs						
4,4'-DDT	0.1	µg/L	ND	ND	ND	ND
alpha-BHC	0.02	µg/L	ND	ND	ND	ND
delta-BHC	NLE	µg/L	ND	ND	ND	ND
Metals						
Antimony	20	µg/L	ND	ND	ND	ND
Arsenic	8	µg/L	ND	ND	ND	ND
Barium	2000	µg/L	115.0	72.1	163.0	121.0
Beryllium	20	µg/L	1.4	1.14	2.22	2.28
Cadmium	4	µg/L	ND	ND	1.28	0.553 ER
Chromium	100	µg/L	1.25	1.01 ER	1.81 ER	2.09 ER
Copper	1000	µg/L	ND	ND	ND	0.563 ER
Lead	10	µg/L	1.32	ND	ND	ND
Mercury	2	µg/L	ND	ND	ND	ND
Nickel	100	µg/L	13.2	16.9	33.9	23.9
Selenium	50	µg/L	3.44	ND	ND	5.03 ER
Thallium	10	µg/L	ND	ND	ND	ND

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (January 7, 1993)

(1)- 4246.01 is the PCB/Pesticide resample of 4237.07

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-7
Ground Water Sampling Results
M-5 Landfill Site - MW16 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	9A	9B	10	10	11	12	13	14	15	16A	16B
WELL ID			M5MW16	M5MW16	M5MW16	MW16 Duplicate	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16
Date Collected			4/14/1999	4/28/1999	9/14/1999	9/14/1999	11/18/1999	3/3/2000	5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001
ANALYTE / Lab ID			4419.05	4447.07	4788.04	4788.03	4955.1	5220.09	5445.1	5644.10	5903.10	784	16007.10
VOCs													
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	10	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**96.37**	**8.35**	**639.74**	**745.75**	**54.42**	**37.76**	**27.79**	**20.36**	**23.2**	**14.84**	**17.88**
Trichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs													
4-Methylphenol	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND
*TICs	500	µg/L	10.0	4.0	8.0	5.0	16.0	5.0	6.0	97.0	86.0	NA	ND
Metals													
Antimony	20	µg/L	ND	ND	ND	4.16	ND	**61.9**	ND	ND	ND	NA	ND
Arsenic	8	µg/L	ND	4.11	ND	ND	3.28	**8.13**	ND	ND	3.61	NA	3.0
Barium	2000	µg/L	101	156	149	153	209	656.0	190.0	143.0	216.0	NA	195.0
Beryllium	20	µg/L	ND	ND	0.597	0.639	ND	ND	ND	ND	ND	NA	ND
Cadmium	4	µg/L	ND	2.62	**7.58**	1.16	0.615	1.74	ND	ND	ND	NA	1.3
Chromium	100	µg/L	8.33	8.43	37.4	39.3	1.72	**3830**	1.99	ND	ND	NA	15.1
Copper	1000	µg/L	ND	ND	12.5	25.1	4.87	ND	ND	ND	ND	NA	42.0
Lead	10	µg/L	ND	ND	ND	2.72	ND	ND	ND	ND	ND	NA	4.0
Mercury	2	µg/L	ND	ND	ND	ND	0.2	ND	ND	ND	ND	NA	ND
Nickel	100	µg/L	6.65	5.88	10.8	13.3	6.73	**24700**	8.11	6.59	1.43	NA	22.0
Selenium	50	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND
Thallium	10	µg/L	ND	5.17	ND	ND	ND	ND	ND	ND	ND	NA	ND

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

J-Estimated Concentration observed greater than the MDL and less than the RL.

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-7
Ground Water Sampling Results
M-5 Landfill Site - MW16 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	17	18	19	20	21	22	23	24	25	26	27
WELL ID			M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16
Date Collected			6/5/2001	9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002	10/28/2002	1/22/2003	4/21/2003	7/30/2003	10/8/2003
ANALYTE / Lab ID			16166.10	16407.10	16491.10	20029.10	20219.10	20594.10	20760.10	30032.10	30180.10	30439.10	30638.09
VOCs													
2-Butanone	300	µg/L	13.45	ND	ND	ND	ND	ND	2.59	ND	ND	ND	2.49
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	10	µg/L	ND	ND	ND	1.93	**69.44**	3.38	**103.82**	**22.02**	**16.12**	**20.3**	**68.16**
Tetrachloroethene	1	µg/L	**24.47**	**205.77**	**620.81**	**839.5**	**213.53**	**416.79**	**42.41**	**31.09**	**8.5**	**18.57**	**23.44**
Trichloroethene	1	µg/L	ND	ND	ND	**1.93**	**35.84**	ND	**2.23**	**1.36 J**	**2.16**	**5.61**	**15.5**
Vinyl chloride	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs													
4-Methylphenol	NLE	µg/L	ND	ND	ND	ND	ND	ND	7.99	ND	ND	ND	NA
*TICs	500	µg/L	ND	5.0	ND	ND	5.0	33.0	20.0	17.0	10.0	26.0	NA
Metals													
Antimony	20	µg/L	ND	7.58	ND	ND	ND	ND	ND	ND	ND	ND	NA
Arsenic	8	µg/L	7.04	7.34	7.68	3.16	ND	4.02	**27.3**	**12.6**	**13.6**	4.38 ER	NA
Barium	2000	µg/L	188.0	287.0	309.0	356.0	257.0	549.0	233.0	135	154	258	NA
Beryllium	20	µg/L	ND	ND	ND	0.743	ND	1.26	ND	ND	ND	0.166 ER	NA
Cadmium	4	µg/L	1.67	ND	**6.04**	1.53	ND	0.606	0.986	0.872 ER	1.12	1.47 ER	NA
Chromium	100	µg/L	0.982	1.9	15.6	2.73	5.39	5.66	7.1	1.92 ER	1.15 ER	1.4 ER	NA
Copper	1000	µg/L	15.2	12.8	4.52	3.12	8.5	2.85	ND	ND	ND	ND	NA
Lead	10	µg/L	ND	1.48	1.67	ND	1.23	ND	1.6	ND	ND	ND	NA
Mercury	2	µg/L	ND	0.1	0.1	ND	ND	ND	ND	ND	ND	ND	NA
Nickel	100	µg/L	10.5	14.8	16.1	20.3	15.1	32.6	15.3	7.06	7.31	9.46	NA
Selenium	50	µg/L	6.65	ND	ND	11.5	8.86	5.36	4.27	ND	ND	ND	NA
Thallium	10	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

J-Estimated Concentration observed greater than the MDL and less than the RL.

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-7
Ground Water Sampling Results
M-5 Landfill Site - MW16 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	27	28	28	29	30	30	31	32	33	34
WELL ID			MW16 Duplicate	M5MW16	MW16 Duplicate	M5MW16	M5MW16	MW16 Duplicate	M5MW16	M5MW16	M5MW16	M5MW16
Date Collected			10/8/2003	1/14/2004	1/14/2004	5/13/2004	8/20/2004	8/20/2004	12/15/2004	3/14/2005	6/3/2005	9/16/2005
ANALYTE / Lab ID			30638.03	40029.09	40029.03	40359.09	40614.09	40614.03	40845.05	50152.05	50284.09	50473.08
VOCs												
2-Butanone	300	µg/L	3.23	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	700	µg/L	ND	ND	ND	2.06	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	10	µg/L	**82.37**	**83.66**	**80.96**	**22.47**	**66.66**	**186**	**47.94**	**32.37**	**33.24**	**283.79**
Tetrachloroethene	1	µg/L	**18.88**	**34.59**	**31.41**	**38.41**	**7.63**	**63.95**	**59.14**	**6.22**	**90.59**	**9.51**
Trichloroethene	1	µg/L	**19.23**	**13.1**	**13.14**	**14.68**	**9.48**	**46.72**	**19.57**	**2.8**	**34.2**	**34.1**
Vinyl chloride	5	µg/L	ND	ND	ND	ND	ND	ND	1.21	ND	ND	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs												
4-Methylphenol	NLE	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
*TICs	500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Antimony	20	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	8	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	20	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	10	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	50	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	10	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

J-Estimated Concentration observed greater than the MDL and less than the RL.

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ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-7
Ground Water Sampling Results
M-5 Landfill Site - MW16 (Dec05-Jun07)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	35	36	37	38	39	40	41
WELL ID			M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16
Date Collected			12/21/2005	3/1/2006	5/5/2006	9/13/2006	11/17/2006	3/8/2007	6/6/2007
ANALYTE / Lab ID			50655.09	60094.09	60209.09	60395.09	60500.04	70087.05	70207.09
VOCs									
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	70	µg/L	36.52	38.04	37.55	**77.14**	27.74	9.25	5.5
Tetrachloroethene	1	µg/L	**8.41**	**30.42**	**75.67**	**334.54**	**86.18**	**32.4**	**25.31**
Trichloroethene	1	µg/L	**5.79**	**11.65**	**64.99**	**88.75**	**37.11**	**19.98**	**6.53**
Vinyl chloride	1	µg/L	ND	**1.6 J**	**3.47**	**10.11**	**4.95**	**2.41**	**1.17 J**
*TICs	500	µg/L	11.0	6.0	ND	ND	ND	ND	ND
SVOCs									
4-Methylphenol	NLE	µg/L	NA	NA	NA	NA	NA	NA	NA
*TICs	500	µg/L	NA	NA	NA	NA	NA	NA	NA
Metals									
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	NA	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA	NA
Thallium	2	µg/L	NA	NA	NA	NA	NA	NA	NA

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-C (November 7, 2005)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

J-Estimated Concentration observed greater than the MDL and less than the RL.

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-7
Ground Water Sampling Results
M-5 Landfill Site - MW16 (Aug07-Feb09)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	42	43	44	45	46	47
WELL ID			M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16
Date Collected			8/14/2007	12/5/2007	3/11/2008	6/3/2008	8/25/2008	11/10/2008
ANALYTE / Lab ID			70307.09	70507.09	80077.09	80185.09	80306.09	80404.09
VOCs								
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	70	µg/L	29.47	12.22	8.48	3.23	13.2	4.23
Tetrachloroethene	1	µg/L	**53.02**	**11.97**	**6.93**	**4.42**	**5.92**	**4.43**
Trichloroethene	1	µg/L	**25.4**	**5.2**	0.74 J	0.75 J	**1.99 J**	**1.36 J**
Vinyl chloride	1	µg/L	**7.33**	**2.85**	ND	ND	**1.2 J**	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND
SVOCs								
4-Methylphenol	NLE	µg/L	NA	NA	NA	NA	NA	NA
*TICs	500	µg/L	NA	NA	NA	NA	NA	NA
Metals								
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA
Barium	6000	µg/L	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA
Thallium	2	µg/L	NA	NA	NA	NA	NA	NA

Notes:

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NLE-No Limit Established

Table 5-8
Ground Water Sampling Results
M-5 Landfill Site - MW18 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	9A	9B	10	11	12	13	14	15	16A	16B	17
WELL ID			M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18
Date Collected			4/13/1999	4/27/1999	9/14/1999	11/18/1999	3/3/2000	5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001	6/5/2001
ANALYTE / Lab ID			4416.1	4444.1	4788.06	4955.15	5220.11	5445.11	5644.11	5903.11	785	1600711	16166.11
VOCs													
Tetrachloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs													
*TICs	500	µg/L	14.0	7.0	7.0	9.0	6.0	8.0	84.0	**120.0**	NA	**150.0**	ND
Pest/PCBs													
gamma-Chlordane	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND
Metals													
Antimony	20	µg/L	ND	ND	ND	ND	ND	ND	2.54	ND	NA	ND	ND
Arsenic	8	µg/L	ND	ND	ND	ND	ND	ND	ND	**14.2**	NA	ND	**11.0**
Barium	2000	µg/L	41.8	47	104.0	52.2	115.0	132.0	83.3	3030	NA	182.0	1690
Beryllium	20	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND
Cadmium	4	µg/L	0.621	1.99	1.3	0.64	0.724	ND	ND	**5.52**	NA	1.7	**10.4**
Chromium	100	µg/L	1.97	1.02	4.06	0.573	ND	1.46	ND	4.74	NA	5.3	ND
Copper	1000	µg/L	5.04	ND	4.58	14.9	ND	ND	ND	ND	NA	12.0	8.52
Lead	10	µg/L	**11.8**	ND	ND	ND	ND	ND	1.89	ND	NA	ND	3.08
Mercury	2	µg/L	0.12	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND
Nickel	100	µg/L	2.63	1.86	7.64	1.73	3.39	2.84	ND	ND	NA	3.0	3.13
Selenium	50	µg/L	ND	ND	ND	ND	ND	ND	ND	5.77	NA	4.0	ND
Thallium	10	µg/L	ND	4.32	ND	ND	ND	ND	ND	ND	NA	ND	ND

Notes:

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Table 5-8
Ground Water Sampling Results
M-5 Landfill Site - MW18 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	18	19	20	21	22	23	24	25	26	27	28
WELL ID			M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18
Date Collected			9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002	10/28/2002	1/22/2003	4/21/2003	7/30/2003	10/8/2003	1/14/2004
ANALYTE / Lab ID			16407.11	16491.11	20029.11	20219.11	20594.11	20760.11	30032.11	30180.11	30439.11	30638.10	40029.10
VOCs													
Tetrachloroethene	1	µg/L	ND	**2.95**	**1.34**	ND	ND	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs													
*TICs	500	µg/L	6.0	4.0	6.0	4.0	22.0	15.0	15.0	12.0	49.0	NA	NA
Pest/PCBs													
gamma-Chlordane	NLE	µg/L	ND	0.018	ND	ND	ND	ND	ND	ND	ND	NA	NA
Metals													
Antimony	20	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA
Arsenic	8	µg/L	2.68	ND	3.84	**16.8**	6.7	6.73	**8.4**	**20.8**	ND	NA	NA
Barium	2000	µg/L	177.0	142.0	201.0	752.0	119.0	78.9	561.0	**4490.0**	202.0	NA	NA
Beryllium	20	µg/L	ND	ND	ND	ND	ND	ND	ND	0.62	ND	NA	NA
Cadmium	4	µg/L	ND	**7.35**	1.32	1.53	ND	ND	3.6	**11.4**	1.11 ER	NA	NA
Chromium	100	µg/L	1.74	1.68	1.64	3.2	ND	1.27	1.19 ER	2.05 ER	ND	NA	NA
Copper	1000	µg/L	5.99	ND	2.82	2.92	4.49	ND	40.1	ND	ND	NA	NA
Lead	10	µg/L	1.14	ND	ND	1.35	ND	ND	4.38 ER	5.65	ND	NA	NA
Mercury	2	µg/L	ND	ND	0.1	0.15	ND	ND	ND	ND	ND	NA	NA
Nickel	100	µg/L	2.48	1.73	16.5	ND	1.25	ND	2.87 ER	ND	1.06 ER	NA	NA
Selenium	50	µg/L	ND	ND	12.6	ND	5.92	3.59	ND	ND	ND	NA	NA
Thallium	10	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA

Notes:

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NLE-No Limit Established

Table 5-8
Ground Water Sampling Results
M-5 Landfill Site - MW18 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	29	30	31	32	33	34
WELL ID			M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18
Date Collected			5/13/2004	8/20/2004	12/13/2004	3/14/2005	6/3/2005	9/16/2005
ANALYTE / Lab ID			40359.10	40614.10	40833.03	50152.06	50284.10	50473.09
VOCs								
Tetrachloroethene	1	µg/L	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND
SVOCs								
*TICs	500	µg/L	NA	NA	NA	NA	NA	NA
Pest/PCBs								
gamma-Chlordane	NLE	µg/L	NA	NA	NA	NA	NA	NA
Metals								
Antimony	20	µg/L	NA	NA	NA	NA	NA	NA
Arsenic	8	µg/L	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	NA	NA	NA	NA	NA	NA
Beryllium	20	µg/L	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA
Chromium	100	µg/L	NA	NA	NA	NA	NA	NA
Copper	1000	µg/L	NA	NA	NA	NA	NA	NA
Lead	10	µg/L	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA
Selenium	50	µg/L	NA	NA	NA	NA	NA	NA
Thallium	10	µg/L	NA	NA	NA	NA	NA	NA

Notes:

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NLE-No Limit Established

Table 5-8
Ground Water Sampling Results
M-5 Landfill Site - MW18 (Dec05-Jun07)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	35	36	37	38	39	39	40	41
WELL ID			M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	MW18 Duplicate	M5MW18	M5MW18
Date Collected			12/21/2005	3/1/2006	5/5/2006	9/13/2006	11/17/2006	11/17/2006	3/8/2007	6/6/2007
ANALYTE / Lab ID			50655.10	60094.10	60209.10	60395.10	60500.05	60500.03	70087.06	70204.10
VOCs										
Tetrachloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	11.0	7.0	ND	4.0	ND	ND	ND	ND
SVOCs										
*TICs	500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs										
gamma-Chlordane	NLE	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Metals										
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

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NLE-No Limit Established

Table 5-8
Ground Water Sampling Results
M-5 Landfill Site - MW18 (Aug07-Feb09)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	42	43	44	45	46	47
WELL ID			M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18
Date Collected			8/14/2007	12/5/2007	3/11/2008	6/3/2008	8/25/2008	11/10/2008
ANALYTE / Lab ID			70307.10	70507.10	80077.10	80185.10	80306.10	80404.10
VOCs								
Tetrachloroethene	1	µg/L	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND
SVOCs								
*TICs	500	µg/L	NA	NA	NA	NA	NA	NA
Pest/PCBs								
gamma-Chlordane	NLE	µg/L	NA	NA	NA	NA	NA	NA
Metals								
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA
Barium	6000	µg/L	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA
Thallium	2	µg/L	NA	NA	NA	NA	NA	NA

Notes:

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Table 5-9
Ground Water Sampling Results
M-5 Landfill Site - MW19 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	9A	9B	10	11	12	13	14	15	16A	16B	17
WELL ID			M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19
Date Collected			4/13/1999	4/27/1999	9/14/1999	11/18/1999	3/6/2000	5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001	6/5/2001
ANALYTE / Lab ID			4416.09	4444.09	4788.07	4955.14	5222.01	5445.12	5644.12	5903.12	786	1600712	16166.12
VOCs													
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	10	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	6	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**6.59**
Tetrachloroethene	1	µg/L	**11.53**	**3.72**	**10.24**	**69.22**	**5.44**	ND	**4.77**	**3.8**	ND	**2.43**	**6.89**
Trichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs													
4-Methylphenol	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND
*TICs	500	µg/L	ND	20.0	4.0	6.0	6.0	6.0	75.0	30.0	NA	ND	ND
Metals													
Antimony	20	µg/L	ND	ND	3.01	2.85	ND	ND	3.46	ND	NA	ND	ND
Arsenic	8	ug/L	ND	ND	ND	ND	ND	ND	ND	2.99	NA	5.0	**11.7**
Barium	2000	ug/L	39.7	67.2	61.3	79.3	104.0	80.9	78.9	345.0	NA	63.6	55.0
Beryllium	20	ug/1	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND
Cadmium	4	µg/L	ND	3.22	2.74	0.75	ND	ND	ND	ND	NA	1.3	2.35
Chromium	100	µg/L	10.6	12.1	32.8	1.65	ND	1.69	ND	ND	NA	4.7	1.34
Copper	1000	µg/L	6.31	ND	5.35	33.0	ND	ND	ND	ND	NA	18.0	ND
Lead	10	µg/L	4.92	ND	ND	ND	ND	ND	1.14	ND	NA	ND	ND
Mercury	2	µg/L	0.11	ND	ND	ND	ND	ND	0.4	ND	NA	ND	0.12
Nickel	100	µg/L	3.22	1.8	14.0	2.38	4.19	2.3	ND	ND	NA	3.0	2.36
Selenium	50	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	NA	ND	4.72
Thallium	10	µg/L	ND	4.93	ND	ND	ND	ND	ND	ND	NA	ND	ND

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

J-Estimated Concentration observed greater than the MDL and less than the RL.

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-9
Ground Water Sampling Results
M-5 Landfill Site - MW19 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	18	19	20	21	22	23	23	24	24	25	26
WELL ID			M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	MW19 Duplicate	M5MW19	MW19 Duplicate	M5MW19	M5MW19
Date Collected			9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002	10/28/2002	10/28/2002	1/22/2003	1/22/2003	4/21/2003	7/30/2003
ANALYTE / Lab ID			16407.12	16491.12	20029.12	20219.12	20594.12	20760.12	20760.03	30032.12	30032.03	30180.12	30439.12
VOCs													
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	3.93	4.06	1.18 J	1.59 J	ND	ND
cis -1,2-Dichloroethene	10	µg/L	3.87	1.84	**16.64**	5.93	**51.33**	2.28	2.37	ND	ND	ND	ND
Chloroform	6	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**34.94**	**13.62**	**284.64**	**18.2**	**34.31**	**5.1**	**4.89**	**1.54 J**	**1.35 J**	**1.73 J**	**1.01 J**
Trichloroethene	1	µg/L	**1.66**	ND	**17.44**	**2.8**	**6.44**	**1**	**1.06**	ND	ND	ND	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs													
4-Methylphenol	NLE	µg/L	7.57	10.1	ND	ND	ND	3.13	2.08	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	7.95	ND	ND	ND	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	140.0	50.0	43.0	4.0	31.0	111.0	182.0	28.0	18.0	15.0	27.0
Metals													
Antimony	20	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	ug/L	5.7	**8.1**	**13.7**	**16.9**	**9.08**	**8.1**	5.72	ND	ND	ND	2.37 ER
Barium	2000	ug/L	59.8	47.4	40.8	81.9	36.7	69.1	55.9	48.0	49.0	52.5	65.8
Beryllium	20	ug/1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	0.769	2.96	1.13	ND	ND	ND	ND	0.735 ER	ND	0.724 ER	0.689 ER
Chromium	100	µg/L	ND	ND	0.874	6.2	0.845	2.42	0.585	0.711 ER	0.597 ER	ND	ND
Copper	1000	µg/L	20.8	ND	ND	9.43	ND	ND	ND	2.57 ER	ND	ND	ND
Lead	10	µg/L	2.1	ND	ND	ND	ND	1.39	ND	ND	ND	ND	ND
Mercury	2	µg/L	ND	ND	ND	0.17	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	ND	ND	1.73	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	50	µg/L	ND	ND	10.2	ND	5.94	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

J-Estimated Concentration observed greater than the MDL and less than the RL.

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-9
Ground Water Sampling Results
M-5 Landfill Site - MW19 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	27	28	29	30	31	32	33	34
WELL ID			M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19
Date Collected			10/8/2003	1/14/2004	5/13/2004	8/20/2004	12/13/2004	3/14/2005	6/3/2005	9/16/2005
ANALYTE / Lab ID			30638.11	40029.11	40359.11	40614.11	40833.02	50152.07	50284.11	50473.10
VOCs										
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	10	µg/L	3.04	0.49 J	ND	0.81 J	ND	ND	ND	1.58 J
Chloroform	6	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**5.42**	**1.89 J**	ND	0.84 J	ND	ND	ND	**5.73**
Trichloroethene	1	µg/L	**1.92 J**	**1.04J**	**1.41 J**	ND	**1.33 J**	0.91 J	ND	**3.12**
*TICs	500	µg/L	ND	ND	ND	5.0	ND	ND	ND	ND
SVOCs										
4-Methylphenol	NLE	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl) phthalate	30	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
*TICs	500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Metals										
Antimony	20	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	8	ug/L	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2000	ug/L	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	20	ug/1	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Lead	10	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	50	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	10	µg/L	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

J-Estimated Concentration observed greater than the MDL and less than the RL.

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-9
Ground Water Sampling Results
M-5 Landfill Site - MW19 (Dec05-Jun07)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	35	36	37	38	39	40	41
WELL ID			M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19
Date Collected			12/21/2005	3/1/2006	5/5/2006	9/13/2006	11/17/2006	3/8/2007	6/6/2007
ANALYTE / Lab ID			50655.11	60094.11	60209.11	60395.11	60500.06	70087.06	70204.11
VOCs									
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	70	µg/L	0.67 J	0.97 J	0.89 J	2.82	1.55 J	1.19 J	ND
Chloroform	70	µg/L	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	ND	**1.17 J**	ND	**6.58**	0.97 J	0.91 J	ND
Trichloroethene	1	µg/L	ND	0.82 J	ND	**4.8**	**1.17 J**	**1.01 J**	ND
*TICs	500	µg/L	10.0	6.0	ND	ND	ND	ND	6.0
SVOCs									
4-Methylphenol	NLE	µg/L	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl) phthalate	3	µg/L	NA	NA	NA	NA	NA	NA	NA
*TICs	500	µg/L	NA	NA	NA	NA	NA	NA	NA
Metals									
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA
Arsenic	3	ug/L	NA	NA	NA	NA	NA	NA	NA
Barium	2000	ug/L	NA	NA	NA	NA	NA	NA	NA
Beryllium	1	ug/L	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA	NA
Thallium	2	µg/L	NA	NA	NA	NA	NA	NA	NA

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-C (November 7, 2005)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

J-Estimated Concentration observed greater than the MDL and less than the RL.

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-9
Ground Water Sampling Results
M-5 Landfill Site - MW19 (Aug07-Feb09)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	42	43	44	45	46	47
WELL ID			M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19
Date Collected			8/14/2007	12/5/2007	3/11/2008	6/3/2008	8/25/2008	11/10/2008
ANALYTE / Lab ID			70307.11	70507.11	80077.11	80185.11	80306.11	80404.11
VOCs								
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	70	µg/L	0.91 J	9.3	1.25 J	1.11 J	0.57 J	8.5
Chloroform	70	µg/L	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	0.82 J	**2.36**	0.58 J	ND	0.75 J	**2.01**
Trichloroethene	1	µg/L	ND	**5.01**	**1.34 J**	ND	0.33 J	**3.68**
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND
SVOCs								
4-Methylphenol	NLE	µg/L	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl) phthalate	3	µg/L	NA	NA	NA	NA	NA	NA
*TICs	500	µg/L	NA	NA	NA	NA	NA	NA
Metals								
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA
Arsenic	3	ug/L	NA	NA	NA	NA	NA	NA
Barium	6000	ug/L	NA	NA	NA	NA	NA	NA
Beryllium	1	ug/L	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA
Thallium	2	µg/L	NA	NA	NA	NA	NA	NA

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-C (July 27, 2007)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

J-Estimated Concentration observed greater than the MDL and less than the RL.

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-10
Ground Water Sampling Results
M-5 Landfill Site - MW20 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	9A	9A	9B	9B	10	11	12	13	14	15	16A
WELL ID			M5MW20	MW20 Duplicate	M5MW20	MW20 Duplicate	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20
Date Collected			4/13/1999	4/13/1999	4/27/1999	4/27/1999	9/13/1999	11/18/1999	3/3/2000	5/31/2000	8/21/2000	12/11/2000	2/13/2001
ANALYTE / Lab ID			4416.08	4416.11	4444.08	4444.11	4447.09	4955.11	5220.05	5445.13	5644.13	5903.13	787
VOCs													
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.2	ND
cis -1,2-Dichloroethene	10	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	6	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**142.59**	**143**	**169.54**	**54.41**	**156.58**	**143.93**	**90.03**	**43.44**	**23.85**	**110.95**	**48.11**
Trichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs													
*TICs	500	µg/L	17.0	10.0	13.0	37.0	ND	16.0	5.0	ND	90.0	10.0	NA
Pest/PCBs													
gamma-Chlordane	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals													
Antimony	20	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	2.87	ND	NA
Arsenic	8	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
Barium	2000	µg/L	45.2	40.9	36.3	32.4	38.7	30.7	25.8	3.7	15.8	16.0	NA
Beryllium	20	ug/1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	ND	0.996	3.16	1.76	2.45	ND	ND	ND	ND	ND	NA
Chromium	100	µg/L	30.7	37.2	24.9	6.6	2.8	3.37	4.34	4.37	3.94	ND	NA
Copper	1000	µg/L	4.46	ND	6.08	ND	6.05	4.14	ND	ND	ND	ND	NA
Lead	10	µg/L	9.54	5.97	2.5	ND	ND	ND	ND	ND	1.66	ND	NA
Mercury	2	µg/L	0.12	0.13	ND	ND	ND	ND	ND	ND	0.3	ND	NA
Nickel	100	µg/L	6.43	6.81	5.41	4.02	6.13	5.65	4.92	2.77	ND	ND	NA
Selenium	50	µg/L	ND	ND	ND	ND	ND	ND	ND	3.42	ND	ND	NA
Thallium	10	µg/L	ND	ND	ND	5.88	ND	ND	ND	ND	ND	ND	ND

Notes:

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**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

J-Estimated Concentration observed greater than the MDL and less than the RL.

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-10
Ground Water Sampling Results
M-5 Landfill Site - MW20 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	16B	16B	17	18	19	19	20	21	22	23	24
WELL ID			M5MW20	MW20 Duplicate	M5MW20	M5MW20	M5MW20	MW20 Duplicate	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20
Date Collected			3/19/2001	3/19/2001	6/5/2001	9/5/2001	10/4/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002	10/28/2002	1/22/2003
ANALYTE / Lab ID			1600713	1600703	16166.13	16407.13	16491.13	16491.03	20029.13	20219.13	20594.13	20760.13	30032.13
VOCs													
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	10	µg/L	ND	ND	ND	1.22	3.38	3.41	3.09	ND	ND	ND	ND
Chloroform	6	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**65.73**	**65.5**	**45.3**	**111.58**	**83.81**	**82.54**	**85.31**	**76.89**	**79.41**	**12.99**	**27.87**
Trichloroethene	1	µg/L	ND	ND	ND	**1.18**	**3.56**	**3.66**	**4.27**	ND	ND	ND	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs													
*TICs	500	µg/L	ND	ND	ND	ND	6.0	ND	7.0	6.0	28.0	13.0	18.0
Pest/PCBs													
gamma-Chlordane	NLE	µg/L	ND	ND	ND	ND	0.005	0.004	ND	ND	ND	ND	ND
Metals													
Antimony	20	µg/L	ND	ND	ND	ND	ND	ND	ND	3.53	ND	ND	ND
Arsenic	8	µg/L	ND	ND	ND	ND	2.58	ND	ND	ND	3.46	5.22	ND
Barium	2000	µg/L	24.3	23.9	19.1	24.4	20.1	30.6	22.1	24.3	30.1	22.1	9.36 ER
Beryllium	20	ug/1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	0.6	ND	ND	ND	**10.2**	**4.43**	ND	ND	ND	ND	ND
Chromium	100	µg/L	3.6	3.4	1.03	4.96	3.0	3.61	5.43	2.64	12.6	40.3	1.4 ER
Copper	1000	µg/L	16.0	5.0	ND	11.3	3.03	2.52	ND	13.1	2.97	4.93	ND
Lead	10	µg/L	ND	ND	ND	ND	ND	1.65	ND	1.29	ND	4.41	ND
Mercury	2	µg/L	ND	ND	0.12	ND	ND	1.2	ND	0.16	0.11	ND	ND
Nickel	100	µg/L	9.0	3.0	3.59	4.84	3.35	3.95	5.0	4.33	5.24	3.36	1.53 ER
Selenium	50	µg/L	ND	ND	5.04	ND	ND	ND	10.7	5.55	4.15	4.13	ND
Thallium	10	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

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**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

J-Estimated Concentration observed greater than the MDL and less than the RL.

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-10
Ground Water Sampling Results
M-5 Landfill Site - MW20 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	25	26	27	28	29	30	31	32	33	34
WELL ID			M5MW20	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20
Date Collected			4/21/2003	7/30/2003	10/8/2003	1/14/2004	5/13/2004	8/20/2004	12/13/2004	3/14/2005	6/3/2005	9/16/2005
ANALYTE / Lab ID			30180.13	30439.13	30638.12	40029.12	40359.12	40614.12	40833.01	50152.08	50284.12	50473.11
VOCs												
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	10	µg/L	ND	1.1 J	5.33	0.96 J	ND	4.12	2.77	1.87 J	**13.2**	4.21
Chloroform	6	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.60 J
Tetrachloroethene	1	µg/L	**27.99**	**15.26**	**43.96**	**21.69**	**13.74**	**7.51**	**3.96**	**4.93**	**13.75**	**8.74**
Trichloroethene	1	µg/L	ND	ND	**4.83**	**1.9 J**	0.92 J	**2.05**	ND	**1.11 J**	**8.35**	**2.67**
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs												
*TICs	500	µg/L	10.0	29.0	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs												
gamma-Chlordane	NLE	µg/L	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Metals												
Antimony	20	µg/L	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	8	µg/L	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	30.7	11.3	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	20	ug/1	ND	0.0825 ER	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	100	µg/L	3.3 ER	6.62	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1000	µg/L	ND	1.33 ER	NA	NA	NA	NA	NA	NA	NA	NA
Lead	10	µg/L	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	3.21 ER	2.08 ER	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	50	µg/L	ND	6.37 ER	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	10	µg/L	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

J-Estimated Concentration observed greater than the MDL and less than the RL.

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-10
Ground Water Sampling Results
M-5 Landfill Site - MW20 (Dec05-Jun07)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	35	36	37	38	39	39	40	40	41
WELL ID			M5MW20	M5MW20	M5MW20	M5MW20	M5MW20	MW20 Duplicate	M5MW20	MW20 Duplicate	M5MW20
Date Collected			12/21/2005	3/1/2006	5/5/2006	9/13/2006	11/17/2006	11/17/2006	3/8/2007	3/8/2007	6/6/2007
ANALYTE / Lab ID			50655.12	60094.12	60209.12	60395.12	60503.09	60503.03	70087.08	70087.03	70204.12
VOCs											
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	70	µg/L	1.56 J	3.73	3.55	1.57 J	3.48	3.38	4.63	4.45	ND
Chloroform	70	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	0.87 J	**7.21**	**7.69**	**4.01**	**1.72 J**	**1.66 J**	**1.83 J**	**1.98 J**	ND
Trichloroethene	1	µg/L	**1 J**	**2.76**	**2.45**	ND	0.53 J	0.48 J	**1.41 J**	**1.21 J**	ND
*TICs	500	µg/L	5.0	5.0	ND	ND	ND	ND	ND	ND	8.0
SVOCs											
*TICs	500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pest/PCBs											
gamma-Chlordane	NLE	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals											
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-C (November 7, 2005)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

J-Estimated Concentration observed greater than the MDL and less than the RL.

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-10
Ground Water Sampling Results
M-5 Landfill Site - MW20 (Aug07-Feb09)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	42	43	44	45	46	47
WELL ID			M5MW20	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20
Date Collected			8/14/2007	12/5/2007	3/11/2008	6/3/2008	8/25/2008	11/10/2008
ANALYTE / Lab ID			70307.12	70507.12	80077.12	80185.12	80306.12	80404.12
VOCs								
Acetone	6000	µg/L	ND	ND	2.15	ND	ND	ND
cis -1,2-Dichloroethene	70	µg/L	3.47	7.17	ND	3.71	21.55	6.61
Chloroform	70	µg/L	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**2.26**	ND	0.95 J	**1.28 J**	**2.41**	**2.19**
Trichloroethene	1	µg/L	0.59 J	0.72 J	ND	0.55 J	**1.65 J**	0.70 J
*TICs	500	µg/L	ND	ND	4.0	ND	ND	ND
SVOCs								
*TICs	500	µg/L	NA	NA	NA	NA	NA	NA
Pest/PCBs								
gamma-Chlordane	NLE	µg/L	NA	NA	NA	NA	NA	NA
Metals								
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA
Barium	6000	µg/L	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA
Thallium	2	µg/L	NA	NA	NA	NA	NA	NA

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-C (July 27, 2007)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

J-Estimated Concentration observed greater than the MDL and less than the RL.

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-11
Ground Water Sampling Results
M-5 Landfill Site - MW23 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	9A	9B	10	11	12	13	14	15
WELL ID			M5MW23	M5MW23	M5MW23	M5MW23	M5MW23	M5MW23	M5MW23	M5MW23
Date Collected			4/13/1999	4/27/1999	9/13/1999	11/18/1999	3/3/2000	5/31/2000	8/21/2000	12/11/2000
ANALYTE / Lab ID			4419.08	4447.08	4447.03	4955.12	5220.04	5445.14	5644.14	5903.14
VOCs										
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	4.92
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	10	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	1.4
Chloroform	6	µg/L	ND	ND	ND	**9.01**	1.18	ND	ND	ND
Tetrachloroethene	1	µg/L	**84.93**	**44.43**	**29.53**	**59.02**	**11.53**	**23.13**	**4.22**	**14.27**
Trichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs										
4-Methylphenol	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	1.37
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	5.0	5.0	4.0	26.0	6.0	24.0	104.0	82.0
Metals										
Antimony	20	µg/L	ND	ND	ND	ND	ND	ND	2.39	ND
Arsenic	8	µg/L	ND	ND	ND	ND	2.8	2.02	4.0	4.52
Barium	2000	µg/L	12.7	28	21.5	16.9	52.0	131.0	110.0	57.7
Beryllium	20	ug/1	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	1.17	2.89	0.786	ND	ND	ND	ND	ND
Chromium	100	µg/L	13.4	8.97	22.6	3.29	1.52	1.71	ND	ND
Copper	1000	µg/L	ND	ND	6.92	ND	ND	ND	ND	ND
Lead	10	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Mercury	2	µg/L	ND	ND	ND	ND	ND	ND	0.2	ND
Nickel	100	µg/L	3.94	6.27	2.59	2.73	4.97	2.21	ND	ND
Selenium	50	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	ND	6.7	ND	ND	ND	ND	ND	ND

Notes:

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**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

J-Estimated Concentration observed greater than the MDL and less than the RL.

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-11
Ground Water Sampling Results
M-5 Landfill Site - MW23 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	16A	16B	17	17	18	19	20	20
WELL ID			M5MW23	M5MW23	M5MW23	MW23 Duplicate	M5MW23	M5MW23	M5MW23	MW23 Duplicate
Date Collected			2/13/2001	3/19/2001	6/5/2001	6/5/2001	9/5/2001	10/4/2001	1/14/2002	1/14/2002
ANALYTE / Lab ID			788	1600714	16166.14	16166.03	16407.14	16491.14	20029.14	20029.03
VOCs										
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	700	µg/L	6.79	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	10	µg/L	ND	ND	ND	ND	1.48	1.77	1.77	2.04
Carbon disulfide	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	6	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	ND	**6.39**	**33.84**	**33.54**	**3.41**	**3.85**	**8.26**	**9.93**
Trichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	**1.07**
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs										
4-Methylphenol	NLE	µg/L	NA	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	30	µg/L	NA	ND	ND	ND	ND	1.4	ND	ND
*TICs	500	µg/L	NA	20.0	ND	ND	11.0	26.0	11.0	9.0
Metals										
Antimony	20	µg/L	NA	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	NA	ND	4.15	ND	6.46	5.77	6.81	5.25
Barium	2000	µg/L	NA	53.2	15.3	18.0	46.1	33.5	111.0	106.0
Beryllium	20	ug/1	NA	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	NA	1.0	ND	1.01	0.992	3.41	1.32	1.59
Chromium	100	µg/L	NA	13.6	1.12	1.92	17.5	15.6	16.0	14.6
Copper	1000	µg/L	NA	8.0	ND	16.2	8.27	3.4	3.29	2.79
Lead	10	µg/L	NA	ND	ND	1.3	2.41	2.0	4.02	2.42
Mercury	2	µg/L	NA	ND	ND	ND	0.3	0.1	0.1	ND
Nickel	100	µg/L	NA	10.0	4.06	7.59	ND	2.2	2.22	2.0
Selenium	50	µg/L	NA	ND	7.08	7.15	ND	ND	10.3	7.63
Thallium	10	µg/L	NA	ND	ND	ND	ND	ND	ND	ND

Notes:

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**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (January 7, 1993)

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ER - Estimated Result

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ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-11
Ground Water Sampling Results
M-5 Landfill Site - MW23 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	21	22	23	24	25	25	26	27
WELL ID			M5MW23	M5MW23	M5MW23	M5MW23	M5MW23	MW23 Duplicate	M5MW23	M5MW23
Date Collected			4/23/2002	8/21/2002	10/28/2002	1/22/2003	4/21/2003	4/21/2003	7/30/2003	10/8/2003
ANALYTE / Lab ID			20219.14	20594.14	20760.14	30032.14	30180.14	30180.03	30439.14	30638.13
VOCs										
2-Butanone	300	µg/L	ND	14.45	ND	ND	ND	ND	2.75	ND
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	10	µg/L	3.31	ND	ND	ND	1.37 J	1.07 J	4.6	ND
Carbon disulfide	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	6	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**8.97**	**15.68**	ND	**79.46**	**17.35**	**20.0**	**20.45**	**1.6 J**
Trichloroethene	1	µg/L	ND	ND	ND	**3.97**	**3.15**	**2.89**	**2.51**	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND	ND	3.0
SVOCs										
4-Methylphenol	NLE	µg/L	ND	3.66	ND	ND	ND	ND	ND	NA
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	ND	ND	ND	ND	ND	NA
*TICs	500	µg/L	5.0	36.0	12.0	21.0	10.0	10.0	37.0	NA
Metals										
Antimony	20	µg/L	ND	ND	ND	ND	ND	ND	ND	NA
Arsenic	8	µg/L	**11.5**	**8.7**	**16.5**	**86.7**	**13.2**	**10.5**	**13.3**	NA
Barium	2000	µg/L	303	21.7	5.5	39.1	15.7	14.0	119.0	NA
Beryllium	20	ug/1	ND	ND	ND	0.57	ND	ND	0.0632 ER	NA
Cadmium	4	µg/L	1.35	ND	ND	**8.11**	1.93	1.58	1.45 ER	NA
Chromium	100	µg/L	53.6	11.9	2.4	72.5	12.9	12.5	3.55 ER	NA
Copper	1000	µg/L	4.89	ND	ND	ND	ND	ND	ND	NA
Lead	10	µg/L	4.22	ND	1.29	8.02	ND	ND	ND	NA
Mercury	2	µg/L	0.18	0.11	ND	ND	ND	ND	ND	NA
Nickel	100	µg/L	1.11	ND	ND	3.96 ER	ND	ND	0.89 ER	NA
Selenium	50	µg/L	ND	ND	ND	ND	ND	ND	ND	NA
Thallium	10	µg/L	ND	ND	ND	ND	ND	ND	ND	NA

Notes:

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**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (January 7, 1993)

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ER - Estimated Result

J-Estimated Concentration observed greater than the MDL and less than the RL.

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-11
Ground Water Sampling Results
M-5 Landfill Site - MW23 (Apr99-Sept05)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	28	29	30	31	31	32	33	34
WELL ID			M5MW23	M5MW23	M5MW23	M5MW23	MW23 Duplicate	M5MW23	M5MW23	M5MW23
Date Collected			1/14/2004	5/13/2004	8/20/2004	12/15/2004	12/15/2004	3/14/2005	6/3/2005	9/16/2005
ANALYTE / Lab ID			40029.13	40359.13	40614.13	40845.06	40845.03	50152.09	50284.13	50473.12
VOCs										
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	10	µg/L	0.69 J	0.59 J	ND	ND	ND	ND	ND	1.42 J
Carbon disulfide	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	6	µg/L	ND	ND	ND	ND	ND	0.57 J	ND	ND
Tetrachloroethene	1	µg/L	**4.35**	**13.33**	ND	**2.15**	**1.76 J**	**13.75**	**23.07**	**7.24**
Trichloroethene	1	µg/L	**1.02 J**	**2.07**	ND	ND	ND	ND	ND	0.89 J
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs										
4-Methylphenol	NLE	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl) phthalate	30	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
*TICs	500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Metals										
Antimony	20	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	8	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	20	ug/1	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Lead	10	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	50	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	10	µg/L	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

J-Estimated Concentration observed greater than the MDL and less than the RL.

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-11
Ground Water Sampling Results
M-5 Landfill Site - MW23 (Dec05-Jun07)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	35	36	37	38	39	40	41
WELL ID			M5MW23	M5MW23	M5MW23	M5MW23	M5MW23	M5MW23	M5MW23
Date Collected			12/21/2005	3/1/2006	5/5/2006	9/13/2006	11/17/2006	3/8/2007	6/6/2007
ANALYTE / Lab ID			50655.13	60094.13	60209.13	60395.13	60503.10	70087.09	70204.13
VOCs									
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	70	µg/L	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	700	µg/L	ND	ND	ND	ND	ND	ND	ND
Chloroform	6	µg/L	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**2.79**	**26.49**	**10.71**	**3.61**	**1.61 J**	**1.54 J**	**16.0**
Trichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	8.0	6.0	ND	ND	ND	ND	ND
SVOCs									
4-Methylphenol	NLE	µg/L	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl) phthalate	3	µg/L	NA	NA	NA	NA	NA	NA	NA
*TICs	500	µg/L	NA	NA	NA	NA	NA	NA	NA
Metals									
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	NA	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA	NA
Thallium	2	µg/L	NA	NA	NA	NA	NA	NA	NA

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-C (November 7, 2005)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

J-Estimated Concentration observed greater than the MDL and less than the RL.

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-11
Ground Water Sampling Results
M-5 Landfill Site - MW23 (Aug07-Feb09)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	42	43	44	45	46	47
WELL ID			M5MW23	M5MW23	M5MW23	M5MW23	M5MW23	M5MW23
Date Collected			8/14/2007	12/5/2007	3/11/2008	6/3/2008	8/25/2008	11/10/2008
ANALYTE / Lab ID			70307.13	70507.13	80077.13	80185.13	80306.13	80404.13
VOCs								
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	70	µg/L	ND	ND	ND	ND	0.29 J	ND
Carbon disulfide	700	µg/L	ND	ND	ND	ND	ND	ND
Chloroform	70	µg/L	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**3.91**	ND	**1.86 J**	**4.5**	**2.74**	**3.34**
Trichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND
SVOCs								
4-Methylphenol	NLE	µg/L	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl) phthalate	3	µg/L	NA	NA	NA	NA	NA	NA
*TICs	500	µg/L	NA	NA	NA	NA	NA	NA
Metals								
Antimony	6	µg/L	NA	NA	NA	NA	NA	NA
Arsenic	3	µg/L	NA	NA	NA	NA	NA	NA
Barium	6000	µg/L	NA	NA	NA	NA	NA	NA
Beryllium	1	µg/L	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA
Chromium	70	µg/L	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA
Selenium	40	µg/L	NA	NA	NA	NA	NA	NA
Thallium	2	µg/L	NA	NA	NA	NA	NA	NA

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-C (July 27, 2007)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated Result

J-Estimated Concentration observed greater than the MDL and less than the RL.

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-12
Ground Water Sampling Results
M-5 Landfill Site - MW25 (Apr99-Jul03)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	9A	9B	10	11	12	13	13	14
WELL ID			M5MW25	M5MW25	M5MW25	M5MW25	M5MW25	M5MW25	MW25 Duplicate	M5MW25
Date Collected			4/14/1999	4/28/1999	9/14/1999	11/18/1999	3/3/2000	5/31/2000	5/31/2000	8/21/2000
ANALYTE / Lab ID			4419.06	4447.04	4788.08	4955.13	5220.08	5445.15	5445.03	5644.15
VOCs										
Chloroform	6	µg/L	1.47	ND	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs										
Diethyl phthalate	5000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	7.0	ND	15.0	62.0	5.0	4.0	13.0	46.0
Pest/PCBs										
alpha-BHC	0.02	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
gamma-BHC	0.2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Metals										
Antimony	20	µg/L	ND	ND	2.66	ND	ND	ND	ND	3.92
Arsenic	8	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	47.5	37.2	50.1	62.6	57.4	42.6	28.1	59.5
Beryllium	20	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	1.05	3.63	0.895	1.54	0.934	ND	ND	0.619
Chromium	100	µg/L	56.3	40.5	2.32	53.4	4.77	2.72	4.64	ND
Copper	1000	µg/L	ND	14.3	ND	3.45	ND	ND	ND	35.4
Lead	10	µg/L	4.75	6.35	ND	ND	ND	ND	ND	1.91
Mercury	2	µg/L	ND	0.16	ND	0.1	ND	ND	ND	0.9
Nickel	100	µg/L	8.13	7.43	ND	14.8	10.7	4.92	7.93	10.7
Selenium	50	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	10	µg/L	ND	3.58	ND	ND	ND	ND	ND	ND

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

B-Compound detected in the sample and its associated blank sample

ER - Estimated Result

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-12
Ground Water Sampling Results
M-5 Landfill Site - MW25 (Apr99-Jul03)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	15	16A	16A	16B	17	18	18	19
WELL ID			M5MW25	M5MW25	MW25 Duplicate	M5MW25	M5MW25	M5MW25	MW25 Duplicate	M5MW25
Date Collected			12/11/2000	2/13/2001	2/13/2001	3/19/2001	6/5/2001	9/5/2001	9/5/2001	10/4/2001
ANALYTE / Lab ID			5903.15	789	777	16007.15	16166.15	16407.15	16407.03	16491.15
VOCs										
Chloroform	6	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs										
Diethyl phthalate	5000	µg/L	ND	NA	NA	ND	ND	ND	1.69 B	ND
*TICs	500	µg/L	71.0	NA	NA	5.0	ND	5.0	11.0	4.0
Pest/PCBs										
alpha-BHC	0.02	µg/L	ND	NA	NA	ND	ND	ND	ND	0.011
gamma-BHC	0.2	µg/L	ND	ND	ND	ND	ND	ND	ND	0.015
Metals										
Antimony	20	µg/L	ND	NA	NA	ND	ND	ND	ND	ND
Arsenic	8	µg/L	ND	NA	NA	3.0	3.55	ND	ND	4.89
Barium	2000	µg/L	46.5	NA	NA	50.7	99.3	141.0	146.0	114.0
Beryllium	20	µg/L	ND	NA	NA	ND	ND	ND	ND	1.08
Cadmium	4	µg/L	ND	NA	NA	1.2	ND	ND	ND	**5.98**
Chromium	100	µg/L	ND	NA	NA	6.4	2.5	8.32	2.93	99.0
Copper	1000	µg/L	ND	NA	NA	5.0	ND	12.1	14.2	6.99
Lead	10	µg/L	ND	NA	NA	ND	ND	1.42	ND	6.17
Mercury	2	µg/L	ND	NA	NA	ND	ND	ND	ND	ND
Nickel	100	µg/L	2.38	NA	NA	7.0	17.0	21.8	22.0	21.4
Selenium	50	µg/L	ND	NA	NA	ND	7.38	ND	ND	ND
Thallium	10	µg/L	ND	NA	NA	ND	ND	5.55	ND	4.98

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

B-Compound detected in the sample and its associated blank sample

ER - Estimated Result

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-12
Ground Water Sampling Results
M-5 Landfill Site - MW25 (Apr99-Jul03)
Fort Monmouth, New Jersey

Round	**NJDEP Criteria	Units	20	21	21	22	23	24	25	26	26
WELL ID			M5MW25	M5MW25	MW25 Duplicate	M5MW25	M5MW25	M5MW25	M5MW25	M5MW25	MW25 Duplicate
Date Collected			1/14/2002	4/23/2002	4/23/2002	8/21/2002	10/28/2002	1/22/2003	4/21/2003	7/30/2003	7/30/2003
ANALYTE / Lab ID			20029.15	20219.15	20219.03	20594.15	20760.15	30032.15	30180.15	30439.15	30439.03
VOCs											
Chloroform	6	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs											
Diethyl phthalate	5000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
*TICs	500	µg/L	12.0	5.0	13.0	26.0	10.0	19.0	9.0	30.0	9.0
Pest/PCBs											
alpha-BHC	0.02	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
gamma-BHC	0.2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals											
Antimony	20	µg/L	ND	4.97	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	ND	2.9	3.74	2.42	7.5	2.72 ER	ND	ND	ND
Barium	2000	µg/L	93.5	77.5	75.2	78.4	57.9	50.5	47.5	147	146
Beryllium	20	µg/L	ND	ND	ND	ND	ND	ND	ND	0.373 ER	0.377 ER
Cadmium	4	µg/L	0.942	ND	ND	ND	1.25	1.53	0.84 ER	1.02 ER	0.966 ER
Chromium	100	µg/L	6.34	1.88	2.09	2.82	5.8	7.09 ER	9.55 ER	1.99 ER	2.9 ER
Copper	1000	µg/L	99.1	4.87	3.18	ND	ND	30.8	25.9	4.77 ER	6.4
Lead	10	µg/L	**11.0**	1.59	ND	ND	ND	ND	ND	ND	1.02 ER
Mercury	2	µg/L	ND	0.15	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	21.3	10.7	11.4	14.5	13	13.1	9.36	17.3	17.2
Selenium	50	µg/L	10.6	5.15	6.46	5.78	3.38	ND	ND	6.21 ER	8.92 ER
Thallium	10	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

* TICs = Tentatively Identified Compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (January 7, 1993)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

B-Compound detected in the sample and its associated blank sample

ER - Estimated Result

NA - Not Analyzed

ND - Analyte not detected in sample.

NLE-No Limit Established

Table 5-13
Ground Water Sampling Results
M-8 Landfill Site MW12 (June97-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	1	2	3	4	4	5	6	7	8	8
WELL ID			M8MW12	M8MW12	M8MW12	M8MW12	MW12 Duplicate	M8MW12	M8MW12	M8MW12	M8MW12	MW12 Duplicate
Date Collected			6/24/1997	8/25/1997	10/31/1997	2/25/1998	2/25/1998	6/4/1998	8/28/1998	11/4/1998	1/27/1999	1/27/1999
ANALYTE / Lab ID			2731.03	2930.06	3125.06	3366.03	3366.07	3619.03	3843.07	4029.03	4227.03	4227.15
VOCs												
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	2.5	ND	ND	ND
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	4	µg/L	ND	ND	ND	ND	**5.28**	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	10	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	3	µg/L	ND	ND	**3.75**	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**5.04**	**4.96**	**7.64**	**2.25**	ND	**5.49**	**5.56**	**21.68**	**4.27**	**4.21**
Toluene	1000	µg/L	ND	ND	1.02	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	5.0	ND	ND	ND	6.0	ND	ND	ND	ND	ND
SVOCs												
1,3-Dichlorobenzene	600	µg/L	ND	ND	ND	ND	2.43	ND	ND	ND	ND	ND
4-Methylphenol	NLE	µg/L	ND	ND	ND	ND	ND	1.03	ND	ND	ND	ND
Acenaphthene	400	µg/L	ND	ND	ND	ND	1.19	ND	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	30	µg/L	1.51	ND	ND	2.48	1.67	ND	ND	2.23	ND	**43.77**
Di-*n* -butyl phthalate	900	µg/L	ND	ND	23.36	5.49 B	1.45 B	ND	ND	ND	ND	ND
Di-*n* -octyl phthalate	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.64
TICs*	500	µg/L	89.0	42.0	41.0	**294.0**	**474.0**	ND	ND	40.0	ND	ND
Pesticides/PCBs												
4,4'-DDD	0.1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE	0.1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methoxychlor	40	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals												
Antimony	20	µg/L	ND	ND	ND	ND	ND	ND	4.83	ND	ND	ND
Arsenic	8	µg/L	ND	ND	ND	7.0	ND	2.6	6.1	ND	ND	ND
Barium	2000	µg/L	6.4	ND	5.8	28.6	353.0	9.3	25.9	7.16	14.8	14.0
Beryllium	20	µg/L	ND	ND	ND	ND	ND	ND	0.797	ND	ND	ND
Cadmium	4	µg/L	ND	ND	ND	ND	2.1	ND	ND	ND	1.81	1.06
Chromium	100	µg/L	ND	83.0	2.3	53.3	7.6	1.4	56.0	8.23	42.5	38.2
Copper	1000	µg/L	5.0	9.0	9.0	16.0	25.0	3.6	ND	ND	36.8	11.8
Lead	10	µg/L	ND	1.0	**19.0**	**10.0**	8.0	ND	**12.6**	ND	3.0	2.7
Mercury	2	µg/L	ND	ND	ND	0.5	1.5	ND	0.11	ND	ND	0.2
Nickel	100	µg/L	ND	ND	1.9	6.0	18.7	3.9	5.18	12.7	6.04	5.11
Selenium	50	µg/L	2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively identified compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (Jan. 7, 1993)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for Semivolatiles and Metals were discontinued as per NJDEP approval dated November 2004

Table 5-13
Ground Water Sampling Results
M-8 Landfill Site MW12 (June97-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	9	10	10	11	11	12	13	13	14	14
WELL ID			M8MW12	M8MW12	MW12 Duplicate	M8MW12	MW12 Duplicate	M8MW12	M8MW12	MW12 Duplicate	M8MW12	MW12 Duplicate
Date Collected			6/22/1999	9/23/1999	9/23/1999	12/28/1999	12/28/1999	3/15/2000	6/5/2000	6/5/2000	9/6/2000	9/6/2000
ANALYTE / Lab ID			4566.03	4811.04	4811.03	5051.04	5051.03	5250.04	5454.04	5454.03	5693.04	5693.03
VOCs												
2-Butanone	300	µg/L	2.89	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	4	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	10	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	3	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**46.06**	**11.77**	**11.81**	**19.76**	**17.14**	**15.64**	**10.89**	**6.66**	**7.63**	**6.93**
Toluene	1000	µg/L	ND	ND	ND	ND	ND	ND	3.29	3.11	22.06	24.27
Trichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs												
1,3-Dichlorobenzene	600	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol	NLE	µg/L	ND	ND	ND	ND	ND	1.72	ND	1.28	1.79	3.66
Acenaphthene	400	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-*n* -butyl phthalate	900	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-*n* -octyl phthalate	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	5.0	4.0	7.0	9.0	45.0	5.0	ND	**247.0**	38.0
Pesticides/PCBs												
4,4'-DDD	0.1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE	0.1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methoxychlor	40	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals												
Antimony	20	µg/L	ND	ND	ND	5.95	7.45	ND	ND	ND	ND	ND
Arsenic	8	µg/L	ND	ND	2.56	ND	ND	ND	ND	ND	3.59	2.68
Barium	2000	µg/L	8.49	9.31	9.66	4.28	4.74	10.4	13.4	15.9	10.5	11.8
Beryllium	20	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	0.841	ND	0.622	ND	ND	ND	ND	ND	ND	ND
Chromium	100	µg/L	1.53	14.4	15.1	0.978	1.36	4.78	5.75	4.74	ND	ND
Copper	1000	µg/L	ND	11.0	16.6	9.22	12.6	6.83	ND	19.0	ND	ND
Lead	10	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.4
Mercury	2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	4.4	3.26	3.52	2.78	3.5	3.43	4.51	4.5	ND	ND
Selenium	50	µg/L	ND	ND	ND	ND	ND	ND	ND	3.98	ND	ND

Notes:

*TICs - Tentatively identified compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (Jan. 7, 1993)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for Semivolatiles and Metals were discontinued as per NJDEP approval dated November 2004

Table 5-13
Ground Water Sampling Results
M-8 Landfill Site MW12 (June97-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	15	15	16	17	17	18	19	19	20	21
WELL ID			M8MW12	MW12 Duplicate	M8MW12	M8MW12	MW12 Duplicate	M8MW12	M8MW12	MW12 Duplicate	M8MW12	M8MW12
Date Collected			12/13/2000	12/13/2000	3/21/2001	6/8/2001	6/8/2001	9/24/2001	12/17/2001	12/17/2001	3/21/2002	6/11/2002
ANALYTE / Lab ID			5906.04	5906.03	16011.04	16174.04	16174.03	16448.04	16662.04	16662.03	20162.04	20361.04
VOCs												
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	4	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	10	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	3	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**3.42**	**6.68**	**4.72**	**6.59**	**6.41**	**7.24**	**25.43**	**15.6**	**29.19**	**29.04**
Toluene	1000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs												
1,3-Dichlorobenzene	600	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	400	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-*n* -butyl phthalate	900	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-*n* -octyl phthalate	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	112.0	ND	ND	ND	ND	5.0	5.0	6.0	ND	22.0
Pesticides/PCBs												
4,4'-DDD	0.1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE	0.1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methoxychlor	40	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals												
Antimony	20	µg/L	ND	ND	7.0	ND	ND	ND	ND	ND	2.62	ND
Arsenic	8	µg/L	ND	ND	ND	5.65	6.64	ND	ND	3.41	4.44	ND
Barium	2000	µg/L	5.6	8.33	5.7	15.2	14.5	18.9	7.28	8.52	7.49	8.19
Beryllium	20	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	1.31	ND
Chromium	100	µg/L	4.12	4.9	8.6	4.84	4.09	22	3.56	4.25	4.66	4.79
Copper	1000	µg/L	ND	ND	6.0	2.37	2.55	3.66	8.16	12.1	3.21	ND
Lead	10	µg/L	ND	ND	3.0	1.46	1.53	2.97	2.08	3.23	ND	ND
Mercury	2	µg/L	ND	ND	ND	ND	0.12	ND	ND	ND	ND	ND
Nickel	100	µg/L	1.46	3.67	3.0	6.87	6.81	10.1	2.65	3.06	ND	1.11
Selenium	50	µg/L	ND	ND	7.0	6.47	9.39	ND	ND	ND	ND	3.51

Notes:

*TICs - Tentatively identified compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (Jan. 7, 1993)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for Semivolatiles and Metals were discontinued as per NJDEP approval dated November 2004

Table 5-13
Ground Water Sampling Results
M-8 Landfill Site MW12 (June97-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	21	22	22	23	24	25	26	27	28	28
WELL ID			MW12 Duplicate	M8MW12	MW12 Duplicate	M8MW12	M8MW12	M8MW12	M8MW12	M8MW12	M8MW12	MW12 Duplicate
Date Collected			6/11/2002	9/25/2002	9/25/2002	12/13/2002	3/21/2003	5/30/2003	8/22/2003	12/12/2003	3/9/2004	3/9/2004
ANALYTE / Lab ID			20361.03	20678.04	20678.03	20885.04	30132.04	30254.04	30541.04	30804.04	40157.04	40157.03
VOCs												
2-Butanone	300	µg/L	ND	14.04	12.96	59.8	2.78	ND	9.29	ND	ND	ND
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	4.04 B	ND	ND
Chlorobenzene	4	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	10	µg/L	ND	ND	ND	2.03	ND	ND	2.73	1.18 J	6.5	6.68
Methylene chloride	3	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**29.46**	**11.44**	**11.62**	**9.51**	**4.45**	**3.10**	ND	ND	ND	ND
Toluene	1000	µg/L	ND	1.18	1.3	2.66	ND	ND	ND	ND	ND	ND
Trichloroethene	1	µg/L	ND	ND	ND	ND	0.92 J	ND	ND	ND	**3.70**	**3.60**
TICs*	500	µg/L	ND	ND	ND	5.0	ND	ND	ND	ND	ND	ND
SVOCs												
1,3-Dichlorobenzene	600	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol	NLE	µg/L	ND	17.60	18.83	4.45	ND	ND	ND	ND	ND	ND
Acenaphthene	400	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-*n* -butyl phthalate	900	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-*n* -octyl phthalate	100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	8.0	64.0	71.0	88.0	14.0	10.0	11.0	21.0	5.0	11.0
Pesticides/PCBs												
4,4'-DDD	0.1	µg/L	ND	ND	ND	ND	0.002	ND	ND	ND	ND	ND
4,4'-DDE	0.1	µg/L	ND	ND	ND	ND	0.002	ND	ND	ND	ND	ND
Methoxychlor	40	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals												
Antimony	20	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	ND	**16.8**	**13.6**	6.46	4.30 ER	3.05 ER	7.08	**9.95**	ND	ND
Barium	2000	µg/L	6.85	12.9	14.0	7.47	10.1	21.7	29.9	13.7	8.26	6.94
Beryllium	20	µg/L	ND	ND	ND	ND	ND	0.451 ER	ND	0.089 ER	ND	ND
Cadmium	4	µg/L	ND	2.37	2.18	0.669	ND	1.10 ER	3.97	ND	ND	ND
Chromium	100	µg/L	7.63	9.05	12.5	1.14	ND	33.0	2.57 ER	8.22	15.0	10.7
Copper	1000	µg/L	3.29	6.81	5.6	ND	2.45 ER	8.02	ND	ND	ND	ND
Lead	10	µg/L	ND	3.78	3.74	ND	ND	8.61	3.52 ER	1.09 ER	ND	ND
Mercury	2	µg/L	ND	ND	0.11	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	5.71	2.66	2.67	ND	ND	12.7	1.70 ER	1.32 ER	ND	ND
Selenium	50	µg/L	7.76	4.25	4.0	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively identified compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (Jan. 7, 1993)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for Semivolatiles and Metals were discontinued as per NJDEP approval dated November 2004

Table 5-13
Ground Water Sampling Results
M-8 Landfill Site MW12 (June97-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	29	29	30	31	32	33	33	34
WELL ID			M8MW12	MW12 Duplicate	M8MW12	M8MW12	M8MW12	M8MW12	MW12 Duplicate	M8MW12
Date Collected			6/28/2004	6/28/2004	8/30/2004	12/21/2004	3/16/2005	6/7/2005	6/7/2005	9/22/2005
ANALYTE / Lab ID			40494.04	40494.03	40637.04	40860.04	50157.04	50291.04	50291.03	50483.04
VOCs										
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	4	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	10	µg/L	3.05	3.31	5.47	ND	ND	6.85	6.47	6.29
Methylene chloride	3	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	ND	ND	ND	ND	**3.67**	ND	ND	ND
Toluene	1000	µg/L	ND	ND	ND	ND	0.26 J	ND	ND	ND
Trichloroethene	1	µg/L	ND	ND	ND	ND	**1.89 J**	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	6.0	ND	ND	ND	ND
SVOCs										
1,3-Dichlorobenzene	600	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NLE	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	400	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl) phthalate	30	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Di-*n* -butyl phthalate	900	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Di-*n* -octyl phthalate	100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
TICs*	500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides/PCBs										
4,4'-DDD	0.1	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.1	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	40	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Metals										
Antimony	20	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	8	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	20	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Lead	10	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	50	µg/L	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

*TICs - Tentatively identified compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (Jan. 7, 1993)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for Semivolatiles and Metals were discontinued as per NJDEP approval dated November 2004

Table 5-13
Ground Water Sampling Results
M-8 Landfill Site MW12 (Dec05-May07)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	35	36	36	37	38	39	40	41
WELL ID			M8MW12	M8MW12	MW12 Duplicate	M8MW12	M8MW12	M8MW12	M8MW12	M8MW12
Date Collected			12/27/2005	3/16/2006	3/16/2006	6/6/2006	9/27/2006	12/19/2006	3/29/2007	5/29/2007
ANALYTE / Lab ID			50658.04	60113.04	60113.03	60262.04	60421.04	60540.04	70115.04	70194.04
VOCs										
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	6000	µg/L	ND	ND	ND	ND	ND	ND	0.83 J	ND
Chlorobenzene	50	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
cis -l,2-Dichloroethene	70	µg/L	3.21	1.98 J	1.89 J	ND	3.18	5.91	0.57 J	ND
Methylene chloride	3	µg/L	ND	ND	ND	ND	ND	ND	ND	1.67 J
Tetrachloroethene	1	µg/L	ND	0.83 J	0.96 J	**1.58 J**	**11.99**	**3.04**	ND	ND
Toluene	1000	µg/L	5.19	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1	µg/L	0.40 J	**3.05**	**3.05**	**1.62 J**	**3.59**	**3.12**	ND	ND
TICs*	500	µg/L	6.0	ND	ND	ND	ND	ND	ND	6.0
Pesticides/PCBs										
4,4'-DDD	0.1	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.1	µg/L	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	40	µg/L	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

*TICs - Tentatively identified compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-C (Nov. 7, 2005)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for Semivolatiles and Metals were discontinued as per NJDEP approval dated November 2004

Table 5-13
Ground Water Sampling Results
M-8 Landfill Site MW12 (Aug07-Nov08)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	42	43	43	44	44	45	46	46	47	47
WELL ID			M8MW12	M8MW12	MW12 Duplicate	M8MW12	MW12 Duplicate	M8MW12	M8MW12	MW12 Duplicate	M8MW12	MW12 Duplicate
Date Collected			8/29/2007	12/28/2007	12/28/2007	3/13/2008	3/13/2008	6/5/2008	9/4/2008	9/4/2008	11/21/2008	11/21/2008
ANALYTE / Lab ID			70319.04	70571.04	70571.03	80083.04	80083.03	80193.04	80315.04	80315.03	80430.04	80430.03
VOCs												
2-Butanone	300	µg/L	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND
Acetone	6000	µg/L	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND
Chlorobenzene	50	µg/L	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	70	µg/L	1.74 J	0.99 J	1.10 J	ND	NA	ND	2.79	2.63	5.0	4.88
Methylene chloride	3	µg/L	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND
Tetrachloroethene	1	µg/L	**1.34 J**	ND	ND	ND	NA	0.71 J	**2.34**	**2.67**	**9.83**	**9.75**
Toluene	600	µg/L	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND
Trichloroethene	1	µg/L	0.73 J	ND	ND	ND	NA	ND	0.52 J	0.59 J	**5.12**	**5.06**
TICs*	500	µg/L	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND
Pesticides/PCBs												
4,4'-DDD	0.1	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	0.1	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	40	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

*TICs - Tentatively identified compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-C (July 27, 2007)

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

Sampling for Semivolatiles and Metals were discontinued as per NJDEP approval dated November 2004

Table 5-14
Ground Water Sampling Results
M-8 Landfill Site MW23 (Sept98-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	10	11	11	11	11	11	12	13	14	15
WELL ID			M8MW23	M8MW23	LF1(1)	LF1(1) Duplicate	LF2(1)	LF2(1) Duplicate	M8MW23	M8MW23	M8MW23	M8MW23
Date Collected			9/23/1999	12/28/1999	2/8/2000	2/8/2000	2/22/2000	2/22/2000	3/15/2000	6/5/2000	9/6/2000	12/13/2000
ANALYTE / Lab ID			4811.16	5051.15	5156.02	5156.03	5192.02	5192.03	5250.16	5454.15	5693.15	5906.15
VOCs												
2-Butanone	300	µg/L	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND
Carbon disulfide	NLE	µg/L	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND
cis -l,2-Dichloroethene	10	µg/L	6.44	ND	NA	NA	NA	NA	5.47	ND	6.81	**10.99**
Tetrachloroethene	1	µg/L	**1.62**	**7.38**	NA	NA	NA	NA	ND	**4.5**	ND	ND
Toluene	1000	µg/L	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND
Trichloroethene	1	µg/L	**1.94**	ND	NA	NA	NA	NA	**2.7**	ND	ND	ND
Vinyl chloride	5	µg/L	1.18	ND	NA	NA	NA	NA	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND
SVOCs												
4-Methylphenol	NLE	µg/L	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND
Benzoic acid	NLE	µg/L	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	NA	NA	NA	NA	ND	ND	ND	ND
Diethyl phthalate	5000	µg/L	ND	ND	NA	NA	NA	NA	ND	ND	ND	2.79
TICs*	500	µg/L	**235.0**	38.0	NA	NA	NA	NA	9.0	85.0	51.0	20.0
Metals												
Antimony	20	µg/L	ND	6.84	8.43	4.75	ND	ND	ND	3.55	ND	ND
Arsenic	8	µg/L	3.47	ND	ND	ND	ND	2.24	2.61	ND	ND	ND
Barium	2000	µg/L	89.9	65.6	61.8	58.5	57.9	59.1	49.5	76.7	45.8	34.4
Beryllium	20	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	0.607	0.634	ND	ND	0.518	ND	ND	ND	ND	ND
Chromium	100	µg/L	5.63	4.78	4.7	4.24	1.16	1.26	1.74	4.08	ND	ND
Copper	1000	µg/L	21.4	3.34	259.0	67.3	ND	ND	4.02	5.63	ND	ND
Lead	10	µg/L	5.92	3.82	7.15	6.56	ND	ND	ND	3.06	2.79	3.94
Mercury	2	µg/L	ND	0.2	ND	0.12	ND	0.14	0.2	ND	ND	ND
Nickel	100	µg/L	6.15	5.74	6.03	5.15	6.56	6.84	9.03	11.5	ND	ND
Selenium	50	µg/L	ND	ND	3.75	3.87	4.09	4.05	ND	ND	ND	ND
Thallium	10	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively identified compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (Jan. 7, 1993)

(1)Low flow sampling method used to collect sample

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for Semivolatiles, Pesticides/PCBs, and Metals were discontinued as per NJDEP approval dated November 2004

Table 5-14
Ground Water Sampling Results
M-8 Landfill Site MW23 (Sept98-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	16	16	17	18	19	20	21	22	23	23
WELL ID			M8MW23	MW23 Duplicate	M8MW23	M8MW23	M8MW23	M8MW23	M8MW23	M8MW23	M8MW23	MW23 Duplicate
Date Collected			3/21/2001	3/21/2001	6/8/2001	9/24/2001	12/17/2001	3/21/2002	6/11/2002	9/23/2002	12/10/2002	12/10/2002
ANALYTE / Lab ID			16011.15	16011.03	16174.15	16448.15	16662.15	20162.15	20361.15	20678.05	20876.11	20876.03
VOCs												
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	22.19	ND	7.98	10.95
Carbon disulfide	NLE	µg/L	ND	ND	ND	ND	ND	ND	7.7	6.13	ND	ND
cis -l,2-Dichloroethene	10	µg/L	3.92	3.85	8.29	**16.42**	**18.47**	6.85	**15.89**	5.86	5.78	3.69
Tetrachloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	3.79	3.78
Trichloroethene	1	µg/L	ND	**1.66**	ND	ND	ND	**1.2**	ND	ND	ND	ND
Vinyl chloride	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	2.06	1.11
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs												
4-Methylphenol	NLE	µg/L	ND	ND	ND	ND	ND	ND	11.97	10.11	34.0	20.52
Benzoic acid	NLE	µg/L	ND	ND	ND	ND	ND	ND	2.86	ND	ND	ND
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diethyl phthalate	5000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	**410.0**	ND	ND	16.0	6.0	ND	186.0	122.0	10.0	8.0
Metals												
Antimony	20	µg/L	ND	6.0	ND	ND	ND	3.2	ND	ND	ND	ND
Arsenic	8	µg/L	**12.0**	6.0	3.41	3.87	6.74	4.93	ND	2.43	ND	ND
Barium	2000	µg/L	39.3	44.2	56.1	57.3	91.0	41.6	96.6	142.0	91.1	93.1
Beryllium	20	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	**5.0**	**5.4**	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	100	µg/L	ND	ND	ND	1.86	3.27	3.03	2.58	1.14	ND	ND
Copper	1000	µg/L	ND	5.0	3.93	6.93	18.5	6.49	11.2	2.34	ND	ND
Lead	10	µg/L	7.0	3.0	**12.2**	**13.5**	**33.5**	9.98	**21.9**	4.0	ND	ND
Mercury	2	µg/L	ND	ND	ND	ND	0.1	ND	ND	ND	ND	ND
Nickel	100	µg/L	22.0	24.0	10.4	5.4	5.41	27.2	1.86	ND	ND	ND
Selenium	50	µg/L	ND	ND	9.13	ND	ND	ND	8.43	ND	ND	ND
Thallium	10	µg/L	ND	7.0	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively identified compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (Jan. 7, 1993)

(1)Low flow sampling method used to collect sample

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for Semivolatiles, Pesticides/PCBs, and Metals were discontinued as per NJDEP approval dated November 2004

Table 5-14
Ground Water Sampling Results
M-8 Landfill Site MW23 (Sept98-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	24	25	26	27	28	29	30	31	32	33	34
WELL ID			M8MW23	M8MW23	M8MW23	M8MW23	M8MW23	M8MW23	M8MW23	M8MW23	M8MW23	M8MW23	M8MW23
Date Collected			3/21/2003	5/30/2003	8/22/2003	12/30/2003	3/9/2004	6/28/2004	8/30/2004	12/21/2004	3/16/2005	6/8/2005	9/22/2005
ANALYTE / Lab ID			30132.15	30254.15	30541.15	30831.07	40157.08	40494.15	40637.15	40860.05	50157.12	50299.10	50483.12
VOCs													
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis -l,2-Dichloroethene	10	µg/L	ND	1.01 J	**11.74**	0.47 J	2.12	5.46	8.29	2.66	2.15	1.06 J	5.99
Tetrachloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	0.95 J	ND	ND	ND	ND
Vinyl chloride	5	µg/L	ND	ND	4.07	ND	2.40	**5.13**	**13.71**	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs													
4-Methylphenol	NLE	µg/L	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
Benzoic acid	NLE	µg/L	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	ND	ND	1.74 J	NA	NA	NA	NA	NA	NA
Diethyl phthalate	5000	µg/L	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
TICs*	500	µg/L	27.00	12.0	89.0	60.0	6.0	NA	NA	NA	NA	NA	NA
Metals													
Antimony	20	µg/L	4.16 ER	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA
Arsenic	8	µg/L	3.17 ER	ND	**10.1**	**9.69**	ND	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	21.3	9.54	75.8	11.7	33.0	NA	NA	NA	NA	NA	NA
Beryllium	20	µg/L	0.0764	0.155 ER	0.109 ER	0.092 ER	ND	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	0.144 ER	ND	0.723 ER	ND	ND	NA	NA	NA	NA	NA	NA
Chromium	100	µg/L	3.25 ER	4.39 ER	5.12	2.94 ER	ND	NA	NA	NA	NA	NA	NA
Copper	1000	µg/L	7.07	2.59 ER	14.7	4.58 ER	8.1	NA	NA	NA	NA	NA	NA
Lead	10	µg/L	**32.4**	2.76 ER	**42.6**	**10.7**	9.8	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	ND	ND	0.19 ER	ND	ND	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	4.47 ER	2.98 ER	5.26	5.36	ND	NA	NA	NA	NA	NA	NA
Selenium	50	µg/L	ND	7.15 ER	ND	ND	ND	NA	NA	NA	NA	NA	NA
Thallium	10	µg/L	ND	2.08 ER	ND	ND	ND	NA	NA	NA	NA	NA	NA

Notes:

*TICs - Tentatively identified compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (Jan. 7, 1993)

(1)Low flow sampling method used to collect sample

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for Semivolatiles, Pesticides/PCBs, and Metals were discontinued as per NJDEP approval dated November 2004

Table 5-14
Ground Water Sampling Results
M-8 Landfill Site MW23 (Dec05-May07)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	35	36	37	37	38	38	39	40	41
WELL ID			M8MW23	M8MW23	M8MW23	MW23 Duplicate	M8MW23	MW23 Duplicate	M8MW23	M8MW23	M8MW23
Date Collected			12/27/2005	3/16/2006	6/8/2006	6/8/2006	9/28/2006	9/28/2006	12/19/2006	3/30/2007	5/30/2007
ANALYTE / Lab ID			50658.10	60113.12	60266.07	60266.03	60422.07	60422.03	60540.12	70118.09	70195.07
VOCs											
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis -l,2-Dichloroethene	70	µg/L	0.68 J	1.65 J	ND	ND	ND	0.48 J	2.14	ND	0.64 J
Tetrachloroethene	1	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1	µg/L	ND	0.37 J	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	1	µg/L	ND	ND	ND	ND	ND	ND	0.91 J	ND	ND
TICs*	500	µg/L	ND	ND	ND	5.0	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively identified compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-C (Nov. 7, 2005)

(1)Low flow sampling method used to collect sample

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

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Table 5-14
Ground Water Sampling Results
M-8 Landfill Site MW23 (Aug07-Nov08)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	42	43	44	45	46	47
WELL ID			M8MW23	M8MW23	M8MW23	M8MW23	M8MW23	M8MW23
Date Collected			8/30/2007	12/28/2007	3/13/2008	6/5/2008	9/5/2008	11/21/2008
ANALYTE / Lab ID			70320.07	70571.15	80083.12	80193.12	80319.07	80430.15
VOCs								
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND
Carbon disulfide	700	µg/L	ND	ND	ND	ND	ND	ND
cis -l,2-Dichloroethene	70	µg/L	ND	1.63 J	0.33 J	ND	11.67	5.60
Tetrachloroethene	1	µg/L	ND	ND	ND	ND	ND	ND
Toluene	600	µg/L	ND	ND	ND	ND	ND	ND
Trichloroethene	1	µg/L	ND	ND	ND	ND	ND	ND
Vinyl chloride	1	µg/L	ND	ND	ND	ND	**2.73**	0.79 J
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively identified compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-C (July 27, 2007)

(1)Low flow sampling method used to collect sample

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for Semivolatiles, Pesticides/PCBs, and Metals were discontinued as per NJDEP approval dated November 2004

Table 5-15
Ground Water Sampling Results
M-8 Landfill Site MW24 (Sept99-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	10	11	11	11	12	12	13	14	15	16	16
WELL ID			M8MW24	LF1(1)	LF1(1) Duplicate	LF2(1)	M8MW24	MW24 Duplicate	M8MW24	M8MW24	LF3(1)	M8MW24	MW24 Duplicate
Date Collected			9/23/1999	1/6/2000	1/6/2000	1/27/2000	3/15/2000	3/15/2000	6/5/2000	9/6/2000	12/26/2000	4/2/2001	4/2/2001
ANALYTE / Lab ID			4811.17	5074.02	5074.03	5124.01	5250.17	5250.03	5454.16	5693.16	5919.01	16017.01	16017.04
VOCs													
1,3-Dichlorobenzene	600	µg/L	ND	NA	NA	NA	ND	ND	ND	ND	ND	4.17	3.77
1,4-Dichlorobenzene	75	µg/L	ND	NA	NA	NA	ND	ND	ND	ND	ND	13.51	12.75
2-Butanone	300	µg/L	ND	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND
Benzene	1	µg/L	ND	NA	NA	NA	**1.67**	**1.39**	**1.35**	**1.49**	ND	**3.97**	**3.82**
Chlorobenzene	4	µg/L	1.01	NA	NA	NA	1.99	1.68	2.74	2.91	1.37	**39.77**	**38.86**
Chloroform	6	µg/L	ND	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND
cis -l,2-Dichloroethene	10	µg/L	ND	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	700	µg/L	4.05	NA	NA	NA	1.06	1.07	ND	ND	ND	ND	ND
Toluene	1000	µg/L	ND	NA	NA	NA	3.75	2.79	ND	ND	ND	ND	ND
Total Xylenes	1000	µg/L	10.76	NA	NA	NA	2.2	1.92	ND	ND	ND	ND	ND
TICs*	500	µg/L	33.0	NA	NA	NA	ND	ND	ND	ND	ND	68.0	59.0
SVOCs													
1,3-Dichlorobenzene	600	µg/L	ND	NA	NA	NA	ND	ND	ND	ND	ND	2.37	2.69
1,4-Dichlorobenzene	75	µg/L	ND	NA	NA	NA	ND	ND	ND	ND	ND	7.68	8.66
4-Methylphenol	NLE	µg/L	38.58	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	400	µg/L	ND	NA	NA	NA	ND	ND	ND	ND	ND	ND	1.03
Bis(2-ethylhexyl) phthalate	30	µg/L	1.74	NA	NA	NA	1.78	ND	ND	ND	ND	3.38	4.13
Diethyl phthalate	5000	µg/L	ND	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND
Naphthalene	NLE	µg/L	3.24	NA	NA	NA	ND	ND	ND	ND	ND	10.97	12.73
TICs*	500	µg/L	**505.0**	NA	NA	NA	23.0	ND	ND	6.0	ND	79.0	97.0
Pesticides/PCBs													
4,4'-DDT	0.1	µg/L	ND	ND	ND	ND	ND	ND	ND	**0.15**	ND	ND	ND
Dieldrin	0.03	µg/L	ND	ND	ND	ND	ND	ND	ND	0.042	ND	ND	ND
Endrin	2	µg/L	ND	ND	ND	ND	ND	ND	**1.08**	**1.80**	ND	ND	ND
Endrin aldehyde	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	0.065	ND	ND	ND
Endrin ketone	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	0.066	ND	ND	ND
Endosulfan I	0.4	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Gamma-chlordane	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methoxychlor	40	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively identified compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (Jan. 7, 1993)

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Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

Total Xylenes= ∑ of *o* -Xylene and *m,p* -Xylene.

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Sampling for Semivolatiles and Metals were discontinued as per NJDEP approval dated November 2004

Table 5-15
Ground Water Sampling Results
M-8 Landfill Site MW24 (Sept99-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	17	17	18	19	20	21	22	23	24	24	25	26
WELL ID			M8MW24	MW24 Duplicate	M8MW24	M8MW24	M8MW24	M8MW24	M8MW24	M8MW24	M8MW24	MW24 Duplicate	M8MW24	M8MW24
Date Collected			6/23/2001	6/23/2001	9/26/2001	12/10/2001	3/27/2002	6/22/2002	9/26/2002	12/13/2002	3/20/2003	3/20/2003	6/25/2003	9/8/2003
ANALYTE / Lab ID			16207.04	16207.03	16460.01	16634.01	20171.01	20390.01	20688.01	20886.01	30127.04	30127.03	30321.03	30580.04
VOCs														
1,3-Dichlorobenzene	600	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	75	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	1.15	1.06	ND	ND
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	1	µg/L	ND	ND	**1.28**	**1.40**	ND	**1.33**	ND	ND	ND	ND	ND	**1.08 J**
Chlorobenzene	4	µg/L	1.7	1.64	2.8	1.94	ND	1.78	2.51	1.42	**5.00**	**4.80**	ND	2.15
Chloroform	6	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.02	ND
cis -l,2-Dichloroethene	10	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	700	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	1000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.0
SVOCs														
1,3-Dichlorobenzene	600	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	75	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	400	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	ND	1.44	ND	ND	ND	ND	ND	ND	ND	ND
Diethyl phthalate	5000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.05 J B	ND
Naphthalene	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	16.0	6.0	6.0	9.0	14.0	8.0	19	19	12.0	4.0
Pesticides/PCBs														
4,4'-DDT	0.1	µg/L	ND	ND	ND	0.004	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	0.03	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin	2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin aldehyde	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin ketone	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan I	0.4	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Gamma-chlordane	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methoxychlor	40	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively identified compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (Jan. 7, 1993)

(1)Low flow sampling method used to collect sample

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Total Xylenes= ∑ of *o* -Xylene and *m,p* -Xylene.

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NA - Not analyzed

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Table 5-15
Ground Water Sampling Results
M-8 Landfill Site MW24 (Sept99-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	26	27	27	28	29	30	30	31	31	32	33	34
WELL ID			MW24 Duplicate	M8MW24	MW24 Duplicate	M8MW24	M8MW24	M8MW24	MW24 Duplicate	M8MW24	MW24 Duplicate	M8MW24	M8MW24	M8MW24
Date Collected			9/8/2003	11/21/2003	11/21/2003	2/25/2004	6/28/2004	8/30/2004	8/30/2004	12/21/2004	12/21/2004	3/17/2005	6/7/2005	9/23/2005
ANALYTE / Lab ID			30580.03	30755.04	30755.03	40142.01	40499.01	40637.16	40637.03	40860.06	40860.03	50158.07	50291.09	50486.07
VOCs														
1,3-Dichlorobenzene	600	µg/L	ND	ND	ND	ND	ND	ND	ND	0.44 J	0.40 J	ND	ND	ND
1,4-Dichlorobenzene	75	µg/L	ND	ND	ND	0.74 J	0.72 J	0.70 J	0.71 J	1.51 J	1.51 J	ND	0.62 J	0.85 J
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	1	µg/L	**1.06 J**	0.65 J	0.66 J	**1.20 J**	0.98 J	**1.16 J**	**1.12 J**	**1.19 J**	**1.20 J**	**1.24 J**	0.28 J	0.37 J
Chlorobenzene	4	µg/L	2.11	1.45 J	1.45 J	3.11	2.61	2.56	2.52	**6.70**	**6.80**	3.76	2.14	3.04
Chloroform	6	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis -l,2-Dichloroethene	10	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	700	µg/L	ND	ND	ND	ND	ND	0.42 J	0.39 J	ND	ND	ND	ND	ND
Toluene	1000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	1000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	3.0	4.0	3.0	11.0	6.0	ND	ND	3.0	4.0	29.0	ND	4.0
SVOCs														
1,3-Dichlorobenzene	600	µg/L	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	75	µg/L	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NLE	µg/L	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	400	µg/L	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl) phthalate	30	µg/L	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Diethyl phthalate	5000	µg/L	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	NLE	µg/L	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
TICs*	500	µg/L	ND	32.0	5.0	17.0	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides/PCBs														
4,4'-DDT	0.1	µg/L	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	0.03	µg/L	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	2	µg/L	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Endrin aldehyde	NLE	µg/L	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Endrin ketone	NLE	µg/L	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan I	0.4	µg/L	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Gamma-chlordane	NLE	µg/L	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	40	µg/L	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

*TICs - Tentatively identified compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-6 (Jan. 7, 1993)

(1)Low flow sampling method used to collect sample

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

Total Xylenes= ∑ of *o* -Xylene and *m,p* -Xylene.

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for Semivolatiles and Metals were discontinued as per NJDEP approval dated November 2004

Table 5-15
Ground Water Sampling Results
M-8 Landfill Site MW24 (Sept99-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	10	11	11	11	12	12	13	14	15	16	16
WELL ID			M8MW24	LF1(1)	LF1(1) Duplicate	LF2(1)	M8MW24	MW24 Duplicate	M8MW24	M8MW24	LF3(1)	M8MW24	MW24 Duplicate
Date Collected			9/23/1999	1/6/2000	1/6/2000	1/27/2000	3/15/2000	3/15/2000	6/5/2000	9/6/2000	12/26/2000	4/2/2001	4/2/2001
ANALYTE / Lab ID			4811.17	5074.02	5074.03	5124.01	5250.17	5250.03	5454.16	5693.16	5919.01	16017.01	16017.04
Metals													
Antimony	20	µg/L	ND	2.0	2.0	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	3.77	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2000	µg/L	276.0	57.6	57.1	87.4	137.0	141.0	120.0	113.0	65.9	601.0	606.0
Beryllium	20	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	µg/L	1.83	ND	ND	ND	ND	ND	ND	ND	ND	2.7	2.6
Chromium	100	µg/L	8.75	2.8	2.7	ND	2.75	ND	3.93	ND	ND	ND	ND
Copper	1000	µg/L	29.3	53.0	45.0	ND	ND	ND	ND	ND	ND	10.0	4.0
Lead	10	µg/L	**27.1**	ND	ND	ND	ND	ND	5.61	ND	ND	**25.0**	**19.0**
Mercury	2	µg/L	0.2	ND	ND	0.61	0.2	ND	ND	ND	ND	0.25	0.16
Nickel	100	µg/L	3.59	1.4	1.5	ND	1.78	2.38	3.86	ND	ND	7.0	6.0
Selenium	50	µg/L	ND	ND	ND	4.0	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively identified compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Groundwater Quality Standards as per N.J.A.C. 7:9-6 (Jan. 7, 1993)

(1)Low flow sampling method used to collect sample

Exceedances of NJDEP Groundwater Quality Standards are shaded and bold

Total Xylenes= ∑ of *o* -Xylene and *m,p* -Xylene.

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for Semivolatiles and Metals were discontinued as per NJDEP approval dated November 2004

Table 5-15
Ground Water Sampling Results
M-8 Landfill Site MW24 (Sept99-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	17	17	18	19	20	21	22	23	24	24	25	26
WELL ID			M8MW24	MW24 Duplicate	M8MW24	M8MW24	M8MW24	M8MW24	M8MW24	M8MW24	M8MW24	MW24 Duplicate	M8MW24	M8MW24
Date Collected			6/23/2001	6/23/2001	9/26/2001	12/10/2001	3/27/2002	6/22/2002	9/26/2002	12/13/2002	3/20/2003	3/20/2003	6/25/2003	9/8/2003
ANALYTE / Lab ID			16207.04	16207.03	16460.01	16634.01	20171.01	20390.01	20688.01	20886.01	30127.04	30127.03	30321.03	30580.04
Metals														
Antimony	20	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	8	µg/L	ND	4.95	ND	ND	4.17	ND	3.49	ND	ND	ND	ND	ND
Barium	2000	µg/L	173.0	165.0	289.0	186.0	85.0	137.0	201.0	136.0	185.0	175.0	194.0	173.0
Beryllium	20	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	0.100 ER	0.0816	0.0528 ER	0.037 ER
Cadmium	4	µg/L	1.06	1.1	ND	ND	ND	ND	ND	ND	0.586 ER	ND	0.661 ER	0.452 ER
Chromium	100	µg/L	ND	ND	0.844	3.49	ND	ND	ND	ND	ND	3.01	1.35 ER	ND
Copper	1000	µg/L	ND	ND	24.4	2.32	ND	ND	ND	ND	ND	ND	ND	ND
Lead	10	µg/L	ND	ND	4.76	2.37	ND	ND	ND	ND	ND	**11.8**	1.36 ER	1.28 ER
Mercury	2	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	µg/L	ND	ND	2.32	1.81	ND	ND	ND	ND	1.48 ER	ND	1.01 ER	ND
Selenium	50	µg/L	9.87	10.1	ND	ND	ND	5.68	5.88	ND	ND	8.59	ND	ND

Notes:

*TICs - Tentatively identified compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Groundwater Quality Standards as per N.J.A.C. 7:9-6 (Jan. 7, 1993)

(1)Low flow sampling method used to collect sample

Exceedances of NJDEP Groundwater Quality Standards are shaded and bold

Total Xylenes= ∑ of *o* -Xylene and *m,p* -Xylene.

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for Semivolatiles and Metals were discontinued as per NJDEP approval dated November 2004

Table 5-15
Ground Water Sampling Results
M-8 Landfill Site MW24 (Sept99-Sept05)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	26	27	27	28	29	30	30	31	31	32	33	34
WELL ID			MW24 Duplicate	M8MW24	MW24 Duplicate	M8MW24	M8MW24	M8MW24	MW24 Duplicate	M8MW24	MW24 Duplicate	M8MW24	M8MW24	M8MW24
Date Collected			9/8/2003	11/21/2003	11/21/2003	2/25/2004	6/28/2004	8/30/2004	8/30/2004	12/21/2004	12/21/2004	3/17/2005	6/7/2005	9/23/2005
ANALYTE / Lab ID			30580.03	30755.04	30755.03	40142.01	40499.01	40637.16	40637.03	40860.06	40860.03	50158.07	50291.09	50486.07
Metals														
Antimony	20	µg/L	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	8	µg/L	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	175.0	138.0	139.0	235.0	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	20	µg/L	ND	0.038 ER	0.049 ER	ND	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	µg/L	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	100	µg/L	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1000	µg/L	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Lead	10	µg/L	2.29 ER	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	2	µg/L	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	100	µg/L	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	50	µg/L	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

*TICs - Tentatively identified compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Groundwater Quality Standards as per N.J.A.C. 7:9-6 (Jan. 7, 1993)

(1)Low flow sampling method used to collect sample

Exceedances of NJDEP Groundwater Quality Standards are shaded and bold

Total Xylenes= ∑ of *o* -Xylene and *m,p* -Xylene.

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for Semivolatiles and Metals were discontinued as per NJDEP approval dated November 2004

Table 5-15
Ground Water Sampling Results
M-8 Landfill Site MW24 (Dec05-May07)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	35	36	37	38	39	40	41
WELL ID			M8MW24	M8MW24	M8MW24	M8MW24	M8MW24	M8MW24	M8MW24
Date Collected			12/28/2005	3/17/2006	6/8/2006	9/27/2006	12/19/2006	3/30/2007	5/29/2007
ANALYTE / Lab ID			50660.09	60116.07	60266.08	60421.12	60540.13	70118.10	70194.12
VOCs									
1,3-Dichlorobenzene	600	µg/L	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	75	µg/L	0.68 J	0.46 J	ND	ND	0.51 J	0.47 J	0.89 J
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND	ND
Benzene	1	µg/L	0.24 J	ND	ND	ND	ND	0.29 J	ND
Chlorobenzene	50	µg/L	2.84	1.58 J	1.07 J	2.15	ND	3.21	3.40
Chloroform	70	µg/L	ND	ND	ND	ND	ND	ND	ND
cis -l,2-Dichloroethene	70	µg/L	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	700	µg/L	ND	ND	ND	ND	ND	ND	ND
Toluene	1000	µg/L	ND	ND	ND	ND	ND	2.15	ND
Total Xylenes	1000	µg/L	ND	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	9.0	ND	ND	ND	4.0	ND	18.0
Pesticides/PCBs									
4,4'-DDT	0.1	µg/L	ND	ND	ND	ND	ND	ND	ND
Dieldrin	0.03	µg/L	ND	ND	ND	ND	ND	ND	ND
Endrin	2	µg/L	ND	ND	ND	ND	ND	ND	ND
Endrin aldehyde	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND
Endrin ketone	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND
Endosulfan I	40	µg/L	ND	ND	ND	ND	ND	ND	ND
Gamma-chlordane	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND
Methoxychlor	40	µg/L	ND	ND	ND	ND	ND	ND	ND

Notes:

*TICs - Tentatively identified compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-C (Nov. 7, 2005)

(1)Low flow sampling method used to collect sample

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

Total Xylenes= ∑ of *o* -Xylene and *m,p* -Xylene.

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for Semivolatiles and Metals were discontinued as per NJDEP approval dated November 2004

Table 5-15
Ground Water Sampling Results
M-8 Landfill Site MW24 (Aug07-Nov08)
Fort Monmouth, New Jersey

Round No.	**NJDEP Criteria	Units	42	43	44	45	46	47
WELL ID			M8MW24	M8MW24	M8MW24	M8MW24	M8MW24	M8MW24
Date Collected			8/30/2007	12/28/2007	3/14/2008	6/5/2008	9/5/2008	11/21/2008
ANALYTE / Lab ID			70320.08	70571.16	80086.07	80193.13	80319.08	80430.16
VOCs								
1,3-Dichlorobenzene	600	µg/L	ND	ND	0.30 J	ND	0.33 J	ND
1,4-Dichlorobenzene	75	µg/L	0.55 J	ND	1.03 J	0.53 J	1.04 J	0.53 J
2-Butanone	300	µg/L	ND	ND	ND	ND	ND	ND
Benzene	1	µg/L	ND	ND	0.74 J	ND	0.24 J	ND
Chlorobenzene	50	µg/L	1.87 J	2.02	5.08	2.35	3.68	2.30
Chloroform	70	µg/L	ND	ND	ND	ND	ND	ND
cis -l,2-Dichloroethene	70	µg/L	ND	ND	ND	ND	0.31 J	ND
Ethylbenzene	700	µg/L	ND	ND	ND	ND	ND	ND
Toluene	600	µg/L	ND	ND	ND	ND	ND	ND
Total Xylenes	1000	µg/L	ND	ND	ND	ND	ND	ND
TICs*	500	µg/L	ND	ND	8.0	ND	17.0	4.0
Pesticides/PCBs								
4,4'-DDT	0.1	µg/L	NA	NA	NA	NA	NA	NA
Dieldrin	0.03	µg/L	NA	NA	NA	NA	NA	NA
Endrin	NLE	µg/L	NA	NA	NA	NA	NA	NA
Endrin aldehyde	NLE	µg/L	NA	NA	NA	NA	NA	NA
Endrin ketone	0.03	µg/L	NA	NA	NA	NA	NA	NA
Endosulfan I	40	µg/L	NA	NA	NA	NA	NA	NA
Gamma-chlordane	0.5	µg/L	NA	NA	NA	NA	NA	NA
Methoxychlor	40	µg/L	NA	NA	NA	NA	NA	NA

Notes:

*TICs - Tentatively identified compounds, cannot exceed 500 ppb for VOCs and SVOCs. No individual compound can exceed 100 ppb.

**NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9-C (July 27, 2007)

(1)Low flow sampling method used to collect sample

Exceedances of NJDEP Ground Water Quality Standards are shaded and bold

Total Xylenes= ∑ of *o* -Xylene and *m,p* -Xylene.

ER - Estimated result

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Sampling for Semivolatiles and Metals were discontinued as per NJDEP approval dated November 2004

Table 5-16
Ground Water Exceedance Summary
M-5 Landfill Site (FTMM-05)
Fort Monmouth, New Jersey

Analyte	Criterion	Field ID	Round	Date Collected	Lab Sample ID	Result
VOCs						
PCE	**1**	M-5MW11	39	11/17/2006	6050305	**4.57**
			40	3/8/2007	7008704	**1.5 J**
			41	6/6/2007	7020405	**3.83**
			42	8/14/2007	7030705	**5.24**
			44	3/11/2008	8007705	**2.02**
			45	6/3/2008	8018505	**2.93**
			47	11/10/2008	8040405	**2.47**
		M-5MW16	39	11/17/2006	6050004	**86.18**
			40	3/8/2007	7008705	**32.4**
			41	6/6/2007	7020709	**25.31**
			42	8/14/2007	7030709	**53.02**
			43	12/5/2007	7050709	**11.97**
			44	3/11/2008	8007709	**6.93**
			45	6/3/2008	8018509	**4.42**
			46	8/25/2008	8030609	**5.92**
			47	11/10/2008	8040409	**4.43**
		M-5MW19	43	12/5/2007	7050711	**2.36**
			47	11/10/2008	8040411	**2.01**
		M-5MW20	39	11/17/2006	6050309	**1.72 J**
			39 (Duplicate)	11/17/2006	6050303	**1.66 J**
			40	3/8/2007	7008708	**1.83 J**
			40 (Duplicate)	3/8/2007	7008703	**1.98 J**
			42	8/14/2007	7030712	**2.26**
			45	6/3/2008	8018512	**1.28 J**
			46	8/25/2008	8030612	**2.41**
			47	11/10/2008	8040412	**2.19**
		M-5MW23	39	11/17/2006	6050310	**1.61 J**
			40	3/8/2007	7008709	**1.54 J**
			41	6/6/2007	7020413	**16**
			42	8/14/2007	7030713	**3.91**
			44	3/11/2008	8007713	**1.86 J**
			45	6/3/2008	8018513	**4.5**
			46	8/25/2008	8030613	**2.74**
			47	11/10/2008	8040413	**3.34**
		M-8MW12	39	12/19/2006	6054004	**3.04**
			42	8/29/2007	7031904	**1.34 J**
			46	9/4/2008	8007713	**2.34**
			46 (Duplicate)	9/4/2008	8018513	**2.67**
			47	11/21/2008	8030613	**9.83**
			47 (Duplicate)	11/21/2008	8040413	**9.75**
TCE	1	M-5MW16	39	11/17/2006	6050004	**37.11**
			40	3/8/2007	7008705	**19.98**
			41	6/6/2007	7020709	**6.53**
			42	8/14/2007	7030709	**25.4**
			43	12/5/2007	7050709	**5.2**
			46	8/25/2008	8030609	**1.99 J**
			47	11/10/2008	8040409	**1.36 J**

Table 5-16
Ground Water Exceedance Summary
M-5 Landfill Site (FTMM-05)
Fort Monmouth, New Jersey

Analyte	Criterion	Field ID	Round	Date Collected	Lab Sample ID	Result
TCE		M-5MW19	39	11/17/2006	6050006	**1.17 J**
			40	3/8/2007	7008706	**1.01 J**
			43	12/5/2007	7050711	**5.01**
			44	3/11/2008	8007711	**1.34 J**
			47	11/10/2008	8040411	**3.68**
		M-5MW20	40	3/8/2007	7008708	**1.41 J**
			40 (Duplicate)	3/8/073	7008703	**1.21 J**
			46	8/25/2008	8030612	**1.65 J**
		M-8MW12	39	12/19/2006	6054004	**3.12**
			47	11/21/2008	8043004	**5.12**
			47 (Duplicate)	11/21/2008	8043003	**5.06**
Vinyl Chloride	1	M-5MW16	39	11/17/2006	6050004	**4.95**
			40	3/8/2007	7008705	**2.41**
			41	6/6/2007	7020709	**1.17 J**
			42	8/14/2007	7030709	**7.33**
			43	12/5/2007	7050709	**2.85**
			46	8/25/2008	8030609	**1.2 J**
		M-8MW23	46	9/5/2008	8031907	**2.73**

All results are in micrograms per liter (µg/l).
VOCs = Volatile Organic Compounds.
PCE = Tetrachloroethene.
TCE = Trichloroethene.
Criteria=NJDEP Ground Water Quality Standards (Higher of GWQS and PQL) per N.J.A.C. 7:9-6.1997 as amended through 2008.

Table 5-17
Summary of Surface Water Quality Results
SS-04 (Oct96-Aug04)
Fort Monmouth, New Jersey

Round Number	Fresh Water Criteria [1]	Units	1A	1B	1C	2A	2B	2C	3	4	5	6	7
Stream ID			SS-04	SS-04	SS-04	SS-04	SS-04	SS-04	SS-04	SS-04	SS-04	SS-04	SS-04
Date Collected			10/8/1996	11/25/1996	12/12/1996	1/29/1997	2/26/1997	3/10/1997	4/8/1997	7/17/1997	10/30/1997	2/10/1998	4/21/1998
Analyte/Lab ID			2178.04	2223.12	2246.12	2298.12	2361.12	2375.12	2439.12	2810.12	3121.12	3331.12	3499.12
VOCs													
Acetone	NLE	µg/L	NA	NA	NA	30.91	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	NLE	µg/L	NA	NA	NA	1.16	1.14	ND	2.18	1.63	ND	ND	ND
Methyl *tert* -butyl ether	70	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	2.5	µg/L	**3.75 B**	**3.03 B**	**3.62**	2.5	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.34	µg/L	**2.35**	**6.26**	**2.28**	**4.42**	**6.37**	**2.33**	ND	**1.61**	**1.24**	**6.61**	ND
Trichloroethene	1.0	µg/L	0.64	**1.60**	0.75	ND	ND	ND	ND	ND	ND	ND	ND
Tentatively identified compounds	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Wet Chemistry													
Temperature	NLE	ºC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH	6.5–8.5	—	7.17	7.33	7.83	8.09	7.06	7.91	7.88	7.52	8.32	**8.64**	6.90
Ammonia	NLE	mg/L	1.28	1.64	1.24	2.64	6.25	NA	0.44	0.33	1.13	0.482	0.916
Nitrates	10000	mg/L	1.8	1.2	1.1	2.3	1.9	2.5	1.2	ND	0.6	0.4	ND
Oxygen (dissolved)	NLE	mg/L	7.5	7.4	6.1	9.5	14	13.9	11.4	19.9	9.3	9.6	11.27
Phosphate	NLE	mg/L	0.6	0.03	0.07	0.2	0.1	0.12	0.13	0.39	0.14	0.2	0.26
Salinity	NLE	%	3.18	NA	5	0	1	0	NA	3	5	NA	NA
Sulfate	NLE	mg/L	240	2125	450	52	42	7	145	185	110	40	25
Fecal Coliform	NLE	cfu/100mL	320	50	300	20	<1	15	60	740	40	80	1400
Total Coliform	NLE	cfu/100mL	6700	140	TNTC	1000	60	125	720	TNTC	820	140	360

Notes:

[1] Health based NDEP Surface Water Quality Criteria as per N.J.A.C. 7:9B effective 4/17/98

mg/L and µg/L = milligrams/liter and micrograms/liter, respectively

cfu/100 mL = colony-forming units/100 milliliters

B - Compound detected in the sample and its associated blank sample

Exceedences of NJDEP SWQC are shaded and bold

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

TNTC - Too numerous to count

Table 5-17
Summary of Surface Water Quality Results
SS-04 (Oct96-Aug04)
Fort Monmouth, New Jersey

Round Number	Fresh Water Criteria [1]	Units	8	9	10	11	12	13	14	15	16	17	18
Stream ID			SS-04	SS-04	SS-04	SS-04	SS-04	SS-04	SS-04	SS-04	SS-04	SS-04	SS-04
Date Collected			8/19/1998	11/17/1998	2/25/1999	6/29/1999	9/22/1999	12/8/1999	3/1/2000	6/12/2000	8/24/2000	11/20/2000	3/8/2001
Analyte/Lab ID			3816.12	4060.09	4300.12	4579.14	4806.05	4997.10	5211.10	5468.16	5658.16	5868.16	1310
VOCs													
Acetone	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	NLE	µg/L	1.92	1.19	ND	2.41	2.02	ND	1.23	ND	1.19	ND	ND
Methyl *tert* -butyl ether	70	µg/L	ND	ND	ND	ND	ND	ND	2.18	ND	ND	ND	ND
Methylene chloride	2.5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.34	µg/L	**2.85**	**1.62**	**5.61**	**5.27**	**1.85**	ND	**6.18**	**4.37**	**3.19**	**3.7**	**2.52**
Trichloroethene	1.0	µg/L	**1.10**	ND	ND	**1.56**	ND	ND	**1.26**	ND	**1.19**	ND	ND
Tentatively identified compounds	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Wet Chemistry													
Temperature	NLE	ºC	NA	NA	NA	30.3	12.5	12.5	12.3	26.8	23	21.3	NA
pH	6.5–8.5	—	6.86	7.15	6.60	7.47	7.28	7.30	7.68	6.75	7.27	7.37	7.03
Ammonia	NLE	mg/L	0.474	ND	0.669	1.09	0.714	0.444	0.637	ND	0.484	0.405	ND
Nitrates	10000	mg/L	ND	ND	ND	0.2	ND	ND	0.3	0.6	0.9	1	1.1
Oxygen (dissolved)	NLE	mg/L	3.12	8.92	7.9	4.43	6.76	6.89	7.49	6.65	7.35	8.27	8.99
Phosphate	NLE	mg/L	0.01	0.04	ND	ND	ND	ND	ND	ND	ND	ND	ND
Salinity	NLE	%	0	10	1	2	1	1	0	2	2	1.001	NA
Sulfate	NLE	mg/L	145	700	37	250	120	140	85	120	29	44	300
Fecal Coliform	NLE	cfu/100mL	720	260	60	2460	1360	260	20	860	180	60	0
Total Coliform	NLE	cfu/100mL	3760	840	240	10100	10200	1240	300	1160	7200	800	440

Notes:

[1] Health based NDEP Surface Water Quality Criteria as per N.J.A.C. 7:9B effective 4/17/98

mg/L and µg/L = milligrams/liter and micrograms/liter, respectively

cfu/100 mL = colony-forming units/100 milliliters

B - Compound detected in the sample and its associated blank sample

Exceedences of NJDEP SWQC are shaded and bold

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

TNTC - Too numerous to count

Table 5-17
Summary of Surface Water Quality Results
SS-04 (Oct96-Aug04)
Fort Monmouth, New Jersey

Round Number	Fresh Water Criteria [1]	Units	19	20	21	22	23	24	25	26	27	28	29
Stream ID			SS-04	SS-04	SS-04	SS-04	SS-04	SS-04	SS-04	SS-04	SS-04	SS-04	SS-04
Date Collected			5/16/2001	9/25/2001	11/14/2001	2/11/2002	6/18/2002	9/18/2002	11/4/2002	3/13/2003	5/21/2003	9/17/2003	11/4/2003
Analyte/Lab ID			16120.16	16449.14	16579.19	20086.19	20376.19	20666.1	20780.12	30118.17	30247.16	30592.15	30700.15
VOCs													
Acetone	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	0.57 J	ND	1.14 J	1.03 J
Methyl *tert* -butyl ether	70	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**454.16**
Methylene chloride	2.5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.34	µg/L	**2.95**	ND	ND	**1.64**	**1.97**	ND	ND	**2.33**	ND	**1.13 J**	ND
Trichloroethene	1.0	µg/L	ND	ND	ND	ND	ND	ND	ND	0.51 J	ND	ND	ND
Tentatively identified compounds	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	120
Wet Chemistry													
Temperature	NLE	ºC	NA	21.1	6.99	NA	NA	NA	NA	NA	NA	NA	NA
pH	6.5–8.5	—	7.36	7.96	6.78	7.07	7.42	7.71	7.89	**6.18**	7.78	7.80	7.76
Ammonia	NLE	mg/L	0.301	ND	0.616	ND	ND	0.4	ND	0.35	0.47	0.18	ND
Nitrates	10000	mg/L	0.8	0.4	ND	0.24	0.72	0.4	0.18	1.44	0.74	1.32	0.94
Oxygen (dissolved)	NLE	mg/L	7.87	0	8.77	8.97	8.47	7.2	7.77	11.06	8.51	7.98	8.43
Phosphate	NLE	mg/L	0.12	0.28	0.23	0.18	0.17	0.11	0.19	0.16	0.46	0.15	0.07
Salinity	NLE	%	NA	1	12	11	13	9	2	2	12	8	9
Sulfate	NLE	mg/L	130	34.2	666	205	41.3	460	1106	33.6	31.4	33.1	81.8
Fecal Coliform	NLE	cfu/100mL	180	720	360	480	500	TNTC	40	0	40	10	ND
Total Coliform	NLE	cfu/100mL	3600	10400	460	560	9000	TNTC	520	200	480	1320	650

Notes:

[1] Health based NDEP Surface Water Quality Criteria as per N.J.A.C. 7:9B effective 4/17/98

mg/L and µg/L = milligrams/liter and micrograms/liter, respectively

cfu/100 mL = colony-forming units/100 milliliters

B - Compound detected in the sample and its associated blank sample

Exceedences of NJDEP SWQC are shaded and bold

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

TNTC - Too numerous to count

Table 5-17
Summary of Surface Water Quality Results
SS-04 (Oct96-Aug04)
Fort Monmouth, New Jersey

Round Number	Fresh Water Criteria [1]	Units	30	31	32
Stream ID			SS-04	SS-04	SS-04
Date Collected			3/17/2004	6/29/2004	8/26/2004
Analyte/Lab ID			40182.15	40500.15	40632.15
VOCs					
Acetone	NLE	µg/L	0.65 J B	6.62	1.48 J
cis -1,2-Dichloroethene	NLE	µg/L	ND	ND	0.97 J
Methyl *tert* -butyl ether	70	µg/L	ND	ND	ND
Methylene chloride	2.5	µg/L	ND	ND	ND
Tetrachloroethene	0.34	µg/L	**0.81 J**	ND	**0.61 J**
Trichloroethene	1.0	µg/L	ND	ND	ND
Tentatively identified compounds	NLE	µg/L	ND	ND	ND
Wet Chemistry					
Temperature	NLE	ºC	10.71	13.38	22.1
pH	6.5–8.5	—	7.69	7.77	7.70
Ammonia	NLE	mg/L	ND	ND	ND
Nitrates	10000	mg/L	1.32	ND	ND
Oxygen (dissolved)	NLE	mg/L	9.67	8.63	7.52
Phosphate	NLE	mg/L	0.18	0.14	0.18
Salinity	NLE	%	8	17	15
Sulfate	NLE	mg/L	43.9	155	226
Fecal Coliform	NLE	cfu/100mL	50	TNTC	80
Total Coliform	NLE	cfu/100mL	290	TNTC	TNTC

Notes:

[1] Health based NDEP Surface Water Quality Criteria as per N.J.A.C. 7:9B effective 4/17/98

mg/L and µg/L = milligrams/liter and micrograms/liter, respectively

cfu/100 mL = colony-forming units/100 milliliters

B - Compound detected in the sample and its associated blank sample

Exceedences of NJDEP SWQC are shaded and bold

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

TNTC - Too numerous to count

Table 5-18
Summary of Surface Water Quality Results
SS-05 (Oct96-Dec09)
Fort Monmouth, New Jersey

Round Number	Fresh Water Criteria [1]	Units	1A	1B	1C	2A	2B	2C	3	4	5	6	7
Stream ID			SS-05	SS-05	SS-05	SS-05	SS-05	SS-05	SS-05	SS-05	SS-05	SS-05	SS-05
Date Collected			10/8/1996	11/25/1996	12/12/1996	1/29/1997	2/26/1997	3/10/1997	4/8/1997	7/17/1997	10/30/1997	2/10/1998	4/21/1998
Analyte/Lab ID			2178.05	2223.14	2246.14	2298.14	2361.13	2375.13	2439.13	2810.13	3121.13	3331.13	3499.13
VOCs													
Acetone	NLE	µg/L	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND
tert -Butyl alcohol	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	68	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	NLE	µg/L	NA	NA	NA	1.19	ND	ND	1.80	3.66	1.83	ND	ND
Methyl *tert* -butyl ether	70	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	2.5	µg/L	**3.52**	**3.08**	**3.47**	**3.41**	ND	ND	1.96	ND	ND	ND	ND
Tetrachloroethene	0.34	µg/L	**2.76**	**7.53**	**2.98**	**4.76**	**5.32**	**2.42**	**2.28**	**3.54**	**1.70**	**6.34**	**4.48**
Total xylenes	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1.0	µg/L	0.81	**1.86**	0.71	**1.04**	ND	ND	ND	ND	ND	ND	ND
Tentatively identified compounds	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Wet Chemistry													
Temperature	NLE	ºC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH	6.5–8.5	—	7.40	7.17	7.65	7.72	7.05	7.83	7.90	7.37	8.36	**8.59**	6.92
Ammonia	NLE	mg/L	1.4	1.41	1.37	3.27	6.22	NA	0.39	0.38	0.81	0.434	0.962
Nitrates	10000	mg/L	1.9	1.4	1.2	2.6	1.8	2.3	0.9	0.3	0.6	0.1	0.2
Oxygen (dissolved)	NLE	mg/L	7.4	6.1	6.1	9.7	15.2	13.8	13	6.8	10.3	10	10.99
Phosphate	NLE	mg/L	0.74	0.15	0.18	0.33	0.1	0.12	0.1	0.36	0.14	0.11	0.59
Salinity	NLE	%	2.78	NA	2	0	1	0	NA	2	4	NA	NA
Sulfate	NLE	mg/L	280	200	0.75	44	40	6	60	120	60	30	26
Fecal Coliform	NLE	cfu/100mL	6600	80	260	60	<1	5	80	500	40	100	1060
Total Coliform	NLE	cfu/100mL	6000	250	830	700	30	145	1060	TNTC	1300	60	720

Notes:

[1] Health based NDEP Surface Water Quality Criteria as per N.J.A.C. 7:9B effective 4/17/98

mg/L and µg/L = milligrams/liter and micrograms/liter, respectively

cfu/100 mL = colony-forming units/100 milliliters

B - Compound detected in the sample and its associated blank sample

Exceedences of NJDEP SWQC are shaded and bold

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

TNTC - Too numerous to count

Total xylenes= Σ of *o* -xylene and *m,p* -xylene

Table 5-18
Summary of Surface Water Quality Results
SS-05 (Oct96-Dec09)
Fort Monmouth, New Jersey

Round Number	Fresh Water Criteria [1]	Units	8	9	9	10	11	12	13	14	15	16	17
Stream ID			SS-05	SS-05	SS-05 Duplicate	SS-05	SS-05	SS-05	SS-05	SS-05	SS-05	SS-05	SS-05
Date Collected			8/19/1998	11/17/1998	11/17/1998	2/25/1999	6/29/1999	9/22/1999	12/8/1999	3/1/2000	6/12/2000	8/24/2000	11/20/2000
Analyte/Lab ID			3816.11	4060.10	4060.11	4300.13	4579.15	4806.06	4997.11	5211.11	5468.15	5658.15	5868.15
VOCs													
Acetone	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
tert -Butyl alcohol	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	68	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	NLE	µg/L	2.28	1.67	1.63	ND	2.74	1.96	1.6	1.27	ND	1.19	ND
Methyl *tert* -butyl ether	70	µg/L	ND	ND	ND	ND	ND	ND	ND	2.34	ND	ND	ND
Methylene chloride	2.5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.34	µg/L	**3.39**	**2.17**	**2.28**	**5.45**	**6.04**	**1.82**	**3.82**	**6.62**	**4.38**	**3.44**	**3.58**
Total xylenes	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1.0	µg/L	**1.27**	ND	ND	ND	**1.74**	ND	ND	**1.36**	ND	ND	ND
Tentatively identified compounds	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Wet Chemistry													
Temperature	NLE	ºC	NA	NA	NA	NA	29.1	12.6	12.5	12.3	26.3	22.7	20.7
pH	6.5–8.5	—	6.83	7.20	NA	6.63	7.15	7.55	7.25	7.89	6.72	7.25	7.30
Ammonia	NLE	mg/L	0.468	ND	NA	0.688	1.06	1.4	0.202	0.675	ND	0.533	0.401
Nitrates	10000	mg/L	ND	ND	NA	0.2	0.5	ND	0.6	0.2	0.8	1	1.2
Oxygen (dissolved)	NLE	mg/L	3.27	8.9	NA	8.1	4.36	6.74	6.93	7.5	6.67	7.21	8.31
Phosphate	NLE	mg/L	2.28	0.03	NA	ND	ND	ND	ND	ND	ND	ND	ND
Salinity	NLE	%	0	7	NA	0	0	2	1	0	1	1	1
Sulfate	NLE	mg/L	125	450	NA	35	210	120	29	65	47	32	43
Fecal Coliform	NLE	cfu/100mL	620	280	NA	100	920	1020	100	40	580	100	ND
Total Coliform	NLE	cfu/100mL	3840	1060	NA	220	14700	6300	960	240	2100	3900	1160

Notes:

[1] Health based NDEP Surface Water Quality Criteria as per N.J.A.C. 7:9B effective 4/17/98

mg/L and µg/L = milligrams/liter and micrograms/liter, respectively

cfu/100 mL = colony-forming units/100 milliliters

B - Compound detected in the sample and its associated blank sample

Exceedences of NJDEP SWQC are shaded and bold

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

TNTC - Too numerous to count

Total xylenes= Σ of *o* -xylene and *m,p* -xylene

Table 5-18
Summary of Surface Water Quality Results
SS-05 (Oct96-Dec09)
Fort Monmouth, New Jersey

Round Number	Fresh Water Criteria [1]	Units	18	19	20	21	22	23	24	25	26	27	28
Stream ID			SS-05	SS-05	SS-05	SS-05	SS-05	SS-05	SS-05	SS-05	SS-05	SS-05	SS-05
Date Collected			3/8/2001	5/16/2001	9/25/2001	11/14/2001	2/11/2002	6/18/2002	9/18/2002	11/4/2002	3/13/2003	5/21/2003	9/17/2003
Analyte/Lab ID			1309	16120.15	16449.16	16579.20	20086.2	20376.2	20666.22	20780.14	30118.18	30247.15	30592.16
VOCs													
Acetone	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
tert -Butyl alcohol	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	68	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	NLE	µg/L	ND	0.97	ND	1.51	ND	ND	ND	ND	0.81 J	ND	1.36 J
Methyl *tert* -butyl ether	70	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	2.5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.34	µg/L	ND	**4.09**	ND	**1.99**	**2.44**	**2.39**	ND	ND	**3.08**	**3.54**	**1.23 J**
Total xylenes	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1.0	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	0.71 J	ND	ND
Tentatively identified compounds	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Wet Chemistry													
Temperature	NLE	ºC	NA	NA	21	7.71	NA	NA	NA	NA	NA	NA	NA
pH	6.5–8.5	—	7.01	7.67	7.11	6.72	7.04	7.31	7.77	7.93	**6.44**	7.76	7.65
Ammonia	NLE	mg/L	ND	0.241	ND	0.608	ND	ND	0.19	ND	0.383	0.39	0.19
Nitrates	10000	mg/L	1.1	0.5	0.8	0.2	0.32	0.83	0.75	0.11	1.21	0.91	1.5
Oxygen (dissolved)	NLE	mg/L	8.79	7.91	4.1	8.71	8.88	8.43	7.3	7.99	9.12	8.47	7.93
Phosphate	NLE	mg/L	ND	0.19	0.28	0.16	0.2	0.3	0.05	0.17	0.1	0.31	0.16
Salinity	NLE	%	NA	NA	0	10	9	11	8	1	2	11	7
Sulfate	NLE	mg/L	100	53	26	384	146	17.85	121	1089	26.9	29.6	24.1
Fecal Coliform	NLE	cfu/100mL	20	180	460	80	120	800	TNTC	200	40	40	10
Total Coliform	NLE	cfu/100mL	300	2840	6200	460	400	10600	TNTC	890	320	1540	920

Notes:

[1] Health based NDEP Surface Water Quality Criteria as per N.J.A.C. 7:9B effective 4/17/98

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cfu/100 mL = colony-forming units/100 milliliters

B - Compound detected in the sample and its associated blank sample

Exceedences of NJDEP SWQC are shaded and bold

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

TNTC - Too numerous to count

Total xylenes= Σ of *o* -xylene and *m,p* -xylene

Table 5-18
Summary of Surface Water Quality Results
SS-05 (Oct96-Dec09)
Fort Monmouth, New Jersey

Round Number	Fresh Water Criteria [1]	Units	29	30	31	32	33	34	35	36	37	38	39
Stream ID			SS-05	SS-05	SS-05	SS-05	SS-05	SS-05	SS-05	SS-05	SS-05	SS-05	SS-05
Date Collected			11/4/2003	3/17/2004	6/29/2004	8/26/2004	11/23/2004	3/3/2005	6/15/2005	9/13/2005	12/1/2005	2/22/2006	5/31/2006
Analyte/Lab ID			30700.16	40182.16	40500.16	40632.16	40804.06	50117.06	50313.04	50462.04	50624.04	60087.12	60251.04
VOCs													
Acetone	NLE	µg/L	ND	0.66 J B	ND	1.51 J	ND	ND	ND	ND	ND	ND	ND
tert -Butyl alcohol	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	68	µg/L	ND	ND	ND	ND	1.07 J	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	NLE	µg/L	1.34 J	0.57 J	1.19 J	1.61 J	1.29 J	0.87 J	1.60 J	1.77 J	0.72 J	0.98 J	ND
Methyl *tert* -butyl ether	70	µg/L	**556.49**	ND	ND	ND	ND	ND	ND	ND	0.34 J	0.58 J	ND
Methylene chloride	2.5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.34	µg/L	ND	**2.21**	**1.31 J**	**1.09 J**	**1.23 J**	**1.84 J**	**1.30 J**	ND	**0.63 J**	**2.01**	ND
Total xylenes	NLE	µg/L	2.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1.0	µg/L	ND	0.57 J	ND	0.73 J	ND	ND	0.66 J	ND	ND	0.65 J	ND
Tentatively identified compounds	NLE	µg/L	160	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Wet Chemistry													
Temperature	NLE	ºC	NA	10.63	13.41	23.1	11.8	4.81	24.26	26.7	9.78	6.48	22.3
pH	6.5–8.5	—	7.69	7.73	7.69	7.61	6.54	6.74	7.00	7.31	6.89	7.45	6.94
Ammonia	NLE	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrates	10000	mg/L	1.11	5.28	ND	0.4	2.64	2.17	ND	ND	ND	ND	ND
Oxygen (dissolved)	NLE	mg/L	8.53	9.7	8.6	7.6	4.5	0.93	6.76	3.53	13.42	17.25	12.88
Phosphate	NLE	mg/L	0.06	0.12	0.12	0.1	0.2	0.12	ND	ND	ND	ND	ND
Salinity	NLE	%	8	7	9	13	2	1	0	0	0	0	0
Sulfate	NLE	mg/L	47	39.7	23.8	19.9	73.2	29.7	61.3	33.7	56.2	24.1	24.2
Fecal Coliform	NLE	cfu/100mL	ND	40	200	40	180	0	400	100	ND	ND	300
Total Coliform	NLE	cfu/100mL	440	130	22800	2000	1200	200	22800	16700	13400	200	TNTC

Notes:

[1] Health based NDEP Surface Water Quality Criteria as per N.J.A.C. 7:9B effective 4/17/98

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cfu/100 mL = colony-forming units/100 milliliters

B - Compound detected in the sample and its associated blank sample

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J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

TNTC - Too numerous to count

Total xylenes= Σ of *o* -xylene and *m,p* -xylene

Table 5-18
Summary of Surface Water Quality Results
SS-05 (Oct96-Dec09)
Fort Monmouth, New Jersey

Round Number	Fresh Water Criteria [1]	Units	40	41	42	43	44	45	46	47	48	49	50
Stream ID			SS-05	SS-05	SS-05	SS-05	SS-05	SS-05	SS-05	SS-05	SS-05	SS-05	SS-05
Date Collected			9/20/2006	12/11/2006	3/13/2007	6/26/2007	9/13/2007	12/19/2007	3/25/2008	6/26/2008	9/30/2008	12/29/2008	3/24/2009
Analyte/Lab ID			60404.04	60523.15	70093.15	70234.04	70339.15	70541.15	80094.05	80213.15	80346.06	80478.06	90119.06
VOCs													
Acetone	NLE	µg/L	ND	ND	1.31 J	7.15	ND	ND	ND	ND	ND	ND	ND
tert -Butyl alcohol	NLE	µg/L	ND	ND	ND	ND	8.65 J	ND	ND	ND	ND	ND	ND
Chloroform	68	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	NLE	µg/L	ND	0.86 J	0.79 J	ND	0.67 J	ND	0.79 J	1.50 J	0.60 J	0.58 J	ND
Methyl *tert* -butyl ether	70	µg/L	ND	0.44 J	0.44 J	ND	0.33 J	ND	0.66 J	0.34 J	ND	ND	ND
Methylene chloride	2.5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.34	µg/L	ND	**1.47 J**	**1.86 J**	ND	0.29	**0.84 J**	**1.40 J**	**1.15 J**	ND	**0.97 J**	**0.47 J**
Total xylenes	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1.0	µg/L	ND	0.49 J	0.58 J	ND	ND	ND	0.60 J	0.55 J	ND	ND	ND
Tentatively identified compounds	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Wet Chemistry													
Temperature	NLE	ºC	19.53	8.46	11.56	27.3	20.9	5.89	10.00	23.25	19.22	7.78	8.46
pH	6.5–8.5	—	8.01	7.11	7.37	6.52	7.59	7.36	7.76	**8.54**	6.94	7.22	7.60
Ammonia	NLE	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrates	10000	mg/L	ND	ND	ND	ND	ND	NA	4.02	5.92	ND	ND	ND
Oxygen (dissolved)	NLE	mg/L	6.87	8.31	7.73	6.46	6.54	4.74	8.58	8.07	8.44	7.38	7.73
Phosphate	NLE	mg/L	ND	ND	ND	ND	ND	NA	0.09	ND	ND	ND	0.02
Salinity	NLE	%	0	0	0	0	0	0	0	0	0	0	0
Sulfate	NLE	mg/L	69.2	53.8	26.6	19.0	226	NA	22.9	64.4	43.0	29.4	93.2
Fecal Coliform	NLE	cfu/100mL	1100	350	NA	4500	3200	50	20	100	300	120	ND
Total Coliform	NLE	cfu/100mL	4800	950	500	37500	12400	700	100	5760	1450	500	160

Notes:

[1] Health based NDEP Surface Water Quality Criteria as per N.J.A.C. 7:9B effective 4/17/98

mg/L and µg/L = milligrams/liter and micrograms/liter, respectively

cfu/100 mL = colony-forming units/100 milliliters

B - Compound detected in the sample and its associated blank sample

Exceedences of NJDEP SWQC are shaded and bold

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

TNTC - Too numerous to count

Total xylenes= Σ of *o* -xylene and *m,p* -xylene

Table 5-18
Summary of Surface Water Quality Results
SS-05 (Oct96-Dec09)
Fort Monmouth, New Jersey

Round Number	Fresh Water Criteria [1]	Units	51	52	53
Stream ID			SS-05	SS-05	SS-05
Date Collected			6/29/2009	9/25/2009	12/7/2009
Analyte/Lab ID			90268.06	90398.06	90472.06
VOCs					
Acetone	NLE	µg/L	ND	ND	ND
tert -Butyl alcohol	NLE	µg/L	ND	ND	ND
Chloroform	68	µg/L	ND	ND	ND
cis -1,2-Dichloroethene	NLE	µg/L	1.02 J	ND	0.41 J
Methyl *tert* -butyl ether	70	µg/L	ND	ND	ND
Methylene chloride	2.5	µg/L	ND	ND	ND
Tetrachloroethene	0.34	µg/L	**1.24 J**	ND	**0.61**
Total xylenes	NLE	µg/L	ND	ND	ND
Trichloroethene	1.0	µg/L	0.50 J	ND	ND
Tentatively identified compounds	NLE	µg/L	ND	8	ND
Wet Chemistry					
Temperature	NLE	ºC	23.16	20.32	4.26
pH	6.5–8.5	—	7.94	**6.26**	6.78
Ammonia	NLE	mg/L	ND	NA	NA
Nitrates	10000	mg/L	0.689	NA	NA
Oxygen (dissolved)	NLE	mg/L	6.51	6.73	3.84
Phosphate	NLE	mg/L	ND	NA	NA
Salinity	NLE	%	0	0	0
Sulfate	NLE	mg/L	23.7	NA	NA
Fecal Coliform	NLE	cfu/100mL	NA	NA	NA
Total Coliform	NLE	cfu/100mL	NA	NA	NA

Notes:

[1] Health based NDEP Surface Water Quality Criteria as per N.J.A.C. 7:9B effective 4/17/98

mg/L and µg/L = milligrams/liter and micrograms/liter, respectively

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B - Compound detected in the sample and its associated blank sample

Exceedences of NJDEP SWQC are shaded and bold

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

TNTC - Too numerous to count

Total xylenes= Σ of *o* -xylene and *m,p* -xylene

Table 5-19
Summary of Surface Water Quality Results
SS-15 (Oct96-Dec09)
Fort Monmouth, New Jersey

Round Number	Fresh Water Criteria [1]	Units	1A	1B	1C	2A	2B	2C	3	4	5	6	7	8	9
Stream ID			SS-15	SS-15	SS-15	SS-15	SS-15	SS-15	SS-15	SS-15	SS-15	SS-15	SS-15	SS-15	SS-15
Date Collected			10/8/1996	11/25/1996	12/12/1996	1/29/1997	2/26/1997	3/10/1997	4/8/1997	7/17/1997	10/30/1997	2/10/1998	4/21/1998	8/19/1998	11/18/1998
Analyte/Lab ID			2178.15	2223.09	2246.09	2298.09	2361.09	2375.09	2439.09	2810.09	3121.09	3331.09	3499.09	3816.09	4069.08
VOCs															
Acetone	NLE	µg/L	NA	NA	NA	4.22	ND	ND	ND	ND	ND	ND	ND	ND	ND
tert-Butyl alcohol	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	2000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	2200	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	550	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NLE	µg/L	NA	NA	NA	1.57	1.46	ND	2.69	5.53	2.57	ND	1.22	3.89	ND
Ethylbenzene	530	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl *tert*-butyl ether	70	µg/L	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND	ND	ND
Methylene chloride	2.5	µg/L	**3.85 B**	**2.98 B**	**5.51**	**2.68**	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.34	µg/L	**8.41**	**10.38**	**5.63**	**5.68**	**7.84**	**3.39**	**6.00**	**7.12**	**2.72**	**6.90**	**5.72**	**5.39**	ND
Trichloroethene	1	µg/L	**2.58**	**2.54**	**1.31**	**1.33**	ND	ND	**1.6**	**2.5**	ND	**1.03**	**1.21**	**2.06**	ND
Total xylenes	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tentatively identified compounds	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals															
Antimony	5.6	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	0.017	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	3.4	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	92	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.050	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	170	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Wet Chemistry															
Temperature	NLE	ºC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH	6.5–8.5	—	NA	6.89	**8.53**	**8.80**	7.39	7.46	**8.6**	7.77	**8.50**	**9.28**	6.88	6.84	7.30
Ammonia	NLE	mg/L	NA	1.7	ND	ND	6.54	NA	0.38	0.31	0.66	0.444	0.785	0.268	0.125
Nitrates	10000	mg/L	NA	2.8	1.7	2.4	2	2.1	ND	1.1	0.5	ND	ND	0.6	3.1
Oxygen (dissolved)	NLE	mg/L	NA	6.8	3.4	9.8	12.1	12	14.1	10.8	10.8	12.5	10.81	3.61	10.1
Phosphate	NLE	mg/L	NA	0.08	0.1	0.14	0.12	0.19	0.13	0.43	0.09	0.24	0.14	5.6	0.08
Salinity	NLE	%	NA	NA	1	0	1	0	NA	0	2	NA	NA	0	1
Sulfate	NLE	mg/L	NA	28	30	36	35	26	30	24	27	28	23	24	840
Fecal Coliform	NLE	cfu/100mL	NA	40	310	40	<1	15	20	220	20	40	1300	300	220
Total Coliform	NLE	cfu/100mL	NA	160	580	1300	120	20	1240	3440	960	120	520	1960	740

Notes:

[1] Health based NDEP Surface Water Quality Criteria as per N.J.A.C. 7:9B effective 4/17/98

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ER - Estimated result

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ND - Not detected

NLE - No limit established

Total xylenes= Σ of *o*-xylene and *m,p*-xylene

Table 5-19
Summary of Surface Water Quality Results
SS-15 (Oct96-Dec09)
Fort Monmouth, New Jersey

Round Number	Fresh Water Criteria [1]	Units	10	11	12	13	14	15	16	17	18	19	20	21	22
Stream ID			SS-15	SS-15	SS-15	SS-15	SS-15	SS-15	SS-15	SS-15	SS-15	SS-15	SS-15	SS-15	SS-15
Date Collected			2/25/1999	6/29/1999	9/21/1999	12/8/1999	3/1/2000	6/12/2000	8/24/2000	11/20/2000	2/21/2001	5/16/2001	9/25/2001	11/14/2001	2/11/2002
Analyte/Lab ID			4300.09	4579.11	4802.11	4997.17	5211.17	5468.12	5658.12	5868.12	962	16120.12	16449.08	16579.12	20086.12
VOCs															
Acetone	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
tert-Butyl alcohol	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	2000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	2200	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	550	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NLE	µg/L	ND	4.17	3.59	ND	1.39	ND	2.02	ND	ND	1.5	ND	3.09	ND
Ethylbenzene	530	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl *tert*-butyl ether	70	µg/L	ND	ND	ND	ND	2.38	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	2.5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.34	µg/L	**7.33**	**7.86**	**2.61**	**4.08**	**6.95**	**5.94**	**5.2**	**6.29**	**7.19**	**6.64**	ND	**3.49**	**2.65**
Trichloroethene	1	µg/L	ND	**2.4**	**1.37**	ND	**1.39**	ND	**1.58**	ND	ND	ND	ND	ND	ND
Total xylenes	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tentatively identified compounds	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals															
Antimony	5.6	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	0.017	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	3.4	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	92	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	5	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.050	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	170	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Wet Chemistry															
Temperature	NLE	ºC	NA	23.5	12.6	12.3	12.2	24.2	21.2	19.2	NA	NA	20.9	8.42	NA
pH	6.5–8.5	—	6.75	7.73	7.34	7.29	7.70	6.84	7.28	7.31	7.19	7.84	7.31	7.23	7.77
Ammonia	NLE	mg/L	0.289	1.03	0.587	2	1.12	ND	0.57	0.37	0.51	0.11	ND	3.04	ND
Nitrates	10000	mg/L	0.8	0.7	ND	0.4	0.8	0.9	1	1.2	0.9	1.1	0.4	0.6	0.44
Oxygen (dissolved)	NLE	mg/L	8.5	6.72	7.04	7.03	7.89	7.31	8.71	9.21	8.14	7.01	8.77	8.67	9.1
Phosphate	NLE	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.19	0.2	0.18
Salinity	NLE	%	0	0	0	0	0	0	0	1	NA	NA	0	0	0
Sulfate	NLE	mg/L	46	26	41	27	35	30	39	34	31	33	28.3	17	111
Fecal Coliform	NLE	cfu/100mL	160	340	600	120	60	380	280	120	0	280	320	60	180
Total Coliform	NLE	cfu/100mL	440	5600	9100	1400	180	920	3100	1420	640	3900	3720	520	380

Notes:

[1] Health based NDEP Surface Water Quality Criteria as per N.J.A.C. 7:9B effective 4/

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Table 5-19
Summary of Surface Water Quality Results
SS-15 (Oct96-Dec09)
Fort Monmouth, New Jersey

Round Number	Fresh Water Criteria [1]	Units	23	24	25	26	27	28	29	30	31	32	33	34	35
Stream ID			SS-15	SS-15	SS-15	SS-15	SS-15	SS-15	SS-15	SS-15	SS-15	SS-15	SS-15	SS-15	SS-15
Date Collected			6/18/2002	9/18/2002	11/5/2002	3/24/2003	5/21/2003	9/17/2003	11/4/2003	3/17/2004	6/29/2004	8/26/2004	11/23/2004	3/3/2005	6/14/2005
Analyte/Lab ID			20376.11	20666.07	20787.07	30134.04	30247.12	30592.20	30700.20	40182.20	40500.20	40632.20	40804.12	50117.12	50312.06
VOCs															
Acetone	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	0.69 J B	ND	2.15	ND	ND	ND
tert-Butyl alcohol	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	2000	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	2200	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	550	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NLE	µg/L	1.63	2.39	ND	1.44 J	1.89 J	1.64 J	1.71 J	0.55 J	1.18 J	1.78 J	2.17	1.51 J	3.23
Ethylbenzene	530	µg/L	ND	ND	ND	ND	ND	ND	0.69 J	ND	ND	ND	ND	ND	ND
Methyl *tert*-butyl ether	70	µg/L	ND	ND	ND	ND	ND	ND	535.08	ND	ND	ND	ND	ND	ND
Methylene chloride	2.5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.34	µg/L	**2.67**	**2.55**	**1.52**	**3.96**	**3.84**	**1.60 J**	**1.49 J**	**2.26**	**1.28 J**	**1.25 J**	**2.00**	**2.92**	**2.34**
Trichloroethene	1	µg/L	ND	ND	ND	**1.11 J**	ND	ND	0.53 J	0.55 J	ND	0.78 J	ND	ND	**1.24 J**
Total xylenes	NLE	µg/L	ND	ND	ND	ND	ND	ND	6.27	ND	ND	ND	ND	ND	ND
Tentatively identified compounds	NLE	µg/L	ND	ND	ND	ND	ND	ND	170	ND	ND	ND	ND	ND	ND
Metals															
Antimony	5.6	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND
Arsenic	0.017	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND
Barium	2000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	51.2	62.1	52.8
Beryllium	6	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND
Cadmium	3.4	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND
Chromium	92	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND
Lead	5	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND
Mercury	0.050	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND
Nickel	500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11.5	13.1	7.37
Selenium	170	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND
Wet Chemistry															
Temperature	NLE	ºC	NA	NA	NA	NA	NA	NA	NA	10.66	13.41	21	11.79	3.07	25.72
pH	6.5–8.5	—	7.61	7.79	7.71	**5.66**	7.81	7.55	7.56	7.59	7.66	7.53	**6.10**	6.88	7.08
Ammonia	NLE	mg/L	ND	0.12	ND	ND	0.42	0.17	ND	ND	ND	ND	ND	ND	ND
Nitrates	10000	mg/L	0.81	1.18	0.5	ND	0.85	1.4	1.28	3.96	ND	1.9	1.32	2.02	ND
Oxygen (dissolved)	NLE	mg/L	8.97	7.53	8.11	3.71	8.63	7.76	8.53	9.74	8.73	7.37	4.87	0.48	7.06
Phosphate	NLE	mg/L	0.23	0.03	0.23	0.11	0.41	0.16	0.03	0.14	0.06	0.12	0.26	0.24	ND
Salinity	NLE	%	0	4	5	2	0	0	5	4	5	7	2	0	0
Sulfate	NLE	mg/L	20.7	26.81	36.4	401	27.3	19.7	24.1	24	23.2	19.9	22.8	28.3	26.5
Fecal Coliform	NLE	cfu/100mL	600	180	30	140	100	10	ND	ND	ND	ND	60	0	ND
Total Coliform	NLE	cfu/100mL	10000	5080	1700	960	760	1720	170	390	14600	5440	2560	440	12100

Notes:

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Table 5-19
Summary of Surface Water Quality Results
SS-15 (Oct96-Dec09)
Fort Monmouth, New Jersey

Round Number	Fresh Water Criteria [1]	Units	36	37	38	39	40	41	42	43	44	45	46	47	48
Stream ID			SS-15	SS-15	SS-15	SS-15	SS-15	SS-15	SS-15	SS-15	SS-15	SS-15	SS-15	SS-15	SS-15
Date Collected			9/12/2005	11/30/2005	2/22/2006	5/30/2006	9/19/2006	12/11/2006	3/13/2007	6/26/2007	9/13/2007	12/19/2007	3/25/2008	6/26/2008	9/30/2008
Analyte/Lab ID			50460.06	50623.06	60087.06	60249.06	60400.06	60523.06	70093.06	70230.06	70339.06	70541.06	80094.11	80213.06	80346.12
VOCs															
Acetone	NLE	µg/L	ND	ND	1.34 J	ND	ND	ND	0.92 J	ND	ND	ND	ND	ND	ND
tert-Butyl alcohol	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	20.81	14.52	ND	ND	ND
1,2-Dichlorobenzene	2000	µg/L	ND	0.98 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	2200	µg/L	ND	0.25 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	550	µg/L	ND	0.51 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NLE	µg/L	5.05	ND	1.29 J	ND	1.50 J	0.24 J	0.81 J	2.14	2.81	ND	1.35 J	2.89	0.88 J
Ethylbenzene	530	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl *tert*-butyl ether	70	µg/L	ND	ND	0.70 J	ND	ND	ND	0.47 J	ND	1.00 J	ND	0.88 J	0.63 J	ND
Methylene chloride	2.5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.34	µg/L	**1.25 J**	ND	**2.54**	ND	ND	ND	**2.21**	ND	**1.54 J**	**0.93 J**	**2.42**	**2.28**	ND
Trichloroethene	1	µg/L	0.91 J	ND	0.85 J	ND	ND	ND	0.65 J	ND	ND	ND	**1.02 J**	**1.01 J**	ND
Total xylenes	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tentatively identified compounds	NLE	µg/L	ND	ND	3	ND	ND	ND	ND	ND	ND	7	ND	ND	ND
Metals															
Antimony	5.6	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	0.017	µg/L	ND	ND	ND	ND	ND	ND	ND	**3.12 ER**	ND	ND	ND	**3.37 ER**	**3.50 ER**
Barium	2000	µg/L	56.3	24.5	52.8	67	44.9	54.3	58.8	52.6	52.5	50.6	57.4	61.5	58.4
Beryllium	6	µg/L	ND	ND	ND	0.105	0.242 ER	ND	0.156	ND	ND	0.106	ND	ND	0.247 ER
Cadmium	3.4	µg/L	ND	ND	ND	0.487	0.571 ER	0.639 ER	0.857 ER	0.435 ER	ND	0.879 ER	0.298 ER	ND	1.08 ER
Chromium	92	µg/L	ND	5.49	ND	1.67	1.11 ER	0.899 ER	0.692 ER	0.432 ER	0.906 ER	1.44 ER	0.433 ER	0.758 ER	3.66 ER
Copper	1300	µg/L	ND	ND	ND	2.63	0.893 ER	ND	ND	1.84 ER	0.801 ER	2.50 ER	2.00 ER	ND	ND
Lead	5	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.49 ER	ND
Mercury	0.050	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	500	µg/L	ND	ND	11.5	9.63	10.5	6.7	9.76	6.09	6.44	14.4	13	6.15	10.6
Selenium	170	µg/L	ND	ND	ND	ND	10.9 ER	5.79 ER	7.29 ER	6.39 ER	ND	ND	ND	6.62 ER	8.61 ER
Wet Chemistry															
Temperature	NLE	ºC	24.12	14.32	5.01	21.74	20.78	5.79	8.21	22.3	18.7	4.82	8.62	23.47	17.60
pH	6.5–8.5	—	6.92	6.91	7.37	7.31	7.89	**6.31**	6.87	6.86	7.81	6.63	7.87	8.22	6.97
Ammonia	NLE	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrates	10000	mg/L	ND	ND	ND	ND	ND	ND	1.05	ND	ND	NA	2.76	5.97	ND
Oxygen (dissolved)	NLE	mg/L	0.67	11.32	16.65	11.32	7.26	6.46	8.41	6.94	6.54	3.01	9.47	8.28	7.55
Phosphate	NLE	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	0.07	ND	ND
Salinity	NLE	%	0	0	0	0	0	0	0	0	0	0	0	0	0
Sulfate	NLE	mg/L	25.7	16.8	23.6	21.2	24.7	45.1	30	20.9	22.8	NA	21.2	17.63	18.4
Fecal Coliform	NLE	cfu/100mL	100	2000	ND	500	150	100	NA	100	2000	50	ND	ND	50
Total Coliform	NLE	cfu/100mL	10400	11500	250	TNTC	2550	350	600	2450	11400	800	120	4080	2650

Notes:

[1] Health based NDEP Surface Water Quality Criteria as per N.J.A.C. 7:9B effective 4/

mg/L and µg/L = milligrams/liter and micrograms/liter, respectively

cfu/100 mL = colony-forming units/100 milliliters

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

Exceedences of NJDEP SWQC are shaded and bold

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Total xylenes= Σ of *o*-xylene and *m,p*-xylene

Table 5-19
Summary of Surface Water Quality Results
SS-15 (Oct96-Dec09)
Fort Monmouth, New Jersey

Round Number	Fresh Water Criteria [1]	Units	49	50	51	52	53
Stream ID			SS-15	SS-15	SS-15	SS-15	SS-15
Date Collected			12/29/2008	3/24/2009	6/29/2009	9/25/2009	12/7/2009
Analyte/Lab ID			80478.12	90119.12	90268.12	90398.12	90472.12
VOCs							
Acetone	NLE	µg/L	ND	ND	ND	ND	ND
tert-Butyl alcohol	NLE	µg/L	ND	ND	ND	ND	9.16
1,2-Dichlorobenzene	2000	µg/L	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	2200	µg/L	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	550	µg/L	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NLE	µg/L	0.94 J	0.96 J	1.33 J	1.92	0.70
Ethylbenzene	530	µg/L	ND	ND	ND	ND	ND
Methyl *tert*-butyl ether	70	µg/L	ND	ND	ND	ND	0.18 J
Methylene chloride	2.5	µg/L	ND	ND	ND	ND	ND
Tetrachloroethene	0.34	µg/L	**1.55 J**	**3.03**	**2.02**	**1.87**	**1.11**
Trichloroethene	1	µg/L	ND	**1.26 J**	0.77 J	0.96	0.44 J
Total xylenes	NLE	µg/L	ND	ND	ND	ND	ND
Tentatively identified compounds	NLE	µg/L	ND	ND	ND	ND	ND
Metals							
Antimony	5.6	µg/L	ND	**17.8 ER**	5.52	**6.06**	ND
Arsenic	0.017	µg/L	ND	**66.6**	**14.1**	**19.6**	ND
Barium	2000	µg/L	58.3	60.1	58.3	61.2	47.5
Beryllium	6	µg/L	0.336 ER	ND	ND	ND	0.0702 ER
Cadmium	3.4	µg/L	0.471 ER	ND	ND	ND	0.608 ER
Chromium	92	µg/L	3.37 ER	0.838 ER	0.628	ND	3.85 ER
Copper	1300	µg/L	ND	1.45 ER	2.49	4.60	ND
Lead	5	µg/L	**5.74**	2.59 ER	ND	ND	ND
Mercury	0.050	µg/L	ND	ND	ND	ND	**0.18 ER**
Nickel	500	µg/L	11.9	11.2	12.0	9.18	8.05
Selenium	170	µg/L	ND	104	24.3	24.5	ND
Wet Chemistry							
Temperature	NLE	ºC	8.33	6.59	23.58	18.31	4.79
pH	6.5–8.5	—	7.09	7.11	7.42	7.05	7.21
Ammonia	NLE	mg/L	ND	ND	ND	NA	NA
Nitrates	10000	mg/L	ND	ND	ND	NA	NA
Oxygen (dissolved)	NLE	mg/L	6.99	7.85	8.08	8.61	4.65
Phosphate	NLE	mg/L	ND	0.03	ND	NA	NA
Salinity	NLE	%	0	0	0	0	0
Sulfate	NLE	mg/L	19.1	29.0	18.9	NA	NA
Fecal Coliform	NLE	cfu/100mL	20	ND	NA	NA	NA
Total Coliform	NLE	cfu/100mL	600	1460	NA	NA	NA

Notes:

[1] Health based NDEP Surface Water Quality Criteria as per N.J.A.C. 7:9B effective 4/

mg/L and µg/L = milligrams/liter and micrograms/liter, respectively

cfu/100 mL = colony-forming units/100 milliliters

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

Exceedences of NJDEP SWQC are shaded and bold

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

Total xylenes= Σ of *o*-xylene and *m,p*-xylene

Table 5-20
Summary of Surface Water Quality Results
SS-16 (Oct96-Aug04)
Fort Monmouth, New Jersey

Round Number	Fresh Water Criteria [1]	Units	1A	1B	1C	2A	2B	2C	3	4	5	6	7
Stream ID			SS-16	SS-16	SS-16	SS-16	SS-16	SS-16	SS-16	SS-16	SS-16	SS-16	SS-16
Date Collected			10/8/1996	11/25/1996	12/12/1996	1/29/1997	2/26/1997	3/10/1997	4/8/1997	7/17/1997	10/30/1997	2/10/1998	4/21/1998
Analyte/Lab ID			2178.13	2223.10	2246.10	2298.10	2361.10	2375.10	2439.10	2810.10	3121.10	3331.10	3499.10
VOCs													
Acetone	NLE	µg/L	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	NLE	µg/L	NA	NA	NA	2.46	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	NLE	µg/L	NA	NA	NA	1.30	1.27	ND	2.05	2.55	1.76	ND	ND
Methyl *tert* -butyl ether	70	µg/L	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	310	µg/L	NA	3.16 B	4.65 B	3.01	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.34	µg/L	NA	**8.2**	**3.82**	**5.19**	**6.75**	**2.31**	**4.47**	**4.72**	**1.86**	**6.23**	**4.58**
Trichloroethene	1.0	µg/L	NA	**2.24**	1.00	**1.14**	**1.20**	ND	**1.26**	ND	ND	ND	ND
Tentatively identified compounds	NLE	µg/L	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND
Wet Chemistry													
Temperature	NLE	ºC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH	6.5–8.5	—	NA	6.99	8.13	8.52	7.09	8.04	8.37	7.47	8.78	8.96	6.90
Ammonia	NLE	mg/L	NA	1.39	1.05	2.36	6.99	NA	0.4	0.44	0.73	0.463	0.92
Nitrates	10000	mg/L	NA	1.4	1.5	2.8	1.9	2.7	ND	2.2	0.7	1.1	ND
Oxygen (dissolved)	NLE	mg/L	NA	6.1	3.19	10.1	12.8	13.8	13.9	7.4	9.4	14.1	11.41
Phosphate	NLE	mg/L	NA	0.05	0.08	0.12	0.11	0.11	0.12	0.42	0.12	0.18	0.11
Salinity	NLE	%	NA	NA	1	0	1	0	NA	0	2	NA	NA
Sulfate	NLE	mg/L	NA	87	58	42	35	6	33	36	33	24	27
Fecal Coliform	NLE	cfu/100mL	NA	20	140	ND	<1	5	80	420	300	140	1280
Total Coliform	NLE	cfu/100mL	NA	150	530	1000	70	175	1180	3020	3500	<1	420

Notes:

[1] Health based NDEP Surface Water Quality Criteria as per N.J.A.C. 7:9B effective 4/17/98

mg/L and µg/L = milligrams/liter and micrograms/liter, respectively

cfu/100 mL = colony-forming units/100 milliliters

B - Compound detected in the sample and its associated blank sample

Exceedences of NJDEP SWQC are shaded and bold

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table 5-20
Summary of Surface Water Quality Results
SS-16 (Oct96-Aug04)
Fort Monmouth, New Jersey

Round Number	Fresh Water Criteria [1]	Units	8	9	10	11	12	13	14	15	16	17	18
Stream ID			SS-16	SS-16	SS-16	SS-16	SS-16	SS-16	SS-16	SS-16	SS-16	SS-16	SS-16
Date Collected			8/19/1998	11/18/1998	2/25/1999	6/29/1999	9/22/1999	12/8/1999	3/1/2000	6/12/2000	8/24/2000	11/20/2000	2/21/2001
Analyte/Lab ID			3816.10	4069.06	4300.10	4579.12	4806.03	4997.12	5211.13	5468.14	5658.14	5868.14	963
VOCs													
Acetone	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	NLE	µg/L	2.94	ND	ND	3.56	2.74	1.79	ND	ND	1.68	ND	ND
Methyl *tert* -butyl ether	70	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	310	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.34	µg/L	**4.33**	**1.48**	**6.06**	**7.7**	**2.63**	**4.13**	ND	**3.74**	**4.47**	**4.49**	**6.25**
Trichloroethene	1.0	µg/L	**1.63**	ND	ND	**2.25**	ND	ND	ND	ND	**1.28**	ND	ND
Tentatively identified compounds	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Wet Chemistry													
Temperature	NLE	ºC	NA	NA	NA	28.5	12.7	12.4	12.3	25.9	20.2	19.1	NA
pH	6.5–8.5	—	6.81	7.26	6.63	8.10	7.72	7.35	7.99	6.78	**6.33**	6.71	7.16
Ammonia	NLE	mg/L	0.354	0.179	0.691	1.34	0.786	0.232	0.74	ND	0.429	0.409	0.56
Nitrates	10000	mg/L	0.1	1.4	0.5	0.4	ND	0.3	0.4	0.9	1	1.3	1
Oxygen (dissolved)	NLE	mg/L	3.12	9.35	8.4	3.4	6.71	6.85	7.51	6.71	6.21	7.31	6.93
Phosphate	NLE	mg/L	2.33	0.07	ND	ND	0.1	ND	ND	ND	ND	ND	ND
Salinity	NLE	%	0	10	0	0	5	4	0	0	0	1	NA
Sulfate	NLE	mg/L	65	620	32	59	41	29	70	29	29	30	33
Fecal Coliform	NLE	cfu/100mL	320	200	80	620	600	100	40	580	2800	80	0
Total Coliform	NLE	cfu/100mL	1640	940	160	11500	1300	1020	140	920	3400	580	520

Notes:

[1] Health based NDEP Surface Water Quality Criteria as per N.J.A.C. 7:9B effective 4/17/98

mg/L and µg/L = milligrams/liter and micrograms/liter, respectively

cfu/100 mL = colony-forming units/100 milliliters

B - Compound detected in the sample and its associated blank sample

Exceedences of NJDEP SWQC are shaded and bold

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table 5-20
Summary of Surface Water Quality Results
SS-16 (Oct96-Aug04)
Fort Monmouth, New Jersey

Round Number	Fresh Water Criteria [1]	Units	19	20	21	22	23	24	25	26	27	28	29
Stream ID			SS-16	SS-16	SS-16	SS-16	SS-16	SS-16	SS-16	SS-16	SS-16	SS-16	SS-16
Date Collected			5/16/2001	9/25/2001	11/14/2001	2/11/2002	6/18/2002	9/18/2002	11/4/2002	3/13/2003	5/21/2003	9/17/2003	11/4/2003
Analyte/Lab ID			16120.14	16449.15	16579.15	20086.15	20376.15	20666.23	20787.1	30118.13	30247.14	30592.17	30700.17
VOCs													
Acetone	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	NLE	µg/L	1.23	1.28	1.41	ND	1.35	ND	ND	0.90 J	1.85 J	1.79 J	1.31 J
Methyl *tert* -butyl ether	70	µg/L	ND	2.33	ND	ND	ND	ND	ND	ND	ND	ND	497.62
Methylene chloride	310	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.34	µg/L	**4.91**	**6.47**	**2.00**	**2.47**	**2.46**	ND	**1.49**	**3.21**	**3.68**	**1.70 J**	ND
Trichloroethene	1.0	µg/L	ND	**1.27**	ND	ND	ND	ND	ND	0.74 J	ND	ND	ND
Tentatively identified compounds	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	170
Wet Chemistry													
Temperature	NLE	ºC	NA	21	7.66	NA	NA	NA	NA	NA	NA	NA	NA
pH	6.5–8.5	—	7.77	7.41	6.59	6.91	7.50	7.83	7.79	**6.18**	7.83	7.53	7.54
Ammonia	NLE	mg/L	0.29	ND	0.798	ND	ND	0.19	ND	0.441	0.47	0.17	ND
Nitrates	10000	mg/L	0.7	0.8	0.1	0.33	0.74	1.12	0.62	1.17	0.81	1.37	1.35
Oxygen (dissolved)	NLE	mg/L	7.19	1.59	8.57	9.67	8.94	7.79	8.29	21.93	8.63	7.91	8.57
Phosphate	NLE	mg/L	0.12	0.18	0.22	0.14	0.22	0.08	0.23	0.15	0.36	0.06	ND
Salinity	NLE	%	NA	0	9	7	9	6	6	2	7	7	6
Sulfate	NLE	mg/L	33	26.2	589	152	25.7	66.85	34.8	27.5	30.5	19.5	23.7
Fecal Coliform	NLE	cfu/100mL	160	300	ND	20	200	TNTC	60	0	60	10	ND
Total Coliform	NLE	cfu/100mL	4400	3860	480	420	6500	TNTC	1540	340	680	1900	460

Notes:

[1] Health based NDEP Surface Water Quality Criteria as per N.J.A.C. 7:9B effective 4/17/98

mg/L and µg/L = milligrams/liter and micrograms/liter, respectively

cfu/100 mL = colony-forming units/100 milliliters

B - Compound detected in the sample and its associated blank sample

Exceedences of NJDEP SWQC are shaded and bold

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table 5-20
Summary of Surface Water Quality Results
SS-16 (Oct96-Aug04)
Fort Monmouth, New Jersey

Round Number	Fresh Water Criteria [1]	Units	30	31	32
Stream ID			SS-16	SS-16	SS-16
Date Collected			3/17/2004	6/29/2004	8/26/2004
Analyte/Lab ID			40182.17	40500.17	40632.17
VOCs					
Acetone	NLE	µg/L	0.67 J B	6.4	ND
Bromomethane	NLE	µg/L	ND	ND	ND
cis -1,2-Dichloroethene	NLE	µg/L	0.54 J	1.23 J	1.63 J
Methyl *tert* -butyl ether	70	µg/L	0.29 J	ND	ND
Methylene chloride	310	µg/L	ND	ND	ND
Tetrachloroethene	0.34	µg/L	**2.26**	**1.32 J**	**1.17 J**
Trichloroethene	1.0	µg/L	0.56 J	ND	0.74 J
Tentatively identified compounds	NLE	µg/L	ND	ND	ND
Wet Chemistry					
Temperature	NLE	ºC	10.7	13.57	22.8
pH	6.5–8.5	—	7.68	7.63	7.59
Ammonia	NLE	mg/L	ND	ND	ND
Nitrates	10000	mg/L	3.96	ND	ND
Oxygen (dissolved)	NLE	mg/L	9.73	8.67	7.6
Phosphate	NLE	mg/L	0.11	0.13	0.08
Salinity	NLE	%	6	7	11
Sulfate	NLE	mg/L	19.5	23.8	21.7
Fecal Coliform	NLE	cfu/100mL	20	100	20
Total Coliform	NLE	cfu/100mL	330	14800	3120

Notes:

[1] Health based NDEP Surface Water Quality Criteria as per N.J.A.C. 7:9B effective 4/17/98

mg/L and µg/L = milligrams/liter and micrograms/liter, respectively

cfu/100 mL = colony-forming units/100 milliliters

B - Compound detected in the sample and its associated blank sample

Exceedences of NJDEP SWQC are shaded and bold

NA - Not analyzed

ND - Not detected

NLE - No limit established

Table 5-21
Summary of Surface Water Quality Results
SS-27 (Jun00-Dec09)
Fort Monmouth, New Jersey

Round Number	Fresh Water Criteria [1]	Units	15	16	17	18	19	20	21	22	23	24	25
Stream ID			SS-27	SS-27	SS-27	SS-27	SS-27	SS-27	SS-27	SS-27	SS-27	SS-27	SS-27
Date Collected			6/12/2000	8/24/2000	11/20/2000	3/8/2001	5/16/2001	9/25/2001	11/14/2001	2/11/2002	6/18/2002	9/18/2002	11/4/2002
Analyte/Lab ID			5468.26	5658.26	5868.25	1319	16120.26	16449.05	16579.16	20086.16	20376.16	20666.13	20780.09
VOCs													
Acetone	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	2100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl *tert* -butyl ether	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1.6	µg/L	ND	**1.72**	**1.87**	ND	ND	ND	ND	ND	ND	ND	ND
Total xylenes	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1.0	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tentatively identified compounds	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals													
Antimony	5.6	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	0.017	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	2000	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	6.0	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	3.4	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	92	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	5.0	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.050	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	500	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	170	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Wet Chemistry													
Temperature	NLE	ºC	27.1	24.7	22.4	NA	NA	21.1	7.44	NA	NA	NA	NA
pH	6.5–8.5	—	6.91	6.81	**6.41**	7.34	7.29	6.91	7.11	7.41	7.59	7.75	7.71
Ammonia	NLE	mg/L	ND	0.612	0.413	ND	0.264	0.23	0.549	ND	ND	0.5	ND
Nitrates	10000	mg/L	0.2	0.4	0.9	1.2	0.2	0.2	ND	0.09	0.65	0.47	0.28
Oxygen (dissolved)	NLE	mg/L	6.51	7.23	7.47	8.91	7.59	7.49	9.11	9.37	8.77	7.81	7.81
Phosphate	NLE	mg/L	ND	ND	ND	ND	0.14	0.98	0.19	0.23	0.23	0.35	0.19
Salinity	NLE	%	5	3	1.001	NA	NA	4	16	14	15	10	2
Sulfate	NLE	mg/L	250	100	ND	200	240	ND	1100	799	145.5	982	1130
Fecal Coliform	NLE	cfu/100mL	1400	600	20	0	300	1460	20	800	500	TNTC	100
Total Coliform	NLE	cfu/100mL	6300	7200	880	20	2800	20300	620	760	6000	TNTC	610

Notes:

[1] Health based NDEP Surface Water Quality Criteria as per N.J.A.C. 7:9B effective 4/17/98

mg/L and µg/L = milligrams/liter and micrograms/liter, respectively

cfu/100 mL = colony-forming units/100 milliliters

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

Exceedences of NJDEP SWQC are shaded and bold

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

TNTC - Too numerous to count

Total Xylenes= Σ of *o* -xylene and *m,p* -xylene

Table 5-21
Summary of Surface Water Quality Results
SS-27 (Jun00-Dec09)
Fort Monmouth, New Jersey

Round Number	Fresh Water Criteria [1]	Units	26	27	28	29	30	31	32	33	34	35	36
Stream ID			SS-27	SS-27	SS-27	SS-27	SS-27	SS-27	SS-27	SS-27	SS-27	SS-27	SS-27
Date Collected			3/13/2003	5/21/2003	9/17/2003	11/4/2003	3/17/2004	6/29/2004	8/26/2004	11/23/2004	3/3/2005	6/14/2005	9/13/2005
Analyte/Lab ID			30118.14	30247.25	30592.12	30700.12	40182.12	40500.12	40632.12	40804.17	50117.17	50313.09	50462.09
VOCs													
Acetone	NLE	µg/L	ND	ND	ND	ND	0.70 J B	5.91	1.17 J	ND	ND	ND	ND
Chloroform	2100	µg/L	ND	ND	ND	ND	ND	ND	ND	1.97 J	ND	ND	ND
cis -1,2-Dichloroethene	NLE	µg/L	ND	1.38 J	1.16 J	0.88 J	ND	ND	0.75 J	ND	ND	0.79 J	1.11 J
Methyl *tert* -butyl ether	NLE	µg/L	ND	ND	ND	377.93	ND	ND	ND	ND	ND	0.67 J	ND
Tetrachloroethene	1.6	µg/L	**1.71 J**	**2.68**	1.16 J	1.06 J	0.85 J	ND	0.56 J	ND	1.06 J	0.58 J	ND
Total xylenes	NLE	µg/L	ND	ND	ND	4.39	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1.0	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tentatively identified compounds	NLE	µg/L	ND	ND	ND	28	ND	ND	ND	ND	ND	ND	ND
Metals													
Antimony	5.6	µg/L	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND
Arsenic	0.017	µg/L	NA	NA	NA	NA	NA	NA	NA	ND	ND	**5.33**	ND
Barium	2000	µg/L	NA	NA	NA	NA	NA	NA	NA	38	57.2	69.3	51.3
Beryllium	6.0	µg/L	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND
Cadmium	3.4	µg/L	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND
Chromium	92	µg/L	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND
Copper	1300	µg/L	NA	NA	NA	NA	NA	NA	NA	ND	ND	5.21	7.74
Lead	5.0	µg/L	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND
Mercury	0.050	µg/L	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND
Nickel	500	µg/L	NA	NA	NA	NA	NA	NA	NA	5.92	9.48	11.5	ND
Selenium	170	µg/L	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND	ND
Wet Chemistry													
Temperature	NLE	ºC	NA	NA	NA	NA	10.67	13.41	22.4	11.59	5.07	25.33	25.7
pH	6.5–8.5	—	**6.33**	7.69	7.91	7.78	7.70	7.73	7.68	6.91	6.88	6.87	6.81
Ammonia	NLE	mg/L	0.303	0.43	0.18	ND	ND	ND	ND	ND	ND	ND	ND
Nitrates	10000	mg/L	1.24	0.98	1.38	0.78	2.64	ND	ND	4.84	2.33	ND	ND
Oxygen (dissolved)	NLE	mg/L	15.87	8.54	8.11	8.47	9.71	8.56	7.31	1.72	1.25	2.98	0
Phosphate	NLE	mg/L	0.11	0.39	0.1	0.13	0.25	0.1	0.15	1.83	0.1	ND	ND
Salinity	NLE	%	2	15	10	11	9	21	17	3	1	5	0
Sulfate	NLE	mg/L	26.7	34.4	32.5	209	43.3	154	209	204	32.7	588 E	234
Fecal Coliform	NLE	cfu/100mL	20	20	ND	20	40	TNTC	100	460	0	1800	600
Total Coliform	NLE	cfu/100mL	260	320	2480	990	350	TNTC	TNTC	1400	320	TNTC	17000

Notes:

[1] Health based NDEP Surface Water Quality Criteria as per N.J.A.C. 7:9B effective 4/17/98

mg/L and µg/L = milligrams/liter and micrograms/liter, respectively

cfu/100 mL = colony-forming units/100 milliliters

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

Exceedences of NJDEP SWQC are shaded and bold

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

TNTC - Too numerous to count

Total Xylenes= Σ of *o* -xylene and *m,p* -xylene

Table 5-21
Summary of Surface Water Quality Results
SS-27 (Jun00-Dec09)
Fort Monmouth, New Jersey

Round Number	Fresh Water Criteria [1]	Units	37	38	39	40	41	42	43	43	44	45	46
Stream ID			SS-27	SS-27	SS-27	SS-27	SS-27	SS-27	SS-27	SS-27 Duplicate	SS-27	SS-27	SS-27
Date Collected			12/1/2005	2/22/2006	5/31/2006	9/20/2006	12/11/2006	3/13/2007	6/26/2007	6/26/2007	9/13/2007	12/19/2007	3/26/2008
Analyte/Lab ID			50624.09	60087.17	60251.08	60404.06	60523.17	70093.17	70234.06	70234.03	70339.17	70541.17	80095.08
VOCs													
Acetone	NLE	µg/L	ND	1.50 J	ND	ND	ND	0.99 J	6.71	6.54	ND	ND	ND
Chloroform	2100	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	NLE	µg/L	ND	0.51 J	ND	ND	0.35 J	0.36 J	ND	ND	ND	ND	0.61 J
Methyl *tert* -butyl ether	NLE	µg/L	ND	0.46 J	ND	ND	ND	ND	ND	ND	0.42 J	ND	0.42 J
Tetrachloroethene	1.6	µg/L	ND	1.04 J	ND	ND	0.44 J	1.07 J	ND	ND	ND	ND	1.01 J
Total xylenes	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1.0	µg/L	ND	0.35 J	ND	ND	0.30 J	ND	ND	ND	ND	ND	0.40 J
Tentatively identified compounds	NLE	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Metals													
Antimony	5.6	µg/L	ND	ND	3.48	ND	2.39 ER	ND	ND	ND	ND	ND	ND
Arsenic	0.017	µg/L	ND	ND	ND	ND	ND	ND	**3.05 ER**	ND	ND	ND	ND
Barium	2000	µg/L	32	44.8	46.2	33	29.9	41.9	24.8	21.8	27.1	42.5	47.1
Beryllium	6.0	µg/L	ND	ND	ND	ND	ND	ND	0.129 ER	0.116 ER	ND	ND	ND
Cadmium	3.4	µg/L	ND	ND	0.30	ND	0.330 ER	0.493 ER	0.691 ER	0.569 ER	0.843 ER	0.441 ER	0.254 ER
Chromium	92	µg/L	ND	ND	ND	ND	ND	0.283 ER	2.42 ER	0.920 ER	0.416 ER	1.04 ER	0.634 ER
Copper	1300	µg/L	5.56	ND	2.09	4.62 ER	24	9.36	3.52 ER	2.41 ER	3.16 ER	6.08	2.16 ER
Lead	5.0	µg/L	ND	ND	ND	ND	ND	2.72 ER	2.52 ER	ND	ND	ND	ND
Mercury	0.050	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	500	µg/L	5.46	10.3	5.23	6.02	67.7	7.22	4.13 ER	3.75 ER	1.51 ER	9.93	8.87
Selenium	170	µg/L	ND	ND	ND	12.8 ER	6.38 ER	7.94 ER	6.82 ER	5.77 ER	ND	ND	ND
Wet Chemistry													
Temperature	NLE	ºC	9.45	5.85	21.48	20.57	8.46	10.59	26.1	NA	21.0	5.17	7.52
pH	6.5–8.5	—	**6.29**	7.54	**6.09**	7.46	7.11	7.31	**6.37**	NA	7.35	7.17	8.28
Ammonia	NLE	mg/L	ND	ND	ND	ND	ND	ND	ND	NA	ND	ND	ND
Nitrates	10000	mg/L	ND	ND	ND	ND	ND	ND	ND	NA	ND	NA	4.17
Oxygen (dissolved)	NLE	mg/L	13.91	17.29	9.76	3.03	8.51	7.27	6.71	NA	5.01	4.33	9.15
Phosphate	NLE	mg/L	ND	ND	ND	ND	ND	ND	ND	NA	ND	NA	0.06
Salinity	NLE	%	5	0	0	0	3	0.02	0	NA	0	0	0
Sulfate	NLE	mg/L	427	46.9	116	542	232	63.9	17.3	NA	497	NA	24.6
Fecal Coliform	NLE	cfu/100mL	300	ND	200	800	100	NA	20000	NA	1900	50	ND
Total Coliform	NLE	cfu/100mL	15900	250	TNTC	3700	950	500	25000	NA	8400	850	180

Notes:

[1] Health based NDEP Surface Water Quality Criteria as per N.J.A.C. 7:9B effective 4/17/98

mg/L and µg/L = milligrams/liter and micrograms/liter, respectively

cfu/100 mL = colony-forming units/100 milliliters

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

Exceedences of NJDEP SWQC are shaded and bold

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

TNTC - Too numerous to count

Total Xylenes= Σ of *o* -xylene and *m,p* -xylene

Table 5-21
Summary of Surface Water Quality Results
SS-27 (Jun00-Dec09)
Fort Monmouth, New Jersey

Round Number	Fresh Water Criteria [1]	Units	46	47	48	49	50	51	52	53
Stream ID			SS-27 Duplicate	SS-27	SS-27	SS-27	SS-27	SS-27	SS-27	SS-27
Date Collected			3/26/2008	6/26/2008	9/30/2008	12/29/2008	3/24/2009	6/29/2009	9/25/2009	12/7/2009
Analyte/Lab ID			80095.03	80213.17	80346.17	80478.17	90119.17	90268.17	90398.17	90472.17
VOCs										
Acetone	NLE	µg/L		ND	ND	ND	ND	ND	ND	ND
Chloroform	2100	µg/L		ND	ND	ND	ND	ND	ND	ND
cis -1,2-Dichloroethene	NLE	µg/L		0.71 J	0.36 J	ND	0.29 J	0.41 J	ND	0.31 J
Methyl *tert* -butyl ether	NLE	µg/L		ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1.6	µg/L		0.69 J	ND	0.68 J	0.98 J	0.66 J	ND	0.47 J
Total xylenes	NLE	µg/L		ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1.0	µg/L		ND	ND	ND	0.44 J	ND	ND	ND
Tentatively identified compounds	NLE	µg/L		ND	ND	11	ND	ND	19	ND
Metals										
Antimony	5.6	µg/L	ND	ND	ND	ND	**26.6**	**8.53**	19.0	**7.20 ER**
Arsenic	0.017	µg/L	ND	**2.90 ER**	ND	ND	**56**	**19.2**	**33.0**	**1.79 ER**
Barium	2000	µg/L	47.1	39.4	34.1	45.3	44.8	50.6	31.20	32.6
Beryllium	6.0	µg/L	ND	ND	0.164 ER	0.203 ER	ND	ND	ND	ND
Cadmium	3.4	µg/L	0.258 ER	ND	0.645 ER	0.515 ER	ND	ND	ND	ND
Chromium	92	µg/L	0.252 ER	ND	2.99 ER	2.33 ER	ND	ND	7.10	ND
Copper	1300	µg/L	2.04 ER	ND	1.97 ER	ND	6.17	2.97	6.00	2.25 ER
Lead	5.0	µg/L	ND	ND	ND	3.59 ER	ND	ND	ND	**18.2**
Mercury	0.050	µg/L	ND	ND	ND	ND	ND	ND	ND	0.10 ER
Nickel	500	µg/L	9.06	3.26 ER	7.49	8.03	6.12	9.12	5.00	6.55
Selenium	170	µg/L	ND	7.44 ER	10.0 ER	4.76 ER	119	30.9	ND	13.6 ER
Wet Chemistry										
Temperature	NLE	ºC	NA	24.02	19.52	7.56	5.67	21.11	22.35	4.17
pH	6.5–8.5	—	NA	7.55	6.83	7.14	7.39	6.50	7.93	**6.35**
Ammonia	NLE	mg/L	NA	ND	ND	ND	ND	0.581	NA	NA
Nitrates	10000	mg/L	NA	17.6	ND	ND	ND	ND	NA	NA
Oxygen (dissolved)	NLE	mg/L	NA	6.04	6.33	5.67	5.75	6.11	6.49	3.63
Phosphate	NLE	mg/L	NA	ND	ND	ND	0.03	ND	NA	NA
Salinity	NLE	%	NA	0	0	0	0	0	0	0
Sulfate	NLE	mg/L	NA	170	164	72.2	239	140	NA	NA
Fecal Coliform	NLE	cfu/100mL	NA	160	550	120	ND	NA	NA	NA
Total Coliform	NLE	cfu/100mL	NA	5520	2450	540	580	NA	NA	NA

Notes:

[1] Health based NDEP Surface Water Quality Criteria as per N.J.A.C. 7:9B effective 4/17/98

mg/L and µg/L = milligrams/liter and micrograms/liter, respectively

cfu/100 mL = colony-forming units/100 milliliters

B - Compound detected in the sample and its associated blank sample

ER - Estimated result

Exceedences of NJDEP SWQC are shaded and bold

J - Estimated concentration exceeds the MDL and is less than the RL

NA - Not analyzed

ND - Not detected

NLE - No limit established

TNTC - Too numerous to count

Total Xylenes= Σ of *o* -xylene and *m,p* -xylene

Table 5-22
Surface Water Exceedance Summary
M-5 Landfill Site (FTMM-05)
Fort Monmouth, New Jersey

Analyte	Criterion	Field ID	Round	Date Collected	Lab Sample ID	Result
VOCs						
Tetrachloroethene	**0.34** [1]	**SS-05**	#41	12/11/2006	6052315	**1.47 J**
			#42	3/13/2007	7009315	**1.86 J**
			#45	12/19/2007	7054115	**0.84 J**
			#46	3/25/2008	8009405	**1.40 J**
			#47	6/26/2008	8021315	**1.15 J**
			#49	12/29/2008	8047806	**0.97 J**
		SS-15	#42	3/13/2007	7009306	**2.21**
			#44	9/13/2007	7033906	**1.54 J**
			#45	12/19/2007	7054106	**0.93 J**
			#46	3/25/2008	8009411	**2.42**
			#47	6/26/2008	8021306	**2.28**
			#49	12/29/2008	8047812	**1.55 J**
Trichloroethene	**1** [1]	**SS-15**	#46	3/25/2008	8009411	**1.02 J**
			#47	6/26/2008	8021306	**1.01 J**
Metals						
Arsenic	**0.017** [1]	**SS-15**	#43	6/26/2007	7023006	**3.12 ER**
			#47	6/26/2008	8021306	**3.37 ER**
			#48	9/30/2008	8034612	**3.50 ER**
		SS-27	#43	6/26/2007	7023406	**3.05 ER**
			#47	6/26/2008	8021317	**2.90 ER**
Lead	**5** [1]	**SS-15**	#49	12/29/2008	8047812	**5.74**
Wet Chemistry						
pH	**6.5-8.5**	**SS-05**	#47	6/26/2008	8021315	**8.54**
		SS-15	#41	12/11/2006	6052306	**6.31**
		SS-27	#43	6/26/2007	7023406	**6.37**

Notes:
All results are in micrograms per liter (µg/l).
VOCs = Volatile Organic Compounds.
J - Estimated Concentration observed is greater than the MDL and less than the RL.
ER - Estimated Result.
1. Criterion= Surface Water Quality Standards (fresh water) as per NJAC 7:9B-1.14 18-May-98 as amended through 2008.

Table 5-23
Ground Water Tentatively Identified Compounds (TICs)
M-5 Landfill Site (FTMM-05)
Fort Monmouth, New Jersey

	Well:	M-5MW-10	M-5MW-11	M-5MW-12	M-5MW-13	M-5MW-14	M-5MW-16	M-5MW-18	M-5MW-19	M-5MW-20	M-5MW-23	M-8MW-12	M-8MW-23	M-8MW-24
Round	**Date**													
39	**Nov-06**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4/1
40	**Mar-07**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
41	**Jun-07**	15/2	ND	ND	14/1	ND	ND	ND	6/1	8/1	ND	6/1	ND	18/3
42	**Aug-07**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
43	**Dec-07**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
44	**Mar-08**	ND	ND	ND	ND	ND	ND	ND	ND	4/1	ND	ND	ND	8/1
45	**Jun-08**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
46	**Aug-08**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	17/2
47	**Nov-08**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4/1

Notes:
Exceedances are bolded and shaded.
Exceedances are based on 100 µg/L for individual TIC concentrations and 500 µg/L for Total TICs concentrations.
Results are given as Total TIC concentrations/# TICs.
NA = Not Analyzed.
ND = Not Detected.

Table 5-24
Surface Water Tentatively Identified Compounds (TICs)
M-5 Landfill Site (FTMM-05)
Fort Monmouth, New Jersey

Surface Water Sample:		SS-05	SS-15	SS-27
Round	**Date**			
41	**Dec-06**	ND	ND	ND
42	**Mar-07**	ND	ND	ND
43	**Jun-07**	ND	ND	ND
44	**Sep-07**	ND	ND	ND
45	**Dec-07**	ND	7/1	ND
46	**Mar-08**	ND	ND	ND
47	**Jun-08**	ND	ND	ND
48	**Sep-08**	ND	ND	ND
49	**Dec-08**	ND'	ND	11/1

Notes:
Exceedances are bolded and shaded.
Exceedances are based on 100 µg/L for individual TIC concentrations and 500 µg/L for Total TICs concentrations.
Results are given as Total TIC concentrations/# TICs.
ND = Not Detected.

Table 5-25 M-5 Landfill Site
4th Quarter 2006 - 4th Quarter 2008
Ground Water Relative Percent Difference Calculations

Round 39a **Q4 2006** **M5MW18** **Sample Multiplier: 1**

	FD	Sample	Avg	Difference	RPD	Average All RPDs
All Non-Detect	0	0	0	0	0.00%	
				Average	**0.00%**	**0.00%**

Round 39b **Q4 2006** **M5MW20** **Sample Multiplier: 1**

	FD	Sample	Avg	Difference	RPD	
cis-1,2-Dichloroethene	3.38	3.48	3.43	0.1	2.92%	
Trichloroethene	0.48	0.53	0.51	0.05	9.90%	
Tetrachloroethene	1.66	1.72	1.69	0.06	3.55%	
				Average	**5.46%**	**5.46%**

Round 40a **Q1 2007** **M5MW10** **Sample Multiplier: 1**

	FD	Sample	Avg	Difference	RPD	
All Non-Detect	0	0	0	0	0.00%	
				Average	**0.00%**	**0.00%**

Round 40b **Q1 2007** **M5MW20** **Sample Multiplier: 1**

	FD	Sample	Avg	Difference	RPD	
cis-1,2-Dichloroethene	4.45	4.63	4.54	0.18	3.96%	
Trichloroethene	1.21	1.41	1.31	0.2	15.27%	
Tetrachloroethene	1.98	1.83	1.91	0.15	7.87%	
				Average	**9.04%**	**9.04%**

Round 41 **Q2 2007** **M5MW10** **Sample Multiplier: 1**

	FD	Sample	Avg	Difference	RPD	
All Non-Detect	0	0	0	0	0.00%	
				Average	**0.00%**	**0.00%**

Round 42 **Q3 2007** **M5MW10** **Sample Multiplier: 1**

	FD	Sample	Avg	Difference	RPD	
All Non-Detect	0	0	0	0	0.00%	
				Average	**0.00%**	**0.00%**

Round 43 **Q4 2007** **M5MW10** **Sample Multiplier: 1**

	FD	Sample	Avg	Difference	RPD	
All Non-Detect	0	0	0	0	0.00%	
				Average	**0.00%**	**0.00%**

Round 45 **Q2 2008** **M5MW10** **Sample Multiplier: 1**

	FD	Sample	Avg	Difference	RPD	
All Non-Detect	0	0	0	0	0.00%	
				Average	**0.00%**	**0.00%**

Table 5-25 M-5 Landfill Site
4th Quarter 2006 - 4th Quarter 2008
Ground Water Relative Percent Difference Calculations

Round 46 **Q3 2008** **M5MW10** **Sample Multiplier: 1**

	FD	Sample	Avg	Difference	RPD	
All Non-Detect	0	0	0	0	0.00%	
				Average	**0.00%**	**0.00%**

Round 47 **Q4 2008** **M5MW10** **Sample Multiplier: 1**

	FD	Sample	Avg	Difference	RPD	
All Non-Detect	0	0	0	0	0.00%	
				Average	**0.00%**	**0.00%**

Min All RPDs	**0.00%**
Avg All RPDs	**1.45%**
Max All RPDs	**9.04%**

FD=Field Duplicate

* Method Detection Limit used for non-detect result.

Table 5-26 M-5 Landfill Site
Surface Water Relative Percent Difference Calculations

4th 06 SS-14

	FD	Sample	Avg	Difference	RPD	
MTBE	0.21	0.29	0.25	0.08	32.00	
				Average	**32.00**	32.00

1st 07 SS-14

	FD	Sample	Avg	Difference	RPD	
cis-1,2-DCE	0.2	0.12	0.16	-0.08	50.00	
				Average	**50.00**	50.00

2nd 07 SS-27

	FD	Sample	Avg	Difference	RPD	
Acetone	6.54	6.71	6.625	-0.17	2.57	
				Average	**2.57**	2.57

2nd 07 SS-14

	FD	Sample	Avg	Difference	RPD	
All non-detect	0	0	0	0	0.00	
				Average	**0.00**	0.00

3rd 07 SS-14

	FD	Sample	Avg	Difference	RPD	
TBA	6.8	9.39	8.095	2.59	32.00	
				Average	**32.00**	32.00

4th 07 SS-14

	FD	Sample	Avg	Difference	RPD	
All non-detect	0	0	0	0	0.00	
				Average	**0.00**	0.00

1st 08 SS-14

Duplicate not analyzed

1st 08 SS-27

Duplicate not analyzed

2nd 08 SS-14

	FD	Sample	Avg	Difference	RPD	
All non-detect	0	0	0	0	0.00	
				Average	**0.00**	0.00

3rd 08 SS-14

	FD	Sample	Avg	Difference	RPD	
All non-detect	0	0	0	0	0.00	
				Average	**0.00**	0.00

Table 5-26 M-5 Landfill Site
Surface Water Relative Percent Difference Calculations

4th 08 SS-14

	FD	Sample	Avg	Difference	RPD	
All non-detect	0	0	0	0	0.00	
				Average	**0.00**	0.00

FD=Field Duplicate.

* Method Detection Limit used for non-detect result. **12.95**

DEPARTMENT OF THE ARMY
US ARMY INSTALLATION MANAGEMENT COMMAND
HEADQUARTERS, UNITED STATES ARMY GARRISON, FORT MONMOUTH
286 SANGER AVENUE
FORT MONMOUTH, NEW JERSEY 07703-5101

Directorate of Public Works May 4, 2009

Mr. Larry Quinn, Site Manager
New Jersey Department of Environmental Protection
Bureau of Investigation, Design and Construction
401 East State Street, P.O. Box 413
Trenton, New Jersey 08625-0413

Re: M-5 Landfill Site (FTMM-05) Remedial Action Progress Report: October 2003 through September 2005 (4th Qtr. 2003 – 3rd Qtr. 2005) Dated: March 2009 Fort Monmouth, New Jersey

Dear Mr. Quinn:

Submitted for your review and edification, please find a copy of the Remedial Action Progress Report (RAPR) for the M-5 Landfill Site (FTMM-05), Fort Monmouth, New Jersey. This RAPR was prepared in accordance with the *Technical Requirements for Site Remediation* (*TRSR*), New Jersey Administrative Code (N.J.A.C.) 7:26E-6.6 (February 2003). Enclosed please find the Electronic Delivery Documents (EDDs) as well as a completed RAPR Checklist.

Should you have any questions or require any additional information, please contact Mr. Charles Appleby, Environmental Protection Specialist, at 732-532-2692 or email: Charles.Appleby@US.Army.mil

Sincerely,

Joseph M. Fallon

Joseph M. Fallon, CHMM
Chief, Environmental Division

Attached: Completed Remedial Progress Report Checklist
Encl. 1: Remedial Action Progress Report, (4th Quarter 2003 through 3rd Quarter 2005)
Electronic Data Deliverable (EDDs), one disk in back of report

Encl. 2, Completed Remedial Progress Report Checklist

SRP CHECKLIST:		REMEDIAL ACTION PROGRESS REPORT 4th Quarter 2003 through 3rd Quarter 2005 M-5 Landfill Site (FTMM-05)		
	N.J.A.C. 7:26E-	Use this checklist to assure that the remedial action progress report is complete and meets all technical requirements.	Included: Yes/No/NA	Page #
	6.6(a)	Have progress reports been submitted as required?	Yes	2.2.3 and 2.2.4
	6.6(b)1	Is a description of each remedial action included and adequate?	Yes	3-1
	6.6(b)2	Is a discussion of problems and proposal for correction included and adequate?	NA	
	6.6(b)3	Are proposals for deviation from approved WP adequately addressed?	NA	
		6.3(e)3iii If requesting to reduce sampling frequency have the requirements at 6.3(e)3ii and in Appendix C been met?	NA	
	6.6(b)4	Is a revised schedule included and adequate?	Yes	6.1 & App.G
	6.6(b)5	Is the status of permit applications included and adequate?	Yes	3.1 & 6.2
	6.6(b)6	Is a list of upcoming remedial actions included and adequate?	Yes	6.5 & App.G
	6.6(b)7	Is the cost of each remedial action adequately documented?	Yes	6.1 & App.G
	6.6(b)8	Is a table of sampling results, summary of data and conclusions included and adequate?	Yes	Sections 5 and 6 and the Tables Section
	6.6(b)9	Is information for active GW remediation included and adequate?	Yes	3-1
		6.6(b)9i Has a ground water Contour Map Reporting Form (Appendix G) been completed and included?	Yes	Figures Section, Behind each Contour Map
	6.6(b)10	Is information for natural GW remediation included and adequate?	Yes	Sections 4 and 5
	6.6(b)11	Is a description of wastes generated included and adequate?	Yes	3-3 & 4-4
	6.6(b)12	Has other important information been included:	NA	
		If not previously provided, has a map of the CEA been included along with a CEA Factsheet from Appendix F?	NA	
		If the RAPR includes a proposal to revise the CEA, has all the necessary information per 6.3 and Appendix F been included?	NA	
		Does the report indicate whether biennial certifications have been submitted for CEAs &/or DERs?	NA	

U. S. Army Garrison
Fort Monmouth
Directorate of Public Works
Fort Monmouth, New Jersey

M-5 Landfill Site (FTMM-05)
Remedial Action Progress Report
(4th Quarter 2003 through 3rd Quarter 2005)

Prepared by:

113 Centrewest Court
Cary, N.C. 27513
919-388-0037

Work Order Number: 2011-05-011

March 2009

TABLE OF CONTENTS

EXECUTIVE SUMMARY……..……..i
1.0 INTRODUCTION..... 1-1
1.1 Objectives 1-1
1.2 Report Organization..... 1-2
2.0 SITE BACKGROUND 2-1
2.1 Site Location and Description..... 2-1
2.2 Site History and Background Investigations..... 2-1
2.2.1 Site Investigation Report – Weston 2-1
2.2.2 RIR/Remedial Action Work Plan – ATC 2-2
2.2.3 Remedial Action Progress Report, 2000-2002 – Versar..... 2-3
2.2.4 Remedial Action Progress Report, 2002-2003 – Versar..... 2-4
3.0 REMEDIAL ACTIVITIES..... 3-1
3.1 Hydrogen Release Compound® 3-1
3.2 Discharge to Groundwater Permit 3-1
3.3 Types of Waste Generated and Disposal Methods 3-2
4.0 MONITORING AND SAMPLING ACTIVITIES 4-1
4.1 Groundwater Monitoring 4-1
4.2 Groundwater Sampling 4-1
4.3 Surface Water Sampling 4-2
4.4 Types of Waste Generated and Disposal Methods 4-2
5.0 SAMPLING ANALYTICAL RESULTS..... 5-1
5.1 Groundwater Sampling Results 5-1
5.1.1 Contaminants of Concern 5-1
5.2 Surface Water Sampling Results 5-3
5.3 Tentatively Identified Compounds (TICs)..... 5-3
5.4 Quality Assurance/Quality Control (QA/QC) 5-4
6.0 REMEDIAL ACTION PROGRESS..... 6-1
6.1 Cost of Remediation Incurred To-Date..... 6-1
6.2 Discharge to Groundwater Permit 6-1
6.3 Conclusions..... 6-1
6.4 Recommendations..... 6-2
6.4.1 Sampling Program 6-2
6.5 Remedial Action Schedule..... 6-3
7.0 REFERENCES..... 7-1

FIGURES

Figure 2-1 Site Location Map
Figure 2-2 Site Layout Map
Figure 3-1 Bioremediation Areas
Figure 4-1 Groundwater Contour Map (October 8, 2003)
Figure 4-2 Groundwater Contour Map (January 14, 2004)
Figure 4-3 Groundwater Contour Map (May 13, 2004)
Figure 4-4 Groundwater Contour Map (August 20, 2004)
Figure 4-5 Groundwater Contour Map (December 16, 2004)
Figure 4-6 Groundwater Contour Map (March 15, 2005)
Figure 4-7 Groundwater Contour Map (June 3, 2005)
Figure 4-8 Groundwater Contour Map (September 16, 2005)
Figure 5-1A Groundwater Contaminant Distribution Map
Figure 5-1B Surface Water Contaminant Distribution Map
Figure 5-2A PCE Concentrations vs Time at M-5MW11
Figure 5-2B TCE Concentrations vs Time at M-5MW11
Figure 5-3A PCE Concentrations vs Time at M-5MW16
Figure 5-3B TCE Concentrations vs Time at M-5MW16
Figure 5-3C Cis-1,2-DCE Concentrations vs Time at M-5MW16
Figure 5-4A PCE Concentrations vs Time at M-5MW19
Figure 5-4B TCE Concentrations vs Time at M-5MW19
Figure 5-4C Cis-1,2-DCE Concentrations vs Time at M-5MW19
Figure 5-5A PCE Concentrations vs Time at M-5MW20
Figure 5-5B TCE Concentrations vs Time at M-5MW20
Figure 5-6A PCE Concentrations vs Time at M-5MW23
Figure 5-6B TCE Concentrations vs Time at M-5MW23
Figure 5-7A PCE Concentrations vs Time at Well M-8MW12
Figure 5-7B TCE Concentrations vs Time at Well M-8MW12
Figure 5-8A PCE Concentrations vs Time at Well M-8MW23
Figure 5-8B TCE Concentrations vs Time at Well M-8MW23
Figure 5-8C Vinyl Chloride Concentrations vs Time at Well M-8MW23

TABLES

Table 4-1 Groundwater Elevation Summary
Table 4-2 Groundwater Sampling Summary
Table 4-3 Surface Water Sampling Summary
Table 5-1 M-5MW10 Groundwater Sampling Results
Table 5-2 M-5MW11 Groundwater Sampling Results
Table 5-3 M-5MW12 Groundwater Sampling Results
Table 5-4 M-5MW13 Groundwater Sampling Results
Table 5-5 M-5MW14 Groundwater Sampling Results
Table 5-6 M-5MW15 Groundwater Sampling Results
Table 5-7 M-5MW16 Groundwater Sampling Results
Table 5-8 M-5MW18 Groundwater Sampling Results

TABLES

Table 5-9 M-5MW19 Groundwater Sampling Results
Table 5-10 M-5MW20 Groundwater Sampling Results
Table 5-11 M-5MW23 Groundwater Sampling Results
Table 5-12 M-5MW25 Groundwater Sampling Results
Table 5-13 M-8MW12 Groundwater Sampling Results
Table 5-14 M-8MW23 Groundwater Sampling Results
Table 5-15 M-8MW24 Groundwater Sampling Results
Table 5-16 Groundwater Exceedance Summary
Table 5-17 SS-4 Surface Water Sampling Results
Table 5-18 SS-5 Surface Water Sampling Results
Table 5-19 SS-15 Surface Water Sampling Results
Table 5-20 SS-16 Surface Water Sampling Results
Table 5-21 Surface Water Exceedance Summary
Table 5-22 M-5 Tentatively Identified Compounds

APPENDICES

Appendix A Roy F. Weston, Inc., December 1995. *Final Site Investigation, Fort Monmouth, New Jersey, Main Post and Charles Wood Areas*
Appendix B ATC Associates, Inc., February 2000. *Remedial Action Work Plan – Landfill M-5, Main Post, Fort Monmouth, New Jersey.*
Appendix C Material Safety Data Sheet for Hydrogen Release Compound®
Appendix D Groundwater Laboratory Analytical Data, 4th Quarter 2003 through 3rd Quarter 2005
Appendix E Surface Water Laboratory Analytical Data, 4th Quarter 2003 through 3rd Quarter 2005
Appendix F Fort Monmouth Directorate of Public Works Analytical Sampling Standard Operating Procedures
Appendix G Final Costs and Schedule for the M-5 Landfill Site

EXECUTIVE SUMMARY

This Remedial Action Progress Report (RAPR) documents the quarterly sampling of 13 monitoring wells [10 located at the M-5 Landfill Site (FTMM-05) and three located at the adjacent M-8 Landfill Site (FTMM-08)] from the 4th Quarter 2003 through the 3rd Quarter 2005 (Rounds 27 through 34) to monitor the progress of the enhanced natural attenuation program [Hydrogen Release Compound® (HRC)] in reducing contaminant levels in groundwater.

The M-5 Landfill Site consists of approximately 3.2 acres located on the western portion of the Main Post, just west of the Eatontown/Oceanport Borough line. The site is bordered by Mill Creek and Parkers Creek to the west and is adjacent to the southern boundary of the M-8 Landfill.

Groundwater monitoring of the site identified concentrations of tetrachloroethene (PCE) above the Groundwater Quality Criteria (GWQC) for Class II-A aquifers. The Remedial Investigation Report/Remedial Action Work Plan (RIR/RAWP) was submitted by ATC in February 2000 and approved by the New Jersey Department of Environmental Protection (NJDEP) in March 2001. The RAWP proposed enhanced natural attenuation with groundwater monitoring as the site remedy for the contaminant of concern (COC), tetrachloroethene (PCE). Predictive modeling indicated that the plume would degrade to below GWQC within a five-year period, and the plume was not predicted to migrate during this time frame.

Analytical results for six monitoring wells during the current reporting period exceeded the NJDEP GWQC for PCE and TCE. Analytical results for two monitoring wells exceeded the GWQC for cis-1,2-dichlroethene (DCE). Therefore, TCE and cis-1,2-DCE have been added as COCs at the M-5 Landfill Site. PCE, TCE, and cis-1,2-DCE concentrations have not exceeded their respective criteria in any of the wells bordering Mill Creek during this reporting period.

Tetrachloroethene (PCE) was detected above the GWQC of 1.0 µg/L in six wells with concentrations ranging from 1.08 µg/L (M-5MW11, Sampling Round 27) to 90.59 µg/L (M-5MW16, Round 33). **Trichloroethene (TCE)** was detected above the GWQC of 1.0 µg/L in six wells with concentrations ranging from 1.02 µg/L (M-5MW23, Round 28) to 34.20 µg/L (M-5MW16, Round 33). **Cis-1,2-dichloroethene (DCE)** was detected above the GWQC of 10.0 µg/L in two wells, with concentrations ranging from 13.20 µg/L (M-5MW20, Round 33) to 283.79 µg/L (M-5MW16, Round 34).

During this reporting period, surface water samples were collected from four surface water locations and analyzed for volatile organic compounds (VOCs); PCE and TCE were detected at one location, SS-15, at concentrations exceeding its Surface Water Quality Criteria (SWQC). However, the source of this contaminant (PCE and daughter products) has been identified as being upgradient of the Fort Monmouth property.

Although concentrations of PCE have fluctuated over time (specifically in M-5MW11, M-5MW16, M-5MW19, M-5MW20, M-5MW23, M-8MW12, and M-8MW23), the PCE levels have generally decreased in all monitoring wells where concentrations were above the GWQC at the onset of the first HRC® injection and the breakdown product concentrations have increased. The conclusion is that HRC® injections have enabled natural attenuation to proceed at an increased rate. Areas around M-5MW16, M-5MW19, M-5MW20, and M-5MW23 are still of concern. Based on the decreasing trend of PCE over time, VEETech recommends that the DPW continue quarterly groundwater and surface water sampling and monitoring activities.

1.0 INTRODUCTION

An enhanced natural attenuation program to remediate the contaminant of concern (COC), tetrachloroethene (PCE), at the M-5 Landfill Site (FTMM-05), located at the Main Post Area of Fort Monmouth, New Jersey, is being conducted in accordance with the Remedial Action Work Plan (RAWP) prepared by ATC, Inc. in February 2000 and approved by the New Jersey Department of Environmental Protection (NJDEP) in March 2001. Under contract number W9125S-05-D-0004, the U.S. Army Garrison Fort Monmouth, Directorate of Public Works has issued a delivery order (DO #2VO1) to VEETech, P.C. (VEETech) to prepare this Remedial Action Progress Report (RAPR). The report documents groundwater and surface water monitoring during the current reporting period of the 4th Quarter 2003 through the 3rd Quarter 2005 (Rounds 27 through 34).

1.1 Objectives

The objective of this RAPR is to document the implementation of the remedial action program performed at the M-5 Landfill Site during the current reporting period of the 4th Quarter 2003 through the 3rd Quarter 2005 following the 4th Hydrogen Release Compound® (HRC) injection event performed between June and August 2004. HRC® injections were implemented by the DPW as a Remedial Action (RA) based on the recommendations found in the Remedial Investigation Report/Remedial Action Work Plan (RIR/RAWP), prepared by ATC, dated February 2000, and approved by the New Jersey Department of Environmental Protection (NJDEP) in March 2001. The purpose of the RA was to treat the contaminant-affected areas at the site using HRC® to reduce the contaminant concentrations to comply with the NJDEP Class II-A aquifer Groundwater Quality Criteria (GWQC). The remedial activities were conducted in accordance with the NJDEP *Technical Requirements for Site Remediation* (February 2003), NJAC 7:26E, et seq. and the M-5 Landfill Site RIR/RAWP (Appendix B).

The RA and subsequent preparation of this RAPR encompassed the following:

- Applying HRC® treatment to seven areas of concern identified in ATC's RIR/RAWP within the M-5 Landfill Site where the most significant groundwater impacts were observed and documented,

- Conducting quarterly rounds of groundwater and surface water sampling and documenting the results to evaluate the effectiveness of the RA,

- Comparing the results of the groundwater and surface water sampling with the NJDEP GWQC and Surface Water Quality Criteria (SWQC),

- Identifying and discussing recommendations with the DPW for the continuation of this RA, and

- Documenting remedial activities as required by the NJDEP *Technical Requirements for Site Remediation* NJAC 7:26E et seq.

1.2 Report Organization

Section 2.0 discusses the site history and background information for the M-5 Landfill Site. Section 3.0 describes and summarizes the remedial activities (HRC® injection) conducted at the M-5 Landfill Site. Section 4.0 discusses groundwater and surface water monitoring and sampling activities at the site. Section 5.0 presents the analytical results of the groundwater and surface water sampling. Section 6.0 discusses the effectiveness of the RA and provides recommendations to the DPW for the M-5 Landfill Site. Section 7.0 is the reference section.

2.0 SITE BACKGROUND

The following sections describe the site background of the M-5 Landfill Site. Included is a description of the site location, site history, background investigations, and previous RAPRs.

2.1 Site Location and Description

Fort Monmouth is located in the central-eastern portion of New Jersey in Monmouth County, approximately 45 miles south of New York City and 70 miles northeast of Philadelphia (Figure 2-1). The M-5 Landfill Site is located on the western portion of the Main Post, just west of the Eatontown/Oceanport Borough line and east of Mill Creek and Parkers Creek, and consists of approximately 3.2 acres. The M-5 Landfill Site is adjacent to the southern boundary of the M-8 Landfill Site. According to a report prepared by the U.S. Army Toxic and Hazardous Materials Agency (USATHAMA) titled, *Installation Assessment of Fort Monmouth, Report 171*, dated May 1980, the M-5 Landfill was in use between 1952 and 1959 for general disposal of domestic and industrial wastes and also automobiles. This site has reportedly been inactive since 1959. Since 1959, there has been a steady growth and stabilization of vegetation (grass, trees, and bushes) on the site. The environmental setting (regional/local geology and hydrogeology) of the M-5 Landfill Site is described in ATC's RIR/RAWP, dated February 2000 (Appendix B).

2.2 Site History and Background Investigations

The U.S. Army Corps of Engineers (USACE), Baltimore District, initially contracted Roy F. Weston, Inc. (Weston) to perform a Site Investigation (SI) at Fort Monmouth, New Jersey. Suspected hazardous waste sites were initially identified at Fort Monmouth in a report prepared by the U.S. Army Toxic and Hazardous Materials Agency (USATHAMA, 1980). The USATHAMA report identified 37 sites with known or suspected waste materials on the Main Post and the two sub-posts (Charles Wood and Evans areas). Weston conducted a background investigation of the 37 sites, as well as eight additional sites that were identified by Fort Monmouth and the NJDEP. Weston's findings were described in a report titled *Investigation of Suspected Hazardous Waste Sites at Fort Monmouth, New Jersey (1993).* The M-5 Landfill Site was one of the 37 sites identified.

In 1995, Weston conducted a site investigation (SI) of the M-5 Landfill Site and prepared an SI Report (December 1995). The Weston SI Report, *Final Site Investigation, Fort Monmouth, New Jersey, Main Post and Charles Wood Areas* (Appendix A), was used as the basis for subsequent remedial investigations, which progressed to the development of remedial actions, including the remediation program at the M-5 Landfill Site. From May 1997 through September 1999, the Directorate of Public Works (DPW) conducted a Remedial Investigation (RI) of the site. ATC was contracted by the DPW to evaluate the data collected during the RI and prepare the RAWP (Appendix B).

2.2.1 Site Investigation Report – Weston

The Site Investigation (SI), performed by Weston in 1995, at the M-5 Landfill Site included installation and sampling of two groundwater monitoring wells [M-5MW10 (downgradient) and M-5MW11]. Surface water sampling was not performed for the M-5 Landfill Site, although

surface water had previously been sampled in conjunction with the M-2 Landfill Site, which is upgradient. Two rounds of groundwater sampling was performed and samples were analyzed for Target Compound List (TCL) plus 30 parameters (TCL+30), Target Analyte List (TAL) metals, sulfate, and cyanide.

A background study of the Main Post was conducted as part of the site investigation reported in 1995. Five borings on the Main Post were placed in areas believed to be unaffected by base activities, as specified by the 1993 *Investigation of Suspected Hazardous Waste Sites at Fort Monmouth, New Jersey report.* Two soil samples were collected from each of the five borings. The borings were converted to monitoring wells and two groundwater samples were collected from each well. Two sediment and surface water samples were also collected as part of the background study. Maximum background concentrations were then established and reported in the SI for soil, groundwater, surface water, and sediment for the Main Post Area of Fort Monmouth so that they could be compared to the analytical results from the SI (Weston, 1995).

Groundwater analytical data for one groundwater monitoring well indicated that tetrachloroethene (PCE) concentrations exceeding the NJDEP GWQC of 1.0 µg/L were present at the M-5 Landfill Site in well M-5MW11. There were no detections of sulfate, or cyanide above the NJDEP GWQC. Fourteen metals were detected in site groundwater; however, only four (aluminum, iron, manganese, and sodium) were found at concentrations exceeding the NJDEP GWQC, but were detected at concentrations below the maximum background concentrations established in the SI report (Weston, 1995) and are therefore not identified as Contaminants of Concern (COCs).

The Weston SI Report (1995) presented a proposal to the DPW for the M-5 Landfill Site that was subsequently implemented. A long-term groundwater and surface water monitoring program was proposed that utilized the existing groundwater-monitoring wells and surface water sampling locations to monitor and document the downgradient surface water and groundwater quality conditions over time.

An expanded SI, requested by the NJDEP, identified PCE as the only COC in groundwater at the M-5 Landfill Site. The DPW installed three additional wells (M-5MW12, M-5MW13, and M-5MW14) in 1998 as part of the expanded SI. This resulted in the performance of a Remedial Investigation (RI) encompassing soil and groundwater characterization to determine the extent of the impacts of PCE at the site.

2.2.2 RIR/Remedial Action Work Plan – ATC

From April 1995 through September 1999, the DPW performed an RI of the M-5 Landfill Site. ATC was contracted by the DPW to install additional groundwater monitoring wells, evaluate the data collected during the RI, and prepare the RAWP.

The following RI approach was established:

- Perform a Geoprobe® investigation of the soils and groundwater within the landfill to characterize the near-surface and subsurface soils and shallow groundwater to determine whether a source area existed for the PCE observed in the groundwater.

- Install additional groundwater-monitoring wells within the landfill and perform constant discharge pump tests to determine the aquifer characteristics of the shallow saturated zone beneath the M-5 Landfill Site.

- Incorporate the new wells into the quarterly groundwater-monitoring program.

- Continue quarterly surface water sampling to evaluate the potential impact to the stream from the PCE detected in the soils and shallow groundwater.

Geoprobe® Investigation

The RI involved the drilling of 261 Geoprobe® locations to facilitate the collection of soil and groundwater samples. The results of the RI indicated that PCE was detected at concentrations above the minimum detection limit (MDL) in seven of the soil borings and at concentrations that exceeded the NJDEP Impact to Groundwater Soil Cleanup Criteria (IGWSCC) of 1.0 milligrams per kilogram (mg/kg) in five samples (concentrations ranging from 1.1 µg/kg to 3.3 µg/kg). PCE was detected in groundwater samples collected from 105 boring locations at concentrations that exceeded the NJDEP GWQC for PCE of 1.0 µg/L.

Eight VOCs (PCE, trichloroethene (TCE), cis-1,2-dichloroethene (DCE), chlorobenzene, benzene, toluene, ethylbenzene, and total xylenes) were detected in groundwater samples above their respective method detection limits (MDL). Of these, PCE, TCE, cis-1,2-DCE chlorobenzene, and benzene were identified in groundwater at concentrations that exceeded their respective GWQC. PCE concentrations above the GWQC were detected in 105 samples. TCE (6 samples), cis-1,2-DCE (10 samples), chlorobenzene (5 samples), and benzene (9 samples) were detected in concentrations above their respective GWQC.

Monitoring Wells

A total of 15 groundwater monitoring wells, three (M-5MW10, M-5MW11, and M-8MW12) installed by Weston (1995), three (M-5MW12, M-5MW13, and M-5MW14) installed by the DPW (1998), and nine monitoring wells (M-5MW15, M-5MW16 M-5MW18, M-5MW19, M-5MW20, M-5MW23, M-5MW25, M-8MW23, and M-8MW24) installed by ATC (1999), have been incorporated in the groundwater-monitoring program at the M-5 Landfill Site. Monitoring well depths ranged from 14 to 20 feet below ground surface (bgs). Groundwater analytical results from the permanent monitoring wells identified PCE as the only contaminant of concern (COC) across the M-5 Landfill Site. Although PCE concentrations were expected to naturally attenuate to acceptable levels over time, the DPW proposed to actively remediate the affected areas at the M-5 Landfill Site by targeting seven specific locations and applying Hydrogen Release Compound (HRC®).

2.2.3 Remedial Action Progress Report, 2000-2002 – Versar

After the first and second HRC® injection periods and twelve rounds of groundwater monitoring well sampling (4th Quarter 1999 through 3rd Quarter 2002), Versar prepared a RAPR, dated August 2003. The RAPR documented the groundwater quality conditions over time and evaluated the impact of the HRC® injection program.

The initial injection of HRC® was performed between October and December 2000 and the second was performed between February and May 2002. These injection events were completed with the prior approval of the NJDEP under the provisions of a Permit-by-Rule agreement.

A generally decreasing trend of the concentrations of PCE and an increase in daughter (e.g. breakdown) product concentrations in groundwater were observed during the reporting period (4th Quarter 1999 through 3rd Quarter 2002). The results supported the contention that COC degradation is occurring at the M-5 Landfill Site, presumably due to the effectiveness of the HRC® injection program that supports the biodegradation processes.

Based on the concentrations of the COC in groundwater following the HRC® injections, the HRC® subsurface injection program was continued by the DPW.

2.2.4 Remedial Action Progress Report, 2002-2003 – Versar

The third HRC® injection round was performed by the DPW between June and August 2003. This injection event was completed with the prior approval of the NJDEP under the provisions of a Permit-by-Rule agreement. Versar prepared a second RAPR, dated September 2005, following the third injection event, for the reporting period 4th Quarter 2002 through 3rd Quarter 2003. Said RAPR documented the groundwater quality conditions over time and evaluated the effectiveness of the HRC® injection program.

A generally decreasing trend of PCE concentrations was observed in groundwater at the site throughout the four quarters of groundwater sampling. The results supported the contention that PCE degradation was occurring at the M-5 Landfill Site, presumably due to the effectiveness of the HRC® to support the biodegradation processes.

Based on the decreasing concentrations of the COC and the increased presence of degradation products in groundwater during the reporting period, the HRC® subsurface injection program was continued.

3.0 REMEDIAL ACTIVITIES

Sampling results documented in ATC's RIR/RAWP (February 2000) for the M-5 Landfill Site indicated that the shallow groundwater contained tetrachloroethene (PCE) at concentrations that exceeded the NJDEP GWQC. Although the COC concentrations in groundwater were expected to gradually decrease through natural attenuation, the DPW implemented an HRC® injection program to actively address the groundwater contamination at the site. This bioremediation involved treating seven areas identified in the RIR/RAWP where elevated concentrations of PCE were detected (Figure 3-1).

3.1 Hydrogen Release Compound®

HRC® is a proprietary, food quality, polylactate ester that, upon being deposited into the subsurface, creates anaerobic aquifer conditions and causes the release of hydrogen. Under anaerobic conditions, naturally occurring microorganisms use the hydrogen to progressively remove chlorine atoms from chlorinated hydrocarbons via reductive dechlorination. HRC® is a slow-release compound that provides a steady hydrogen source for between six months and one year, and has been shown to enhance the natural attenuation of PCE at other study sites. HRC® applications were conducted in accordance with the M-5 Landfill Site RIR/RAWP, prepared by ATC Associates, Inc. (ATC), dated February 2000, and approved by the NJDEP in March 2001.

The seven treatment areas designated for the application of HRC® are illustrated in Figure 3-1. Varying numbers of boring locations within each of the seven delineated areas (from 6 to 59), where concentrations of PCE were detected above the NJDEP GWQC, were selected for application of the biological enhancements.

The fourth HRC® injection event was performed between June and August 2004 using a Geoprobe® rig to install an array of temporary injection points around each of the selected boring locations. These injections points were established on 12 foot by 12 foot grids over each treatment area, for a total of 233 injection locations. Injection of the HRC® was continuous from four feet to eight feet below ground surface (bgs).

3.2 Discharge to Groundwater Permit

The purpose of the New Jersey Pollutant Discharge Elimination System (NJPDES) Discharge to Groundwater (DGW) permit is to request a formal approval of the HRC® subsurface injection program at the M-5 Landfill Site as described in the RAWP prepared by ATC (Appendix B). The fourth injection of HRC® was completed with the prior approval of the NJDEP under the provisions of a Permit-by-Rule agreement.

As described in the ATC RAWP, the HRC® injections do not result in the discharge of any hazardous compounds. A Material Data Safety Sheet (MSDS) for the HRC® is presented in Appendix C.

3.3 Types of Waste Generated and Disposal Methods

The waste types generated by the remedial activities included three-gallon polyethylene pails and personal protective equipment (PPE). The pails were recycled and the PPE was disposed of as non-hazardous waste.

4.0 MONITORING AND SAMPLING ACTIVITIES

As part of the Long Term Monitoring (LTM) program at the M-5 Landfill Site, quarterly groundwater monitoring (Rounds 27 through 34) and surface water sampling (Rounds 29 through 36) continued from the 4th Quarter 2003 through the 3rd Quarter 2005. Groundwater samples were collected from 10 monitoring wells (M-5MW10, M-5MW11, M-5MW12, M-5MW13, M-5MW14, M-5MW16, M-5MW18, M-5MW19, M-5MW20, and M-5MW23) at the M-5 Landfill Site and three monitoring wells (M-8MW12, M-8MW23, and M-8MW24) at the northern adjacent M-8 Landfill Site during eight quarterly sampling events. Surface water samples were collected from four locations (SS-4, SS-5, SS-15, and SS-16) along Mill Creek through the 3rd Quarter 2004 and in two locations (SS-5 and SS-15) from the 4th Quarter 2004 through the 3rd Quarter 2005.

Sampling was conducted by the DPW in accordance with the established protocols as described in the *Fort Monmouth Standard Sampling Operating Procedure [SOP No.: SAM-0205* (August 1999, Revised January 2003 and September 2004)] and the NJDEP *Field Sampling Procedures Manual*, May 1992 and August 2005. Both groundwater and surface water samples were analyzed for VOCs + 15. Surface water samples were also analyzed for polychlorinated biphenyls (PCBs). Laboratory analyses of the samples were conducted at the Fort Monmouth Environmental Testing Laboratory (FMETL), a New Jersey-certified laboratory (Certification No. 13461).

4.1 Groundwater Monitoring

During the current groundwater sampling program at the M-5 Landfill Site, groundwater was encountered at depths ranging from approximately 2-13 feet bgs (2.10 to 12.75 feet below top of well casing). Static depth to water measurements were collected from 12 monitoring wells on October 8, 2003, January 14, 2004, May 13, 2004, August 20, 2004, December 16, 2004, March 15, 2005, June 3, 2005, and September 16, 2005. Depths were not reported for monitoring wells M-5MW15 and M-5MW25 for the 4th Quarter 2004 or the 1st Quarter 2005. No separate-phase product was observed in any of the 12 monitoring wells during the reporting period. Figure 2-2 shows the locations of the monitoring wells. Depth to water measurements results are summarized in Table 4-1. Groundwater-elevation contour maps were generated for each round based on groundwater elevations calculated for 12 monitoring wells. These contour maps are presented in Figures 4-1 through Figure 4-8 along with the required NJDEP contour map reporting forms.

The contour maps indicate that shallow groundwater underlying the M-5 Landfill Site consistently flows to the west towards Mill Creek and Parkers Creek at elevations ranging from 2.05 to 10.15 feet above mean sea level (msl). No significant variations in groundwater flow conditions were observed through the current monitoring period.

4.2 Groundwater Sampling

Quarterly groundwater sampling of the 10 monitoring wells at the M-5 Landfill Site was conducted by the DPW. Quality control samples for the monitoring period included 12 method blanks, 10 trip blanks, 11 field blanks, and 8 duplicate samples.

Sampling equipment was thoroughly decontaminated before and after each use. Following collection, the groundwater samples were immediately placed in laboratory-supplied bottle ware. Sample containers were labeled, sealed, packed in ice, and transported to the FMETL under proper chain-of-custody procedures.

Copies of the chain-of-custody forms and the laboratory analytical data sheets are presented in Appendix D. A summary of the groundwater sampling activities for the remediation monitoring (Rounds 1 through 34); including round numbers, well IDs, sample IDs, sample locations, collection/analysis dates, analytical parameters, and analysis methods is provided in Table 4-2. Figure 2-2 shows the locations of the monitoring wells. The analytical results are discussed in Section 5.1.

4.3 Surface Water Sampling

Surface water sampling was conducted by the DPW for the current reporting period as part of a base-wide surface-water sampling program. A total of 24 surface water samples were collected over eight rounds of sampling from four locations (SS-4, SS-5, SS-15, and SS-16) along Mill Creek. SS-5 and SS-15 were sampled during eight quarterly sampling events from November 2003 through September 2005, and SS-4 and SS-16 were sampled during four sampling events from November 2003 through August 2004. Figure 2-2 shows the locations of surface water sample collection points. SS-15 and SS-16 are located upstream of the site. SS-4 is located downstream of the site. SS-5 is located adjacent to the M-5 Landfill Site. The samples were analyzed by the FMETL for VOCs and PCBs. The results of these analyses are discussed in Section 5.2.

Sampling equipment was thoroughly decontaminated before and after each use. Surface water samples were collected and immediately placed in laboratory-supplied bottle ware. Sample containers were labeled, sealed, packed in ice, and transported to the FMETL under proper chain-of-custody procedures.

Copies of the chain-of-custody forms and the laboratory analytical data are presented in Appendix E. Table 4-3 presents a summary of surface water sampling activities for Rounds 1 through 36 for sampling points SS-4, SS-5, SS-15, and SS-16; including sampling rounds, sample IDs, stream sampling locations, collection/analysis dates, analytical parameters, and analysis methods.

4.4 Types of Waste Generated and Disposal Methods

The waste types generated by the sampling activities included polyethylene tubing, Teflon® bailers, mason string, and personal protective equipment (PPE). The tubing, bailers, string, and PPE were disposed of as non-hazardous waste.

5.0 SAMPLING ANALYTICAL RESULTS

This section includes a summary discussion of the chemical characterization of the site based on the samples collected and analyzed for the current reporting period, including eight quarterly rounds of groundwater monitoring well samples and eight rounds of surface water samples.

5.1 Groundwater Sampling Results

Summaries of the analytical results from each of the 10 monitoring wells on the M-5 Landfill Site and the three monitoring wells on the M-8 Landfill Site for Rounds 1 through 34 are summarized in Tables 5-1 through Table 5-15. Analytes detected in groundwater samples at concentrations above their respective NJDEP GWQC are highlighted and shaded in the tables. Graphs depicting PCE (and daughter product) concentrations over time at wells M-5MW11, M-5MW16, M-5MW19, M-5MW20, M-5MW23, M-8MW12, and M-8MW23 are provided as Figures 5-2A through Figure 5-8C. A summary of results exceeding GWQC in the current reporting period is presented in Table 5-16. Figure 5-1A summarizes the analytical results for tetrachloroethene (PCE), TCE, and cis-1,2-DCE to include all remediation phase sampling events.

During eight quarterly sampling events for the current reporting period, 12 VOCs were detected in the ten M-5 and three M-8 groundwater samples. Five VOCs (benzene, chlorobenzene, ethylbenzene, 1,3-dichlorobenzene, and 1,4-dichlorobenzene) were identified only in M-8MW24. Benzene and chlorobenzene are contaminants of concern (COCs) at the M-8 Landfill Site. Seven VOCs [2-butanone, PCE, trichloroethene (TCE), cis-1,2-dichloroethene (DCE), vinyl chloride, benzene, and chlorobenzene] were detected at concentrations that exceeded their respective GWQC in more than one sample at the M-5 Landfill and M-8 Landfill monitoring wells, while five VOCs (ethylbenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, acetone, and chloroform) were detected below their respective GWQC at both sites. Based on these and previous results, daughter products, cis-1,2-DCE and TCE, have been added as COCs at the M-5 Landfill Site.

5.1.1 Contaminants of Concern

The following paragraphs summarize the results of the contaminants of concern (COCs) detected above the GWQC during the current reporting period:

- PCE concentrations in monitoring well M-5MW11 ranged from non-detect in Round 34 to 3.10 µg/L in Round 29. PCE concentrations exceeded the GWQC of 1.0 µg/L in seven of the eight sampling rounds.

- PCE concentrations in monitoring well M-5MW16 ranged from 6.22 µg/L in Round 32 to 90.59 µg/L in Round 33. In Round 34, PCE was detected at 9.51 µg/L. PCE concentrations exceeded the GWQC in all eight sampling rounds.

- PCE concentrations in monitoring well M-5MW19 ranged from non-detect in Rounds 29 and 31 through 33 to 5.73 µg/L in Round 34. PCE concentrations exceeded the GWQC in three of the eight sampling rounds.

- PCE concentrations in monitoring well M-5MW20 ranged from 3.96 µg/L in Round 31 to 43.96 µg/L in Round 27. In Round 34, PCE was detected at 8.74 µg/L. PCE concentrations exceeded the GWQC in all eight sampling rounds.

- PCE concentrations in monitoring well M-5MW23 ranged from non-detect in Round 30 to 23.07 µg/L in Round 33. In Round 34, PCE was detected at 7.24 µg/L. PCE concentrations exceeded the GWQC in seven of the eight sampling rounds.

- PCE concentrations in monitoring well M-8MW12 ranged from non-detect in Rounds 27 through 31 and Rounds 33 and 34 to 3.67 µg/L in Round 32. PCE concentrations exceeded the GWQC in one of the eight sampling rounds.

- TCE concentrations in monitoring well M-5MW11 ranged from non-detect in Rounds 30 through 34 to 1.2 µg/L in Round 29. TCE concentrations exceeded the GWQC of 1.0 µg/L in one of the eight sampling rounds.

- TCE concentrations in monitoring well M-5MW16 ranged from 2.80 µg/L in Round 32 to 34.20 µg/L in Round 33. In Round 34, TCE was detected at 34.10 µg/L. TCE concentrations exceeded the GWQC in all eight sampling rounds.

- TCE concentrations in monitoring well M-5MW19 ranged from non-detect in Rounds 30, 32, and 33 to 3.12 µg/L in Round 34. TCE concentrations exceeded the GWQC in five of the eight sampling rounds.

- TCE concentrations in monitoring well M-5MW20 ranged from non-detect in Round 31 to 8.55 µg/L in Round 33. In Round 34, TCE was detected at 2.67 µg/L. TCE concentrations exceeded the GWQC in six of the eight sampling rounds.

- TCE concentrations in monitoring well M-5MW23 ranged from non-detect in Round 27 and Rounds 30 through 33 to 2.07 µg/L in Round 29. In Round 34, TCE was detected at 0.89 µg/L. TCE concentrations exceeded the GWQC in two of the eight sampling rounds.

- TCE concentrations in monitoring well M-8MW12 ranged from non-detect in Round 27, Rounds 29 through 31, and Rounds 33 and 34 to 3.70 µg/L in Round 28. TCE concentrations exceeded the GWQC in two of the eight sampling rounds.

- Cis-1,2-dichloroethene concentrations in monitoring well M-5MW16 ranged from 22.47 µg/L in Round 29 to 283.79 µg/L in Round 34. Cis-1,2-DCE exceeded the GWQC of 10.0 µg/L in all eight sampling rounds.

- Cis-1,2-DCE concentrations in monitoring well M-5 MW20 ranged from non-detect in Round 29 to 13.20 µg/L in Round 33. In Round 34, cis-1,2-DCE was detected at 4.21 µg/L. Cis-1,2-DCE concentrations exceeded the GWQC in one of the eight sampling rounds.

Vinyl chloride was detected at M-8MW23 in two of the eight sampling rounds at 5.13 µg/L (Round 29) and 13.71 µg/L (Round 30), exceeding the GWQC of 5.0 µg/L in two of the eight

sampling rounds. The only other detections of vinyl chloride during all phases of sampling were below the GWQC in M-8MW23 at 2.40 µg/L (Round 28), 2.06 µg/L (Round 23), 1.18 µg/L (Round 10), and in M-5MW16 at 1.21 µg/L (Round 31). Therefore, vinyl chloride is not being named as a contaminant of concern at this time.

There was one detection during this reporting period of 2-butanone that exceeded the GWQC of 300 µg/L. The concentration of 2-butanone in monitoring well M-5MW11 was 448.97 µg/L in Round 27. The 2-butanone was not detected in the following seven sampling rounds (Rounds 28-34).

All other monitoring wells had PCE, TCE, and cis-1,2-DCE concentrations that were non-detect or below the NJDEP GWQC.

5.2 Surface Water Sampling Results

Quarterly surface water samples were collected along Mill Creek at two upstream locations (SS-15 and SS-16), one adjacent stream location (SS-5), and one downstream location (SS-4) during the current sampling period (Surface Water Sampling Rounds 29 through 36). Results for surface water samples for Rounds 1 through 36 (October 1996 through September 2005) are summarized in Tables 5-17 through Table 5-20. Surface water contaminant distributions over time are presented in Figure 5-1B. The results of the current surface water sampling events are discussed below.

Surface water sampling results were compared to the appropriate fresh or saline water NJDEP Surface Water Quality Criteria (SWQC). Concentrations of VOCs that exceeded their respective SWQC are summarized in Table 5-21.

During eight quarterly sampling events for the current reporting period, eight VOCs were detected in surface water samples. Two VOCs (PCE and TCE) were detected at concentrations that exceeded their respective SWQC in at least one sample from SS-15 only, while six VOCs were detected below their respective SWQC.

At SS-15 , PCE was detected at concentrations ranging from 1.25 µg/L (Rounds 32 and 36) to 2.92 µg/L (Round 34) above its SWQC of 0.388 µg/L. PCE concentrations exceeded the SWQC in all eight rounds of sampling. Also at SS-15, TCE was detected at 1.24 µg/L (Round 35), which exceeded the SWQC of 1.09 µg/L.

As previously noted, surface water sampling point, SS-15, is located upstream of the M-5 Landfill Site and outside of the Fort Monmouth property boundary. The concentrations of PCE and TCE observed entering the property west of the M-2 and M-5 Landfill Sites are not derived from Army activities at Fort Monmouth.

5.3 Tentatively Identified Compounds (TICs)

During this reporting period, seven of the 13 monitoring wells sampled did not have detected VOC tentatively identified compounds. These were M-5MW10, M-5MW13, M-5MW14, M-5MW16, M-5MW18, M-5MW20, and M-8MW23. Sampling results also indicated five of the other six monitoring wells had only one round of detected TICs. These results ranged from a

concentration of 3 µg/L to 29 µg/L. TICs were reported in five of the eight sampling rounds at M-8MW24. There were no results exceeding the NJDEP criteria of 100 µg/L for individual compounds or 500 µg/L for Total TIC concentrations. Table 5-22 lists the VOC TICs for this reporting period.

5.4 Quality Assurance/Quality Control (QA/QC)

To verify the reliability of the analytical results, VEETech reviewed the holding times for each sample and the results of the analyses of 12 method blanks, 10 trip blanks, 11 field blanks, and eight field duplicate samples for VOCs. Samples were analyzed by the FMETL within the prescribed holding time requirements for the analytical method.

Method Blanks

Laboratory method blanks accompanied each batch of samples for the M-5 Landfill Site. These method blanks consisted of laboratory-grade water that was processed identically to the samples and analyzed with the sample batch. A total of 12 method blanks were analyzed with the M-5 Landfill Site samples.

Two VOCs, acetone and chloroform, were detected in three method blank samples at concentrations below their respective GWQC. Both acetone and chloroform are common laboratory contaminants, and their detection in the method blank samples is not indicative of a widespread laboratory contamination problem. More importantly, none of the COCs (PCE, TCE, and cis-12,-DCE) were detected in any of the method blank samples.

Trip Blanks

A total of 10 trip blanks were included as part of the M-5 Landfill Site sampling program to document that volatile organics were not introduced into the samples during the handling process. The trip blanks were prepared by the FMETL and consisted of sample bottles filled with laboratory-deionized water. The trip blanks remained with the sample bottles in coolers and were returned to the laboratory for analysis with the groundwater samples.

Chloroform was detected in six of the 10 trip blanks; none of the detections exceeded the NJDEP groundwater criteria. As noted above, chloroform is a common laboratory artifact.

Field Blanks

One field blank sample was obtained during each day's sampling activities to document the equipment decontamination procedures. A total of 11 field samples (e.g., field blanks) were collected during the M-5 Landfill Site sampling program. The field blanks were collected by rinsing deionized water, supplied by the laboratory, over the sampling equipment used for each day's activities. The water was collected in clean laboratory-supplied containers and submitted for analysis with the M-5 Landfill Site groundwater samples.

Chloroform was detected in six of the 11 field blanks; none of the detections exceeded the NJDEP groundwater criteria. As noted above, chloroform is a common laboratory artifact. The COCs were not detected in any of the field blanks.

Duplicate Samples

A total of eight field duplicate samples were also collected during the M-5 Landfill Site sampling events to verify the consistency of the entire sampling and analytical procedure. The results for all of the duplicate samples were close to those obtained for the original samples. The relative percent differences (RPDs) for the duplicate sample analyses ranged from 0.0% to 200.0%, however, the average RPD for all of the results was 28.05%. Based on average RPDs, the QA/QC sample results indicate good precision.

6.0 REMEDIAL ACTION PROGRESS

The long-term groundwater monitoring results indicate the concentrations of PCE are decreasing and the daughter product concentrations are increasing in the groundwater at the M-5 Landfill Site as a result of enhanced natural attenuation. There is also no indication of plume migration and contamination from the M-5 Landfill Site is not impacting Mill Creek.

6.1 Cost of Remediation Incurred To-Date

The total cost-to-date from the annual implementation of the remedial actions performed at the M-5 Landfill Site is provided below:

M-5 LANDFILL (SITE # FTMM-05) FUNDING HISTORY

ACTUAL COST (THOUSANDS $)

YEAR	PA	SI	RI	RD	RA	RAO	LTM	TOTAL
1993	3.90							**3.90**
1994		43.40						**43.40**
1995		2.40						**2.40**
1996		0.55					22.50	**23.05**
1997			14.60				23.80	**38.40**
1998			68.00	5.00			14.80	**87.80**
1999			60.00	20.00	39.00	48.00	18.00	**185.00**
2000			163.00			48.00	35.00	**246.00**
2001						50.00	30.00	**80.00**
2002						89.00	27.00	**116.00**
2003						88.00	27.00	**115.00**
2004						88.00	27.00	**115.00**
2005						88.00	27.00	**115.00**
TOTALS =	**3.90**	**46.35**	**305.60**	**25.00**	**39.00**	**499.00**	**252.10**	**1170.95**

6.2 Discharge to Groundwater Permit

A NJPDES DGW permit application was submitted in November 2001 to obtain approval for continuation of the HRC® injection program at the M-5 Landfill Site. The fourth HRC® injection event was performed between June and August 2004 as an extension of the NJDEP Permit-by-Rule approval. All subsequent HRC® injections will be performed under NJDEP regulatory requirements.

6.3 Conclusions

Figures 5-2A through Figure 5-8C illustrate the trend in concentrations of PCE and its daughter products over time at monitoring wells M-5MW11, M-5MW16, M-5MW19, M-5MW20, M-5MW23, M-8MW12, and M-8MW23 where PCE and its daughter products have been

detected above and below their respective GWQC. During this reporting period, PCE and its daughter products were not detected in six of the 13 monitoring wells (M-5MW10, M-5MW12, M-5MW13, M-5MW14, M-5MW18, and M-8MW24). Monitoring wells M-5MW15 and M-5MW25 were last sampled in July 2003.

The trends of PCE and its daughter (breakdown) products in groundwater over time after the implementation of the HRC® injection program are discussed below:

PCE was detected at concentrations exceeding the GWQC of 1.0 µg/L in one to eight sampling rounds collected from six monitoring wells. Concentrations ranged from 1.08 µg/L in M-5MW11 (Round 27) to 90.59 µg/L in M-5MW16 (Round 33). The PCE concentration in M-5MW16 decreased to 9.51 µg/L in Round 34.

TCE was detected at concentrations exceeding the GWQC of 1.0 µg/L in one to eight sampling rounds from six monitoring wells. Concentrations ranged from 1.02 µg/L in M-5MW23 (Round 28) to 34.20 µg/L in M-5MW16 (Round 33).

Cis-1,2-DCE was detected at concentrations exceeding the GWQC of 10 µg/L in one to eight sampling rounds collected from two monitoring wells. Concentrations ranged from 13.20 µg/L in M-5MW20 to 283.79 µg/L in M-5MW16 (Round 34).

Vinyl chloride, which has not been designated a COC, was detected at concentrations exceeding the GWQC of 5.0 µg/L in two rounds at M-8MW23. Concentrations were 5.13 (Round 29) and 13.71 µg/L (Round 30). Sampling results from all sampling rounds at the other 14 monitoring wells (11 at the M-5 Landfill and three at the M-8 Landfill) for vinyl chloride have been either non-detect or below the GWQC.

Although concentrations of PCE have fluctuated over time (specifically in M-5MW11, M-5MW16, M-5MW19, M-5MW20, M-5MW23, M-8MW12, and M-8MW23), the PCE levels have generally decreased in all monitoring wells where concentrations were above the GWQC at the onset of the first HRC® injection. The conclusion is that HRC® injections have enabled natural attenuation to proceed at an increased rate; however, as expected, daughter product concentrations have increased. Areas around M-5MW16, M-5MW19, M-5MW20, and M-5MW23 are still of concern.

6.4 Recommendations

Although COC concentrations have fluctuated in some wells, based on the generally decreasing trend of PCE and the increase of daughter products over time, VEETech recommends that the DPW continue quarterly sampling and monitoring activities. Remedial action progress will be monitored and reported to the NJDEP periodically.

6.4.1 Sampling Program

The following table provides a summary of the current quarterly groundwater and surface water sampling program at the M-5 Landfill Site. At this time, no change in the current program is planned. Any future alterations involving laboratory analyses and the elimination of certain wells from the program will be based on the distribution of the COCs over time.

Monitoring Well	Analysis	Future Sampling Status	Reason
M-5MW10	VOCs	Continue VOCs Quarterly	Downgradient of Contamination Source
M-5MW11	VOCs	Continue VOCs Quarterly	Exceedances of PCE and TCE
M-5MW12	VOCs	Continue VOCs Quarterly	Downgradient of Contamination Source
M-5MW13	VOCs	Continue VOCs Quarterly	Downgradient of Contamination Source
M-5MW14	VOCs	Continue VOCs Quarterly	Downgradient of Contamination Source
M-5MW16	VOCs	Continue VOCs Quarterly	Exceedances of PCE, TCE, & cis-1,2-DCE
M-5MW18	VOCs	Continue VOCs Quarterly	Downgradient of Contamination Source
M5-MW19	VOCs	Continue VOCs Quarterly	Exceedances of PCE and TCE
M-5MW20	VOCs	Continue VOCs Quarterly	Exceedances of PCE, TCE, & cis-1,2-DCE
M-5MW23	VOCs	Continue VOCs Quarterly	Exceedances of PCE and TCE
M-8MW12	VOCs	Continue VOCs Quarterly	Exceedances of PCE and TCE
M-8MW23	VOCs	Continue VOCs Quarterly	Exceedances of vinyl chloride and downgradient of contamination source
M-8MW24	VOCs	Continue VOCs Quarterly	COCs for M-5 Landfill Site not detected, but exceedances of benzene and chlorobenzene

Surface Water Location	Analysis	Future Sampling Status	Reason
SS-4	VOCs, PCBs	Discontinued	No COCs detected above SWQC in 32 rounds and was eliminated after the 3rd Quarter 2004
SS-5	VOCs, PCBs	Continue VOCs Quarterly	Exceedances of PCE
SS-15	VOCs, PCBs	Continue VOCs Quarterly	Exceedances of PCE and TCE
SS-16	VOCs, PCBs	Discontinued	No COCs detected above SWQC in 13 rounds and was eliminated after the 3rd Quarter 2004

6.5 Remedial Action Schedule

The table provided in Appendix G is a schedule summary for all remedial activities at the M-5 Landfill Site from the Preliminary Assessment phase through the end of this reporting period, 3rd Quarter 2005.

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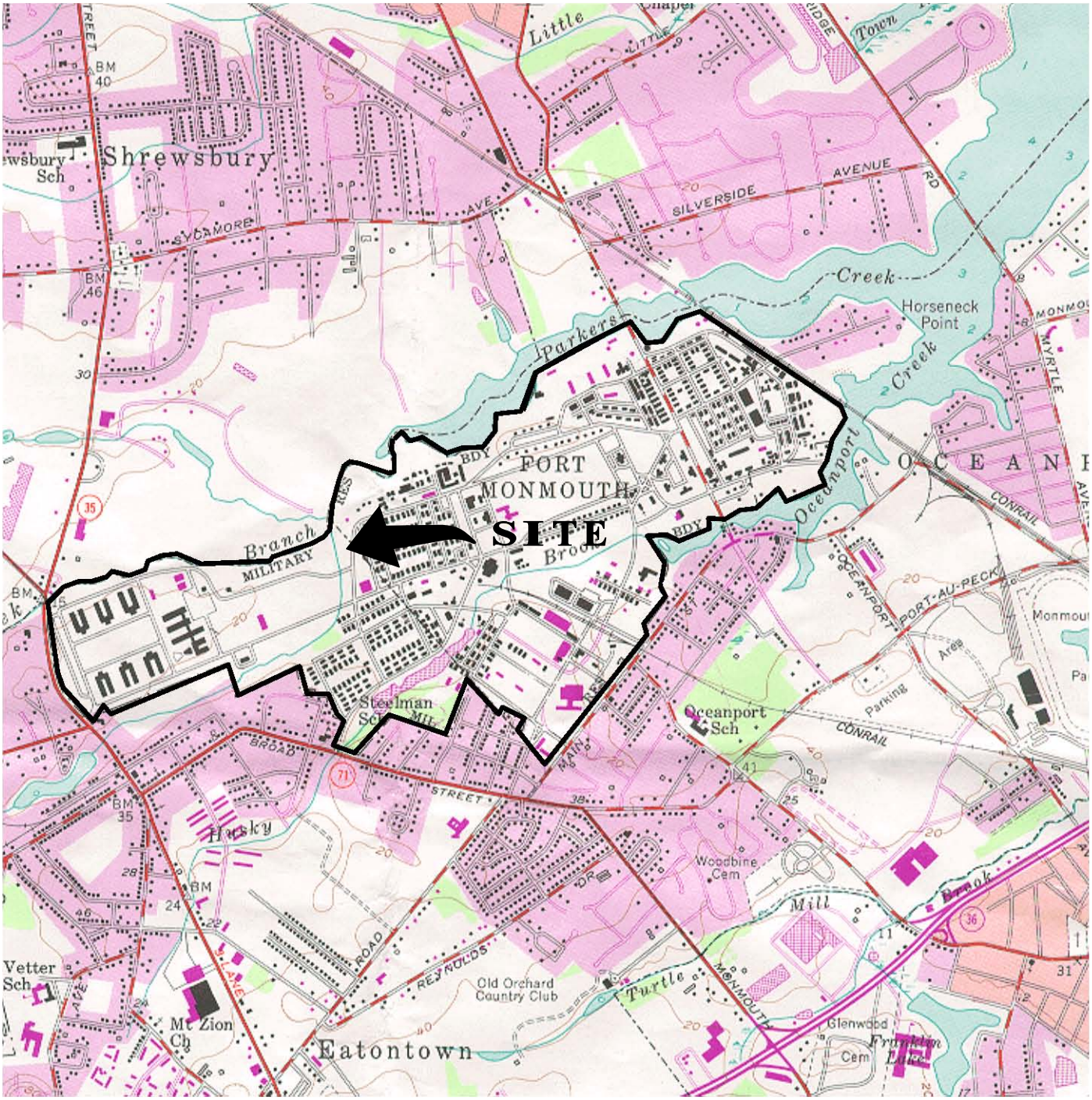
FIGURES



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NEW JERSEY

QUADRANGLE LOCATION

Mapped, edited and published by the U.S. Geological Survey

Figure 2-1
M-5 Landfill (FTMM-05)
Site Location Map
Fort Monmouth, New Jersey

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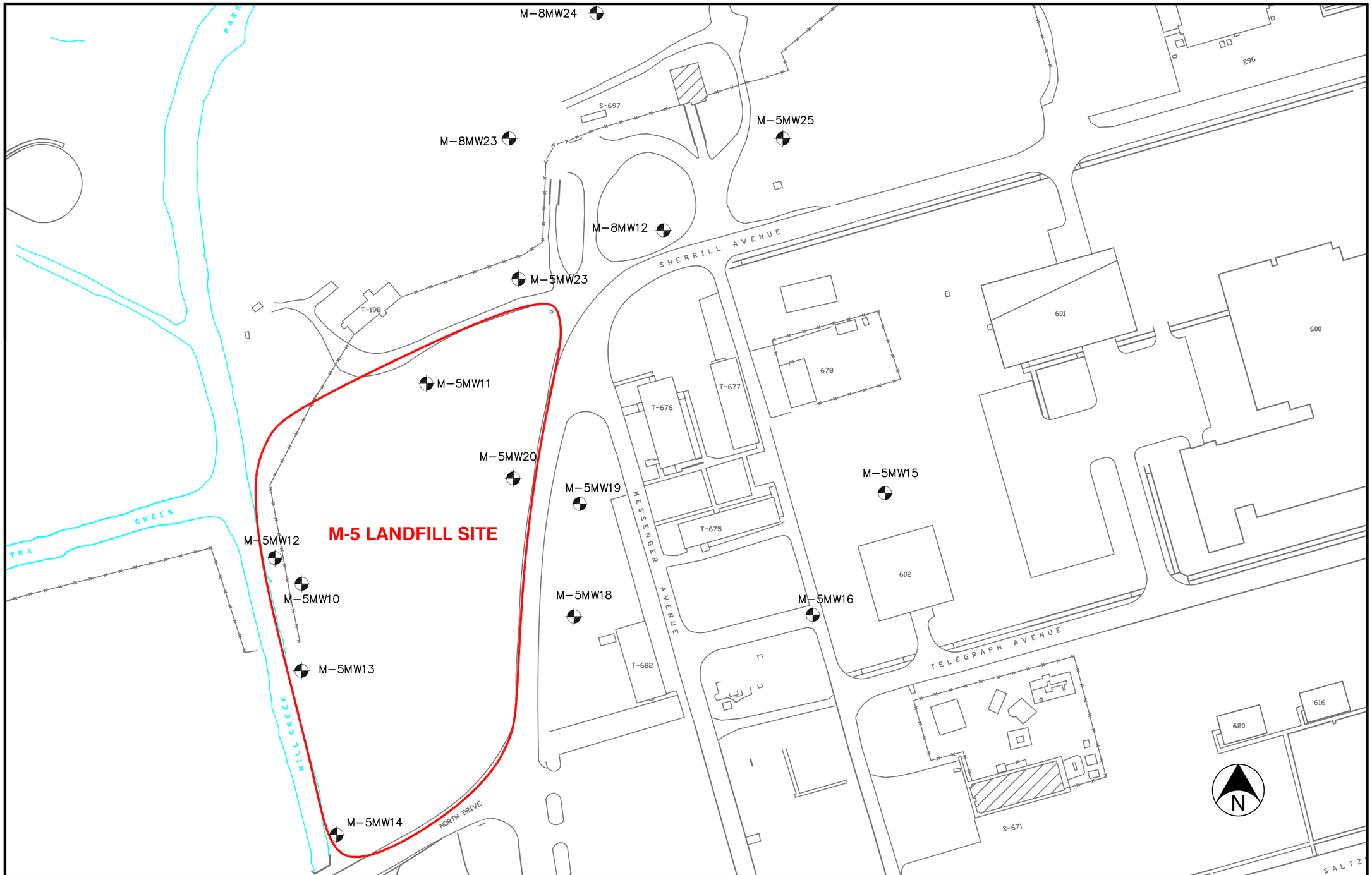

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FIGURE 2-2
SITE LAYOUT MAP

M-5 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

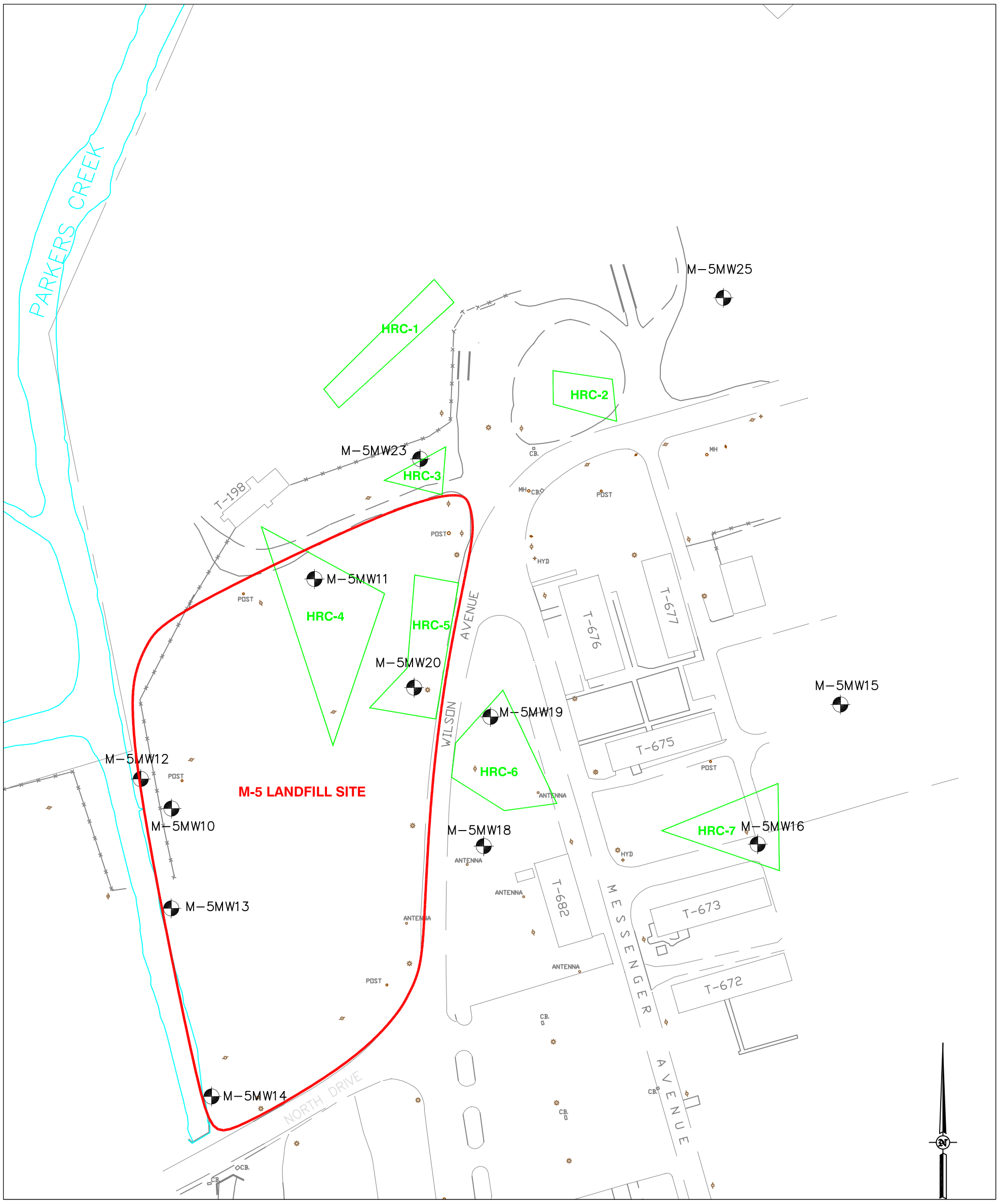
PROJECT NO.: 2011-05-011

FIGURE NO.: 2-2

SCALE
0 25 50 100

16-FEB-09

FIGURE NO.
2-2



Treatment Area	Area (square feet)	Number of Injection Points
HRC-1	3,200	22
HRC-2	1,800	13
HRC-3	900	6
HRC-4	8,500	59
HRC-5	7,000	49
HRC-6	6,000	42
HRC-7	6,000	42

100 50 0 100

SCALE IN FEET

LEGEND

MONITORING WELL LOCATION

HRC-3 HYDROGEN RELEASING COMPOUND TREATMENT AREA

SOURCE: ATC ASSOCIATES, INC., 1998, REMEDIAL ACTION WORK PLAN M-5 LANDFILL SITE, FORT MONMOUTH, NEW JERSEY

REV.	REVISIONS	APPROVED	DATE	DRAWN BY

TITLE:

FIGURE 3-1
BIOREMEDIATION AREAS
M-5 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

DRAWN BY: TJK	DATE DRAWN: 04 MAY 06
CHECKED BY: SM	DATE CHECKED: 01 NOV 07
APPROVED BY:	DATE APPROVED:
	FIGURE No.: 3-1
	PROJECT No.: 2011-05-011
	SCALE: 1" = 100'
	SHEET 1 OF 1 REV.:

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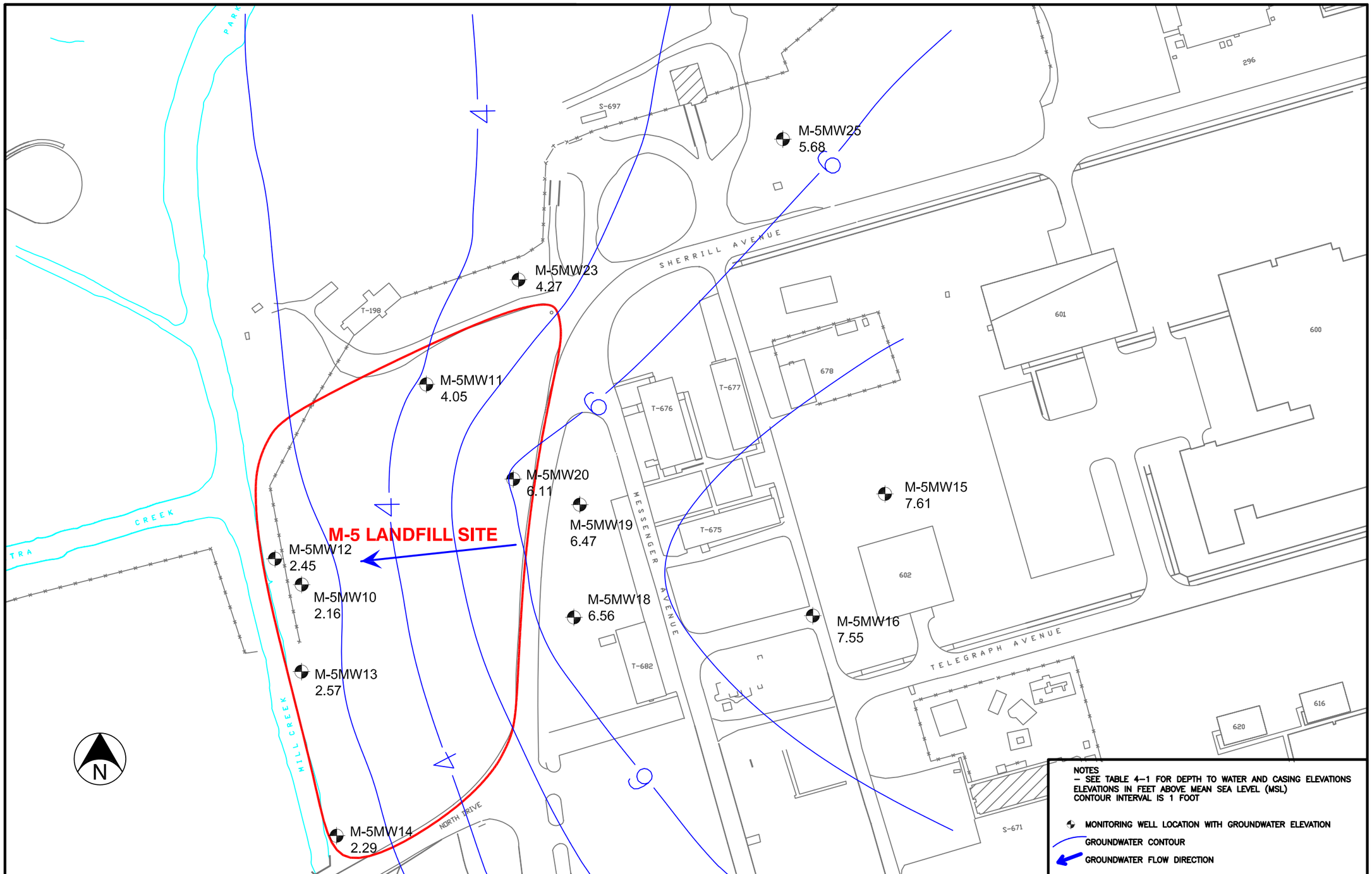

NOTES
– SEE TABLE 4–1 FOR DEPTH TO WATER AND CASING ELEVATIONS
ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL (MSL)
CONTOUR INTERVAL IS 1 FOOT

MONITORING WELL LOCATION WITH GROUNDWATER ELEVATION
GROUNDWATER CONTOUR
GROUNDWATER FLOW DIRECTION

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GROUNDWATER CONTOUR MAP (OCTOBER 8, 2003)

M–5 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

PROJECT NO.: 2011–05–011

FIGURE NO.: 4–1

SCALE
0 25 50 100

16–FEB–09

FIGURE NO.
4-1

APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

Figure 4-1

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X_. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes___ No_X_. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes___ No_X_. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No_X_. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No_X_. If yes, show the formula used to correct the water table elevation.

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5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No_X_. If yes, discuss the reasons for the change.

6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No_X_. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided_X_, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

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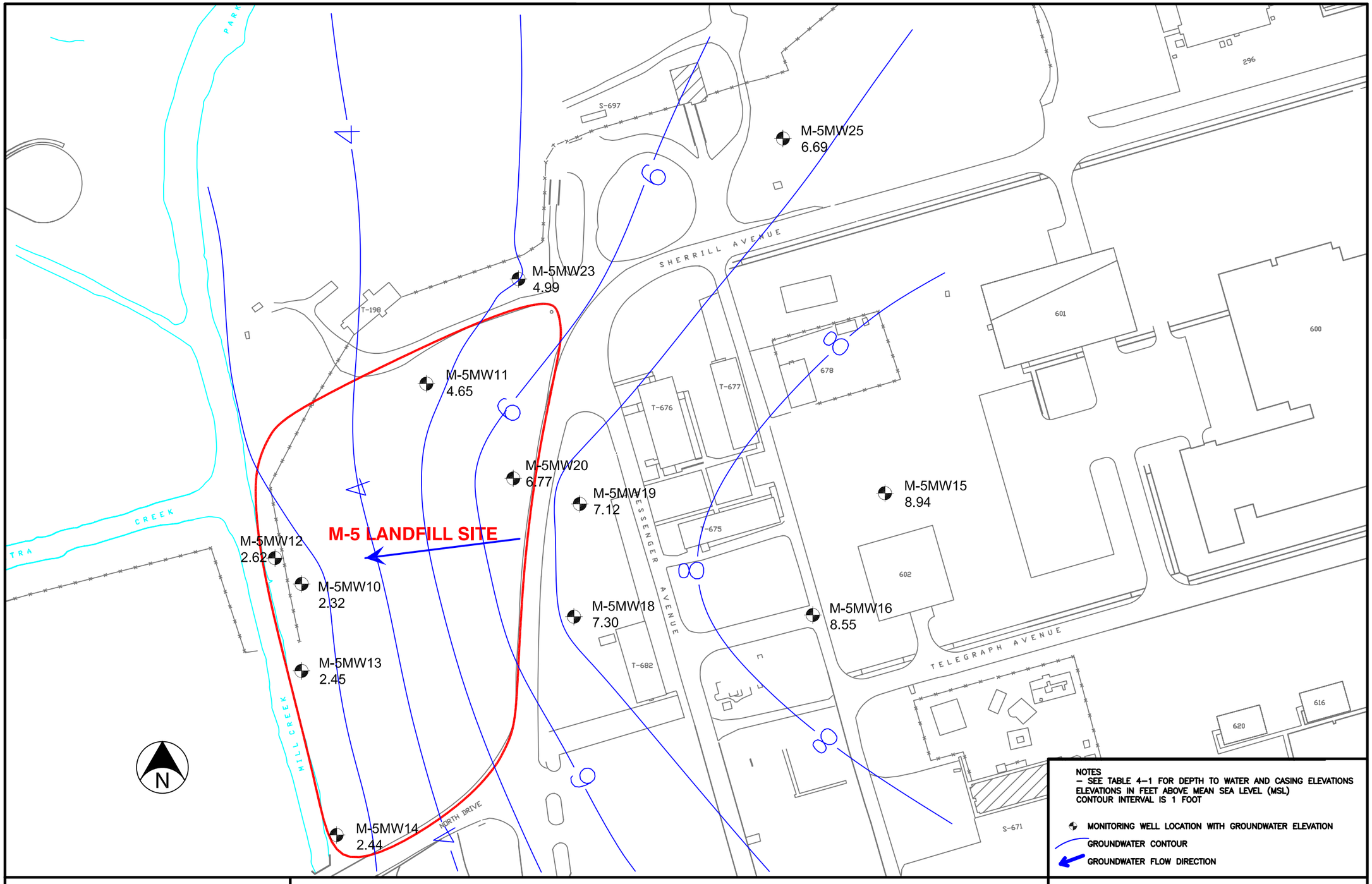

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GROUNDWATER CONTOUR MAP (JANUARY 14, 2004)

M–5 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

PROJECT NO.: 2011–05–011

FIGURE NO.: 4–2

SCALE
0 25 50 100

16–FEB–09

FIGURE NO.
4-2

APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

Figure 4-2

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No X. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes___ No X. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes___ No X. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No X. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No X. If yes, show the formula used to correct the water table elevation.

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5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No_X_. If yes, discuss the reasons for the change.

6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No_X_. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided_X_, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

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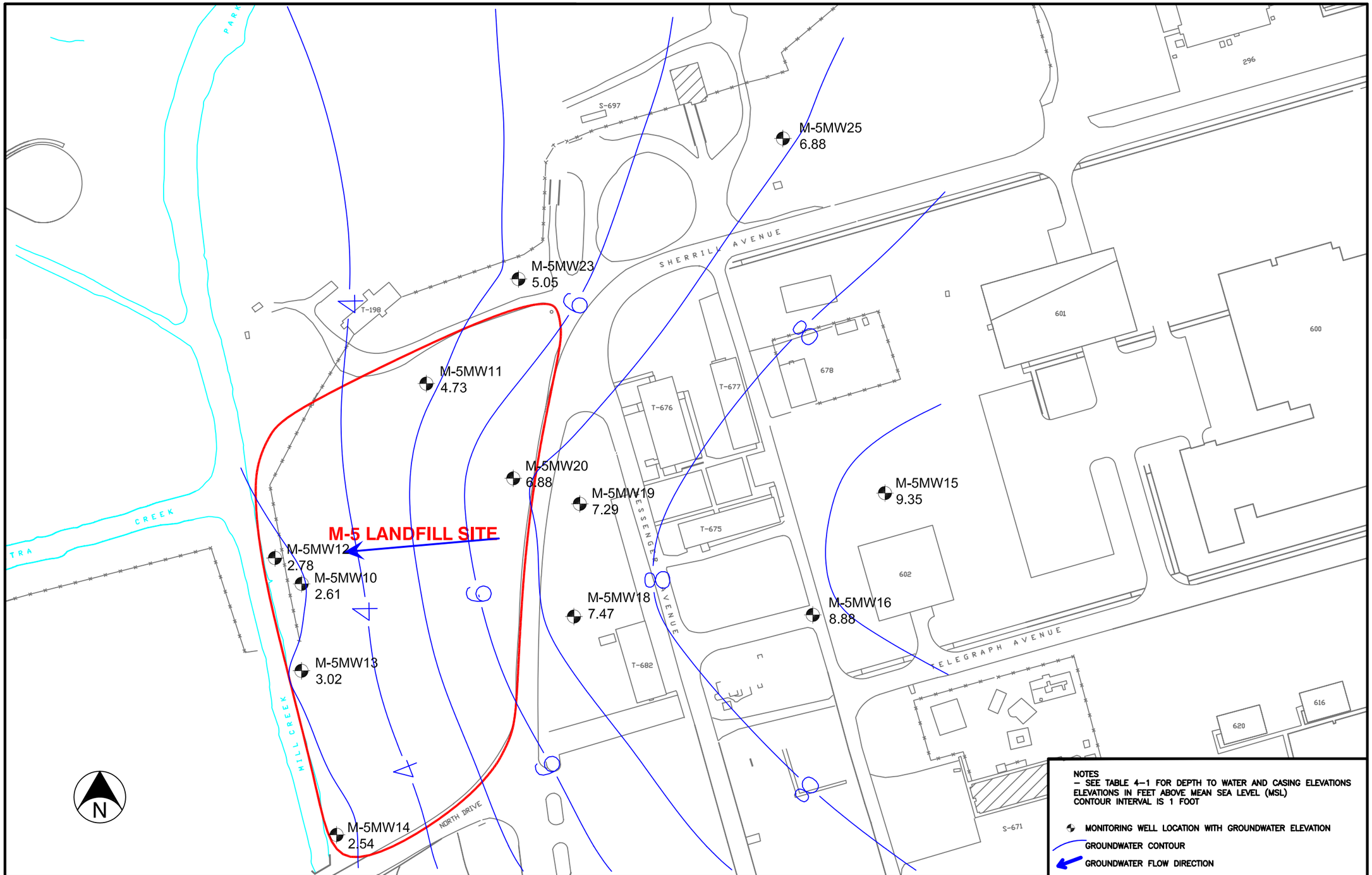

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GROUNDWATER CONTOUR MAP (MAY 13, 2004)

M–5 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

PROJECT NO.: 2011–05–011

FIGURE NO.: 4–3

SCALE
0 25 50 100

16–FEB–09

FIGURE NO.
4-3

APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

Figure 4-3

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X_. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes___ No_X_. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes___ No_X_. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No_X_. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No_X_. If yes, show the formula used to correct the water table elevation.

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5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No_X_. If yes, discuss the reasons for the change.

6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No_X_. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided_X_, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

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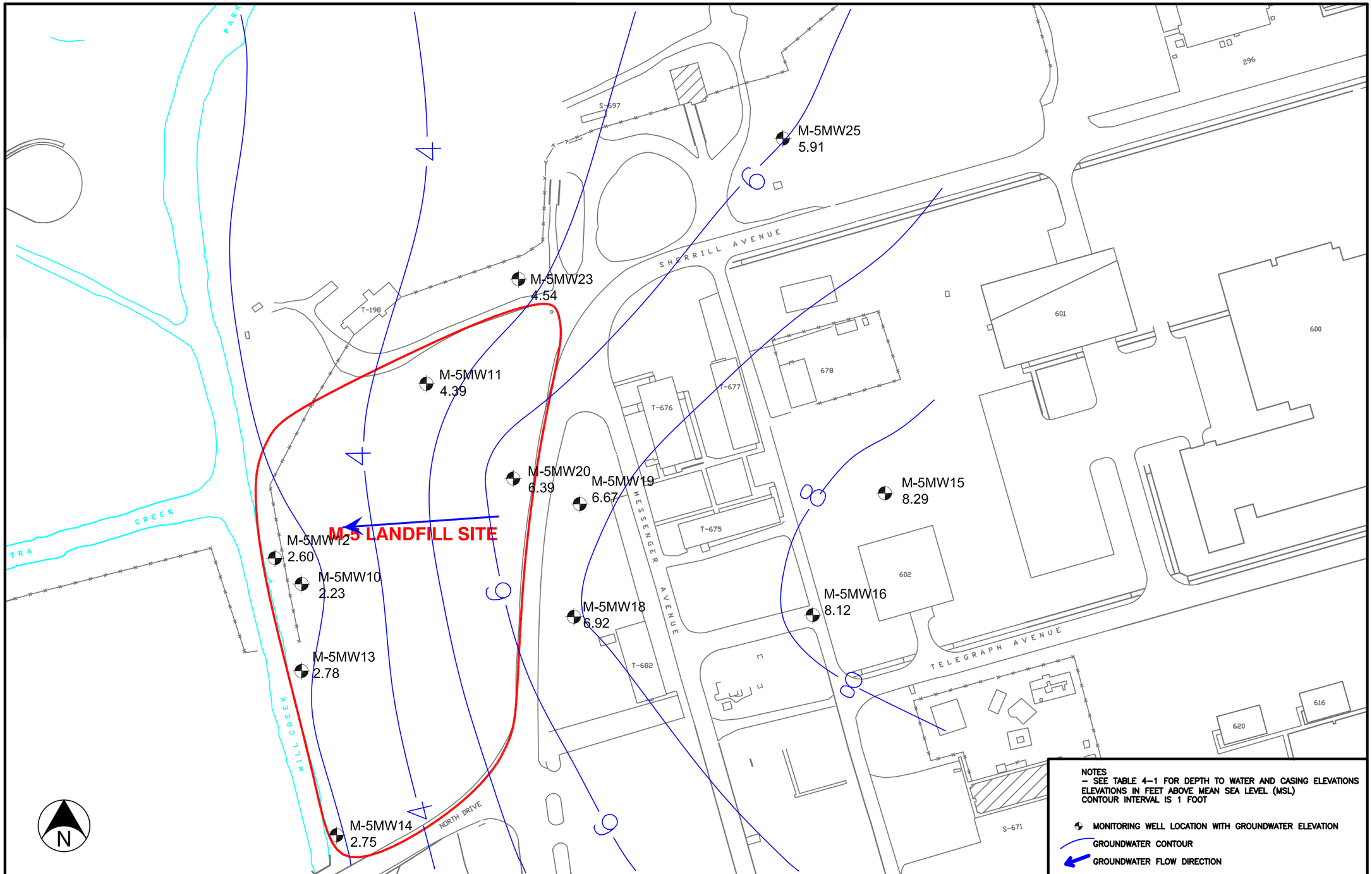

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GROUNDWATER CONTOUR MAP (AUGUST 20, 2004)

M–5 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

PROJECT NO.: 2011–05–011

FIGURE NO.: 4–4

SCALE
0 25 50 100

16–FEB–09

FIGURE NO.
4-4

APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

Figure 4-4

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X_. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes___ No_X_. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes___ No_X_. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No_X_. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No_X_. If yes, show the formula used to correct the water table elevation.

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5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No_X_. If yes, discuss the reasons for the change.

6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No_X_. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided_X_, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

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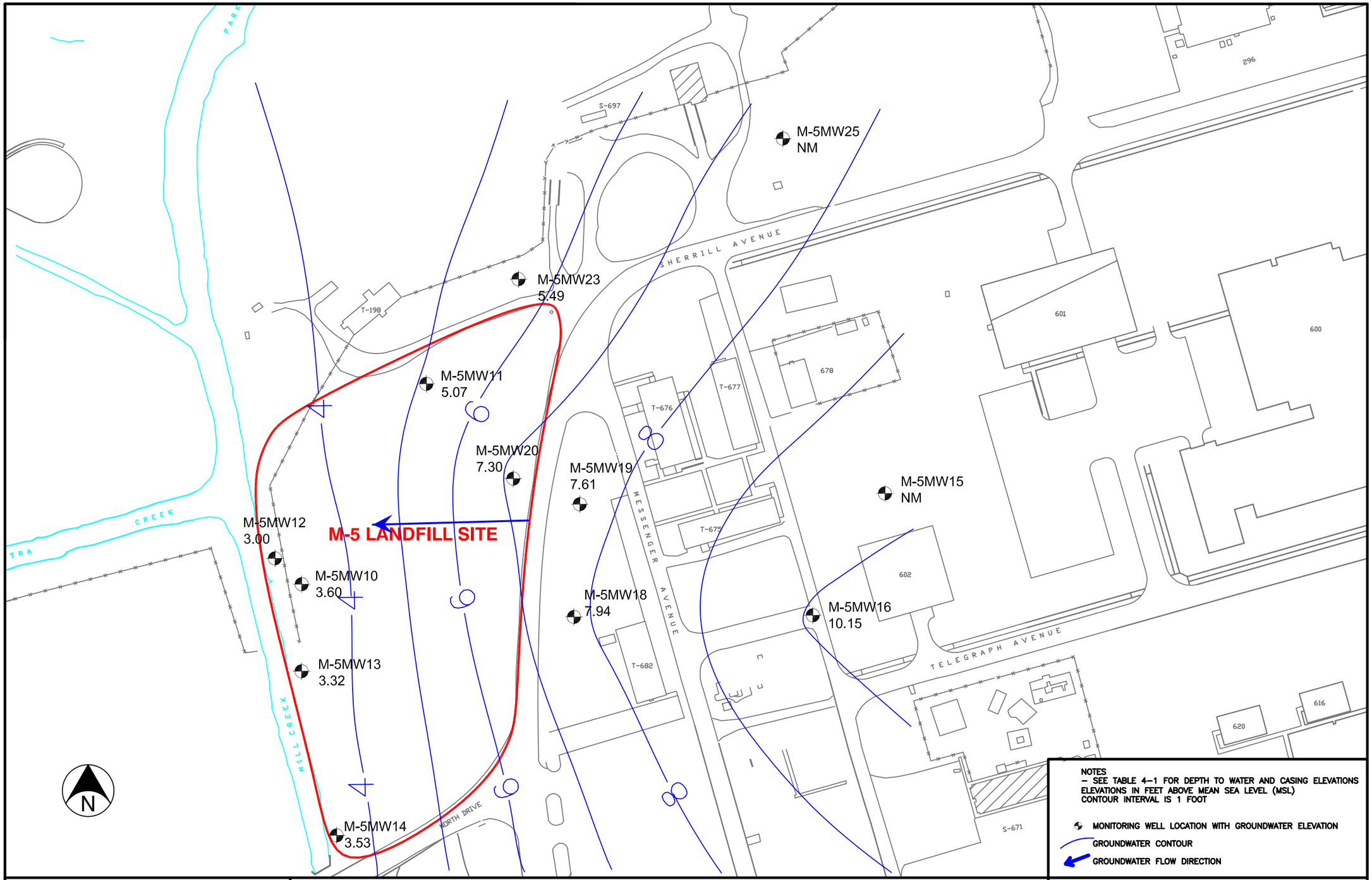

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GROUNDWATER CONTOUR MAP (DECEMBER 16, 2004)

M–5 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

PROJECT NO.: 2011–05–011

FIGURE NO.: 4–5

SCALE
0 25 50 100

16–FEB–09

FIGURE NO.
4-5

APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

Figure 4-5

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X_. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

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5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No X. If yes, discuss the reasons for the change.

6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No X. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes X No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided X, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

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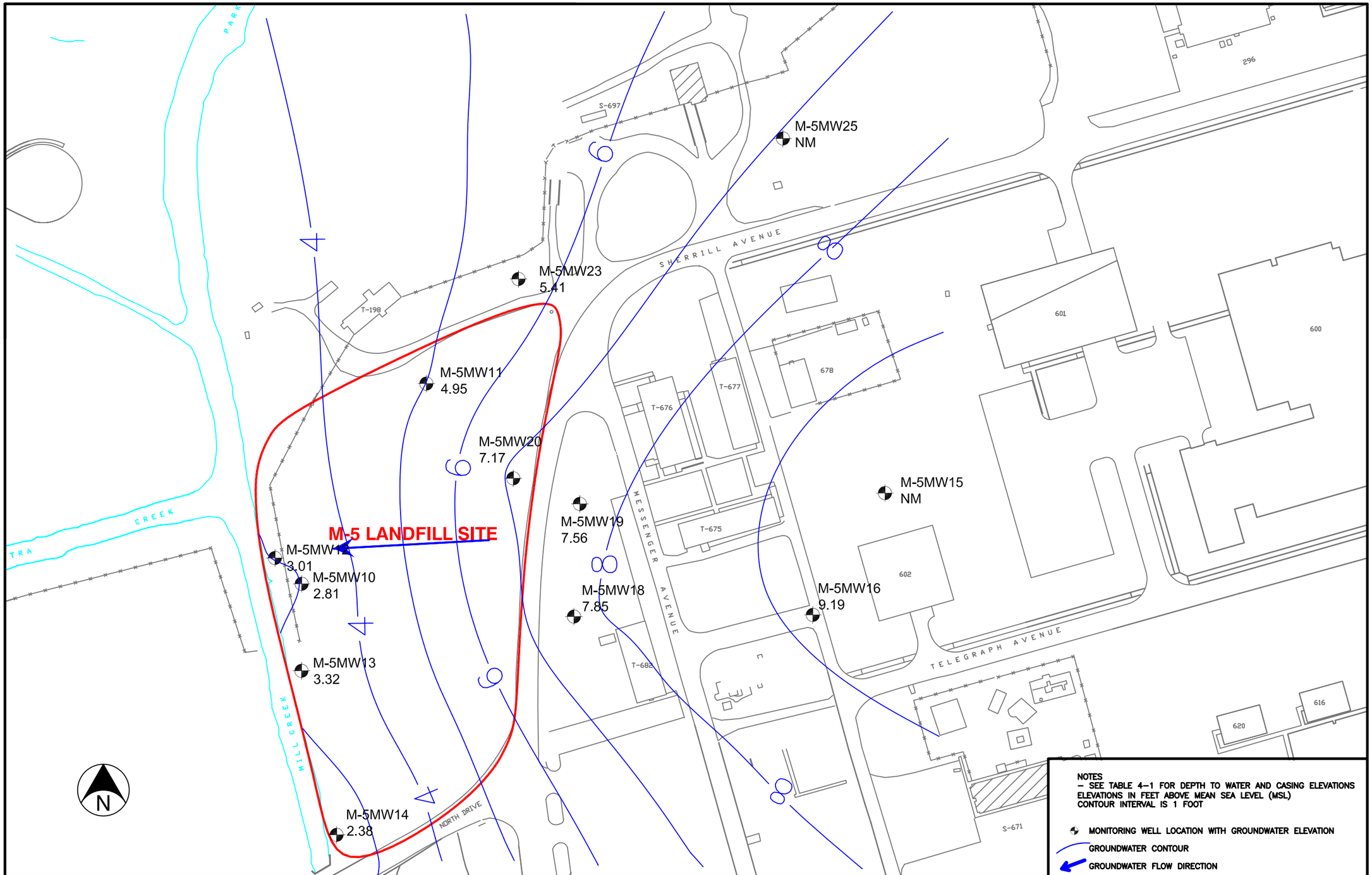

GROUNDWATER CONTOUR MAP (MARCH 15, 2005)

M–5 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

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PROJECT NO.: 2011–05–011

FIGURE NO.: 4–6

SCALE
0 25 50 100

16–FEB–09

FIGURE NO.
4-6

APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

Figure 4-6

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No X. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes___ No X. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes___ No X. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

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5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No_X_. If yes, discuss the reasons for the change.

6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No_X_. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided_X_, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

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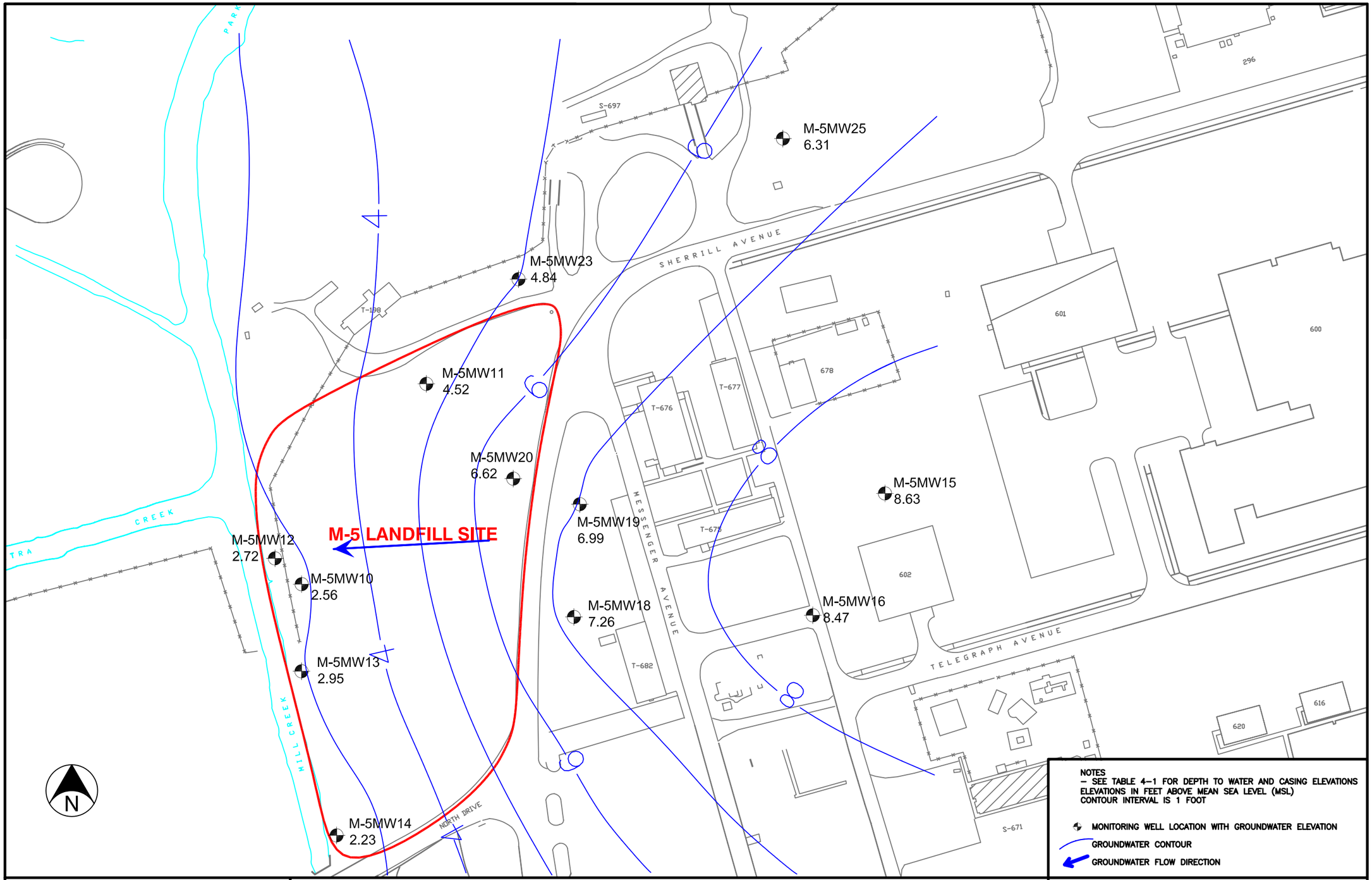

NOTES
– SEE TABLE 4–1 FOR DEPTH TO WATER AND CASING ELEVATIONS
ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL (MSL)
CONTOUR INTERVAL IS 1 FOOT

MONITORING WELL LOCATION WITH GROUNDWATER ELEVATION
GROUNDWATER CONTOUR
GROUNDWATER FLOW DIRECTION

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GROUNDWATER CONTOUR MAP (JUNE 3, 2005)

M–5 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

PROJECT NO.: 2011–05–011

FIGURE NO.: 4–7

SCALE
0 25 50 100

16–FEB–09

FIGURE NO.
4-7

APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

Figure 4-7

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X_. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

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5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No_X_. If yes, discuss the reasons for the change.

6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No_X_. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided_X_, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

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M-5MW25
5.26

M-5MW23
4.06

M-5MW11
4.77

M-5MW20
5.89

M-5MW15
6.91

M-5MW19
5.96

M-5MW18
6.11

M-5MW16
6.93

M-5MW12
2.31

M-5MW10
2.08

M-5MW13
2.29

M-5MW14
2.05

M-5 LANDFILL SITE

SHERRILL AVENUE
MESSENGER AVENUE
TELEGRAPH AVENUE
NORTH DRIVE
MILL CREEK
CREEK
PARK
TRA
S-697
T-198
T-677
T-676
T-675
T-682
678
601
600
602
616
620
S-671
296

N

NOTES
– SEE TABLE 4–1 FOR DEPTH TO WATER AND CASING ELEVATIONS
ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL (MSL)
CONTOUR INTERVAL IS 1 FOOT

MONITORING WELL LOCATION WITH GROUNDWATER ELEVATION
GROUNDWATER CONTOUR
GROUNDWATER FLOW DIRECTION

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GROUNDWATER CONTOUR MAP (SEPTEMBER 16, 2005)

M–5 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

PROJECT NO.: 2011–05–011

FIGURE NO.: 4–8

SCALE
0 25 50 100

16–FEB–09

FIGURE NO.
4-8

APPENDIX G
Contour Map Reporting Form

This reporting form shall accompany each ground water contour map submittal. Use additional sheets as necessary.

Figure 4-8

1. Did any surveyed well casing elevations change from the previous sampling event? Yes___ No_X_. If yes, attach new "Well Certification - Form B – Location Certification" as found in the "Guide for the Submission of Remedial Action Workplans" (NJDEP, March 1995) and identify the reason for the elevation change (damage to casing, installation of recovery system in monitoring well, etc.).

2. Are there any monitor wells in unconfined aquifers in which the water table elevation is higher than the top of the well screen? Yes___ No_X_. If yes, identify these wells.

3. Are there any monitor wells present at the site but omitted from the contour map? Yes___ No_X_. Unless the omission of the well(s) has been previously approved by the Department, justify the omissions.

4. Are there any monitor wells containing separate phase product during this measuring event? Yes___ No_X_. Were any of the monitor wells with separate phase product included in the ground water contour map? Yes___ No_X_. If yes, show the formula used to correct the water table elevation.

NOTICE: This is a courtesy copy of this rule adoption. The official version of this rule was published in the July 5, 2005 *New Jersey Register*. Should there be any discrepancy between this text and the official version of the proposal, the official version will govern. For more information see the New Jersey Office of Administrative Law Rules page at http://www.nj.gov/oal/rules.html.

5. Has the ground water flow direction changed more than 45 degrees from the previous ground water contour map? Yes___ No_X_. If yes, discuss the reasons for the change.

6. Has ground water mounding and/or depressions been identified in the ground water contour map? Yes___ No_X_. Unless the ground water mounds and/or depressions are caused by the ground water remediation system, discuss the reasons for this occurrence.

7. Are all the wells used in the contour map screened in the same water-bearing zone? Yes_X_ No___. If no, justify inclusion of those wells.

8. Were the ground water contours computer generated___, computer aided_Y_, or hand-drawn___? If computer aided or generated, identify the interpolation method(s) used.

Surfer Contouring Software

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N

PARKERS CREEK

WATER FLOW DIRECTION

FETRA CREEK

MILL CREEK

M5-MW25

M5-MW23

M5-MW11

M5-MW20

M5-MW19

M5-MW18

M5-MW16

M5-MW15

M5-MW12

M5-MW10

M5-MW13

M5-MW14

Approximate Groundwater Flow Direction

BATTERY AVENUE

T-675

S-671

601

678

602

	PCE (ug/l)	TCE (ug/l)	cis-1,2-Dichloroethene (ug/L)
NJDEP CRITERIA	1	1	10
4/14/1999	84.93	ND	ND
4/28/1999	44.43	ND	ND
9/13/1999	29.33	ND	ND
11/18/1999	59.02	ND	ND
3/3/2000	11.83	ND	ND
5/31/2000	23.13	ND	ND
8/21/2000	4.22	ND	ND
12/11/2000	14.27	ND	ND
3/19/2001	6.39	ND	ND
6/5/2001	33.84	ND	ND
9/5/2001	3.41	ND	1.48
10/4/2001	3.85	ND	1.77
1/14/2002	8.26	ND	1.77
4/23/2002	8.97	ND	3.31
8/21/2002	15.68	ND	ND
10/28/2002	ND	ND	ND
1/22/2003	79.46	3.97	ND
4/21/2003	17.35	3.15	1.37
7/30/2003	20.45	2.51	4.6
10/8/2003	1.6	ND	ND
1/14/2004	4.35	1.02	0.69
5/13/2004	13.33	2.07	0.59
8/20/2004	ND	ND	ND
12/15/2004	2.15	ND	ND
3/14/2005	13.75	ND	ND
6/3/2005	23.07	ND	ND
9/16/2005	7.24	0.89	1.42

	PCE (ug/l)	TCE (ug/l)	cis-1,2-Dichloroethene (ug/L)
NJDEP CRITERIA	1	1	10
10/7/1998	ND	ND	ND
10/21/1998	ND	ND	ND
2/2/1999	ND	ND	ND
4/13/1999	ND	ND	ND
9/13/1999	ND	ND	ND
11/18/1999	ND	ND	ND
3/6/2000	ND	ND	ND
5/31/2000	ND	ND	ND
8/21/2000	ND	ND	ND
12/11/2000	ND	ND	ND
3/19/2001	ND	ND	ND
6/5/2001	ND	ND	ND
9/5/2001	ND	ND	ND
1/14/2002	ND	ND	ND
4/23/2002	ND	ND	ND
8/21/2002	ND	ND	ND
10/28/2002	ND	ND	ND
1/22/2003	ND	ND	ND
4/21/2003	ND	ND	ND
7/30/2003	ND	ND	ND
10/8/2003	ND	ND	ND
1/14/2004	ND	ND	ND
5/13/2004	ND	ND	ND
8/20/2004	ND	ND	ND
12/16/2004	ND	ND	ND
3/15/2005	ND	ND	ND
6/30/2005	ND	ND	ND
9/16/2005	ND	ND	ND

	PCE (ug/l)	TCE (ug/l)	cis-1,2-Dichloroethene (ug/L)
NJDEP CRITERIA	1	1	10
4/13/1999	142.59	ND	ND
4/27/1999	169.54	ND	ND
9/13/1999	156.58	ND	ND
11/18/1999	143.93	ND	ND
3/3/2000	90.03	ND	ND
5/31/2000	43.44	ND	ND
8/21/2000	23.85	ND	ND
12/11/2000	110.55	ND	ND
3/19/2001	65.73	ND	ND
6/5/2001	45.3	ND	ND
9/5/2001	111.58	1.18	1.22
10/4/2001	83.81	3.56	3.38
1/14/2002	85.31	4.27	3.41
4/23/2002	76.69	ND	3.09
8/21/2002	79.41	ND	ND
10/28/2002	12.99	ND	ND
1/22/2003	27.67	ND	ND
4/21/2003	27.99	ND	ND
7/30/2003	15.26	ND	1.1
10/8/2003	43.96	4.83	5.33
1/14/2004	21.69	1.9	0.96
5/13/2004	13.74	0.92	ND
8/20/2004	7.51	2.05	4.12
12/13/2004	3.96	ND	2.77
3/14/2005	4.93	1.11	1.87
6/30/2005	13.75	8.35	13.2
9/16/2005	8.74	2.67	4.21

	PCE (ug/l)	TCE (ug/l)	cis-1,2-Dichloroethene (ug/L)
NJDEP CRITERIA	1	1	10
10/7/1998	ND	ND	ND
10/21/1998	ND	ND	ND
2/2/1999	ND	ND	ND
4/13/1999	ND	ND	ND
9/13/1999	ND	ND	ND
11/18/1999	ND	ND	ND
3/6/2000	ND	ND	ND
5/31/2000	ND	ND	ND
8/21/2000	ND	ND	ND
12/11/2000	ND	ND	ND
3/19/2001	ND	ND	ND
6/5/2001	ND	ND	ND
9/5/2001	ND	ND	ND
10/4/2001	ND	ND	ND
1/14/2002	ND	ND	ND
4/23/2002	ND	ND	ND
8/21/2002	ND	ND	ND
10/28/2002	ND	ND	ND
1/22/2003	ND	ND	ND
4/21/2003	ND	ND	ND
7/30/2003	ND	ND	ND
Sampling Discontinued			

	PCE (ug/l)	TCE (ug/l)	cis-1,2-Dichloroethene (ug/L)
NJDEP CRITERIA	1	1	10
5/8/1997	62.85	ND	ND
8/8/1997	57.74	ND	ND
10/29/1997	64.96	ND	ND
2/18/1998	39.33	ND	ND
5/6/1998	24.39	ND	ND
8/4/1998	18.37	ND	ND
10/27/1998	53.64	ND	ND
2/2/1999	5.16	ND	ND
4/13/1999	33.38	ND	ND
9/13/1999	49.25	ND	ND
11/18/1999	74.12	ND	ND
3/3/2000	30.62	ND	ND
5/31/2000	13.38	ND	ND
8/21/2000	18.79	ND	ND
12/11/2000	15.86	ND	ND
3/19/2001	11.01	ND	ND
6/5/2001	11.27	ND	ND
9/5/2001	6.11	1.28	6.64
10/4/2001	15.13	1.05	ND
1/14/2002	19.64	1.4	ND
4/23/2002	14.43	ND	ND
8/21/2002	8.9	ND	7.39
10/28/2002	8.14	ND	ND
1/22/2003	5.2	1.06	ND
4/21/2003	4.5	1.42	ND
7/30/2003	5.74	0.88	ND
10/8/2003	1.08	0.91	5.39
1/14/2004	2.01	1.2	1.56
5/13/2004	3.1	ND	ND
8/20/2004	2.05	ND	2.29
12/15/2004	3.05	ND	ND
3/14/2005	2.3	ND	0.61
6/30/2005	2.86	ND	ND
9/16/2005	ND	ND	5.66

	PCE (ug/l)	TCE (ug/l)	cis-1,2-Dichloroethene (ug/L)
NJDEP CRITERIA	1	1	10
10/21/1998	ND	ND	ND
2/2/1999	ND	ND	ND
4/13/1999	ND	ND	ND
9/13/1999	ND	ND	ND
11/18/1999	ND	ND	ND
3/6/2000	ND	ND	ND
5/31/2000	ND	ND	ND
8/21/2000	ND	ND	ND
12/11/2000	ND	ND	ND
3/19/2001	ND	ND	ND
6/5/2001	ND	ND	ND
9/5/2001	ND	ND	ND
10/4/2001	ND	ND	ND
1/14/2002	ND	ND	ND
4/23/2002	ND	ND	ND
8/21/2002	ND	ND	ND
10/28/2002	ND	ND	ND
1/22/2003	ND	ND	ND
4/21/2003	ND	ND	ND
7/30/2003	ND	ND	ND
10/8/2003	ND	ND	ND
1/14/2004	ND	ND	ND
5/13/2004	ND	ND	ND
8/20/2004	ND	ND	ND
12/16/2004	ND	ND	ND
3/15/2005	ND	ND	ND
6/30/2005	ND	ND	ND
9/16/2005	ND	ND	ND

	PCE (ug/l)	TCE (ug/l)	cis-1,2-Dichloroethene (ug/L)
NJDEP CRITERIA	1	1	10
10/21/1998	ND	ND	ND
2/2/1999	ND	ND	ND
4/13/1999	ND	ND	ND
9/13/1999	ND	ND	ND
11/18/1999	ND	ND	ND
3/6/2000	ND	ND	ND
5/31/2000	ND	ND	ND
8/21/2000	ND	ND	ND
12/11/2000	ND	ND	ND
3/19/2001	ND	ND	ND
6/5/2001	ND	ND	ND
9/5/2001	ND	ND	ND
10/4/2001	ND	ND	ND
1/14/2002	ND	ND	ND
4/23/2002	ND	ND	ND
8/21/2002	ND	ND	ND
10/28/2002	ND	ND	ND
1/22/2003	ND	ND	ND
4/21/2003	ND	ND	ND
7/30/2003	ND	ND	ND
Sampling Discontinued			

	PCE (ug/l)	TCE (ug/l)	cis-1,2-Dichloroethene (ug/L)
NJDEP CRITERIA	1	1	10
5/8/1997	ND	ND	ND
8/8/1997	ND	ND	ND
10/29/1997	ND	ND	ND
2/18/1998	ND	ND	ND
5/6/1998	ND	ND	ND
8/4/1998	ND	ND	ND
11/18/1998	ND	ND	ND
2/2/1999	ND	ND	ND
4/13/1999	ND	ND	ND
9/13/1999	ND	ND	ND
11/18/1999	ND	ND	ND
3/6/2000	ND	ND	ND
5/31/2000	ND	ND	ND
8/21/2000	ND	ND	ND
12/11/2000	ND	ND	ND
3/19/2001	ND	ND	ND
6/5/2001	ND	ND	ND
9/5/2001	ND	ND	ND
10/4/2001	ND	ND	ND
1/14/2002	ND	ND	ND
4/23/2002	ND	ND	ND
8/21/2002	ND	ND	ND
10/28/2002	ND	ND	ND
1/22/2003	ND	ND	ND
4/21/2003	ND	ND	ND
7/30/2003	ND	ND	ND
10/8/2003	ND	ND	ND
1/14/2004	ND	ND	ND
5/13/2004	ND	ND	ND
8/20/2004	ND	ND	ND
12/16/2004	ND	ND	ND
3/15/2005	ND	ND	ND
6/30/2005	ND	ND	ND
9/16/2005	ND	ND	ND

	PCE (ug/l)	TCE (ug/l)	cis-1,2-Dichloroethene (ug/L)
NJDEP CRITERIA	1	1	10
4/13/1999	11.53	ND	ND
4/27/1999	3.72	ND	ND
9/14/1999	10.24	ND	ND
11/18/1999	69.22	ND	ND
3/6/2000	5.44	ND	ND
5/31/2000	ND	ND	ND
8/21/2000	4.77	ND	ND
12/11/2000	3.8	ND	ND
3/19/2001	2.43	ND	ND
6/5/2001	6.89	ND	ND
9/5/2001	34.94	1.45	3.87
10/4/2001	13.62	ND	1.84
1/14/2002	284.64	17.44	15.64
4/23/2002	18.2	2.8	5.93
8/21/2002	34.31	6.44	51.33
10/28/2002	5.1	1	2.28
1/22/2003	1.54	ND	ND
4/21/2003	1.73	ND	ND
7/30/2003	1.01	ND	ND
10/8/2003	5.42	1.92	3.04
1/14/2004	1.89	1.04	0.49
5/13/2004	ND	1.41	ND
8/20/2004	0.84	ND	0.81
12/13/2004	ND	1.33	ND
3/14/2005	ND	0.91	ND
6/30/2005	ND	ND	ND
9/16/2005	5.73	3.12	1.58

	PCE (ug/l)	TCE (ug/l)	cis-1,2-Dichloroethene (ug/L)
NJDEP CRITERIA	1	1	10
4/13/1999	ND	ND	ND
4/27/1999	ND	ND	ND
9/14/1999	ND	ND	ND
11/18/1999	ND	ND	ND
3/3/2000	ND	ND	ND
5/31/2000	ND	ND	ND
8/21/2000	ND	ND	ND
12/11/2000	ND	ND	ND
3/19/2001	ND	ND	ND
6/5/2001	ND	ND	ND
9/5/2001	ND	ND	ND
10/4/2001	2.55	ND	ND
1/14/2002	1.34	ND	ND
4/23/2002	ND	ND	ND
8/21/2002	ND	ND	ND
10/28/2002	ND	ND	ND
1/22/2003	ND	ND	ND
4/21/2003	ND	ND	ND
7/30/2003	ND	ND	ND
10/8/2003	ND	ND	ND
1/14/2004	ND	ND	ND
5/13/2004	ND	ND	ND
8/20/2004	ND	ND	ND
12/13/2004	ND	ND	ND
3/14/2005	ND	ND	ND
6/30/2005	ND	ND	ND
9/16/2005	ND	ND	ND

	PCE (ug/l)	TCE (ug/l)	cis-1,2-Dichloroethene (ug/L)
NJDEP CRITERIA	1	1	10
4/14/1999	96.37	ND	ND
4/28/1999	8.35	ND	ND
9/14/1999	639.7	ND	ND
11/18/1999	54.42	ND	ND
3/3/2000	37.76	ND	ND
5/31/2000	27.79	ND	ND
8/21/2000	20.36	ND	ND
12/11/2000	23.2	ND	ND
3/19/2001	17.88	ND	ND
6/5/2001	24.47	ND	ND
9/5/2001	205.77	ND	ND
10/4/2001	628.81	ND	ND
1/14/2002	839.5	1.93	1.93
4/23/2002	213.53	35.54	69.44
8/21/2002	416.79	ND	3.38
10/28/2002	42.41	2.23	103.82
1/22/2003	31.09	1.36	22.02
4/21/2003	8.5	2.16	16.12
7/30/2003	16.57	5.61	20.3
10/8/2003	23.44	15.5	68.16
1/14/2004	34.59	13.1	63.66
5/13/2004	38.41	14.68	22.47
8/20/2004	7.63	9.48	66.66
12/15/2004	69.14	19.57	47.94
3/14/2005	4.22	2.8	32.37
6/30/2005	90.55	34.2	33.24
9/16/2005	9.91	34.1	283.79

ROAD (PAVED)		WOODED AREA	
ROAD/TRAILS (UNPAVED)		TREE/BUSH	
FENCE	—x—	LIGHT POLE	
BUILDING		UTILITY POLE	
APPROXIMATE BOUNDARY		BROOK/CREEK	
MONITORING WELL		MARSHY AREA	

NOTES:

= MONITORING WELL LOCATION

0.00 = CLEANUP STANDARD EXCEEDANCE

MM/DD/YYYY = LOW FLOW SAMPLING EVENT

= Approximate Groundwater Flow Direction

REV.	REVISIONS	APPROVED	DRAWN BY

TITLE:

GROUNDWATER CONTAMINANT DISTRIBUTION
M-5 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

US ARMY GARRISON
FORT MONMOUTH
DIRECTORATE OF PUBLIC WORKS

DATE DRAWN: 15 SEP 07

DATE CHECKED:

DATE APPROVED:

DRAWING No.: 5-1 A

FILE No.:

SCALE: 1" = 35'

SHEET OF REV.: A

N

	PCE (ug/l)	TCE (ug/l)	cis-1,2-Dichloroethene (ug/l)
NJDEP Criteria	4.29	81	NLE
4/8/1997	2.28	ND	1.8
7/17/1997	3.54	ND	3.66
10/30/1997	1.7	ND	1.83
2/10/1998	6.34	ND	ND
4/21/1998	4.48	ND	ND
8/18/1998	3.39	1.27	2.28
11/18/1998	2.17	ND	1.67
2/25/1999	5.45	ND	ND
6/29/1999	6.04	1.74	2.74
9/22/1999	1.82	ND	1.06
12/8/1999	3.82	ND	1.6
3/1/2000	6.62	1.36	1.27
6/12/2000	4.38	ND	ND
8/24/2000	3.44	ND	1.19
11/20/2000	3.56	ND	ND
3/8/2001	ND	ND	ND
5/16/2001	4.09	ND	0.97
9/11/2001	ND	ND	ND
11/14/2001	1.89	ND	1.51
2/11/2002	2.44	ND	ND
6/18/2002	2.39	ND	ND
9/18/2002	ND	ND	ND
11/5/2002	ND	ND	ND
3/13/2003	3.06	0.71	0.81
5/21/2003	3.54	ND	ND
9/17/2003	1.23	ND	1.36
11/4/2003	ND	ND	ND
3/17/2004	2.1	0.67	0.97
6/29/2004	1.21	ND	1.19
8/26/2004	1.09	0.73	1.61
11/23/2004	1.33	ND	1.29
3/3/2005	1.84	ND	0.97
6/19/2005	1.3	0.65	1.6
9/13/2005	ND	ND	1.77

	PCE (ug/l)	TCE (ug/l)	cis-1,2-Dichloroethene (ug/l)
NJDEP Criteria	4.29	81	NLE
4/8/1997	ND	ND	2.18
7/17/1997	1.61	ND	1.63
10/30/1997	1.24	ND	ND
2/10/1998	5.61	ND	ND
4/21/1998	ND	ND	ND
8/18/1998	2.85	1.1	1.92
11/18/1998	1.62	ND	1.19
2/25/1999	5.61	ND	ND
6/29/1999	5.37	1.56	2.41
9/22/1999	1.85	ND	2.02
12/8/1999	ND	ND	ND
3/1/2000	6.18	1.28	1.23
6/12/2000	4.37	ND	ND
8/24/2000	3.19	1.19	1.19
11/20/2000	3.7	ND	ND
3/8/2001	2.52	ND	ND
5/16/2001	2.95	ND	ND
9/11/2001	ND	ND	ND
11/14/2001	ND	ND	ND
2/11/2002	1.64	ND	ND
6/18/2002	1.97	ND	ND
9/18/2002	ND	ND	ND
11/5/2002	ND	ND	ND
3/13/2003	2.33	0.81	0.97
5/21/2003	ND	ND	ND
9/17/2003	1.53	ND	1.74
11/4/2003	ND	ND	ND
3/17/2004	0.81	ND	1.03
6/29/2004	ND	ND	ND
8/26/2004	ND	ND	ND
11/23/2004	0.81	ND	0.97
SAMPLING DISCONTINUED			

	PCE (ug/l)	TCE (ug/l)	cis-1,2-Dichloroethene (ug/l)
NJDEP Criteria	0.368	1.09	NLE
4/8/1997	6	1.6	2.89
7/17/1997	7.12	2.5	5.53
10/30/1997	3.72	ND	2.97
2/10/1998	6.8	1.03	ND
4/21/1998	5.72	1.71	1.22
8/18/1998	5.29	2.06	3.89
11/18/1998	ND	ND	ND
2/25/1999	7.33	1.92	ND
6/29/1999	7.66	3.1	4.17
9/22/1999	2.61	1.37	1.59
12/8/1999	4.68	ND	1.87
3/1/2000	6.51	1.39	1.39
6/12/2000	5.33	ND	1.38
8/24/2000	5.8	1.69	2.02
11/20/2000	6.28	ND	ND
3/8/2001	7.19	ND	ND
5/16/2001	6.62	ND	1.5
9/11/2001	ND	ND	ND
11/14/2001	3.49	ND	3.59
2/11/2002	3.65	ND	ND
6/18/2002	3.67	ND	1.63
9/18/2002	2.55	ND	2.39
11/5/2002	1.53	ND	ND
3/24/2003	3.56	1.11	1.44
5/21/2003	3.83	ND	1.89
9/17/2003	1.8	ND	1.64
11/4/2003	1.49	0.53	1.71
3/17/2004	2.26	0.66	0.66
6/29/2004	1.26	ND	1.18
8/26/2004	1.35	0.78	1.78
11/23/2004	2	ND	2.17
3/3/2005	2.92	ND	1.51
6/14/2005	2.34	1.24	3.23
9/12/2005	1.35	0.91	5.05

	PCE (ug/l)	TCE (ug/l)	cis-1,2-Dichloroethene (ug/l)
NJDEP Criteria	4.29	81	NLE
4/8/1997	4.47	1.26	2.05
7/17/1997	4.72	ND	2.55
10/30/1997	1.86	ND	1.76
2/10/1998	6.03	ND	ND
4/21/1998	4.58	ND	ND
8/18/1998	4.33	1.63	2.44
11/18/1998	1.48	ND	ND
2/25/1999	6.06	ND	ND
6/29/1999	7.7	2.25	3.56
9/22/1999	2.65	ND	2.74
12/8/1999	4.13	ND	1.79
3/1/2000	6.47	1.27	1.28
6/12/2000	3.74	ND	ND
8/24/2000	4.47	1.28	1.68
11/20/2000	4.49	ND	ND
3/8/2001	6.35	ND	ND
5/16/2001	4.91	ND	1.23
9/11/2001	ND	ND	ND
11/14/2001	2	ND	1.41
2/11/2002	2.47	ND	ND
6/18/2002	2.46	ND	1.35
9/18/2002	ND	ND	ND
11/5/2002	1.49	ND	ND
3/13/2003	3.21	0.74	0.8
5/21/2003	3.68	ND	1.86
9/17/2003	1.7	ND	1.79
11/4/2003	ND	ND	1.31
3/17/2004	2.38	0.56	0.54
6/29/2004	1.32	ND	1.23
8/26/2004	1.17	0.74	1.63
SAMPLING DISCONTINUED			

ROAD (PAVED)		WOODED AREA	
ROAD/TRAILS (UNPAVED)		TREE/BUSH	
FENCE	—x—	LIGHT POLE	
BUILDING		UTILITY POLE	
APPROXIMATE BOUNDARY		BROOK/CREEK	
MONITORING WELL		MARSHY AREA	

NOTES:

= SURFACE WATER SAMPLING POINT

REV.	REVISIONS	APPROVED	DRAWN BY

TITLE:

SURFACE WATER SAMPLING RESULTS
M-5 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

DRAWN BY: MKH	DATE DRAWN: 4 DEC 08
CHECKED BY:	DATE CHECKED:
APPROVED BY:	DATE APPROVED:
	DRAWING No.: 5-1B
	FILE No.:
	SCALE: 1" = 300'
	SHEET OF REV.: A

US ARMY GARRISON
FORT MONMOUTH
DIRECTORATE OF PUBLIC WORKS

FIGURE 5-2A
Tetrachloroethene (PCE) Concentrations vs Time at M-5MW11

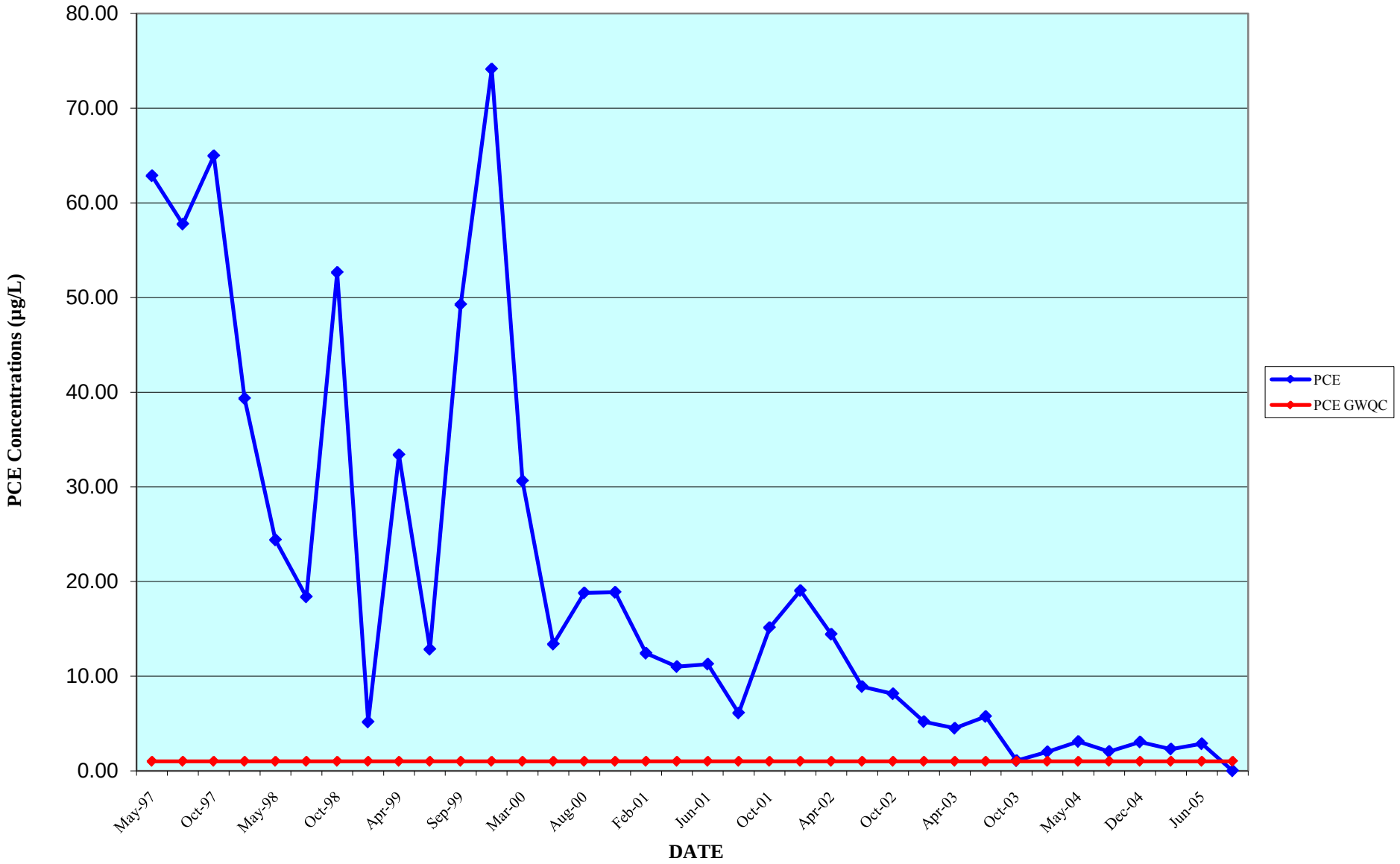


Figure 5-2B
Trichloroethene (TCE) Concentrations vs Time in M-5MW11

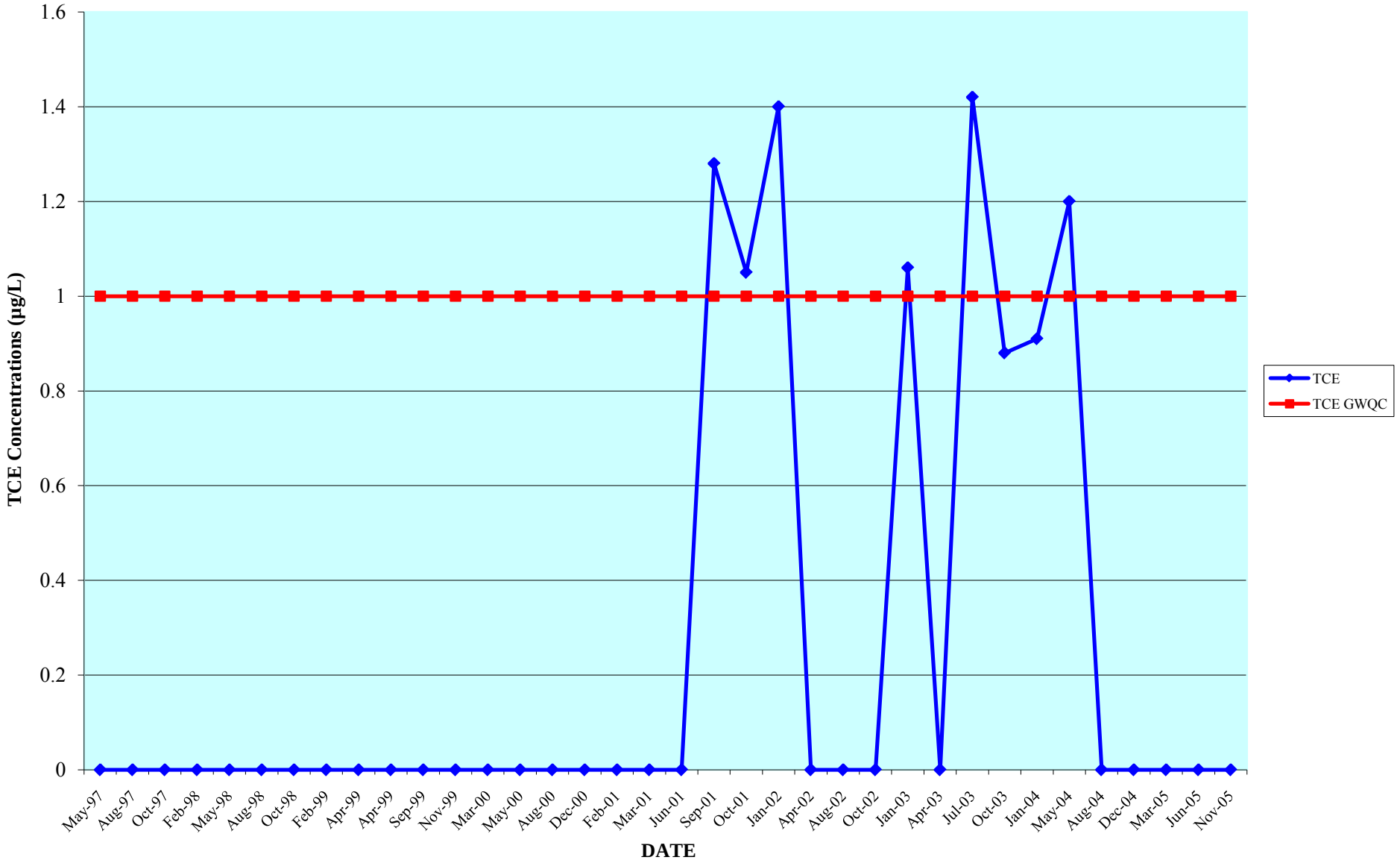


FIGURE 5-3A
Tetrachloroethene (PCE) Concentrations vs Time at M-5MW16

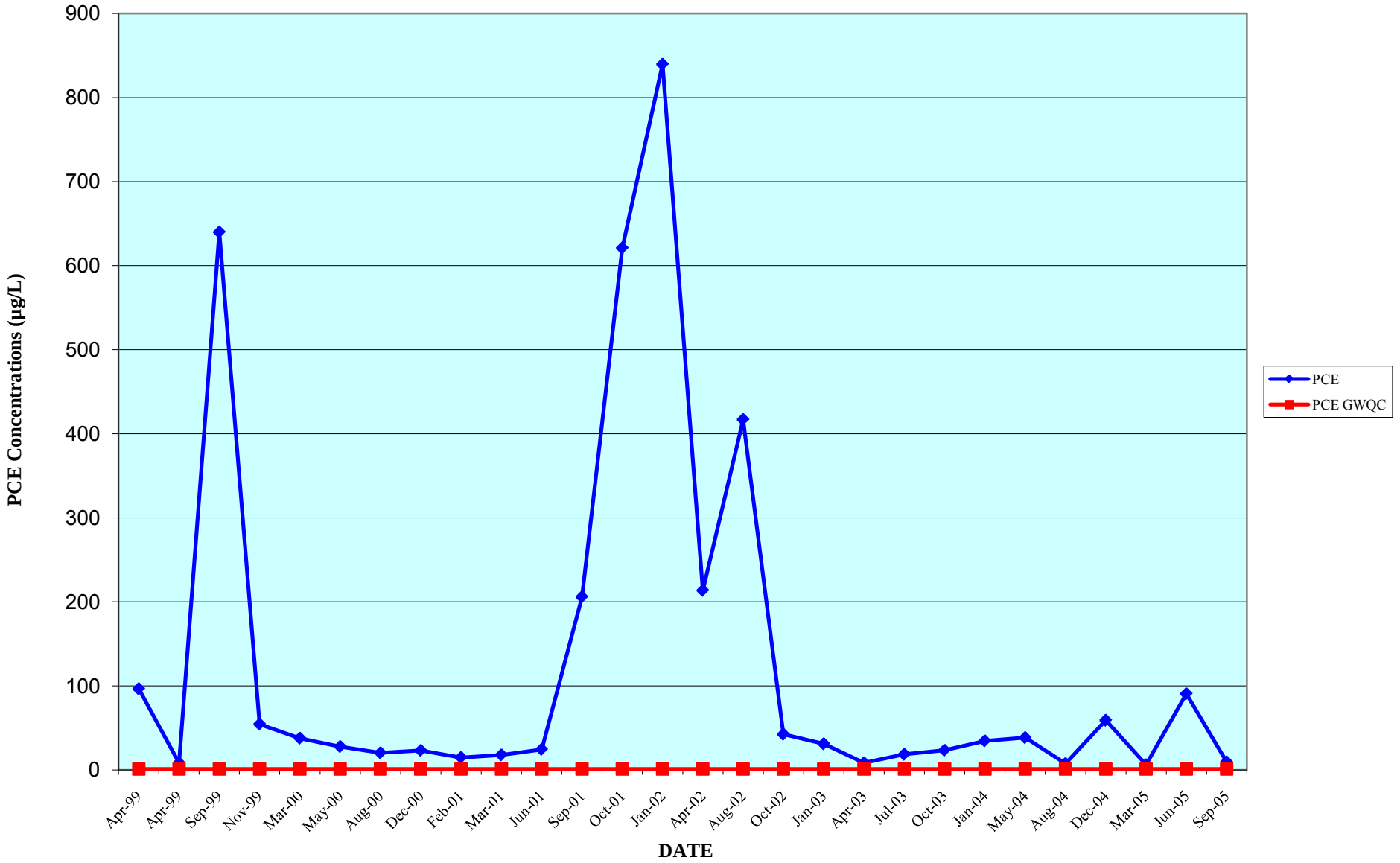


FIGURE 5-3B
Trichloroethene (TCE) Concentrations vs Time at M-5MW16

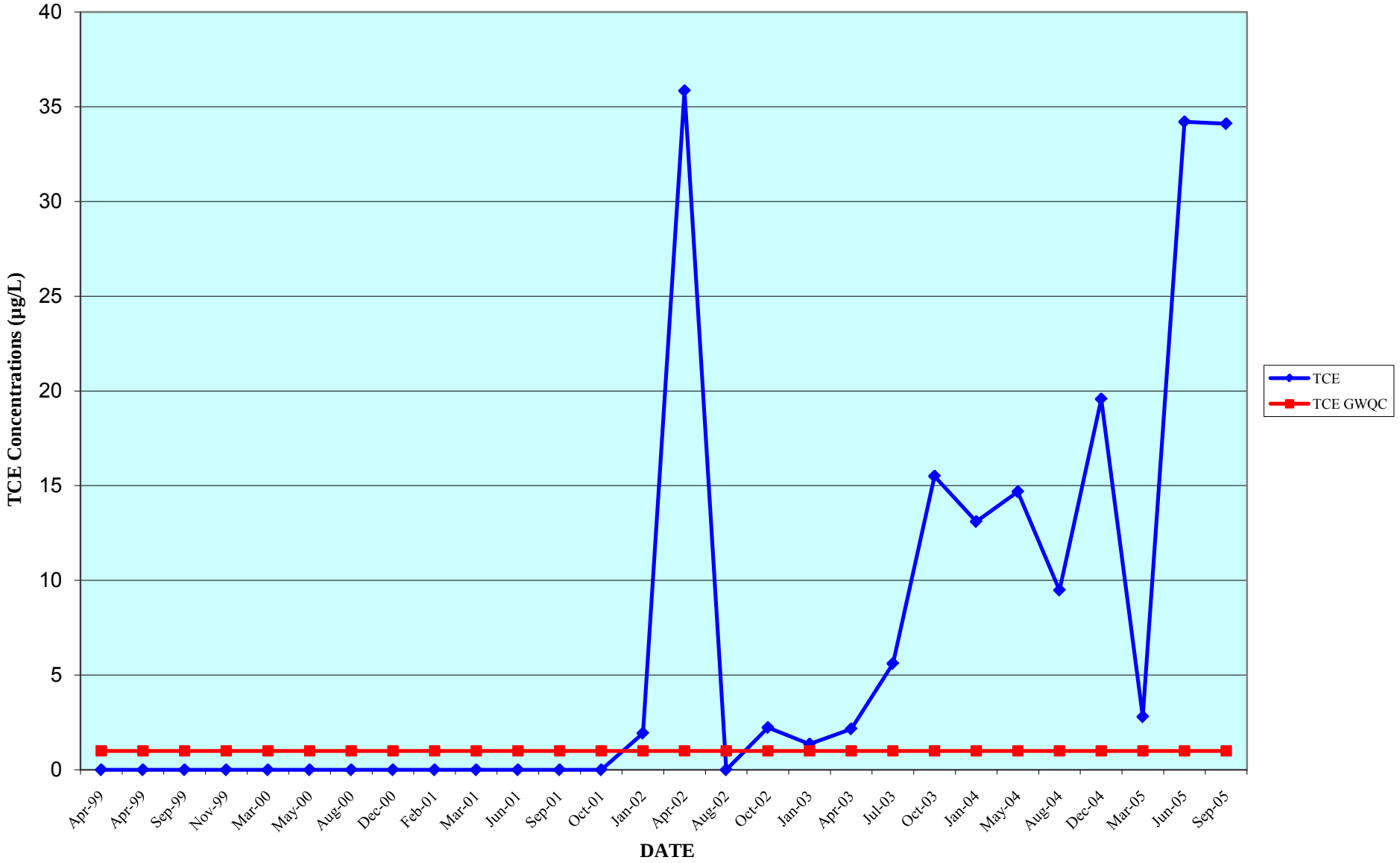


FIGURE 5-3C
cis-1,2-Dichloroethene (DCE) Concentrations vs Time at M-5MW16

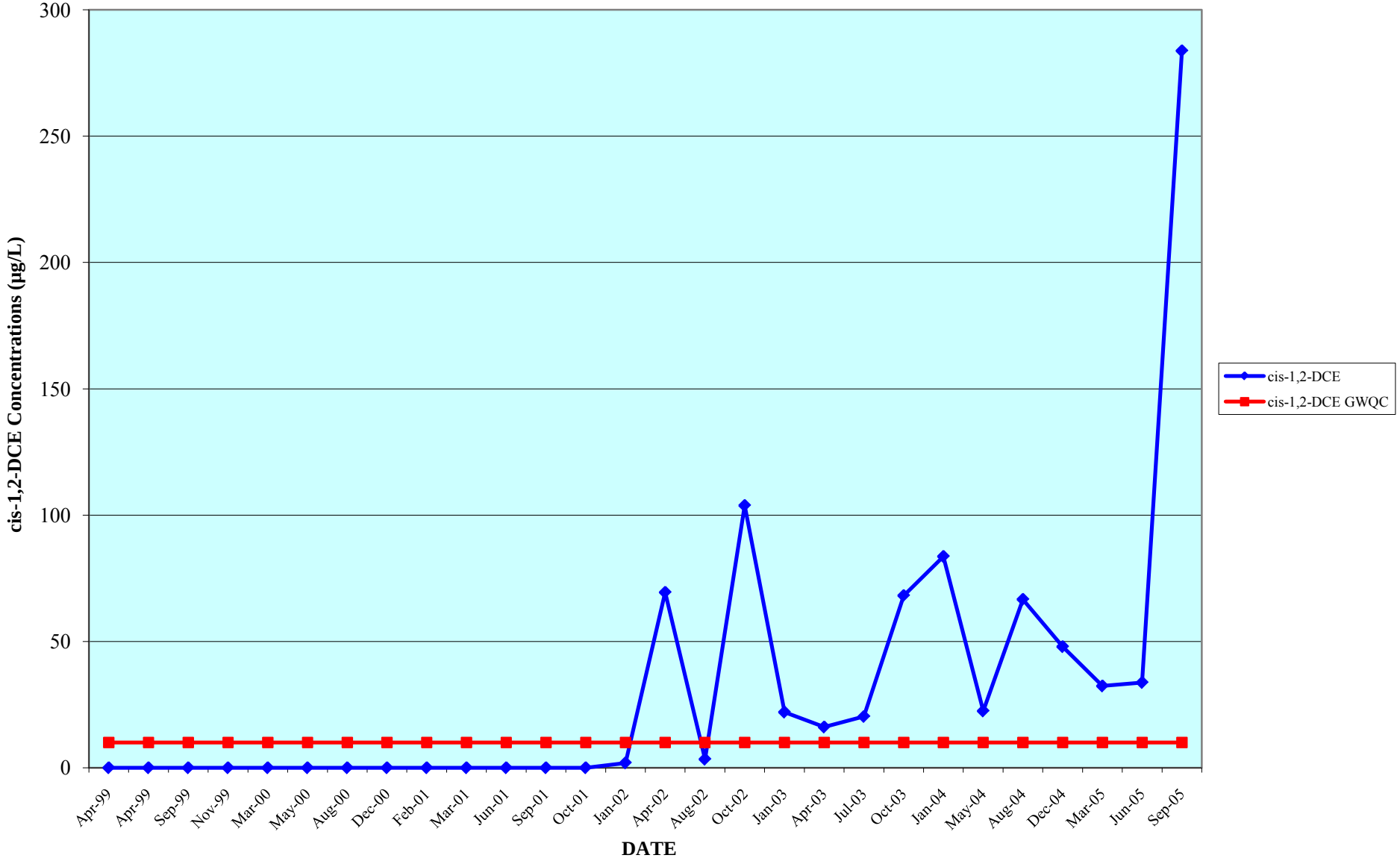


FIGURE 5-4A
Tetrachloroethene (PCE) Concentrations vs Time at M-5MW19

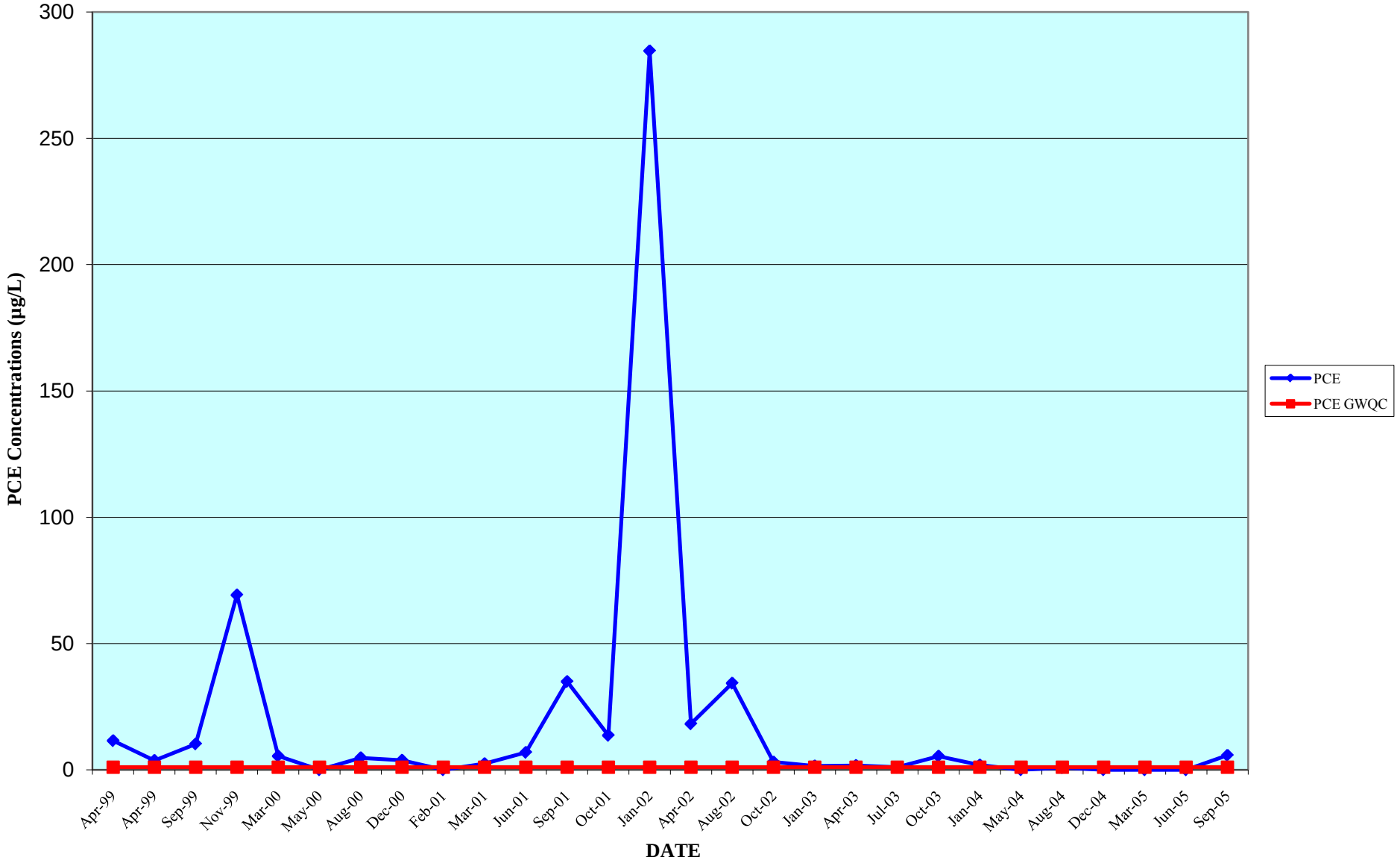


FIGURE 5-4B
Trichloroethene (TCE) Concentrations vs Time at M-5MW19

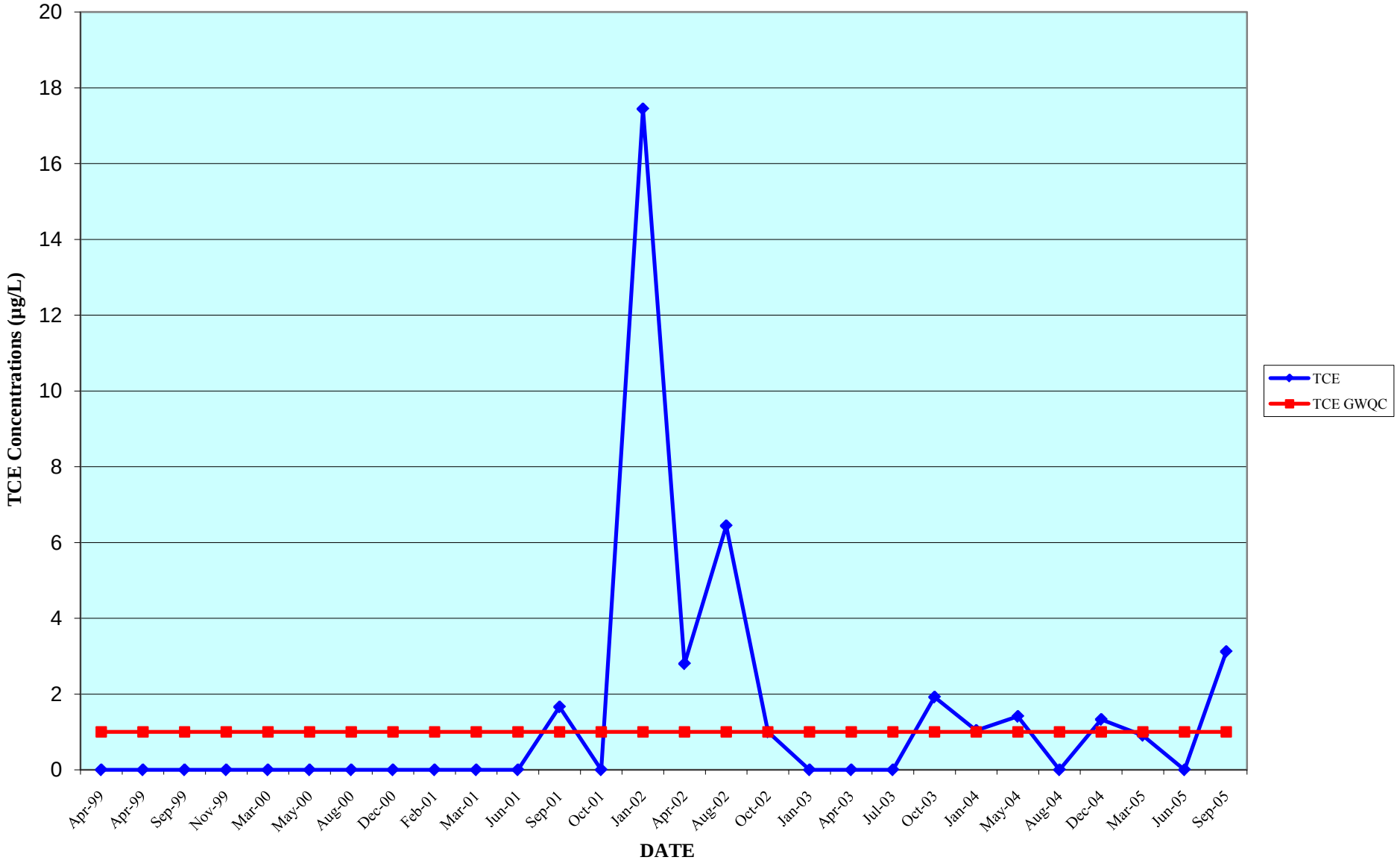


FIGURE 5-4C
cis-1,2-Dichloroethene (DCE) Concentrations vs Time at M-5MW19

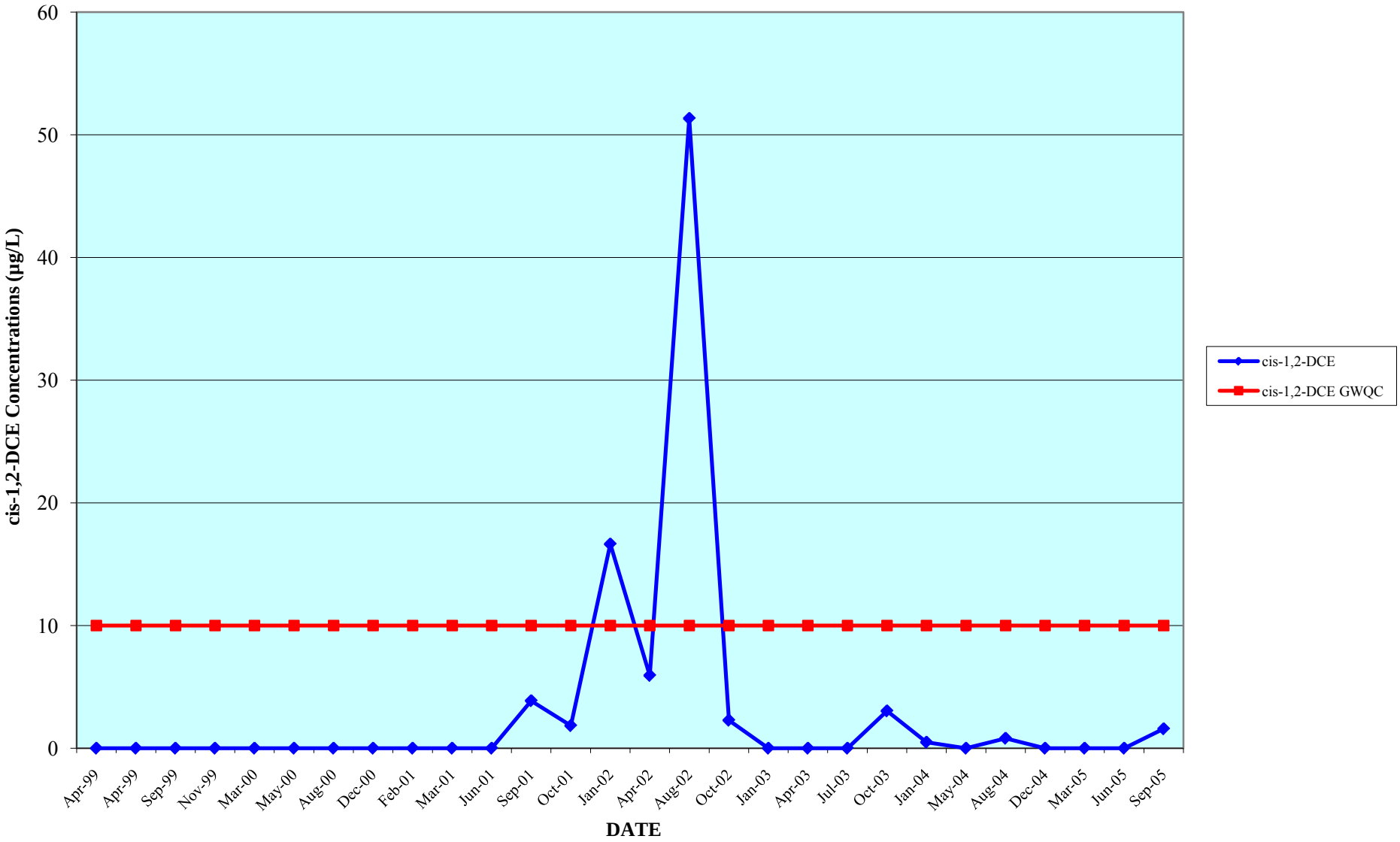


FIGURE 5-5A
Tetrachloroethene (PCE) Concentrations at M-5MW20

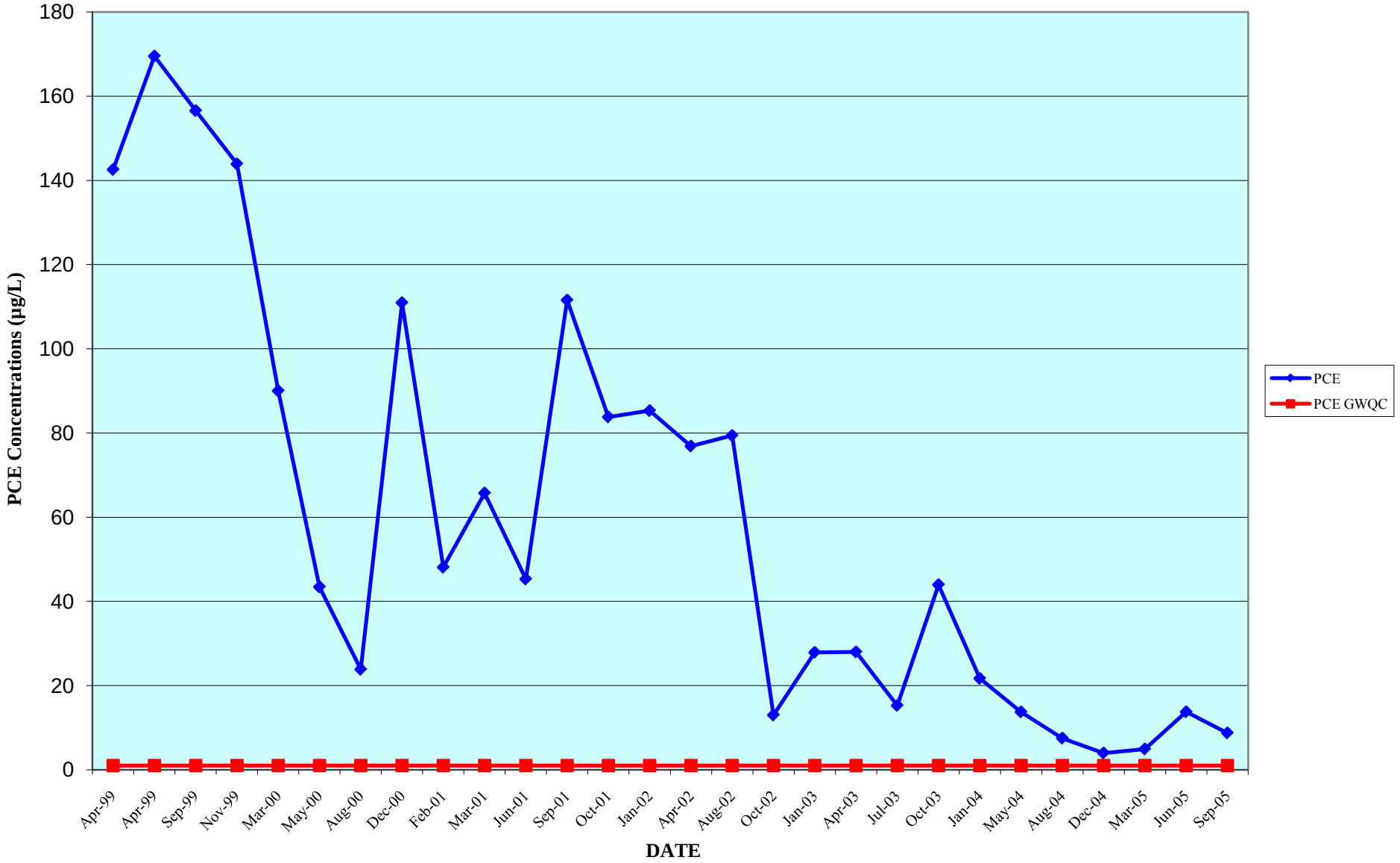


FIGURE 5-5B
Trichlorothene (TCE) Concentrations at M-5MW20

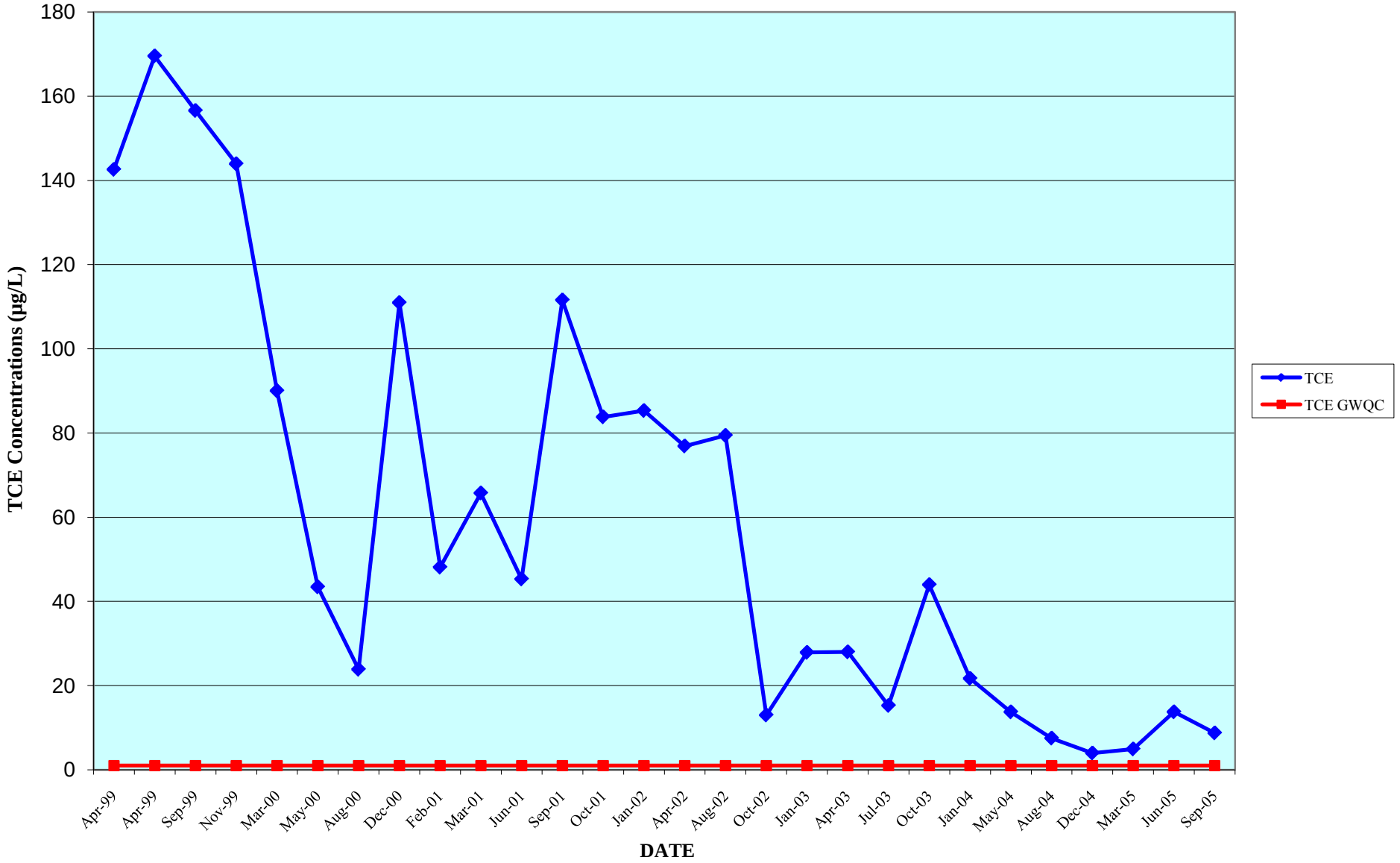


FIGURE 5-6A
Tetrachloroethene (PCE) Concentrations vs Time at M-5 MW23

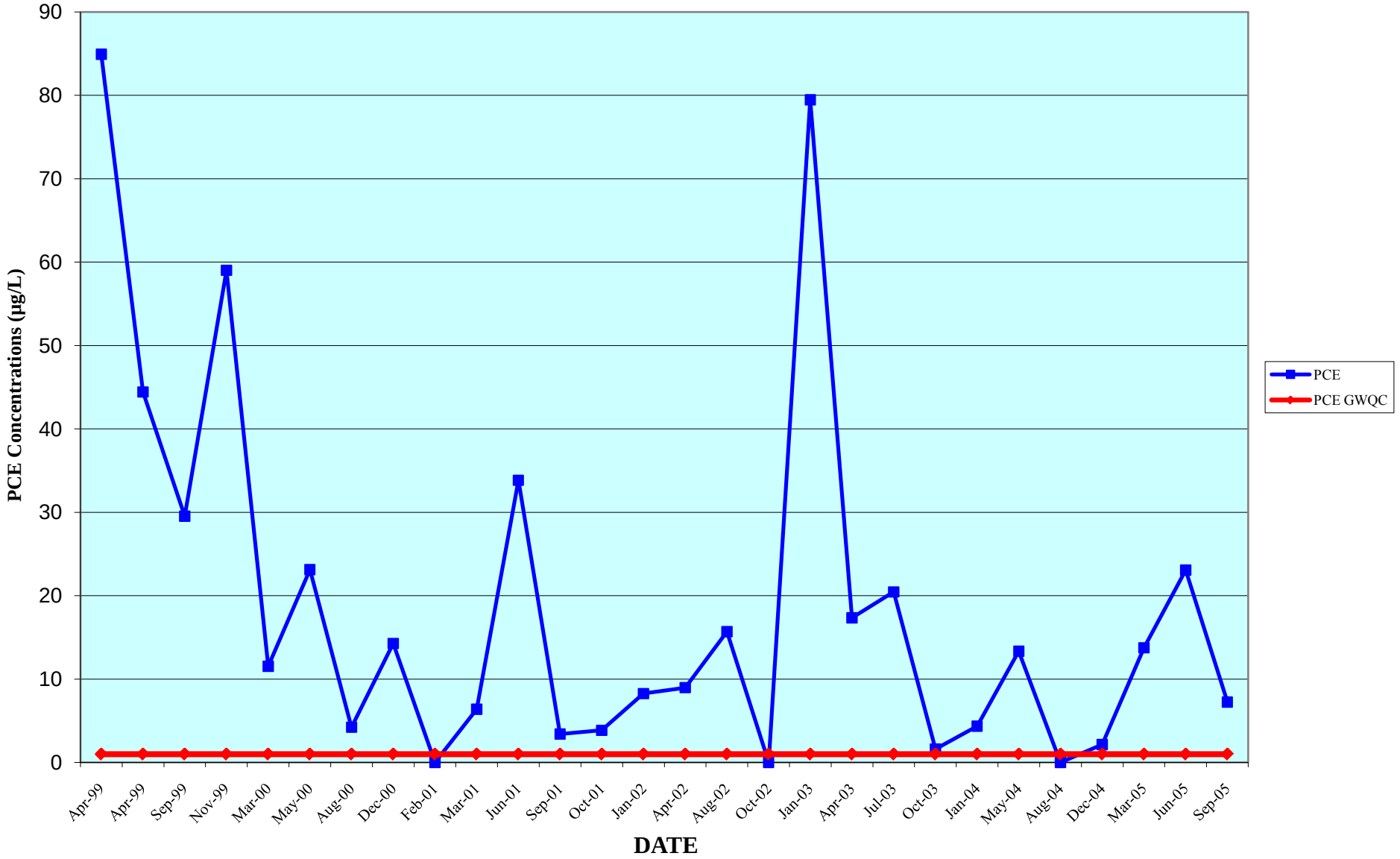


FIGURE 5-6B
Trichloroethene (TCE) Concentrations vs Time at M-5MW23

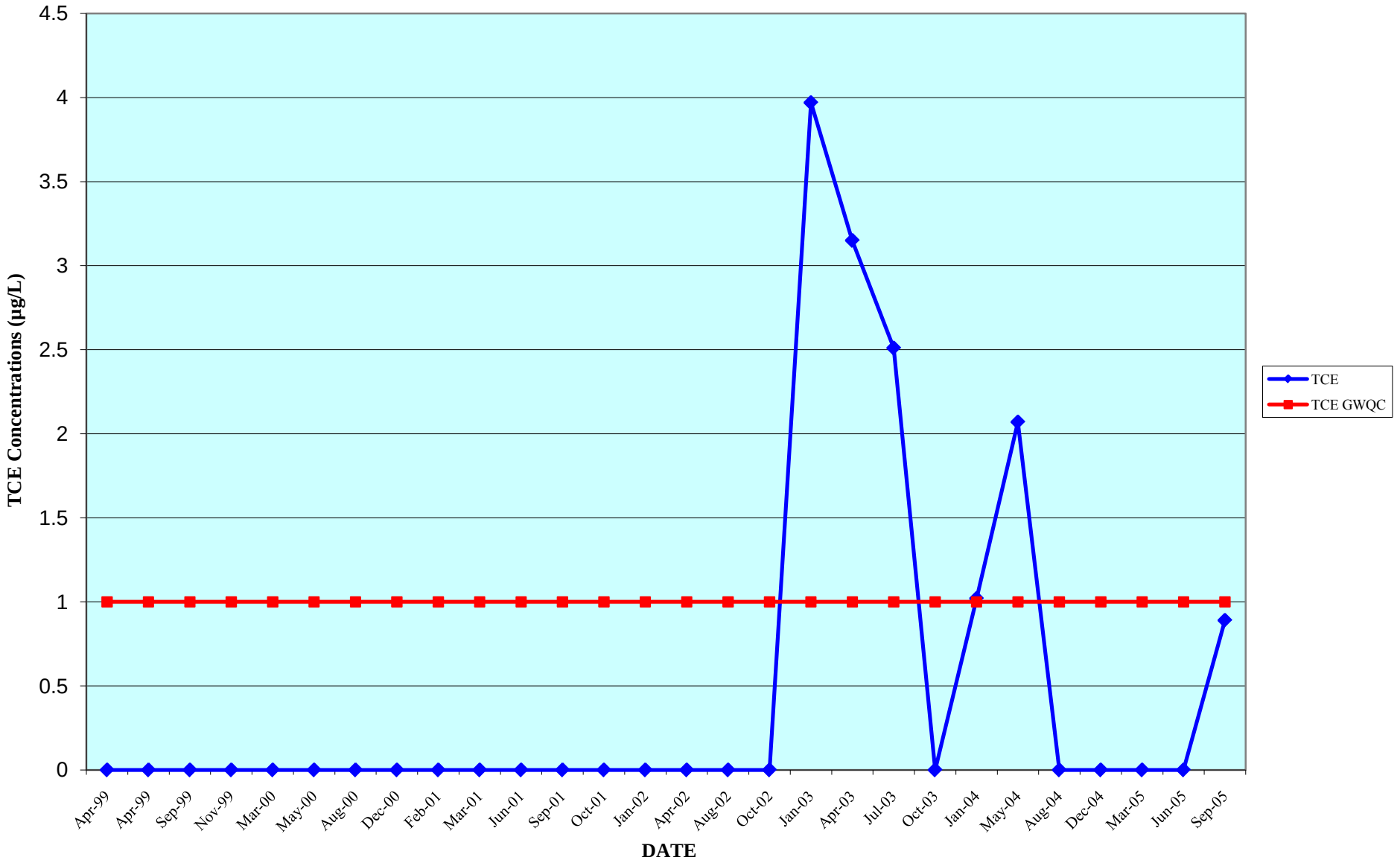


FIGURE 5-7A
Tetrachloroethene (PCE) Concentrations vs Time at M-8MW12

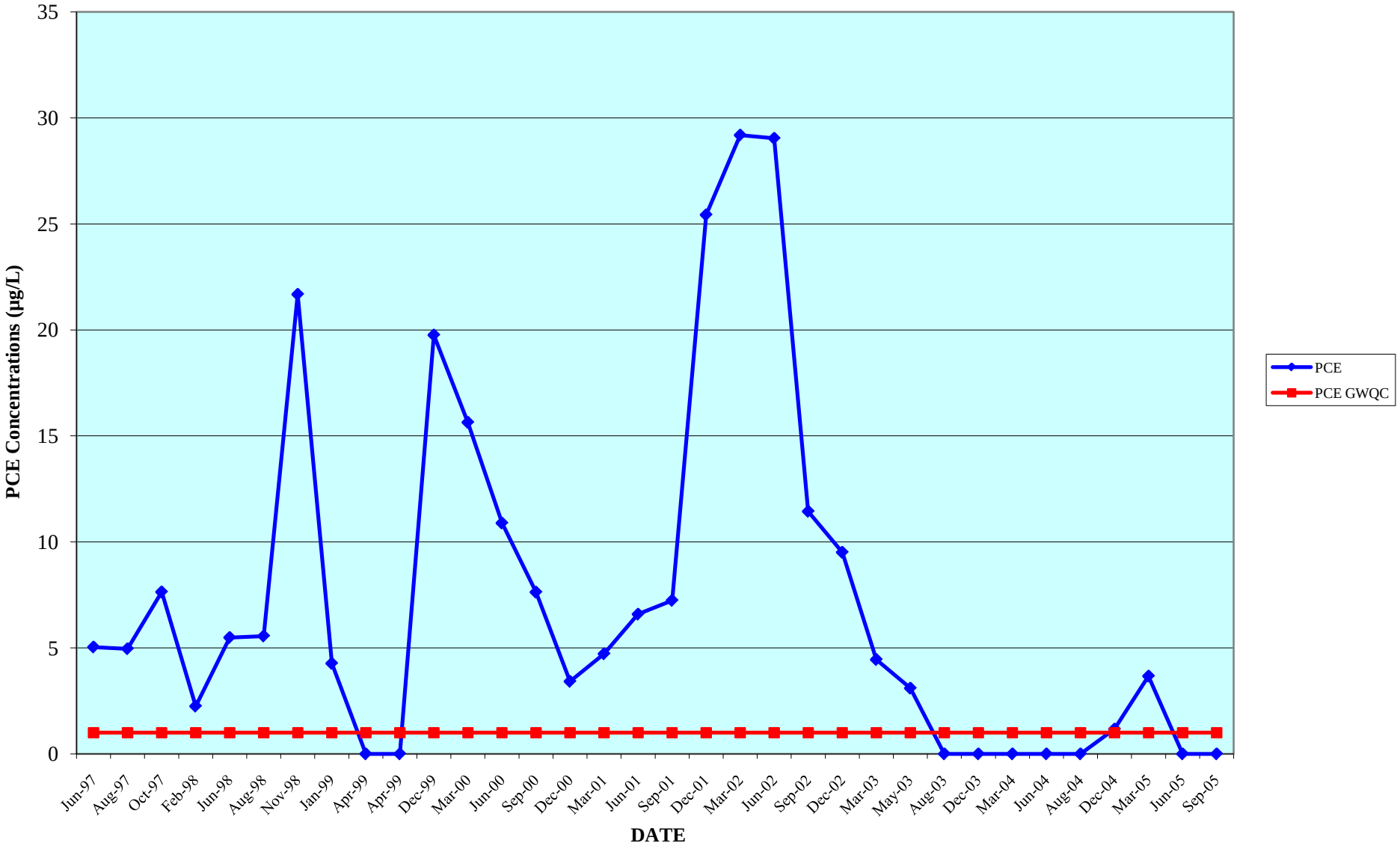


FIGURE 5-7B
Trichloroethene (TCE) Concentrations vs Time at M-8MW12

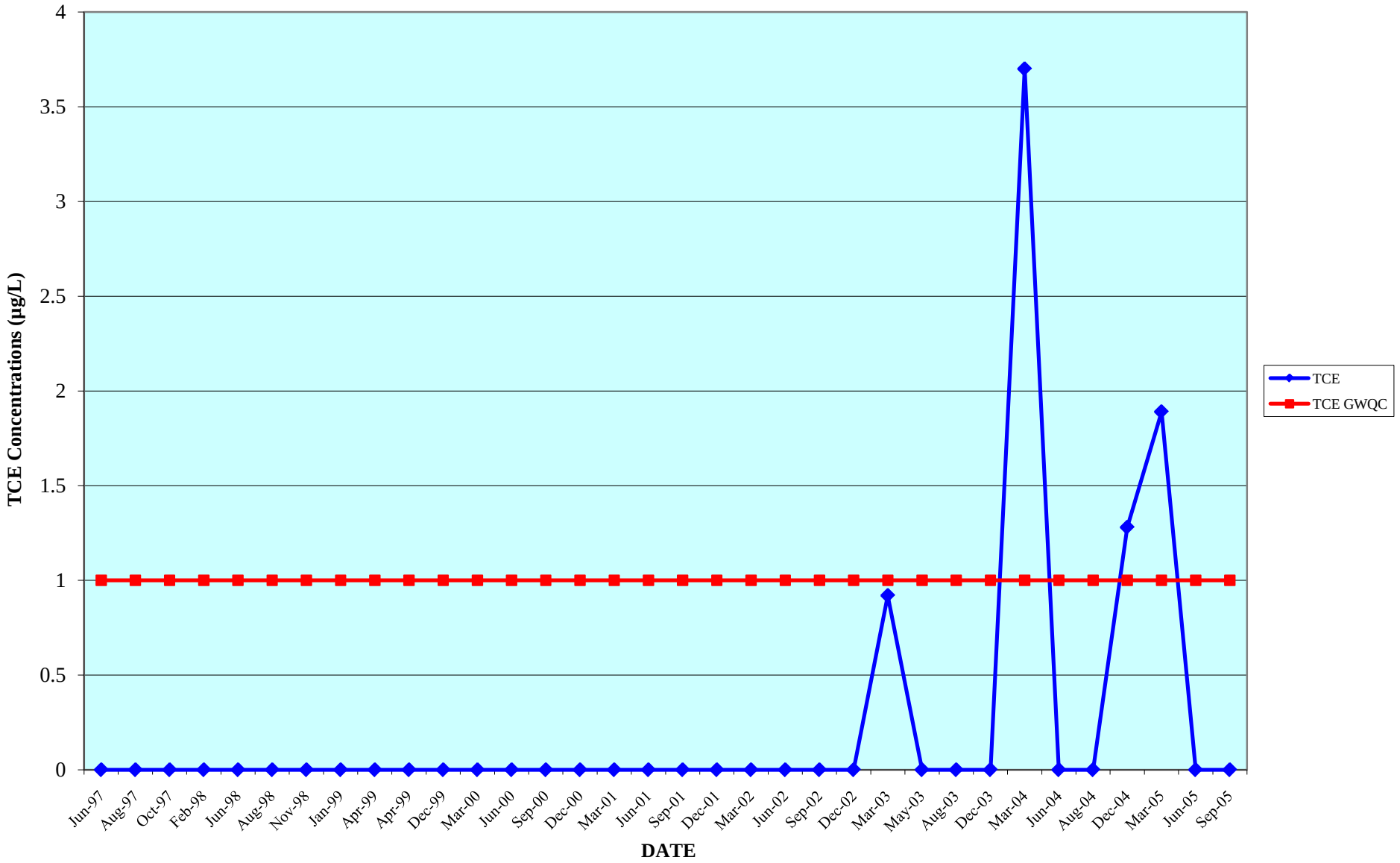


FIGURE 5-8A
Tetrachloroethene (PCE) Concentrations vs Time at M-8MW23

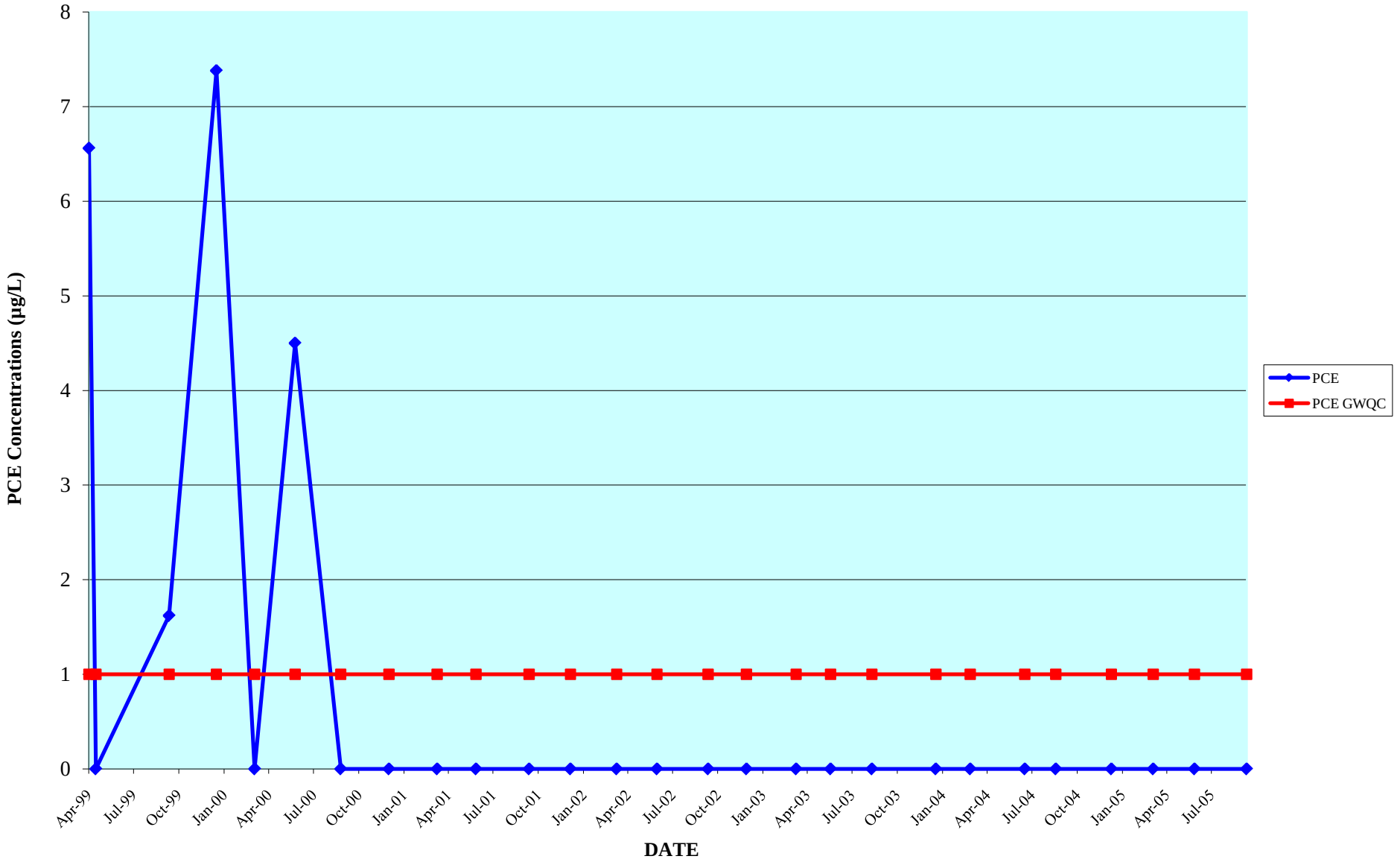


FIGURE 5-8B
Trichloroethene (TCE) Concentrations vs Time at M-8MW23

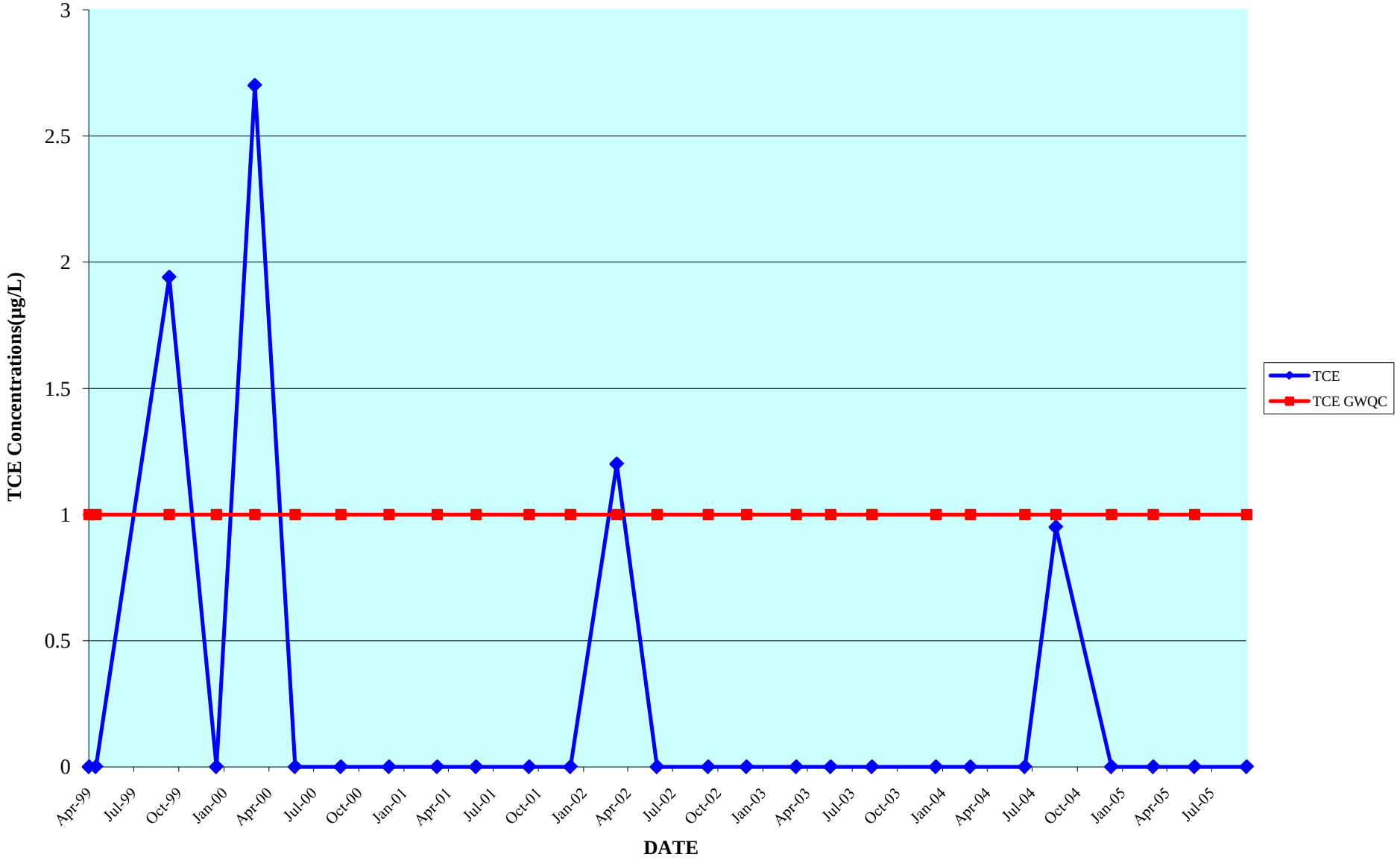
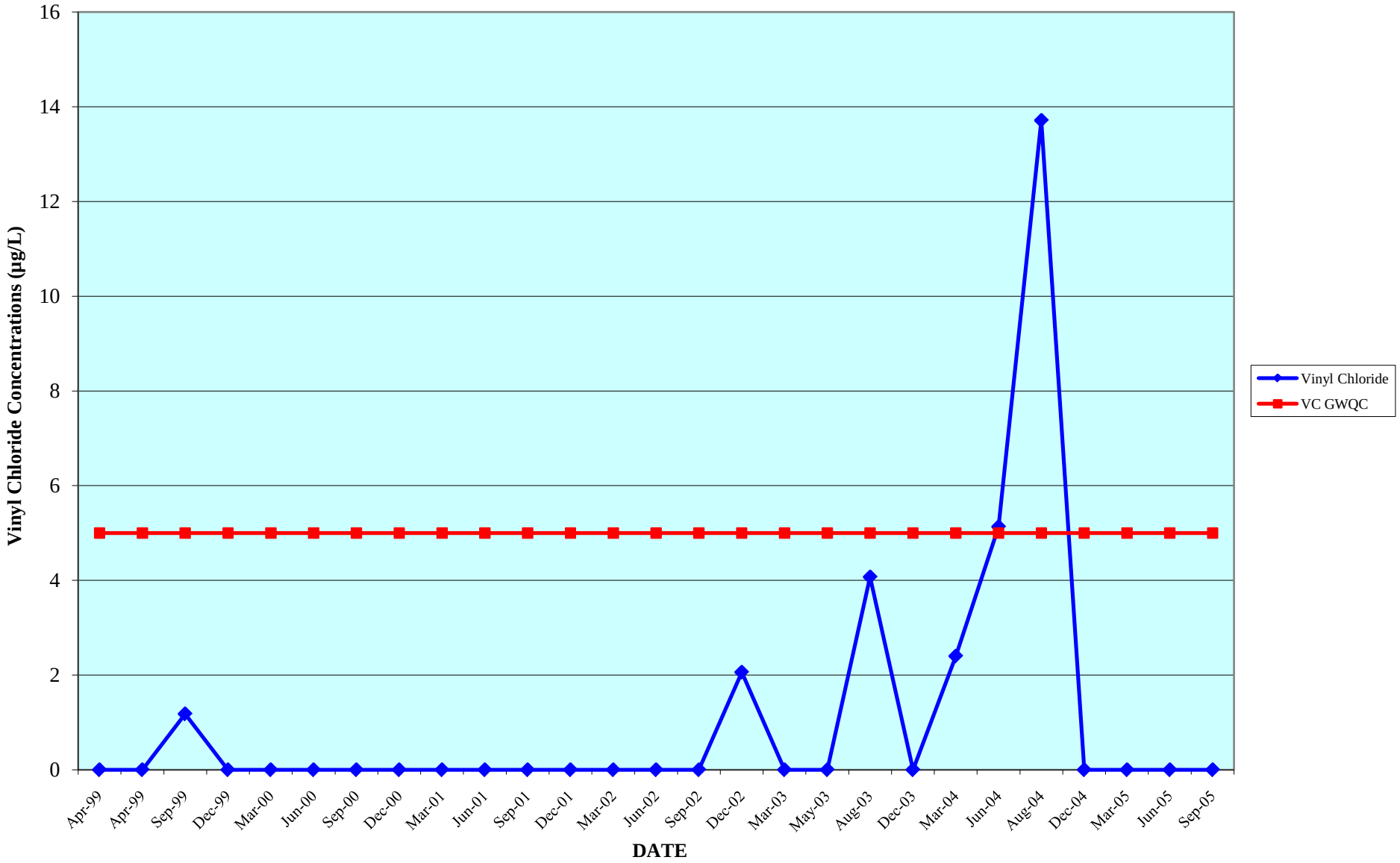


FIGURE 5-8C
Vinyl Chloride Concentrations vs Time at M-8MW23



TABLES

Table 4-1
Groundwater Elevation Summary
M-5 Landfill
Fort Monmouth, New Jersey

Groundwater Sampling Round:		#27			#28			#29			#30		
Well ID	Elev. of Inner Casing Survey Mark	Date	Depth to Water	Ground-water Elev.	Date	Depth to Water	Ground-water Elev.	Date	Depth to Water	Ground-water Elev.	Date	Depth to Water	Ground-water Elev.
M5-MW10	6.91	10/08/03	4.75	2.16	01/14/04	4.59	2.32	05/13/04	4.30	2.61	08/20/04	4.68	2.23
M5-MW11	11.70	10/08/03	7.65	4.05	01/14/04	7.05	4.65	05/13/04	6.97	4.73	08/20/04	7.31	4.39
M5-MW12	8.58	10/08/03	6.13	2.45	01/14/04	5.96	2.62	05/13/04	5.80	2.78	08/20/04	5.98	2.60
M5-MW13	5.42	10/08/03	2.85	2.57	01/14/04	2.97	2.45	05/13/04	2.40	3.02	08/20/04	2.64	2.78
M5-MW14	5.74	10/08/03	3.45	2.29	01/14/04	3.30	2.44	05/13/04	3.20	2.54	08/20/04	2.99	2.75
M5-MW15	17.40	10/08/03	9.79	7.61	01/14/04	8.46	8.94	05/13/04	8.05	9.35	08/20/04	9.11	8.29
M5-MW16	15.18	10/08/03	7.63	7.55	01/14/04	6.63	8.55	05/13/04	6.30	8.88	08/20/04	7.06	8.12
M5-MW18	14.47	10/08/03	7.91	6.56	01/14/04	7.17	7.30	05/13/04	7.00	7.47	08/20/04	7.55	6.92
M5-MW19	14.02	10/08/03	7.55	6.47	01/14/04	6.90	7.12	05/13/04	6.73	7.29	08/20/04	7.35	6.67
M5-MW20	12.64	10/08/03	6.53	6.11	01/14/04	5.87	6.77	05/13/04	5.76	6.88	08/20/04	6.25	6.39
M5-MW23	13.00	10/08/03	8.73	4.27	01/14/04	8.01	4.99	05/13/04	7.95	5.05	08/20/04	8.46	4.54
M5-MW25	18.01	10/08/03	12.33	5.68	01/14/04	11.32	6.69	05/13/04	11.13	6.88	08/20/04	12.10	5.91

Notes:
1) Elev.: Elevation in feet above mean sea level.
2) Depth to water: depth in feet from the inner casing survey mark.
3) NM = Not Measured

Table 4-1
Groundwater Elevation Summary
M-5 Landfill
Fort Monmouth, New Jersey

Groundwater Sampling Round:		#31			#32			#33			#34		
Well ID	Elev. of Inner Casing Survey Mark	Date	Depth to Water	Ground-water Elev.	Date	Depth to Water	Ground-water Elev.	Date	Depth to Water	Ground-water Elev.	Date	Depth to Water	Ground-water Elev.
M5-MW10	6.91	12/16/04	3.91	3.00	03/15/05	4.10	2.81	06/03/05	4.35	2.56	09/16/05	4.83	2.08
M5-MW11	11.70	12/15/04	6.63	5.07	03/14/05	6.75	4.95	06/03/05	7.18	4.52	09/16/05	6.93	4.77
M5-MW12	8.58	12/16/04	5.58	3.00	03/15/05	5.57	3.01	06/03/05	5.86	2.72	09/16/05	6.27	2.31
M5-MW13	5.42	12/16/04	2.10	3.32	03/15/05	2.10	3.32	06/03/05	2.47	2.95	09/16/05	3.13	2.29
M5-MW14	5.74	12/16/04	2.21	3.53	03/15/05	3.36	2.38	06/03/05	3.51	2.23	09/16/05	3.69	2.05
M5-MW15	17.40	12/16/04	NM	NM	03/15/05	NM	NM	06/03/05	8.77	8.63	09/16/05	10.49	6.91
M5-MW16	15.18	12/15/04	5.03	10.15	03/14/05	5.99	9.19	06/03/05	6.71	8.47	09/16/05	8.25	6.93
M5-MW18	14.47	12/13/04	6.53	7.94	03/14/05	6.62	7.85	06/03/05	7.21	7.26	09/16/05	8.36	6.11
M5-MW19	14.02	12/13/04	6.41	7.61	03/14/05	6.46	7.56	06/03/05	7.03	6.99	09/16/05	8.06	5.96
M5-MW20	12.64	12/13/04	5.34	7.30	03/14/05	5.47	7.17	06/03/05	6.02	6.62	09/16/05	6.75	5.89
M5-MW23	13.00	12/15/04	7.51	5.49	03/14/05	7.59	5.41	06/03/05	8.16	4.84	09/16/05	8.94	4.06
M5-MW25	18.01	12/16/04	NM	NM	03/15/05	NM	NM	06/03/05	11.70	6.31	09/16/05	12.75	5.26

Notes:
1) Elev.: Elevation in feet above mean sea level.
2) Depth to water: depth in feet from the inner casing survey mark.
3) NM = Not Measured

Table 4-2
Groundwater Sampling Summary
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#1	M5MW10	2516.02	5/8/1997	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW11	2516.01	5/8/1997	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW12	2731.03	6/24/1997	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 635
#2	M5MW10	2885.04	8/8/1997	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW11	2885.03	8/8/1997	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW12	2930.06	8/25/1997	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
#3	M5MW10	3116.04	10/29/1997	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW11	3116.03	10/29/1997	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW12	3125.06	10/31/1997	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
#4	M5MW10	3348.01	2/18/1998	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW11	3348.02	2/18/1998	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW12	3366.03	2/25/1998	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
#5	M5MW10	3552.01	5/6/1998	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW11	3552.02	5/6/1998	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW12	3619.03	6/4/1998	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
#6	M5MW10	3784.03	8/4/1998	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW11	3784.04	8/4/1998	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW12	3843.07	8/28/1998	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
#7	M5MW10	4010.04	10/27/1998	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW11	4010.03	10/27/1998	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW12	4029.03	11/4/1998	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
#7A	M5MW12	2516.01	10/7/1998	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW13	3967.04	10/7/1998	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW14	3967.05	10/7/1998	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
#7B	M5MW12	2885.03	10/21/1998	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW13	4001.03	10/23/1998	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW14	4001.04	10/23/1998	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
#8	M5MW10	4237.03	2/2/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW11	4237.04	2/2/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW12	3116.03	2/2/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW13	4237.06	2/2/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW14	4237.07	2/2/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW12	4227.03	1/27/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624

Notes:
Metals = Target Analyte List Metals; VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds; Pest/PCBs = Pesticides/Polychlorinated Biphenyls

Table 4-2
Groundwater Sampling Summary
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#9A	M5MW10	4416.03	4/13/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW11	4416.04	4/13/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW12	3348.02	4/13/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW13	4416.06	4/13/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW14	4416.07	4/13/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW15	4419.04	4/14/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW16	4419.05	4/14/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW18	4416.10	4/13/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW19	4416.09	4/13/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW20	4416.08	4/13/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW23	4419.08	4/13/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW25	4419.06	4/14/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW12	4419.07	4/14/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW23	4419.09	4/13/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW24	4419.03	4/14/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
#9B	M5MW10	4444.03	4/27/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW11	4444.04	4/27/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW12	3552.02	4/27/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW13	4444.06	4/27/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW14	4444.07	4/27/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW15	4447.06	4/28/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW16	4447.07	4/28/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW18	4444.10	4/27/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW19	4444.09	4/27/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW20	4444.08	4/27/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW23	4447.08	4/27/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW25	4447.04	4/28/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW12	4447.05	4/28/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW23	4447.09	4/27/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW24	4447.03	4/28/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
#10	M5MW10	4786.07	9/13/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW11	4786.08	9/13/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW12	3784.04	9/13/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW13	4786.05	9/13/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW14	4786.04	9/13/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW15	4788.05	9/14/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW16	4788.04	9/14/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW18	4788.06	9/14/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW19	4788.07	9/14/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW20	4447.09	9/13/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW23	4447.03	9/13/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624

Notes:
Metals = Target Analyte List Metals; VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds; Pest/PCBs = Pesticides/Polychlorinated Biphenyls

Table 4-2
Groundwater Sampling Summary
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#10	M5MW25	4788.08	9/14/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW12	4811.04	9/23/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW23	4811.16	9/23/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW24	4811.17	9/23/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
#11	M5MW10	4955.04	11/18/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW11	4955.05	11/18/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW12	4955.06	11/18/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW13	4955.07	11/18/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW14	4955.08	11/18/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW15	4955.09	11/18/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW16	4955.10	11/18/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW18	4955.15	11/18/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW19	4955.14	11/18/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW20	4955.11	11/18/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW23	4955.12	11/18/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW25	4955.13	11/18/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW12	5051.04	12/28/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW23	5051.15	12/28/1999	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW24	Not Available	Not Available	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
#12	M5MW10	5220.07	3/3/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW11	5220.06	3/3/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW12	5222.02	3/6/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW13	5222.03	3/6/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW14	5222.04	3/6/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW15	5220.1	3/3/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW16	5220.09	3/3/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW18	5220.11	3/3/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW19	5222.01	3/6/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW20	5220.05	3/3/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW23	5220.04	3/3/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW25	5220.08	3/3/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW12	5250.04	3/15/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW23	5250.16	3/15/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW24	5250.17	3/15/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
#13	M5MW10	5445.04	5/31/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW11	5445.05	5/31/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW12	5445.06	5/31/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW13	5445.07	5/31/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW14	5445.08	5/31/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW15	5445.09	5/31/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624

Notes:
Metals = Target Analyte List Metals; VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds; Pest/PCBs = Pesticides/Polychlorinated Biphenyls

Table 4-2
Groundwater Sampling Summary
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#13	M5MW16	5445.10	5/31/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW18	5445.11	5/31/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW19	5445.12	5/31/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW20	5445.13	5/31/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW23	5445.14	5/31/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW25	5445.15	5/31/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW12	5454.04	6/5/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW23	5454.15	6/5/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW24	5454.16	6/5/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
#14	M5MW10	5644.04	8/21/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW11	5644.05	8/21/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW12	5644.06	8/21/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW13	5644.07	8/21/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW14	5644.08	8/21/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW15	5644.09	8/21/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW16	5644.10	8/21/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW18	5644.11	8/21/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW19	5644.12	8/21/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW20	5644.13	8/21/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW23	5644.14	8/21/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW25	5644.15	8/21/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW12	5693.04	9/6/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW23	5693.15	9/6/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW24	5693.16	9/6/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
#15	M5MW10	5903.04	12/11/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW11	5903.05	12/11/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW12	5903.06	12/11/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW13	5903.07	12/11/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW14	5903.08	12/11/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW15	5903.09	12/11/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW16	5903.10	12/11/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW18	5903.11	12/11/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW19	5903.12	12/11/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW20	5903.13	12/11/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW23	5903.14	12/11/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW25	5903.15	12/11/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW12	5906.04	12/13/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW23	5906.15	12/13/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW24	5919.01	12/26/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624

Notes:
Metals = Target Analyte List Metals; VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds; Pest/PCBs = Pesticides/Polychlorinated Biphenyls

Table 4-2
Groundwater Sampling Summary
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#16	M8MW12	1601104	3/21/2000	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW23	1601115	3/21/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW24	1601701	4/2/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
#16A	M5MW10	778	2/13/2001	Aqueous	VOCs	Method 624
	M5MW11	779	2/13/2001	Aqueous	VOCs	Method 624
	M5MW12	780	2/13/2001	Aqueous	VOCs	Method 624
	M5MW13	781	2/13/2001	Aqueous	VOCs	Method 624
	M5MW14	782	2/13/2001	Aqueous	VOCs	Method 624
	M5MW15	783	2/13/2001	Aqueous	VOCs	Method 624
	M5MW16	784	2/13/2001	Aqueous	VOCs	Method 624
	M5MW18	785	2/13/2001	Aqueous	VOCs	Method 624
	M5MW19	786	2/13/2001	Aqueous	VOCs	Method 624
	M5MW20	787	2/13/2001	Aqueous	VOCs	Method 624
	M5MW23	788	2/13/2001	Aqueous	VOCs	Method 624
	M5MW25	789	2/13/2001	Aqueous	VOCs	Method 624
#16B	M5MW10	1600704	3/19/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW11	1600705	3/19/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW12	1600706	3/19/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW13	1600707	3/19/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW14	1600708	3/19/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW15	1600709	3/19/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW16	1600710	3/19/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW18	1600711	3/19/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW19	1600712	3/19/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW20	1600713	3/19/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW23	1600714	3/19/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW25	1600715	3/19/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
#17	M5MW10	16166.04	6/5/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW11	16166.05	6/5/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW12	16166.06	6/5/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW13	16166.07	6/5/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW14	16166.08	6/5/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW15	16166.09	6/5/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW16	16166.10	6/5/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW18	16166.11	6/5/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW19	16166.12	6/5/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW20	16166.13	6/5/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW23	16166.14	6/5/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW25	16166.15	6/5/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW12	1617404	6/8/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624

Notes:
Metals = Target Analyte List Metals; VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds; Pest/PCBs = Pesticides/Polychlorinated Biphenyls

Table 4-2
Groundwater Sampling Summary
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#17	M8MW23	1617415	6/8/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW24	1620704	6/23/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
#18	M5MW10	16407.04	9/5/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW11	16407.05	9/5/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW12	16407.06	9/5/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW13	16407.07	9/5/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW14	16407.08	9/5/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW15	16407.09	9/5/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW16	16407.10	9/5/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW18	16407.11	9/5/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW19	16407.12	9/5/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW20	16407.13	9/5/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW23	16407.14	9/5/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW25	16407.15	9/5/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW12	1644804	9/24/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW23	1644815	9/24/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW24	1646001	9/26/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
#19	M5MW10	16491.04	10/4/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW11	16491.05	10/4/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW12	16491.06	10/4/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW13	16491.07	10/4/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW14	16491.08	10/4/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW15	16491.09	10/4/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW16	16491.10	10/4/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW18	16491.11	10/4/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW19	16491.12	10/4/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW20	16491.13	10/4/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW23	16491.14	10/4/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW25	16491.15	10/4/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW12	1666204	12/17/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW23	1666215	12/17/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW24	1663401	12/10/2001	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
#20	M5MW10	2002904	1/14/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW11	2002905	1/14/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW12	2002906	1/14/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW13	2002907	1/14/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW14	2002908	1/14/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW15	2002909	1/14/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW16	2002910	1/14/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW18	2002911	1/14/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624

Notes:
Metals = Target Analyte List Metals; VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds; Pest/PCBs = Pesticides/Polychlorinated Biphenyls

Table 4-2
Groundwater Sampling Summary
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#20	M5MW19	2002912	1/14/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW20	2002913	1/14/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW23	2002914	1/14/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW25	2002915	1/14/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW12	2016204	3/21/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW23	2016215	3/21/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW24	2017101	3/27/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
#21	M5MW10	2021904	4/23/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW11	2021905	4/23/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW12	2021906	4/23/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW13	2021907	4/23/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW14	2021908	4/23/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW15	2021909	4/23/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW16	2021910	4/23/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW18	2021911	4/23/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW19	2021912	4/23/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW20	2021913	4/23/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW23	2021914	4/23/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW25	2021915	4/23/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW12	2036104	6/11/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW23	2036115	6/11/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW24	2039001	6/22/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
#22	M5MW10	2059404	8/21/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW11	2059405	8/21/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW12	2059406	8/21/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW13	2059407	8/21/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW14	2059408	8/21/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW15	2059409	8/21/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW16	2059410	8/21/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW18	2059411	8/21/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW19	2059412	8/21/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW20	2059413	8/21/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW23	2059414	8/21/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M5MW25	2059415	8/21/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW12	2067804	9/23/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW23	2067805	9/23/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW24	2068801	9/26/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
#23	M5MW10	2076004	10/28/2002	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW11	2076005	10/28/2002	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW12	2076006	10/28/2002	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624

Notes:
Metals = Target Analyte List Metals; VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds; Pest/PCBs = Pesticides/Polychlorinated Biphenyls

Table 4-2
Groundwater Sampling Summary
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#23	M5MW13	2076007	10/28/2002	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW14	2076008	10/28/2002	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW15	2076009	10/28/2002	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW16	2076010	10/28/2002	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW18	2076011	10/28/2002	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW19	2076012	10/28/2002	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW20	2076013	10/28/2002	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW23	2076014	10/28/2002	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW25	2076015	10/28/2002	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M8MW12	2088504	12/13/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW23	2087611	12/10/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW24	2088601	12/13/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
#24	M5MW10	3003204	1/22/2003	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW11	3003205	1/22/2003	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW12	3003206	1/22/2003	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW13	3003207	1/22/2003	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW14	3003208	1/22/2003	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW15	3003209	1/22/2003	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW16	3003210	1/22/2003	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW18	3003211	1/22/2003	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW19	3003212	1/22/2003	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW20	3003213	1/22/2003	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW23	3003214	1/22/2003	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW25	3003215	1/22/2003	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M8MW12	3013204	3/21/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW23	3013215	3/21/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW24	3012704	3/20/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
#25	M5MW10	3018004	4/21/2003	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW11	3018005	4/21/2003	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW12	3018006	4/21/2003	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW13	3018007	4/21/2003	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW14	3018008	4/21/2003	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW15	3018009	4/21/2003	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW16	3018010	4/21/2003	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW18	3018011	4/21/2003	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW19	3018012	4/21/2003	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW20	3018013	4/21/2003	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW23	3018014	4/21/2003	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW25	3018015	4/21/2003	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M8MW12	3025404	5/30/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW23	3025415	5/30/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW24	3032103	6/25/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624

Notes:
Metals = Target Analyte List Metals; VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds; Pest/PCBs = Pesticides/Polychlorinated Biphenyls

Table 4-2
Groundwater Sampling Summary
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#26	M5MW10	3043904	7/30/2003	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW11	3043905	7/30/2003	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW12	3043906	7/30/2003	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW13	3043907	7/30/2003	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW14	3043908	7/30/2003	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW15	3043909	7/30/2003	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW16	3043910	7/30/2003	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW18	3043911	7/30/2003	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW19	3043912	7/30/2003	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW20	3043913	7/30/2003	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW23	3043914	7/30/2003	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M5MW25	3043915	7/30/2003	Aqueous	Metals; SVOCs; VOCs	Methods 3112B and 3120B, Methods 625 & 624
	M8MW12	3054104	8/22/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW23	3054115	8/22/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
	M8MW24	3058004	9/8/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, Methods 608, 625, & 624
#27	M5MW10	3063804	10/8/2003	Aqueous	VOCs	Method 624
	M5MW11	3063805	10/8/2003	Aqueous	VOCs	Method 624
	M5MW12	3063806	10/8/2003	Aqueous	VOCs	Method 624
	M5MW13	3063807	10/8/2003	Aqueous	VOCs	Method 624
	M5MW14	3063808	10/8/2003	Aqueous	VOCs	Method 624
	M5MW16	3063809	10/8/2003	Aqueous	VOCs	Method 624
	M5MW18	3063810	10/8/2003	Aqueous	VOCs	Method 624
	M5MW19	3063811	10/8/2003	Aqueous	VOCs	Method 624
	M5MW20	3063812	10/8/2003	Aqueous	VOCs	Method 624
	M5MW23	3063813	10/8/2003	Aqueous	VOCs	Method 624
	M8MW12	3080404	12/12/2003	Aqueous	VOCs	Method 624
	M8MW23	3083107	12/30/2003	Aqueous	VOCs	Method 624
	M8MW24	3075504	11/21/2003	Aqueous	VOCs	Method 624
#28	M5MW10	4002904	1/14/2004	Aqueous	VOCs	Method 624
	M5MW11	4002905	1/14/2004	Aqueous	VOCs	Method 624
	M5MW12	4002906	1/14/2004	Aqueous	VOCs	Method 624
	M5MW13	4002907	1/14/2004	Aqueous	VOCs	Method 624
	M5MW14	4002908	1/14/2004	Aqueous	VOCs	Method 624
	M5MW16	4002909	1/14/2004	Aqueous	VOCs	Method 624
	M5MW18	4002910	1/14/2004	Aqueous	VOCs	Method 624
	M5MW19	4002911	1/14/2004	Aqueous	VOCs	Method 624
	M5MW20	4002912	1/14/2004	Aqueous	VOCs	Method 624
	M5MW23	4002913	1/14/2004	Aqueous	VOCs	Method 624
	M8MW12	4015704	3/9/2004	Aqueous	VOCs	Method 624
	M8MW23	4015708	3/9/2004	Aqueous	VOCs	Method 624
	M8MW24	4014201	2/25/2004	Aqueous	VOCs	Method 624

Notes:
Metals = Target Analyte List Metals; VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds; Pest/PCBs = Pesticides/Polychlorinated Biphenyls

Table 4-2
Groundwater Sampling Summary
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#29	M5MW10	4035904	5/13/2004	Aqueous	VOCs	Method 624
	M5MW11	4035905	5/13/2004	Aqueous	VOCs	Method 624
	M5MW12	4035906	5/13/2004	Aqueous	VOCs	Method 624
	M5MW13	4035907	5/13/2004	Aqueous	VOCs	Method 624
	M5MW14	4035908	5/13/2004	Aqueous	VOCs	Method 624
	M5MW16	4035909	5/13/2004	Aqueous	VOCs	Method 624
	M5MW18	4035910	5/13/2004	Aqueous	VOCs	Method 624
	M5MW19	4035911	5/13/2004	Aqueous	VOCs	Method 624
	M5MW20	4035912	5/13/2004	Aqueous	VOCs	Method 624
	M5MW23	4035913	5/13/2004	Aqueous	VOCs	Method 624
	M8MW12	4049404	6/28/2004	Aqueous	VOCs	Method 624
	M8MW23	4049415	6/28/2004	Aqueous	VOCs	Method 624
	M8MW24	40409901	6/28/2004	Aqueous	VOCs	Method 624
#30	M5MW10	4061404	8/20/2004	Aqueous	VOCs	Method 624
	M5MW11	4061405	8/20/2004	Aqueous	VOCs	Method 624
	M5MW12	4061406	8/20/2004	Aqueous	VOCs	Method 624
	M5MW13	4061407	8/20/2004	Aqueous	VOCs	Method 624
	M5MW14	4061408	8/20/2004	Aqueous	VOCs	Method 624
	M5MW16	4061409	8/20/2004	Aqueous	VOCs	Method 624
	M5MW18	4061410	8/20/2004	Aqueous	VOCs	Method 624
	M5MW19	4061411	8/20/2004	Aqueous	VOCs	Method 624
	M5MW20	4061412	8/20/2004	Aqueous	VOCs	Method 624
	M5MW23	4061413	8/20/2004	Aqueous	VOCs	Method 624
	M8MW12	4063704	8/30/2004	Aqueous	VOCs	Method 624
	M8MW23	4063715	8/30/2004	Aqueous	VOCs	Method 624
	M8MW24	4063716	8/30/2004	Aqueous	VOCs	Method 624
#31	M5MW10	4084603	12/16/2004	Aqueous	VOCs	Method 624
	M5MW11	4084504	12/16/2004	Aqueous	VOCs	Method 624
	M5MW12	4084604	12/16/2004	Aqueous	VOCs	Method 624
	M5MW13	4084605	12/16/2004	Aqueous	VOCs	Method 624
	M5MW14	4084606	12/16/2004	Aqueous	VOCs	Method 624
	M5MW16	4084505	12/15/2004	Aqueous	VOCs	Method 624
	M5MW18	4083303	12/14/2004	Aqueous	VOCs	Method 624
	M5MW19	4083302	12/14/2004	Aqueous	VOCs	Method 624
	M5MW20	4083301	12/14/2004	Aqueous	VOCs	Method 624
	M5MW23	4084506	12/15/2004	Aqueous	VOCs	Method 624
	M8MW12	4086004	12/21/2004	Aqueous	VOCs	Method 624
	M8MW23	4086005	12/21/2004	Aqueous	VOCs	Method 624
	M8MW24	4086006	12/21/2004	Aqueous	VOCs	Method 624

Notes:
Metals = Target Analyte List Metals; VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds; Pest/PCBs = Pesticides/Polychlorinated Biphenyls

Table 4-2
Groundwater Sampling Summary
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#32	M5MW10	5015404	3/15/2005	Aqueous	VOCs	Method 624
	M5MW11	5015204	3/14/2005	Aqueous	VOCs	Method 624
	M5MW12	5015405	3/15/2005	Aqueous	VOCs	Method 624
	M5MW13	5015406	3/15/2005	Aqueous	VOCs	Method 624
	M5MW14	5015407	3/15/2005	Aqueous	VOCs	Method 624
	M5MW16	5015205	3/14/2005	Aqueous	VOCs	Method 624
	M5MW18	5015206	3/14/2005	Aqueous	VOCs	Method 624
	M5MW19	5015207	3/14/2005	Aqueous	VOCs	Method 624
	M5MW20	5015208	3/14/2005	Aqueous	VOCs	Method 624
	M5MW23	5015209	3/14/2005	Aqueous	VOCs	Method 624
	M8MW12	5015704	3/16/2005	Aqueous	VOCs	Method 624
	M8MW23	5015712	3/16/2005	Aqueous	VOCs	Method 624
	M8MW24	5015807	3/17/2005	Aqueous	VOCs	Method 624
#33	M5MW10	5028404	6/3/2005	Aqueous	VOCs	Method 624
	M5MW11	5028405	6/3/2005	Aqueous	VOCs	Method 624
	M5MW12	5028406	6/3/2005	Aqueous	VOCs	Method 624
	M5MW13	5028407	6/3/2005	Aqueous	VOCs	Method 624
	M5MW14	5028408	6/3/2005	Aqueous	VOCs	Method 624
	M5MW16	5028409	6/3/2005	Aqueous	VOCs	Method 624
	M5MW18	5028410	6/3/2005	Aqueous	VOCs	Method 624
	M5MW19	5028411	6/3/2005	Aqueous	VOCs	Method 624
	M5MW20	5028412	6/3/2005	Aqueous	VOCs	Method 624
	M5MW23	5028413	6/3/2005	Aqueous	VOCs	Method 624
	M8MW12	5029104	6/7/2005	Aqueous	VOCs	Method 624
	M8MW23	5029910	6/8/2005	Aqueous	VOCs	Method 624
	M8MW24	5029109	6/17/2005	Aqueous	VOCs	Method 624
#34	M5MW10	5047303	9/16/2005	Aqueous	VOCs	Method 624
	M5MW11	5047304	9/16/2005	Aqueous	VOCs	Method 624
	M5MW12	5047305	9/16/2005	Aqueous	VOCs	Method 624
	M5MW13	5047306	9/16/2005	Aqueous	VOCs	Method 624
	M5MW14	5047307	9/16/2005	Aqueous	VOCs	Method 624
	M5MW16	5047308	9/16/2005	Aqueous	VOCs	Method 624
	M5MW18	5047309	9/16/2005	Aqueous	VOCs	Method 624
	M5MW19	5047310	9/16/2005	Aqueous	VOCs	Method 624
	M5MW20	5047311	9/16/2005	Aqueous	VOCs	Method 624
	M5MW23	5047312	9/16/2005	Aqueous	VOCs	Method 624
	M8MW12	5048304	9/22/2005	Aqueous	VOCs	Method 624
	M8MW23	5048312	9/22/2005	Aqueous	VOCs	Method 624
	M8MW24	5048607	9/23/2005	Aqueous	VOCs	Method 624

Notes:
Metals = Target Analyte List Metals; VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds; Pest/PCBs = Pesticides/Polychlorinated Biphenyls

Table 4-3
Surface Water Sampling Summary
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#1A	SS-4	2178.04	10/8/1996	Aqueous	VOCs	Method 624
	SS-5	2178.05	10/8/1996	Aqueous	VOCs	Method 624
	SS-15	2178.15	10/8/1996	Aqueous	VOCs	
#1B	SS-4	2223.12	11/25/1996	Aqueous	VOCs	Method 624
	SS-5	2223.14	11/25/1996	Aqueous	VOCs	Method 624
	SS-15	2223.09	11/25/1996	Aqueous	VOCs	Method 624
	SS-16	2223.10	11/25/1996	Aqueous	VOCs	Method 624
#1C	SS-4	2246.12	12/12/1996	Aqueous	VOCs	Method 624
	SS-5	2246.14	12/12/1996	Aqueous	VOCs	Method 624
	SS-15	2246.09	12/12/1996	Aqueous	VOCs	Method 624
	SS-16	2246.10	12/12/1996	Aqueous	VOCs	Method 624
#2A	SS-4	2298.12	1/29/1997	Aqueous	VOCs	Method 624
	SS-5	2298.14	1/29/1997	Aqueous	VOCs	Method 624
	SS-15	2298.09	1/29/1997	Aqueous	VOCs	Method 624
	SS-16	2298.10	1/29/1997	Aqueous	VOCs	Method 624
#2B	SS-4	2361.12	2/26/1997	Aqueous	VOCs	Method 624
	SS-5	2361.13	2/26/1997	Aqueous	VOCs	Method 624
	SS-15	2361.09	2/26/1997	Aqueous	VOCs	Method 624
	SS-16	2361.10	2/26/1997	Aqueous	VOCs	Method 624
#2C	SS-4	2375.12	3/10/1997	Aqueous	VOCs	Method 624
	SS-5	2375.13	3/10/1997	Aqueous	VOCs	Method 624
	SS-15	2375.09	3/10/1997	Aqueous	VOCs	Method 624
	SS-16	2375.10	3/10/1997	Aqueous	VOCs	Method 624
#3	SS-4	2439.12	4/8/1997	Aqueous	VOCs	Method 624
	SS-5	2439.13	4/8/1997	Aqueous	VOCs	Method 624
	SS-15	2439.09	4/8/1997	Aqueous	VOCs	Method 624
	SS-16	2439.10	4/8/1997	Aqueous	VOCs	Method 624
#4	SS-4	2810.12	7/17/1997	Aqueous	VOCs	Method 624
	SS-5	2810.13	7/17/1997	Aqueous	VOCs	Method 624
	SS-15	2810.09	7/17/1997	Aqueous	VOCs	Method 624
	SS-16	2810.10	7/17/1997	Aqueous	VOCs	Method 624

Notes:
VOCs = Volatile Organic Compounds
Pest/PCBs = Pesticides/Polychlorinated Biphenyls

Table 4-3
Surface Water Sampling Summary
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#5	SS-4	3121.12	10/30/1997	Aqueous	VOCs	Method 624
	SS-5	3121.13	10/30/1997	Aqueous	VOCs	Method 624
	SS-15	3121.09	10/30/1997	Aqueous	VOCs	Method 624
	SS-16	3121.10	10/30/1997	Aqueous	VOCs	Method 624
#6	SS-4	3331.12	2/10/1998	Aqueous	VOCs	Method 624
	SS-5	3331.13	2/10/1998	Aqueous	VOCs	Method 624
	SS-15	3331.09	2/10/1998	Aqueous	VOCs	Method 624
	SS-16	3331.10	2/10/1998	Aqueous	VOCs	Method 624
#7	SS-4	3499.12	4/21/1998	Aqueous	VOCs	Method 624
	SS-5	3499.13	4/21/1998	Aqueous	VOCs	Method 624
	SS-15	3499.09	4/21/1998	Aqueous	VOCs	Method 624
	SS-16	3499.10	4/21/1998	Aqueous	VOCs	Method 624
#8	SS-4	3816.12	8/19/1998	Aqueous	VOCs	Method 624
	SS-5	3816.11	8/19/1998	Aqueous	VOCs	Method 624
	SS-15	3816.09	8/19/1998	Aqueous	VOCs	Method 624
	SS-16	3816.10	8/19/1998	Aqueous	VOCs	Method 624
#9	SS-4	4069.09	11/17/1998	Aqueous	VOCs	Method 624
	SS-5	4060.10	11/17/1998	Aqueous	VOCs	Method 624
	SS-16	4069.06	11/17/1998	Aqueous	VOCs	Method 624
	SS-15	4069.08	11/18/1998	Aqueous	VOCs	Method 624
#10	SS-4	4300.12	2/25/1999	Aqueous	VOCs	Method 624
	SS-5	4300.13	2/25/1999	Aqueous	VOCs	Method 624
	SS-15	4300.09	2/25/1999	Aqueous	VOCs	Method 624
	SS-16	4300.10	2/25/1999	Aqueous	VOCs	Method 624
#11	SS-4	4579.14	6/29/1999	Aqueous	VOCs	Method 624
	SS-5	4579.15	6/29/1999	Aqueous	VOCs	Method 624
	SS-15	4579.11	6/29/1999	Aqueous	VOCs	Method 624
	SS-16	4579.12	6/29/1999	Aqueous	VOCs	Method 624
#12	SS-4	4806.05	9/22/1999	Aqueous	VOCs	Method 624
	SS-5	4806.06	9/22/1999	Aqueous	VOCs	Method 624
	SS-15	4802.11	9/21/1999	Aqueous	VOCs	Method 624
	SS-16	4806.03	9/21/1999	Aqueous	VOCs	Method 624

Notes:
VOCs = Volatile Organic Compounds
Pest/PCBs = Pesticides/Polychlorinated Biphenyls

Table 4-3
Surface Water Sampling Summary
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#13	SS-4	4997.10	12/8/1999	Aqueous	VOCs	Method 624
	SS-5	4997.11	12/8/1999	Aqueous	VOCs	Method 624
	SS-16	4997.12	12/8/1999	Aqueous	VOCs	Method 624
	SS-15	4997.17	12/8/1999	Aqueous	VOCs	Method 624
#14	SS-4	5211.10	3/1/2000	Aqueous	VOCs	Method 624
	SS-5	5211.11	3/1/2000	Aqueous	VOCs	Method 624
	SS-16	5211.13	3/1/2000	Aqueous	VOCs	Method 624
	SS-15	5211.17	3/1/2000	Aqueous	VOCs	Method 624
#15	SS-4	5468.16	6/12/2000	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-5	5468.15	6/12/2000	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-15	5468.12	6/12/2000	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-16	5468.14	6/12/2000	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
#16	SS-4	5658.16	8/24/2000	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-5	5658.15	8/24/2000	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-15	5658.12	8/24/2000	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-16	5658.14	8/24/2000	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
#17	SS-4	5868.16	11/20/2000	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-5	5868.15	11/20/2000	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-15	5868.12	11/20/2000	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-16	5868.14	11/20/2000	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
#18	SS-4	1310	3/8/2001	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-5	1309	3/8/2001	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-15	962	2/21/2001	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-16	963	2/21/2001	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
#19	SS-4	16120.16	5/16/2001	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-5	16120.15	5/16/2001	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-15	16120.12	5/16/2001	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-16	16120.14	5/16/2001	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
#20	SS-4	16449.14	9/25/2001	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-5	16449.16	9/25/2001	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-15	16449.08	9/25/2001	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-16	16449.15	9/25/2001	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624

Notes:
VOCs = Volatile Organic Compounds
Pest/PCBs = Pesticides/Polychlorinated Biphenyls

Table 4-3
Surface Water Sampling Summary
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#21	SS-4	16579.19	11/14/2001	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-5	16579.20	11/14/2001	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-15	16579.12	11/14/2001	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-16	16579.15	11/14/2001	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
#22	SS-4	2008619	2/11/2002	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-5	2008620	2/11/2002	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-15	2008612	2/11/2002	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-16	2008615	2/11/2002	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
#23	SS-4	2037619	6/18/2002	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-5	2037620	6/18/2002	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-15	2037611	6/18/2002	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-16	2037615	6/18/2002	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
#24	SS-4	2066610	9/18/2002	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-5	2066622	9/18/2002	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-15	2066607	9/18/2002	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-16	2066623	9/18/2002	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
#25	SS-4	2078012	11/5/2002	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-5	2078014	11/4/2002	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-15	2078707	11/5/2002	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-16	2078710	11/5/2002	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
#26	SS-4	3011817	3/13/2003	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-5	3011818	3/13/2003	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-16	3011813	3/13/2003	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-15	3013404	3/24/2003	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
#27	SS-4	3024716	5/21/2003	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-5	3024715	5/21/2003	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-15	3024712	5/21/2003	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-16	3024714	5/21/2003	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
#28	SS-4	3059215	9/17/2003	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-5	3059216	9/17/2003	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-16	3059217	9/17/2003	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-15	3059220	9/17/2003	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624

Notes:
VOCs = Volatile Organic Compounds
Pest/PCBs = Pesticides/Polychlorinated Biphenyls

Table 4-3
Surface Water Sampling Summary
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#29	SS-4	3070015	11/4/2003	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-5	3070016	11/4/2003	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-16	3070017	11/4/2003	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-15	3070020	11/4/2003	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
#30	SS-4	4018215	3/17/2004	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-5	4018216	3/17/2004	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-16	4018217	3/17/2004	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-15	4018220	3/17/2004	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
#31	SS-4	4050015	6/29/2004	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-5	4050016	6/29/2004	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-16	4050017	6/29/2004	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-15	4050020	6/29/2004	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
#32	SS-4	4063215	8/26/2004	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-5	4063216	8/26/2004	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-16	4063217	8/26/2004	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-15	4063220	8/26/2004	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
#33	SS-5	4080406	11/23/2004	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-15	4080412	11/23/2004	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
#34	SS-5	5011706	3/3/2005	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-15	5011712	3/3/2005	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
#35	SS-5	5011706	6/15/2005	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-15	5011712	6/14/2005	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
#36	SS-5	5046204	9/13/2005	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624
	SS-15	5046006	9/12/2005	Aqueous	Pest/PCBs; VOCs	Methods 608 & 624

Notes:
VOCs = Volatile Organic Compounds
Pest/PCBs = Pesticides/Polychlorinated Biphenyls

Table 5-1

MW10 Groundwater Sampling Results

M-5 Landfill Site

Fort Monmouth, New Jersey

Round	Criterion	Units	#1	#2	#3	#4	#5	#6	#7	#8	#9A	#9B	#10
WELL ID			M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10
ANALYTE / Lab ID			2516.02	2885.04	3116.04	3348.01	3552.01	3784.03	4010.04	4237.03	4416.03	4444.03	4786.08
Date Collected			5/8/1997	8/8/1997	10/29/1997	2/18/1998	5/6/1998	8/4/1998	10/27/1998	2/2/1999	4/13/1999	4/27/1999	9/13/1999
VOCs													
Acetone	6000	ug/L	ND	ND	ND	ND	ND	5.08	9.43	ND	ND	ND	ND
2-Butanone	300	ug/L	ND	ND	ND	ND	ND	ND	4.10	ND	ND	ND	ND
SVOCs													
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND	ND	ND	ND	ND	5.57	ND	ND	ND
Di-n-butylphthalate	700	ug/L	2.51	30.78	2.13	6.20	ND	ND	ND	ND	ND	ND	ND
Pest/PCBs													
4,4'-DDD	.1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE	.1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDT	.1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
alpha-BHC	.02	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
delta-BHC	NLE	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Gamma-BHC	0.20	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	.03	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin ketone	NLE	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
gamma-Chlordane	.5	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor Epoxide	.2	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; Historical Data for rounds 1 through 10 derived from previous RAPR
PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable;
Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-1 (cont'd)
MW10 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#1	#2	#3	#4	#5	#6	#7	#8	#9A	#9B	#10
WELL ID			M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10
Date Collected			5/8/1997	8/8/1997	10/29/1997	2/18/1998	5/6/1998	8/4/1998	10/27/1998	2/2/1999	4/13/1999	4/27/1999	9/13/1999
ANALYTE / Lab ID			2516.02	2885.04	3116.04	3348.01	3552.01	3784.03	4010.04	4237.03	4416.03	4444.03	4786.08
Metals													
Aluminum	200	ug/L	61.7	33.8	105	96	60.1	103	106	ND	43.9	44.5	ND
Antimony	6	ug/L	ND	ND	ND	ND	ND	3.01	5.96	ND	ND	ND	ND
Arsenic	3	ug/L	**3.0**	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2000	ug/L	67.49	ND	78	108	99	26.5	34.4	114	93.2	89.5	40.4
Beryllium	1	ug/L	0.19	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.28	0.560
Calcium	NLE	ug/L	10650	8050	31340	17870	8165	10300	12900	15200	13100	14600	14400
Chromium	70	ug/L	0.7	**76.0**	2.6	ND	ND	3.33	3.98	3.17	4.09	3.51	5.11
Cobalt	NLE	ug/L	ND	ND	ND	ND	ND	ND	0.695	ND	ND	ND	ND
Copper	1300	ug/L	9.0	7.0	11.0	10	10.0	ND	6.27	5.29	22.1	8.55	10.1
Iron	300	ug/L	**4083**	**1680**	**7386**	**4899**	**6027**	**2850**	**3690**	**8760**	**6110**	**4320**	**4330**
Lead	5	ug/L	1.8	1.0	**8.0**	ND	ND	ND	2.45	ND	3.79	ND	ND
Magnesium	NLE	ug/L	10040.00	11160	16140	14860	5989	12500	13400	6920	8050	7990	14600
Manganese	50	ug/L	**87.0**	**59.0**	**200**	**138**	**75**	35.4	47.8	**175**	**135**	**152**	**66.7**
Mercury	2	ug/L	ND	ND	ND	ND	ND	0.19	ND	0.17	ND	ND	ND
Nickel	100	ug/L	ND	ND	1.3	2.3	2.2	ND	1.53	1.81	0.584	1.16	ND
Potassium	NLE	ug/L	9610.0	14410.0	13450	11160	6453	22700	20700	3300	6350	4990	15100
Selenium	40	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	3.91	ND	ND
Silver	40	ug/L	**40.0***	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	50000	ug/L	35250	29150	**82150**	**114800**	39780	23400	29100	42400	35200	39000	47100
Thallium	2	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	NLE	ug/L	ND	ND	ND	ND	2.9	1.51	2.67	1.54	1.49	1.44	1.58
Zinc	2000	ug/L	20.0	4.0	71.0	16	15.5	20.1	85.9	46.7	21.0	18.7	8.68

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; Historical Data for rounds 1 through 10 derived from previous RAPR
PCBs = polychlorinated biphenyls; NLE= No Limit Established; ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb);
NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
*Laboratory contamination.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-1 (cont'd)
MW10 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#11	#12	#13	#14	#15	#16A	#16B	#17	#18	#19	#20	#21	#22
WELL ID			M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10
Date Collected			11/18/1999	3/3/2000	5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001	6/5/2001	9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002
ANALYTE / Lab ID			4955.04	5220.07	5445.04	5644.04	5903.04	778	1600704	16166.04	16407.04	16491.04	2002904	2021904	2059404
VOCs															
1,2-Dichlorobenzene	600	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	600	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	75	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone	NLE	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	6000	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	4	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	70	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	3	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl-tert-Butyl ether	70	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-Xylene	NLE	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
tert-Butyl alcohol	NLE	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1000	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (Total)	1000	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs															
1,2-Dichlorobenzene	600	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	600	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	75	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	100	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	400	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Anthracene	2000	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	**6.34**	ND	ND	ND
Dibenzofuran	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Diethylphthalate	6000	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Di-n-butylphthalate	700	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Di-n-octylphthalate	100	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	300	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Fluorene	300	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Naphthalene	300	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	10	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Phenol	2000	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Pyrene	200	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Pest/PCBs															
4,4'-DDD	.1	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE	.1	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	0.003	ND	ND	ND
4,4'-DDT	.1	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
alpha-BHC	.02	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
delta-BHC	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Dieldrin	.03	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Endrin ketone	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
gamma-Chlordane	.5	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	0.003	ND	ND	ND
Heptachlor Epoxide	.2	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable;
Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-1 (cont'd)
MW10 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#11	#12	#13	#14	#15	#16A	#16B	#17	#18	#19	#20	#21	#22
WELL ID			M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10
Date Collected			11/18/1999	3/3/2000	5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001	6/5/2001	9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002
ANALYTE / Lab ID			4955.04	5220.07	5445.04	5644.04	5903.04	778	1600704	16166.04	16407.04	16491.04	2002904	2021904	2059404
Metals															
Aluminum	200	ug/L	21.4	**404**	**429**	**259**	86.1	NA	80.0	ND	ND	ND	25.5	79.8	**246**
Antimony	6	ug/L	4.19	ND	2.86	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Arsenic	3	ug/L	ND	ND	ND	ND	ND	NA	ND	2.93	**3.72**	ND	2.47	ND	ND
Barium	2000	ug/L	41.7	145	60.9	86.0	45.9	NA	189	97.5	28.5	553	181	152	25.5
Cadmium	4	ug/L	ND	3.12	ND	ND	ND	NA	2.5	1.95	ND	**9.14**	2.81	ND	ND
Calcium	NLE	ug/L	9270	18200	11800	19600	13400	NA	35400	16200	11300	138000	36400	13900	14800
Chromium	70	ug/L	4.68	6.39	8.43	ND	ND	NA	5.8	2.83	3.73	2.30	2.90	3.80	2.05
Cobalt	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	1.95	ND	1.41	ND o	ND o	ND
Copper	1300	ug/L	34.6	7.40	ND	7.39	ND	NA	11.0	16.7	17.1	10.4	5.11	10.1	14.9
Iron	300	ug/L	**5880**	**11700**	**6360**	**5940**	**3250**	NA	**23600**	**14200**	**4130**	**27400**	**14400**	**10000**	**1460**
Lead	5	ug/L	ND	**14.9**	**8.36**	3.56	ND	NA	ND	4.5	ND	3.33	3.42	3.07	ND
Magnesium	NLE	ug/L	11400	12800	9970	9610	9600	NA	27300	14100	14500	14200	30200	14700	14100
Manganese	50	ug/L	33.6	**166**	**86.8**	**218**	**92.2**	NA	**796**	**237**	**76.8**	**1180**	**524**	**112**	**62.3**
Mercury	2	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	0.2	0.1	ND	ND
Nickel	100	ug/L	1.71	2.15	1.62	ND	ND	NA	ND	4.64	ND	9.96	ND	ND	2.21
Potassium	NLE	ug/L	15500	17000	18800	10700	14800	NA	8.25	12300	15400	50600	15900	13600	15300
Selenium	40	ug/L	ND	ND	ND	ND	ND	NA	4.0	7.92	ND	4.58	11.4	8.46	6.97
Silver	40	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	3.32	ND	ND
Sodium	50000	ug/L	22900	44200	30900	49800	29900	NA	**175000**	39400	42300	**996000**	**169000**	49100	**91200**
Vanadium	NLE	ug/L	2.25	5.27	3.99	ND	1.07	NA	ND	1.96	2.38	0.813	ND	2.16	1.57
Zinc	2000	ug/L	43.8	71.6	26.6	27.9	51.9	NA	35.0	55.2	ND	673	33.3	56.8	111

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-1 (cont'd)
MW10 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#23	#24	#25	#26
WELL ID			M5MW10	M5MW10	M-5MW10	M-5MW10
Date Collected			10/28/2002	1/22/2003	4/21/2003	7/30/2003
ANALYTE / Lab ID			2076004	3003204	3018004	3043904
VOCs						
2-Butanone	300	ug/L	ND	ND	ND	ND
Acetone	6000	ug/L	ND	ND	ND	ND
Bromoform	4	ug/L	ND	ND	ND	ND
Chloroform	70	ug/L	ND	ND	ND	ND
cis-l,2-Dichloroethene	10	ug/L	ND	ND	ND	ND
Tetrachloroethene	1	ug/L	ND	ND	ND	ND
Trichloroethene	1	ug/L	ND	ND	ND	ND
Vinyl chloride	5	ug/L	ND	ND	ND	ND
SVOCs						
4-Methylphenol	NLE	ug/L	ND	ND	ND	ND
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND	ND
Metals						
Aluminum	200	ug/L	**281**	**306**	**241**	93.2
Antimony	6	ug/L	ND	5.95	ND	ND
Arsenic	3	ug/L	**4.68**	2.65	ND	ND
Barium	2000	ug/L	66.7	183	172	55.9
Beryllium	1	ug/L	ND	ND	ND	ND
Cadmium	4	ug/L	ND	1.13	1.49	0.545
Calcium	NLE	ug/L	15700	14900	29400	11400
Chromium	70	ug/L	2.45	5.53	1.46	2.23
Cobalt	NLE	ug/L	ND	ND	3.37	ND
Copper	1300	ug/L	10.8	6.26	8.87	3.78
Iron	300	ug/L	**6260**	**17100**	**15400**	**4280**
Lead	5	ug/L	4.45	3.39	2.34	ND
Magnesium	NLE	ug/L	9840	10800	18000	13700
Manganese	50	ug/L	**304**	**252**	**1060**	**106**
Nickel	100	ug/L	ND	ND	3.59	ND
Potassium	NLE	ug/L	7580	7500	6630	15600
Selenium	40	ug/L	7.86	ND	ND	6.64
Sodium	50000	ug/L	**57600**	43100	**93800**	26100
Vanadium	NLE	ug/L	1.49	2.27	1.39	1.49
Zinc	2000	ug/L	38.2	27.7	99.3	26.8

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds
PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-1 (cont'd)
MW10 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#27	#28	#29	#30	#31	#32	#33	#34
WELL ID			M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10	M5MW10
Date Collected			10/8/2003	1/14/2004	5/13/2004	8/20/2004	12/16/2004	3/15/2005	6/3/2005	9/16/2005
ANALYTE / Lab ID			3063804	4002904	4035904	4061404	4084603	5015404	5028404	5047303
VOCs										
2-Butanone	300	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	6000	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	4	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	70	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
cis-l,2-Dichloroethene	10	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	5	ug/L	ND	ND	ND	ND	ND	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb);
Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-2

MW11 Groundwater Sampling Results

M-5 Landfill Site

Fort Monmouth, New Jersey

Round	Criterion	Units	#1	#2	#3	#4	#5	#6	#7	#8	#9A	#9B	#10
WELL ID			M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11
ANALYTE / Lab ID			2516.01	2885.03	3116.03	3348.02	3552.02	3784.04	4010.03	4237.04	4416.04	4444.04	4786.07
Date Collected			5/8/1997	8/8/1997	10/29/1997	2/28/1998	5/6/1998	8/4/1998	10/27/1998	2/2/1999	4/13/1999	4/27/1999	9/13/1999
VOCs													
Acetone	6000	ug/L	ND	ND	ND	ND	ND	9.43	2.91	ND	ND	ND	ND
2-Butanone	300	ug/L	ND	ND	ND	ND	ND	2.92	ND	ND	ND	ND	ND
Tetrachloroethene	1	ug/1	**62.85**	**57.74**	**64.96**	**39.33**	**24.39**	**18.37**	**52.64**	**5.16**	**33.38**	**12.84**	**49.25**
SVOCs													
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND	ND	ND	ND	**5.28**	ND	ND	ND	ND
Di-n-butylphthalate	700	ug/L	3.25	13.68	4.75	10.05	ND	ND	ND	ND	ND	ND	ND
Pest/PCBs													
4,4'-DDD	.1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE	.1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDT	.1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
alpha-BHC	.02	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
delta-BHC	NLE	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Gamma-BHC	0.20	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	.03	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin ketone	NLE	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
gamma-Chlordane	.5	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor Epoxide	.2	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; Historical Data for rounds 1 through 10 derived from previous RAPR
PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable;
Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-2 (cont'd)
MW11 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#1	#2	#3	#4	#5	#6	#7	#8	#9A	#9B	#10
WELL ID			M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11
ANALYTE / Lab ID			2516.01	2885.03	3116.03	3348.02	3552.02	3784.04	4010.03	4237.04	4416.04	4444.04	4786.07
Date Collected			5/8/1997	8/8/1997	10/29/1997	2/28/1998	5/6/1998	8/4/1998	10/27/1998	2/2/1999	4/13/1999	4/27/1999	9/13/1999
Metals													
Aluminum	200	ug/L	76.7	55.1	**669**	**222**	ND	**4570**	78.8	**267**	92.9	92.0	ND
Arsenic	3	ug/L	**3.0**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	2000	ug/L	12.23	ND	13.4	12	10.4	18.7	9.02	19.1	9.95	8.41	11.0
Beryllium	1	ug/L	0.16	0.14	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	ug/L	ND	ND	ND	ND	1.0	1.35	ND	ND	ND	1.74	0.556
Calcium	NLE	ug/L	11750	8730	10060	10710	8788	19500	9090	14800	11700	11000	14100
Chromium	70	ug/L	0.5	**73.0**	5.4	ND	ND	16.5	ND	3.34	1.72	1.39	2.11
Cobalt	NLE	ug/L	20.0	ND	1.1	ND	ND	1.44	ND	ND	ND	0.870	0.648
Copper	1300	ug/L	4.0	4.0	16.0	17	6.8	3.37	7.86	ND	8.28	5.55	4.28
Iron	300	ug/L	ND	110	**1551**	**305**	58	**1500**	184	**1670**	227	198	**680**
Lead	5	ug/L	ND	ND	**8.0**	ND	ND	2.38	ND	ND	ND	ND	ND
Magnesium	NLE	ug/L	4580	3630	3380	2990	2781	6090	2960	3930	3300	3660	7840
Manganese	50	ug/L	45.0	**66.0**	12.7	32	6.4	16.9	7.74	44.4	9.71	18.0	16.5
Mercury	2	ug/L	ND	ND	ND	ND	ND	ND	ND	0.18	ND	ND	ND
Nickel	100	ug/L	ND	ND	3.9	4.9	4.3	3.19	3.87	2.94	2.62	2.28	2.62
Potassium	NLE	ug/L	2250	2320	6120	5260	4573	33000	3480	8340	4340	2670	5420
Selenium	40	ug/L	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	40	ug/L	39.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	50000	ug/L	19470	20630	19220	14550	14570	20800	10200	22300	12400	15100	45900
Vanadium	NLE	ug/L	ND	ND	1.0	ND	1.2	1.62	ND	1.75	ND	4.05	ND
Zinc	2000	ug/L	237	165	168	172	170	149	96.1	118	126	142	163

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; Historical Data for rounds 1 through 10 derived from previous RAPR
PCBs = polychlorinated biphenyls; NLE= No Limit Established; ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb);
NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-2 (cont'd)

MW11 Groundwater Sampling Results

M-5 Landfill Site

Fort Monmouth, New Jersey

Round	Criterion	Units	#11	#12	#13	#14	#15	#16A	#16B	#17	#18	#19	#20	#21	#22
WELL ID			M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11
Date Collected			11/18/1999	3/3/2000	5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001	6/5/2001	9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002
ANALYTE / Lab ID			4955.05	5220.06	5445.05	5644.05	5903.05	779	1600705	16166.05	16407.05	16491.05	2002905	2021905	2059405
VOCs															
2-Butanone	300	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**370.61D**
Acetone	6000	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	NLE	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	9.00
cis-1,2-Dichloroethene	10	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	6.64	ND	ND	ND	7.39
Methyl-tert-Butyl ether	70	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.90
Tetrachloroethene	1	ug/L	**74.12**	**30.62**	**13.38**	**18.79**	**18.86**	**12.42**	**11.01**	**11.27**	**6.11**	**15.13**	**19.04**	**14.43**	**8.90**
Trichloroethene	1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	**1.28**	**1.05**	**1.40**	ND	ND
SVOCs															
1,2-Dichlorobenzene	600	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	600	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	75	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	100	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	400	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Anthracene	2000	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Diethylphthalate	6000	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Di-n-butylphthalate	700	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Di-n-octylphthalate	100	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	300	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Fluorene	300	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Naphthalene	300	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	10	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Phenol	2000	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Pyrene	200	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Pest/PCBs															
4,4'-DDD	.1	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE	.1	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
4,4'-DDT	.1	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
alpha-BHC	.02	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
delta-BHC	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Dieldrin	.03	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Endrin ketone	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
gamma-Chlordane	.5	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	0.002	ND	ND	ND
Heptachlor Epoxide	.2	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable;
Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-2 (cont'd)
MW11 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#11	#12	#13	#14	#15	#16A	#16B	#17	#18	#19	#20	#21	#22
WELL ID			M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11
Date Collected			11/18/1999	3/3/2000	5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001	6/5/2001	9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002
ANALYTE / Lab ID			4955.05	5220.06	5445.05	5644.05	5903.05	779	1600705	16166.05	16470.05	16491.05	2002904	2021904	2059404
Metals															
Aluminum	200	ug/L	ND	189	76.2	**350**	**279**	NA	**240**	ND	ND	75.2	31.1	48.1	137
Antimony	6	ug/L	ND	ND	ND	3.36	ND	NA	ND	ND	ND	ND	ND	3.21	ND
Arsenic	3	ug/L	ND	ND	ND	ND	**3.14**	NA	ND	**5.06**	**11.8**	**7.87**	**4.10**	**4.89**	**9.25**
Barium	2000	ug/L	0.649	12.2	5.70	18.9	14.4	NA	13.0	14.2	6.55	10.2	11.0	9.09	5.82
Cadmium	4	ug/L	ND	ND	ND	ND	ND	NA	0.7	1.2	1.52	**5.95**	**10.8**	ND	ND
Calcium	NLE	ug/L	ND	13900	31500	25400	23500	NA	17600	26200	38600	35000	27700	17800	24600
Chromium	70	ug/L	ND	ND	2.72	ND	4.63	NA	3.1	1.46	2.04	2.45	2.04	2.03	2.82
Cobalt	NLE	ug/L	ND	ND	ND	ND	0.931	NA	ND	2.49	2.23	1.73	1.26	0.737	1.45
Copper	1300	ug/L	8.54	ND	ND	108	ND	NA	8.0	8.21	68.4	2.70	2.25	3.17	ND
Iron	300	ug/L	30.5	**330**	**657**	**438**	**5580**	NA	**35200**	**6590**	**31100**	**18500**	**10400**	**7850**	**18000**
Lead	5	ug/L	ND	ND	ND	1.34	ND	NA	ND	ND	**6.36**	ND	ND	ND	ND
Magnesium	NLE	ug/L	ND	4080	5370	7410	6550	NA	41600	8010	14600	11900	8130	6420	8930
Manganese	50	ug/L	ND	9.56	10.1	38.8	24.4	NA	17.7	31.9	**93.3**	**62.7**	**174**	34.2	**61.3**
Mercury	2	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	0.2	0.1	ND	ND	ND
Nickel	100	ug/L	ND	3.00	3.01	6.05	ND	NA	9.0	6.71	4.10	2.17	3.85	1.75	ND
Potassium	NLE	ug/L	178	3110	9970	6940	4170	NA	24900	2920	2070	3840	3200	1710	1840
Selenium	40	ug/L	ND	ND	ND	ND	ND	NA	ND	8.39	ND	ND	7.05	6.39	7.88
Sodium	50000	ug/L	2150	8380	14000	18900	16100	NA	14300	20000	35300	37100	31700	27500	25000
Vanadium	NLE	ug/L	ND	2.58	1.27	ND	2.39	NA	2.0	2.21	4.87	2.85	1.91	2.37	4.84
Zinc	2000	ug/L	ND	147	56.5	203	111	NA	153	225	264	181	218	116	17.3

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-2 (cont'd)
MW11 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#23	#24	#25	#26
WELL ID			M5MW11	M5MW11	M5MW11	M5MW11
Date Collected			10/28/2002	1/22/2003	4/21/2003	7/30/2003
ANALYTE / Lab ID			2076005	3003205	3018005	3043905
VOCs						
2-Butanone	300	ug/L	ND	ND	ND	ND
Acetone	6000	ug/L	ND	ND	ND	ND
Bromoform	4	ug/L	ND	ND	ND	ND
Chloroform	70	ug/L	ND	ND	ND	ND
cis-l,2-Dichloroethene	10	ug/L	ND	ND	ND	ND
Tetrachloroethene	1	ug/L	**8.14**	**5.2**	**4.5**	**5.74**
Trichloroethene	1	ug/L	ND	**1.06**	ND	**1.42**
Vinyl chloride	5	ug/L	ND	ND	ND	ND
SVOCs						
4-Methylphenol	NLE	ug/L	ND	ND	ND	ND
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND	ND
Metals						
Aluminum	200	ug/L	111	**202**	185	**240**
Antimony	6	ug/L	2.23	ND	ND	ND
Arsenic	3	ug/L	**3.04**	2.6	2.8	**4.12**
Barium	2000	ug/L	15.4	5.08	6.33	8.91
Beryllium	1	ug/L	ND	ND	ND	ND
Cadmium	4	ug/L	ND	ND	0.51	0.759
Calcium	NLE	ug/L	17600	11800	14400	20500
Chromium	70	ug/L	2.26	2.49	1.75	3.03
Cobalt	NLE	ug/L	ND	ND	ND	2.03
Copper	1300	ug/L	ND	ND	1.15	1.54
Iron	300	ug/L	**2240**	**5250**	**4000**	**11100**
Lead	5	ug/L	1.84	ND	ND	0.804
Magnesium	NLE	ug/L	4130	3610	4890	7710
Manganese	50	ug/L	15.8	15.6	22.3	**69**
Nickel	100	ug/L	ND	ND	1.27	2.78
Potassium	NLE	ug/L	3740	1950	1840	3690
Selenium	40	ug/L	5.26	ND	ND	ND
Sodium	50000	ug/L	13000	13400	16600	47300
Vanadium	NLE	ug/L	2.03	8.52	3.92	8.22
Zinc	2000	ug/L	79.8	75.7	101	111

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds
PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-2 (cont'd)
MW11 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#27	#28	#29	#30	#31	#32	#33	#34
WELL ID			M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11	M5MW11
Date Collected			10/8/2003	1/14/2004	5/13/2004	8/20/2004	12/16/2004	3/14/2005	6/3/2005	9/16/2005
ANALYTE / Lab ID			3063805	4002905	4035905	4061405	4084604	5015204	5028405	5047304
VOCs										
2-Butanone	300	ug/L	**448.97**	ND	ND	ND	ND	ND	ND	ND
Acetone	6000	ug/L	4.91	ND	ND	ND	ND	ND	ND	ND
Bromoform	4	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	70	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
cis-l,2-Dichloroethene	10	ug/L	5.39	1.56	ND	2.29	ND	0.61	ND	5.66
Tetrachloroethene	1	ug/L	**1.08**	**2.01**	**3.1**	**2.05**	**3.05**	**2.3**	**2.86**	ND
Trichloroethene	1	ug/L	0.88	0.91	**1.2**	ND	ND	ND	ND	ND
Vinyl chloride	5	ug/L	ND	ND	ND	ND	ND	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb);
Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-3

MW12 Groundwater Sampling Results

M-5 Landfill Site

Fort Monmouth, New Jersey

Round	Criterion	Units	#7A	#7B	#8	#9A	#9B	#10
WELL ID			M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12
ANALYTE / Lab ID			2516.01	2885.03	3116.03	3348.02	3552.02	3784.04
Date Collected			10/7/1998	10/21/1998	2/2/1999	4/13/1999	4/27/1999	9/13/1999
VOCs								
Acetone	6000	ug/L	9.00	ND	ND	ND	ND	ND
2-Butanone	300	ug/L	13.66	ND	ND	ND	ND	ND
SVOCs								
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND	ND	ND	ND
Di-n-butylphthalate	700	ug/L	ND	ND	ND	ND	ND	ND
Pest/PCBs								
4,4'-DDD	.1	ug/L	ND	ND	ND	ND	ND	ND
4,4'-DDE	.1	ug/L	ND	ND	ND	ND	ND	ND
4,4'-DDT	.1	ug/L	ND	ND	ND	ND	ND	ND
alpha-BHC	.02	ug/L	ND	ND	ND	ND	ND	ND
delta-BHC	NLE	ug/L	ND	ND	ND	ND	ND	ND
Gamma-BHC	0.20	ug/L	ND	ND	ND	ND	ND	ND
Dieldrin	.03	ug/L	ND	ND	ND	ND	ND	ND
Endrin ketone	NLE	ug/L	ND	ND	ND	ND	ND	ND
gamma-Chlordane	.5	ug/L	ND	ND	ND	ND	ND	ND
Heptachlor Epoxide	.2	ug/L	ND	ND	ND	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; Historical Data for rounds 7 through 10 derived from previous RAPR
PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable;
Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-3 (cont'd)
MW12 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#7A	#7B	#8	#9A	#9B	#10
WELL ID			M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12
ANALYTE / Lab ID			2516.01	2885.03	3116.03	3348.02	3552.02	3784.04
Date Collected			10/7/1998	10/21/1998	2/2/1999	4/13/1999	4/27/1999	9/13/1999
Metals								
Aluminum	200	ug/L	**3310**	**359**	**1910**	**1880**	**6720**	119
Arsenic	3	ug/L	**10**	**3.22**	ND	ND	**3.54**	ND
Barium	2000	ug/L	224	157.0	112	103	67.8	243
Cadmium	4	ug/L	ND	ND	1.37	0.954	3.97	0.788
Calcium	NLE	ug/L	111000	98000	28200	17400	14300	152000
Chromium	70	ug/L	28.5	5.87	13.2	14.8	31.6	13.3
Cobalt	NLE	ug/L	1.5	ND	0.638	1.25	2.88	ND
Copper	1300	ug/L	40	ND	ND	11.1	11.0	ND
Iron	300	ug/L	**51400**	**28400**	**26600**	**29500**	**24600**	**36500**
Lead	5	ug/L	**7.0**	ND	**5.45**	**7.66**	**16.2**	ND
Magnesium	NLE	ug/L	168000	145000	26300	20500	20200	284000
Manganese	50	ug/L	**1340**	**853**	**1030**	**263**	**84.0**	**566**
Mercury	2	ug/L	0.3	ND	0.16	ND	ND	ND
Nickel	100	ug/L	5.7	ND	8.54	3.79	4.43	ND
Potassium	NLE	ug/L	65300	42100	15900	18300	22600	89200
Sodium	50000	ug/L	**1860000**	**1240000**	**235000**	**75300**	**65000**	**2040000**
Vanadium	NLE	ug/L	14	2.69	4.17	7.14	17.2	2.12
Zinc	2000	ug/L	116	ND	169	178	119	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; Historical Data for rounds 7 through 10 derived from previous RAPR
PCBs = polychlorinated biphenyls; NLE= No Limit Established; ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb);
NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-3 (cont'd)

MW12 Groundwater Sampling Results

M-5 Landfill Site

Fort Monmouth, New Jersey

Round	Criterion	Units	#11	#12	#13	#14	#15	#16A	#16B	#17	#18	#19	#20	#21	#22
WELL ID			M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12
Date Collected			11/18/1999	3/6/2000	5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001	6/5/2001	9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002
ANALYTE / Lab ID			4955.06	5222.02	5445.06	5644.06	5903.06	780	1600706	16166.06	16407.06	16491.06	2002906	2021906	2059406
VOCs															
2-Butanone	300	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	6000	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	NLE	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	10	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl-tert-Butyl ether	70	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs															
1,2-Dichlorobenzene	600	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	600	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	75	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	100	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	400	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Anthracene	2000	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND	ND	1.87	NA	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Diethylphthalate	6000	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Di-n-butylphthalate	700	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Di-n-octylphthalate	100	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	300	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Fluorene	300	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Naphthalene	300	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	10	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Phenol	2000	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Pyrene	200	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Pest/PCBs															
4,4'-DDD	.1	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE	.1	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
4,4'-DDT	.1	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
alpha-BHC	.02	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
delta-BHC	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Dieldrin	.03	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Endrin ketone	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
gamma-Chlordane	.5	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Heptachlor Epoxide	.2	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable;
Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-3 (cont'd)
MW12 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#11	#12	#13	#14	#15	#16A	#16B	#17	#18	#19	#20	#21	#22
WELL ID			M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12
Date Collected			11/18/1999	3/6/2000	5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001	6/5/2001	9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002
ANALYTE / Lab ID			4955.06	5222.02	5445.06	5644.06	5903.06	780	1600706	16166.06	16407.06	16491.06	2002906	2021906	2059406
Metals															
Aluminum	200	ug/L	80.9	**1060**	**422**	**503**	189	NA	170	ND	**732**	24.6	192	**481**	**1140**
Antimony	6	ug/L	2.97	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Arsenic	3	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	2.70	**3.05**
Barium	2000	ug/L	17.1	21.5	4.04	15.6	11.3	NA	21.1	17	39.8	92.0	31.4	34.0	24.8
Cadmium	4	ug/L	ND	ND	ND	ND	ND	NA	1.4	0.782	0.651	**9.98**	0.710	ND	ND
Calcium	NLE	ug/L	22300	22200	16500	16600	13400	NA	30300	17300	36700	66500	38200	20700	23700
Chromium	70	ug/L	6.06	17.1	15.9	ND	1.88	NA	8.2	2.75	8.87	2.28	5.28	6.75	9.97
Cobalt	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	1.76	1.01	ND	ND	ND	0.774
Copper	1300	ug/L	19.2	3.71	82.6	ND	ND	NA	6.0	3.89	18.0	3.42	155	5.94	7.24
Iron	300	ug/L	**7020**	**13000**	**11400**	**9060**	**6620**	NA	**15100**	**8030**	**19900**	**24900**	**15600**	**16500**	**13800**
Lead	5	ug/L	ND	**6.78**	**19.3**	1.83	4.85	NA	ND	ND	4.43	1.30	**16.8**	2.64	2.40
Magnesium	NLE	ug/L	32800	31800	26200	26300	22900	NA	41100	28900	55000	78500	52800	32200	36300
Manganese	50	ug/L	**76.9**	**109**	**67.9**	**97.0**	43.8	NA	**181**	**50.8**	**155**	**945**	**328**	**72.4**	**78.1**
Mercury	2	ug/L	0.1	0.2	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Nickel	100	ug/L	0.594	6.29	5.28	ND	ND	NA	ND	3.31	ND	ND	7.06	ND	ND
Potassium	NLE	ug/L	23800	20000	20500	20800	21100	NA	22600	21300	30400	35000	29400	21700	26000
Selenium	40	ug/L	ND	3.37	ND	ND	ND	NA	ND	13.6	ND	ND	13.1	9.60	13.3
Silver	40	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	1.42	ND	ND
Sodium	50000	ug/L	**171000**	**77000**	**71800**	**72600**	46000	NA	**114000**	**57000**	**149000**	**341000**	**169000**	**64000**	**82500**
Thallium	2	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	**5.53**	ND	ND
Vanadium	NLE	ug/L	1.63	7.60	3.23	ND	1.84	NA	1.2	1.48	5.66	1.14	1.16	4.31	5.77
Zinc	2000	ug/L	18.9	65.6	136	26.2	60.7	NA	16.0	41	50.5	35.6	183	15.3	35.8

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-3 (cont'd)
MW12 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#23	#24	#25	#26
WELL ID			M5MW12	M5MW12	M5MW12	M5MW12
Date Collected			10/28/2002	1/22/2003	4/21/2003	7/30/2003
ANALYTE / Lab ID			2076006	3003206	3018006	3043906
VOCs						
2-Butanone	300	ug/L	ND	ND	ND	ND
Acetone	6000	ug/L	ND	ND	ND	ND
Bromoform	4	ug/L	ND	ND	ND	ND
Chloroform	70	ug/L	ND	ND	ND	ND
cis-l,2-Dichloroethene	10	ug/L	ND	ND	ND	ND
Tetrachloroethene	1	ug/L	ND	ND	ND	ND
Trichloroethene	1	ug/L	ND	ND	ND	ND
Vinyl chloride	5	ug/L	ND	ND	ND	ND
SVOCs						
4-Methylphenol	NLE	ug/L	ND	ND	ND	ND
Bis(2-ethylhexy l)phthalate	3	ug/L	1.3	1.3	ND	ND
Metals						
Aluminum	200	ug/L	90.9	**830**	**639**	**1310**
Antimony	6	ug/L	ND	ND	ND	ND
Arsenic	3	ug/L	ND	ND	ND	ND
Barium	2000	ug/L	11.6	24.6	29.3	56.8
Beryllium	1	ug/L	ND	ND	ND	0.0923
Cadmium	4	ug/L	ND	0.646	1.07	1.01
Calcium	NLE	ug/L	18600	18900	20100	22700
Chromium	70	ug/L	1.95	7.71	6.11	13.3
Cobalt	NLE	ug/L	ND	ND	ND	ND
Copper	1300	ug/L	5.87	13.3	7.5	3.01
Iron	300	ug/L	**6090**	**10700**	**13000**	**19500**
Lead	5	ug/L	2.12	4.16	1.72	2.15
Magnesium	NLE	ug/L	27700	25900	26300	32600
Manganese	50	ug/L	**54.6**	45.9	**67.1**	**81.1**
Nickel	100	ug/L	ND	ND	ND	1.47
Potassium	NLE	ug/L	20700	20100	18600	23700
Selenium	40	ug/L	10.6	4.1	ND	ND
Sodium	50000	ug/L	61100	53500	49400	76200
Vanadium	NLE	ug/L	1.35	5.02	3.7	7.58
Zinc	2000	ug/L	5.69	31.3	16.4	36.5

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds
PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-3 (cont'd)
MW12 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#27	#28	#29	#30	#31	#32	#33	#34
WELL ID			M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12	M5MW12
Date Collected			10/8/2003	1/14/2004	5/13/2004	8/20/2004	12/16/2004	3/14/2005	6/3/2005	9/16/2005
ANALYTE / Lab ID			3063806	4002906	4035906	4061406	4084604	5015204	5028406	5047305
VOCs										
2-Butanone	300	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	6000	ug/L	ND	ND	ND	3.0	ND	ND	ND	ND
Bromoform	4	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	70	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
cis-l,2-Dichloroethene	10	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	5	ug/L	ND	ND	ND	ND	ND	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb);
Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-4
MW13 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#7A	#7B	#8	#9A	#9B	#10
WELL ID			M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13
ANALYTE / Lab ID			3967.04	4001.03	4237.06	4416.06	4444.06	4786.05
Date Collected			10/7/1998	10/23/1998	2/2/1999	4/13/1999	4/27/1999	9/13/1999
VOCs								
Acetone	6000	ug/L	6.34	ND	ND	ND	ND	ND
2-Butanone	300	ug/L	9.08	ND	ND	ND	ND	ND
SVOCs								
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND	ND	ND	ND
Di-n-butylphthalate	700	ug/L	ND	ND	ND	ND	ND	ND
Pest/PCBs								
4,4'-DDD	.1	ug/L	ND	ND	ND	ND	ND	ND
4,4'-DDE	.1	ug/L	ND	ND	ND	ND	ND	ND
4,4'-DDT	.1	ug/L	ND	ND	ND	ND	ND	ND
alpha-BHC	.02	ug/L	ND	ND	ND	ND	ND	ND
delta-BHC	NLE	ug/L	ND	ND	ND	ND	ND	ND
Gamma-BHC	0.20	ug/L	ND	ND	ND	ND	ND	ND
Dieldrin	.03	ug/L	ND	ND	ND	ND	ND	ND
Endrin ketone	NLE	ug/L	ND	ND	ND	ND	ND	ND
gamma-Chlordane	.5	ug/L	ND	ND	ND	ND	ND	ND
Heptachlor Epoxide	.2	ug/L	ND	ND	ND	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; Historical Data for rounds 7 through 10 derived from previous RAPR
PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable;
Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-4 (cont'd)
MW13 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#7A	#7B	#8	#9A	#9B	#10
WELL ID			M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13
ANALYTE / Lab ID			3967.04	4001.03	4237.06	4416.06	4444.06	4786.05
Date Collected			10/7/1998	10/23/1998	2/2/1999	4/13/1999	4/27/1999	9/13/1999
Metals								
Aluminum	200	ug/L	**1450**	**287**	**244**	64.8	**1150**	**225**
Antimony	6	ug/L	ND	ND	ND	ND	ND	2.61
Arsenic	3	ug/L	**4.0**	ND	ND	ND	ND	ND
Barium	2000	ug/L	160	196	108	24.2	48.3	193
Cadmium	4	ug/L	0.7	ND	0.886	ND	2.06	0.716
Calcium	NLE	ug/L	64100	67000	13700	35100	15600	130000
Chromium	70	ug/L	12.1	5.25	5.80	3.40	10.6	14.1
Cobalt	NLE	ug/L	5.9	ND	ND	ND	1.27	0.576
Copper	1300	ug/L	5	ND	5.72	5.00	4.27	7.59
Iron	300	ug/L	**21800**	**11700**	**9810**	**1170**	**8350**	**9520**
Lead	5	ug/L	ND	ND	**17.6**	2.37	3.60	ND
Magnesium	NLE	ug/L	113000	112000	9990	17700	12200	324000
Manganese	50	ug/L	**211**	**203**	**137**	18.4	**131**	**203**
Mercury	2	ug/L	ND	ND	0.17	ND	ND	ND
Nickel	100	ug/L	11.8	ND	3.35	0.743	1.05	2.75
Potassium	NLE	ug/L	55800	46400	5090	13100	8650	114000
Sodium	50000	ug/L	**1160000**	**1030000**	**80100**	7630	**62700**	**2690000**
Vanadium	NLE	ug/L	8	2.48	3.05	ND	5.05	2.51
Zinc	2000	ug/L	106	ND	126	14.6	43.9	12.2

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; Historical Data for rounds 7 through 10 derived from previous RAPR
PCBs = polychlorinated biphenyls; NLE= No Limit Established; ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb);
NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-4 (cont'd)

MW13 Groundwater Sampling Results

M-5 Landfill Site

Fort Monmouth, New Jersey

Round	Criterion	Units	#11	#12	#13	#14	#15	#16A	#16B	#17	#18	#19	#20	#21	#22
WELL ID			M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13
Date Collected			11/18/1999	3/6/2000	5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001	6/5/2001	9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002
ANALYTE / Lab ID			4955.07	5222.03	5445.07	5644.07	5903.07	781	1600707	16166.07	16407.07	16491.07	2002907	2021907	2059407
VOCs															
2-Butanone	300	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	6000	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	NLE	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	10	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl-tert-Butyl ether	70	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs															
1,2-Dichlorobenzene	600	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	600	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	75	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	100	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	400	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Anthracene	2000	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Diethylphthalate	6000	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Di-n-butylphthalate	700	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Di-n-octylphthalate	100	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	300	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Fluorene	300	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Naphthalene	300	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	10	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Phenol	2000	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Pyrene	200	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Pest/PCBs															
4,4'-DDD	.1	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE	.1	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	0.003	ND	ND	ND	ND
4,4'-DDT	.1	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
alpha-BHC	.02	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
delta-BHC	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Dieldrin	.03	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Endrin ketone	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
gamma-Chlordane	.5	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	0.004	ND	ND	ND
Heptachlor Epoxide	.2	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable;
Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-4 (cont'd)
MW13 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#11	#12	#13	#14	#15	#16A	#16B	#17	#18	#19	#20	#21	#22
WELL ID			M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13
Date Collected			11/18/1999	3/6/2000	5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001	6/5/2001	9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002
ANALYTE / Lab ID			4955.07	5222.03	5445.07	5644.07	5903.07	781	1600707	16166.07	16407.07	16491.07	2002907	2021907	2059407
Metals															
Aluminum	200	ug/L	**901**	**282**	175	**301**	128	NA	**510**	ND	**711**	16.0	66.5	**606**	179
Antimony	6	ug/L	ND	ND	ND	3.33	ND	NA	ND	ND	ND	ND	ND	ND	ND
Arsenic	3	ug/L	ND	ND	ND	ND	ND	NA	ND	**5.06**	**4.54**	ND	ND	2.99	ND
Barium	2000	ug/L	51.8	220	67.6	65.6	77.5	NA	154	70	71.9	236	216	150	62.7
Cadmium	4	ug/L	0.736	ND	ND	ND	ND	NA	2.2	1.3	0.606	**7.55**	1.02	ND	ND
Calcium	NLE	ug/L	16200	34300	20100	20000	20500	NA	34400	22700	33900	59600	53500	32000	28900
Chromium	70	ug/L	13.4	10.8	7.31	ND	ND	NA	6.7	2.26	10.2	1.84	2.69	6.75	4.33
Cobalt	NLE	ug/L	0.697	ND	ND	ND	ND	NA	ND	1.61	1.27	ND	0.750	0.902	ND
Copper	1300	ug/L	15.2	ND	ND	ND	ND	NA	9.0	2.18	13.3	65.4	5.79	113	19.0
Iron	300	ug/L	**9860**	**26300**	**12900**	**7170**	**16500**	NA	**24200**	**12100**	**17300**	**27000**	**33300**	**25200**	**11900**
Lead	5	ug/L	3.04	3.62	ND	2.49	**11.7**	NA	ND	ND	**5.36**	**284**	1.81	**11.1**	ND
Magnesium	NLE	ug/L	17300	27100	17100	15400	15700	NA	23300	16600	24800	51900	44000	25000	23300
Manganese	50	ug/L	**87.8**	**366**	**173**	**261**	**255**	NA	**717**	**357**	**348**	**880**	**1030**	**391**	**237**
Mercury	2	ug/L	0.1	ND	ND	ND	ND	NA	ND	ND	0.1	ND	ND	ND	0.11
Nickel	100	ug/L	1.80	4.70	1.79	2.11	ND	NA	ND	3.98	ND	ND	ND	3.85	ND
Potassium	NLE	ug/L	15100	15000	11000	8380	10400	NA	68800	8050	14200	21300	16700	12300	14400
Selenium	40	ug/L	3.52	ND	ND	ND	ND	NA	6.0	8.56	ND	ND	14.1	6.94	7.38
Silver	40	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	1.13	ND	ND
Sodium	50000	ug/L	**103000**	**121000**	**88700**	**88900**	**61200**	NA	**149000**	**81400**	**96300**	**331000**	**286000**	**152000**	**108000**
Vanadium	NLE	ug/L	5.69	4.13	2.35	ND	1.42	NA	0.9	1.66	6.50	0.964	ND	4.60	2.01
Zinc	2000	ug/L	33.7	32.8	21.1	30.4	134	NA	10.0	41.4	29.3	80.4	29.0	130	41.1

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-4 (cont'd)
MW13 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#23	#24	#25	#26
WELL ID			M5MW13	M5MW13	M5MW13	M5MW13
Date Collected			10/28/2002	1/22/2003	4/21/2003	7/30/2003
ANALYTE / Lab ID			2076007	3003207	3018007	3043907
VOCs						
2-Butanone	300	ug/L	ND	ND	ND	ND
Acetone	6000	ug/L	ND	2.3	ND	ND
Bromoform	4	ug/L	ND	ND	ND	ND
Chloroform	70	ug/L	ND	ND	ND	ND
cis-l,2-Dichloroethene	10	ug/L	ND	ND	ND	ND
Tetrachloroethene	1	ug/L	ND	ND	ND	ND
Trichloroethene	1	ug/L	ND	ND	ND	ND
Vinyl chloride	5	ug/L	ND	ND	ND	ND
SVOCs						
4-Methylphenol	NLE	ug/L	ND	ND	ND	ND
Bis(2-ethylhexy l)phthalate	3	ug/L	1.45	1.14	ND	ND
Metals						
Aluminum	200	ug/L	132	**246**	152	**449**
Antimony	6	ug/L	ND	ND	ND	ND
Arsenic	3	ug/L	ND	ND	ND	ND
Barium	2000	ug/L	105	132	133	142
Beryllium	1	ug/L	ND	ND	ND	0.375
Cadmium	4	ug/L	ND	1.64	1.54	0.99
Calcium	NLE	ug/L	21700	19100	25800	30300
Chromium	70	ug/L	1.94	3.56	1.64	2.55
Cobalt	NLE	ug/L	ND	0.685	ND	3.91
Copper	1300	ug/L	ND	2.52	ND	4.84
Iron	300	ug/L	**10900**	**29600**	**20900**	**16100**
Lead	5	ug/L	2.02	3.26	ND	ND
Magnesium	NLE	ug/L	15500	11300	15200	3530
Manganese	50	ug/L	**364**	**339**	**415**	**256**
Nickel	100	ug/L	ND	ND	ND	15.4
Potassium	NLE	ug/L	6960	5090	5430	3980
Selenium	40	ug/L	7.1	ND	ND	ND
Sodium	50000	ug/L	**92700**	**67000**	**89600**	**71400**
Vanadium	NLE	ug/L	1.53	3.49	2.06	2.02
Zinc	2000	ug/L	104	20.1	7.67	65

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds
PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-4 (cont'd)
MW13 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#27	#28	#29	#30	#31	#32	#33	#34
WELL ID			M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13	M5MW13
Date Collected			10/8/2003	1/14/2004	5/13/2004	8/20/2004	12/16/2004	3/15/2005	6/3/2005	9/16/2005
ANALYTE / Lab ID			3063807	4002907	4035907	4061407	4084605	5015406	5028407	5047306
VOCs										
2-Butanone	300	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	6000	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	4	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	70	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
cis-l,2-Dichloroethene	10	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	5	ug/L	ND	ND	ND	ND	ND	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb);
Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-5

MW14 Groundwater Sampling Results

M-5 Landfill Site

Fort Monmouth, New Jersey

Round	Criterion	Units	#7A	#7B	#8	#9A	#9B	#10
WELL ID			M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14
ANALYTE / Lab ID			3967.05	4001.04	4237.07*	4416.07	4444.07	4786.04
Date Collected			10/7/1998	10/23/1998	2/2/1999	4/13/1999	4/27/1999	9/13/1999
VOCs								
Acetone	6000	ug/L	3.54	4.87	ND	ND	ND	ND
2-Butanone	300	ug/L	2.97	3.18	ND	ND	ND	ND
SVOCs								
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND	ND	ND	ND
Di-n-butylphthalate	700	ug/L	ND	ND	ND	ND	ND	ND
Pest/PCBs								
4,4'-DDD	.1	ug/L	ND	ND	ND	ND	ND	ND
4,4'-DDE	.1	ug/L	ND	ND	ND	ND	ND	ND
4,4'-DDT	.1	ug/L	ND	ND	ND	ND	ND	ND
alpha-BHC	.02	ug/L	ND	ND	ND	ND	ND	ND
delta-BHC	NLE	ug/L	ND	ND	ND	ND	ND	ND
Gamma-BHC	0.20	ug/L	ND	ND	ND	ND	ND	ND
Dieldrin	.03	ug/L	ND	ND	ND	ND	ND	ND
Endrin ketone	NLE	ug/L	ND	ND	ND	ND	ND	ND
gamma-Chlordane	.5	ug/L	ND	ND	ND	ND	ND	ND
Heptachlor Epoxide	.2	ug/L	ND	ND	ND	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; Historical Data for rounds 7 through 10 derived from previous RAPR
PCBs = polychlorinated biphenyls; NLE= No Limit Established.
*-M2MW14 was resampled on 2/4/99 (Sample #4246.01) because the original pesticide/PCB sample was damaged.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable
Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-5 (cont'd)
MW14 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#7A	#7B	#8	#9A	#9B	#10
WELL ID			M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14
ANALYTE / Lab ID			3967.05	4001.04	4237.07*	4416.07	4444.07	4786.04
Date Collected			10/7/1998	10/23/1998	2/2/1999	4/13/1999	4/27/1999	9/13/1999
Metals								
Aluminum	200	ug/L	**1210**	120	172	**658**	**303**	ND
Barium	2000	ug/L	33.4	23.5	31.2	81.8	33.9	22.4
Cadmium	4	ug/L	0.7	ND	ND	0.670	1.15	0.655
Calcium	NLE	ug/L	38000	34600	36100	16400	39600	41300
Chromium	70	ug/L	10.8	1.16	5.25	9.65	3.37	3.31
Cobalt	NLE	ug/L	2.3	ND	ND	0.662	ND	ND
Copper	1300	ug/L	ND	ND	8.60	7.48	ND	10.5
Iron	300	ug/L	**4740**	**911**	**1910**	**14000**	**2450**	**571**
Lead	5	ug/L	ND	ND	ND	**6.77**	ND	ND
Magnesium	NLE	ug/L	23900	19300	17900	11600	18800	17600
Manganese	50	ug/L	22.1	15.0	20.7	**191**	19.0	16.4
Mercury	2	ug/L	0.2	ND	0.22	ND	ND	ND
Nickel	100	ug/L	2.2	ND	1.96	2.70	ND	ND
Potassium	NLE	ug/L	27000	16200	12900	7220	15100	13300
Sodium	50000	ug/L	45400	8970	9450	**63400**	9170	7290
Thallium	2	ug/L	**5.0**	ND	ND	ND	**3.44**	ND
Vanadium	NLE	ug/L	5.0	ND	ND	4.73	ND	ND
Zinc	2000	ug/L	26	ND	68.1	53.7	15.1	18.3

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; Historical Data for rounds 7 through 10 derived from previous RAPR
PCBs = polychlorinated biphenyls; NLE= No Limit Established; ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb)
*-M2MW14 was resampled on 2/4/99 (Sample #4246.01) because the original pesticide/PCB sample was damaged.
NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-5 (cont'd)

MW14 Groundwater Sampling Results

M-5 Landfill Site

Fort Monmouth, New Jersey

Round	Criterion	Units	#11	#12	#13	#14	#15	#16A	#16B	#17	#18	#19	#20	#21	#22
WELL ID			M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14
Date Collected			11/18/1999	3/6/2000	5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001	6/5/2001	9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002
ANALYTE / Lab ID			4955.08	5222.04	5445.08	5644.08	5903.08	782	1600708	16166.08	16407.08	16491.08	2002908	2021908	2059408
VOCs															
2-Butanone	300	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	6000	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	NLE	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	10	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl-tert-Butyl ether	70	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs															
1,2-Dichlorobenzene	600	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	600	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	75	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	100	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	400	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Anthracene	2000	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Diethylphthalate	6000	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Di-n-butylphthalate	700	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Di-n-octylphthalate	100	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	300	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Fluorene	300	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Naphthalene	300	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	10	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Phenol	2000	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Pyrene	200	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Pest/PCBs															
4,4'-DDD	.1	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE	.1	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
4,4'-DDT	.1	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
alpha-BHC	.02	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
delta-BHC	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Dieldrin	.03	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Endrin ketone	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
gamma-Chlordane	.5	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Heptachlor Epoxide	.2	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable;
Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-5 (cont'd)
MW14 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#11	#12	#13	#14	#15	#16A	#16B	#17	#18	#19	#20	#21	#22
WELL ID			M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14
Date Collected			11/18/1999	3/6/2000	5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001	6/5/2001	9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002
ANALYTE / Lab ID			4955.08	5222.04	5445.08	5644.08	5903.08	782	1600708	16166.08	16407.08	16491.08	2002908	2021908	2059408
Metals															
Aluminum	200	ug/L	ND	79.2	ND	**242**	**234**	NA	20.0	ND	ND	27.2	11.7	69.0	21.2
Antimony	6	ug/L	ND	ND	ND	4.79	2.23	NA	ND	ND	ND	ND	ND	3.18	ND
Arsenic	3	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	2.56	ND
Barium	2000	ug/L	22.1	93.1	133	34.3	104	NA	33.4	32.6	34.4	38.3	67.8	87.6	28.2
Cadmium	4	ug/L	0.779	ND	ND	ND	ND	NA	ND	ND	ND	7.32	ND	ND	ND
Calcium	NLE	ug/L	39700	45200	57600	46300	44000	NA	46500	43500	47300	44800	46700	47300	47600
Chromium	70	ug/L	2.92	5.06	4.45	ND	1.53	NA	2.6	0.986	1.04	1.16	1.99	2.40	ND
Cobalt	NLE	ug/L	ND o	ND o	ND	ND	ND	NA	ND	1.66	ND	0.583	ND	ND	ND
Copper	1300	ug/L	9.21	ND	ND	34.6	ND	NA	8.0	ND	8.84	10.5	2.82	3.52	11.8
Iron	300	ug/L	**639**	**6660**	**2480**	**844**	**6920**	NA	**12400**	**758**	**987**	**953**	**6010**	**4850**	**874**
Lead	5	ug/L	ND	ND	ND	**12.0**	ND	NA	ND	ND	ND	ND	ND	ND	1.81
Magnesium	NLE	ug/L	16400	17300	14700	18000	17000	NA	18100	16200	18400	21700	17800	17300	17700
Manganese	50	ug/L	17.9	29.1	**178**	**96.3**	21.5	NA	18.4	14.3	30.0	14.2	**165**	18.5	21.5
Mercury	2	ug/L	NND	ND	ND	ND	0.44	NA	ND	0.19	0.1	0.1	ND	ND	ND
Nickel	100	ug/L	O1.27	3.66	5.55	4.85	ND	NA	ND	3.43	ND	ND	ND	1.59	ND
Potassium	NLE	ug/L	12400	10700	7850	11800	13400	NA	12000	11000	12500	12700	13300	11400	12700
Selenium	40	ug/L	ND	ND	ND	ND	ND	NA	ND	10.6	ND	ND	7.41	4.94	4.95
Sodium	50000	ug/L	8460	10300	**70700**	11200	8240	NA	**81000**	14200	10000	**72000**	10500	8250	7910
Vanadium	NLE	ug/L	ND	1.21	ND	ND	0.561	NA	ND	ND	0.865	0.690	ND	0.905	ND
Zinc	2000	ug/L	40.3	23.3	7.51	114	44.3	NA	10.0	36.9	ND	41.5	20.4	ND	21.6

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-5 (cont'd)
MW14 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#23	#24	#25	#26
WELL ID			M5MW14	M5MW14	M5MW14	M5MW14
Date Collected			10/28/2002	1/22/2003	4/21/2003	7/30/2003
ANALYTE / Lab ID			2076008	3003208	3018008	3043908
VOCs						
2-Butanone	300	ug/L	ND	ND	ND	ND
Acetone	6000	ug/L	ND	ND	ND	ND
Bromoform	4	ug/L	ND	ND	ND	ND
Chloroform	70	ug/L	ND	ND	ND	ND
cis-l,2-Dichloroethene	10	ug/L	ND	ND	ND	ND
Tetrachloroethene	1	ug/L	ND	ND	ND	ND
Trichloroethene	1	ug/L	ND	ND	ND	ND
Vinyl chloride	5	ug/L	ND	ND	ND	ND
SVOCs						
4-Methylphenol	NLE	ug/L	ND	ND	ND	ND
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND	ND
Metals						
Aluminum	200	ug/L	18.3	72.5	174	60.8
Antimony	6	ug/L	ND	ND	ND	ND
Arsenic	3	ug/L	ND	ND	ND	ND
Barium	2000	ug/L	50.4	217	210	75.5
Beryllium	1	ug/L	ND	ND	ND	ND
Cadmium	4	ug/L	ND	0.602	1.15	ND
Calcium	NLE	ug/L	42700	57900	58500	45100
Chromium	70	ug/L	1.97	2.35	3.81	ND
Cobalt	NLE	ug/L	8.54	2.8	ND	ND
Copper	1300	ug/L	ND	2.96	ND	1.22
Iron	300	ug/L	**1110**	**20100**	**21100**	**3830**
Lead	5	ug/L	ND	ND	ND	ND
Magnesium	NLE	ug/L	16600	18100	20900	16400
Manganese	50	ug/L	**632**	**227**	35.7	32.7
Nickel	100	ug/L	3.7	1.46	ND	ND
Potassium	NLE	ug/L	10500	10600	14000	12400
Selenium	40	ug/L	8.11	ND	ND	7.05
Sodium	50000	ug/L	36000	32400	9900	11200
Vanadium	NLE	ug/L	ND	0.686	0.819	0.496
Zinc	2000	ug/L	13.9	13.3	7.59	7.65

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds
PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-5 (cont'd)
MW14 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#27	#28	#29	#30	#31	#32	#33	#34
WELL ID			M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14	M5MW14
Date Collected			10/8/2003	1/14/2004	5/13/2004	8/20/2004	12/16/2004	3/15/2005	6/3/2005	9/16/2005
ANALYTE / Lab ID			3063808	4002908	4035908	4061408	4084606	5015407	5028408	5047307
VOCs										
2-Butanone	300	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	6000	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	4	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	70	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
cis-l,2-Dichloroethene	10	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	5	ug/L	ND	ND	ND	ND	ND	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb);
Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-6
MW15 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#9A	#9B	#10
WELL ID			M5MW15	M5MW15	M5MW15
ANALYTE / Lab ID			4419.04	4447.06	4788.05
Date Collected			4/14/1999	4/28/1999	9/14/1999
VOCs					
Tetrachloroethene	1	ug/L	ND	ND	**2.15**
SVOCs					
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND
Di-n-butylphthalate	700	ug/L	ND	ND	ND
Pest/PCBs					
4,4'-DDD	.1	ug/L	ND	ND	ND
4,4'-DDE	.1	ug/L	ND	ND	ND
4,4'-DDT	.1	ug/L	ND	ND	ND
alpha-BHC	.02	ug/L	ND	ND	ND
delta-BHC	NLE	ug/L	ND	ND	ND
Gamma-BHC	0.20	ug/L	ND	ND	ND
Dieldrin	.03	ug/L	ND	ND	ND
Endrin ketone	NLE	ug/L	ND	ND	ND
gamma-Chlordane	.5	ug/L	ND	ND	ND
Heptachlor Epoxide	.2	ug/L	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; Historical Data for rounds 9 through 10 derived from previous RAPR
PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-6 (cont'd)
MW15 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#9A	#9B	#10
WELL ID			M5MW15	M5MW15	M5MW15
ANALYTE / Lab ID			4419.04	4447.06	4788.05
Date Collected			4/14/1999	4/28/1999	9/14/1999
Metals					
Aluminum	200	ug/L	**606**	**564**	**702**
Barium	2000	ug/L	184	180	153
Beryllium	1	ug/L	0.734	0.788	**1.37**
Cadmium	4	ug/L	ND	1.98	1.13
Calcium	NLE	ug/L	11100	7240	4890
Chromium	70	ug/L	2.98	1.97	5.30
Cobalt	NLE	ug/L	8.02	8.28	7.50
Copper	1300	ug/L	ND	ND	5.18
Iron	300	ug/L	**654**	108	**1050**
Lead	5	ug/L	ND	ND	ND
Magnesium	NLE	ug/L	9370	10600	9050
Manganese	50	ug/L	30.2	20.7	15.7
Mercury	2	ug/L	ND	0.27	ND
Nickel	100	ug/L	15.2	15.2	13.4
Potassium	NLE	ug/L	4240	4540	4920
Sodium	50000	ug/L	11800	14000	10100
Thallium	2	ug/L	ND	**5.17**	ND
Vanadium	NLE	ug/L	ND	ND	1.25
Zinc	2000	ug/L	91.4	91.0	122

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; Historical Data for rounds 9 through 10 derived from previous RAPR
PCBs = polychlorinated biphenyls; NLE= No Limit Established; ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb)
NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-6 (cont'd)

MW15 Groundwater Sampling Results

M-5 Landfill Site

Fort Monmouth, New Jersey

Round	Criterion	Units	#11	#12	#13	#14	#15	#16A	#16B	#17	#18	#19	#20	#21	#22
WELL ID			M5MW15	M5MW15	M5MW15	M5MW15	M5MW15	M5MW15	M5MW15	M5MW15	M5MW15	M5MW15	M5MW15	M5MW15	M5MW15
Date Collected			11/18/1999	3/3/2000	5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001	6/5/2001	9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002
ANALYTE / Lab ID			4955.09	5220.10	5445.09	5644.09	5903.09	783	1600709	16166.09	16407.09	16491.09	2002909	2021909	2059409
VOCs															
2-Butanone	300	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	6000	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	10	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs															
1,2-Dichlorobenzene	600	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	600	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	75	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	100	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	400	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Anthracene	2000	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Diethylphthalate	6000	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Di-n-butylphthalate	700	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Di-n-octylphthalate	100	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	300	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Fluorene	300	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Naphthalene	300	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	10	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Phenol	2000	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Pyrene	200	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Pest/PCBs															
4,4'-DDD	.1	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE	.1	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
4,4'-DDT	.1	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
alpha-BHC	.02	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
delta-BHC	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Dieldrin	.03	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Endrin ketone	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
gamma-Chlordane	.5	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Heptachlor Epoxide	.2	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable;
Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-6 (cont'd)
MW15 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#11	#12	#13	#14	#15	#16A	#16B	#17	#18	#19	#20	#21	#22
WELL ID			M5MW15	M5MW15	M5MW15	M5MW15	M5MW15	M5MW15	M5MW15	M5MW15	M5MW15	M5MW15	M5MW15	M5MW15	M5MW15
Date Collected			11/18/1999	3/6/2000	5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001	6/5/2001	9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002
ANALYTE / Lab ID			4955.08	5222.04	5445.08	5644.08	5903.08	782	1600708	16166.08	16407.08	16491.08	2002909	2021909	2059409
Metals															
Aluminum	200	ug/L	**357**	**508**	**441**	**933**	**556**	NA	**1100**	**996**	**1220**	**981**	**629**	**676**	**624**
Antimony	6	ug/L	ND	ND	2.33	3.70	ND	NA	ND	ND	ND	ND	ND	3.09	ND
Arsenic	3	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	2.87
Barium	2000	ug/L	164	152	124	149	129	NA	122	222	218	212	217	113	118
Beryllium	1	ug/1	**1.10**	0.862	**1.03**	**1.35**	**1.16**	NA	**1.3**	**2.26**	**2.24**	**2.10**	**1.29**	**1.22**	**1.41**
Cadmium	4	ug/L	ND	0.717	ND	ND	ND	NA	0.6	0.528	ND	**6.02**	0.803	ND	ND
Calcium	NLE	ug/L	4760	4970	5450	6170	5040	NA	76300	11000	8180	7560	6610	6720	5850
Chromium	70	ug/L	2.72	ND	3.88	ND	ND	NA	2.9	2.27	6.92	3.60	2.04	1.78	0.633
Cobalt	NLE	ug/L	7.08 o	7.65	7.59	8.02	7.71	NA	10.1	17.1	12.1	10.7	9.39	9.83	7.41
Copper	1300	ug/L	7.64	6.47	ND	ND	ND	NA	20.0	ND	9.43	8.15	2.55	2.33	3.58
Iron	300	ug/L	**316**	**477**	203	**510**	**319**	NA	**300**	150	**788**	**588**	**334**	48.2	93.6
Lead	5	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	1.64	3.22	ND	ND	ND
Magnesium	NLE	ug/L	8870	9190	10200	11200	10100	NA	15700	22700	17700	15300	13100	13600	11200
Manganese	50	ug/L	13.9	16.8	18.2	27.3	16.7	NA	23.9	31.1	27.1	21.0	**157**	19.5	14.9
Mercury	2	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	0.11
Nickel	100	ug/L	14.2	19.1	18.5	16.7	12.4	NA	25.0	36	23.9	21.5	21.3	19.4	16.2
Potassium	NLE	ug/L	3950	2950	3410	4330	4120	NA	37300	5270	6310	5570	4310	4740	4700
Selenium	40	ug/L	ND	ND	ND	ND	ND	NA	ND	13	ND	ND	11.1	**88.84**	8.69
Sodium	50000	ug/L	8990	6200	10300	13300	10600	NA	12800	15600	13900	12800	11500	11500	12500
Vanadium	NLE	ug/L	ND	2.20	ND	ND	ND	NA	ND	ND	1.34	0.793	ND	0.742	ND
Zinc	2000	ug/L	94.0	116	90.2	109	184	NA	293	222	154	163	135	130	122

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-6 (cont'd)
MW15 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#23	#24	#25	#26
WELL ID			M5MW15	M5MW15	M5MW15	M5MW15
Date Collected			10/28/2002	1/22/2003	4/21/2003	7/30/2003*
ANALYTE / Lab ID			2076009	3003209	3018009	3043909
VOCs						
2-Butanone	300	ug/L	ND	ND	ND	ND
Acetone	6000	ug/L	ND	ND	ND	ND
Bromoform	4	ug/L	ND	ND	ND	ND
Chloroform	70	ug/L	ND	ND	ND	ND
cis-l,2-Dichloroethene	10	ug/L	ND	ND	ND	ND
Tetrachloroethene	1	ug/L	ND	ND	ND	ND
Trichloroethene	1	ug/L	ND	ND	ND	ND
Vinyl chloride	5	ug/L	ND	ND	ND	ND
SVOCs						
4-Methylphenol	NLE	ug/L	ND	ND	ND	ND
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND	ND
Metals						
Aluminum	200	ug/L	**511**	**708**	**1790**	**1590**
Antimony	6	ug/L	ND	ND	ND	ND
Arsenic	3	ug/L	ND	ND	ND	ND
Barium	2000	ug/L	115	72.1	163	121
Beryllium	1	ug/L	**1.40**	**1.14**	**2.22**	**2.28**
Cadmium	4	ug/L	ND	ND	1.28	0.553
Calcium	NLE	ug/L	4980	6770	13000	11300
Chromium	70	ug/L	1.25	1.01	1.81	2.09
Cobalt	NLE	ug/L	7.22	8.04	17.2	12.5
Copper	1300	ug/L	ND	ND	ND	0.563
Iron	300	ug/L	**797**	276	**586**	**2480**
Lead	5	ug/L	1.32	ND	ND	ND
Magnesium	NLE	ug/L	9370	11300	24100	20100
Manganese	50	ug/L	15.5	17.5	34.7	28.9
Nickel	100	ug/L	13.2	16.9	33.9	23.9
Potassium	NLE	ug/L	4040	4210	4950	7280
Selenium	40	ug/L	3.44	ND	ND	5.03
Sodium	50000	ug/L	10700	11500	17700	16400
Vanadium	NLE	ug/L	ND	108	0.821	1.11
Zinc	2000	ug/L	87.7	36.3	221	152

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds
PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

* Sampling discontinued after July 30, 2003.

Table 5-7
MW16 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#9A	#9B	#10
WELL ID			M5MW16	M5MW16	M5MW16
ANALYTE / Lab ID			4419.05	4447.07	4788.04
Date Collected			4/14/1999	4/28/1999	9/14/1999
VOCs					
Tetrachloroethene	1	ug/L	**96.57**	**8.35**	**639.74**
SVOCs					
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND
Di-n-butylphthalate	700	ug/L	ND	ND	ND
Pest/PCBs					
4,4'-DDD	.1	ug/L	ND	ND	ND
4,4'-DDE	.1	ug/L	ND	ND	ND
4,4'-DDT	.1	ug/L	ND	ND	ND
alpha-BHC	.02	ug/L	ND	ND	ND
delta-BHC	NLE	ug/L	ND	ND	ND
Gamma-BHC	0.20	ug/L	ND	ND	ND
Dieldrin	.03	ug/L	ND	ND	ND
Endrin ketone	NLE	ug/L	ND	ND	ND
gamma-Chlordane	.5	ug/L	ND	ND	ND
Heptachlor Epoxide	.2	ug/L	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; Historical Data for rounds 9 through 10 derived from previous RAPR
PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-7 (cont'd)
MW16 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#9A	#9B	#10
WELL ID			M5MW16	M5MW16	M5MW16
ANALYTE / Lab ID			4419.05	4447.07	4788.04
Date Collected			4/14/1999	4/28/1999	9/14/1999
Metals					
Aluminum	200	ug/L	**1030**	**1240**	**3510**
Arsenic	3	ug/L	ND	**4.11**	ND
Barium	2000	ug/L	101	156	149
Beryllium	1	ug/L	ND	ND	0.597
Cadmium	4	ug/L	ND	2.62	**7.58**
Calcium	NLE	ug/L	11200	12500	10800
Chromium	70	ug/L	8.33	8.43	37.4
Cobalt	NLE	ug/L	3.30	2.78	4.08
Copper	1300	ug/L	ND	ND	12.5
Iron	300	ug/L	**4770**	**11800**	**11100**
Lead	5	ug/L	ND	ND	ND
Magnesium	NLE	ug/L	4020	3580	4990
Manganese	50	ug/L	29.2	31.9	32.1
Mercury	2	ug/L	ND	ND	ND
Nickel	100	ug/L	6.65	5.88	10.8
Potassium	NLE	ug/L	6230	8260	9670
Sodium	50000	ug/L	11700	15100	10000
Thallium	2	ug/L	ND	**5.17**	ND
Vanadium	NLE	ug/L	3.42	3.47	16.1
Zinc	2000	ug/L	36.5	36.3	46.2

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; Historical Data for rounds 9 through 10 derived from previous RAPR
PCBs = polychlorinated biphenyls; NLE= No Limit Established; ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb)
NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-7 (cont'd)
MW16 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#11	#12	#13	#14	#15	#16A	#16B	#17	#18	#19	#20	#21	#22
WELL ID			M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16
Date Collected			11/18/1999	3/3/2000	5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001	6/5/2001	9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002
ANALYTE / Lab ID			4955.10	5220.09	5445.10	5644.10	5903.10	784	1600710	16166.10	16407.10	16491.10	2002910	2021910	2059410
VOCs															
2-Butanone	300	ug/L	ND	ND	ND	ND	ND	ND	ND	13.45	ND	ND	ND	ND	ND
Acetone	6000	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	10	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.93	**69.44**	3.38
Tetrachloroethene	1	ug/L	**54.42**	**37.76**	**27.79**	**20.36**	**23.20**	**14.84**	**17.88**	**24.47**	**205.77D**	**620.81D**	**839.50D**	**213.53D**	**416.79D**
Trichloroethene	1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.93**	**35.84**	ND
SVOCs															
1,2-Dichlorobenzene	600	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	600	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	75	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	100	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	400	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Anthracene	2000	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Diethylphthalate	6000	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Di-n-butylphthalate	700	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Di-n-octylphthalate	100	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	300	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Fluorene	300	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Naphthalene	300	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	10	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Phenol	2000	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Pyrene	200	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Pest/PCBs															
4,4'-DDD	.1	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE	.1	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
4,4'-DDT	.1	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
alpha-BHC	.02	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
delta-BHC	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Dieldrin	.03	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Endrin ketone	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
gamma-Chlordane	.5	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Heptachlor Epoxide	.2	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable;
Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-7 (cont'd)
MW16 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#11	#12	#13	#14	#15	#16A	#16B	#17	#18	#19	#20	#21	#22
WELL ID			M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16
Date Collected			11/18/1999	3/3/2000	5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001	6/5/2001	9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002
ANALYTE / Lab ID			4955.10	5220.09	5445.10	5644.10	5903.10	784	1600710	16166.10	16407.10	16491.10	2002910	2021910	2059410
Metals															
Aluminum	200	ug/L	**242**	**848**	78.2	**293**	**258**	NA	**220**	ND	175	**1710**	**863**	**1010**	**1560**
Antimony	6	ug/L	ND	**61.9**	ND	ND	ND	NA	ND	ND	**7.58**	ND	ND	ND	ND
Arsenic	3	ug/L	**3.28**	**8.13**	ND	ND	**3.61**	NA	**3.0**	**7.04**	**7.34**	**7.68**	**3.16**	ND	**4.02**
Barium	2000	ug/L	209	656	190	143	216	NA	195	188	287	309	356	257	549
Beryllium	1	ug/1	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	0.743	ND	**1.26**
Cadmium	4	ug/L	0.615	1.74	ND	ND	ND	NA	1.3	1.67	ND	**6.04**	1.53	ND	0.606
Calcium	NLE	ug/L	100800	14400	16500	16900	15400	NA	18800	18900	31100	33000	24200	20400	38800
Chromium	70	ug/L	1.72	**3830**	1.99	ND	ND	NA	15.1	0.982	1.90	15.6	2.73	5.39	5.66
Cobalt	NLE	ug/L	2.59	6.54	2.05	2.23	2.14	NA	2.8	3.54	6.00	6.60	6.30	5.31	10.9
Copper	1300	ug/L	4.87	ND	ND	ND	ND	NA	42.0	15.2	12.8	4.52	3.12	8.50	2.85
Iron	300	ug/L	**9840**	**37800**	**10000**	**8060**	**11400**	NA	**13000**	**14500**	**14800**	**32100**	**9910**	**10000**	**4560**
Lead	5	ug/L	ND	ND	ND	ND	ND	NA	4.0	ND	1.48	1.67	ND	1.23	ND
Magnesium	NLE	ug/L	3620	4410	4130	4410	4070	NA	46100	5340	9390	10500	11600	9500	18900
Manganese	50	ug/L	24.7	**119**	35.8	49.3	33.2	NA	**73.0**	46.6	**83.4**	**83.0**	**197**	**63.5**	**112**
Mercury	2	ug/L	0.00.2	ND	ND	ND	ND	NA	ND	ND	0.1	0.1	ND	ND	ND
Nickel	100	ug/L	6.73	24700	8.11	6.59	1.43	NA	22.0	10.5	14.8	16.1	20.3	15.1	32.6
Potassium	NLE	ug/L	5500	5500	6020	6050	6540	NA	5990	6320	10600	11500	7810	6400	12700
Selenium	40	ug/L	ND	ND	ND	ND	ND	NA	ND	6.65	ND	ND	11.5	8.86	5.36
Sodium	50000	ug/L	8850	7070	9380	11100	9500	NA	10700	15900	30100	38600	47300	39900	**78600**
Vanadium	NLE	ug/L	ND	11.7	ND	ND	ND	NA	ND	0.867	2.38	8.10	3.21	5.24	5.58
Zinc	2000	ug/L	41.2	65.4	6.87	29.0	42.5	NA	101	48.6	64.5	161	119	94.5	205

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-7 (cont'd)
MW16 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#23	#24	#25	#26
WELL ID			M5MW16	M5MW16	M5MW16	M5MW16
Date Collected			10/28/2002	1/22/2003	4/21/2003	7/30/2003
ANALYTE / Lab ID			2076010	3003210	3018010	3043910
VOCs						
2-Butanone	300	ug/L	2.59	ND	ND	ND
Acetone	6000	ug/L	ND	ND	ND	ND
Bromoform	4	ug/L	ND	ND	ND	ND
Chloroform	70	ug/L	ND	ND	ND	ND
cis-l,2-Dichloroethene	10	ug/L	**103.82**	**22.02**	**16.12**	**20.3**
Tetrachloroethene	1	ug/L	**42.41**	**31.09**	**8.5**	**18.57**
Trichloroethene	1	ug/L	**2.23**	**1.36**	**2.16**	**5.61**
Vinyl chloride	5	ug/L	ND	ND	ND	ND
SVOCs						
4-Methylphenol	NLE	ug/L	7.99	ND	ND	ND
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND	ND
Metals						
Aluminum	200	ug/L	**446**	**301**	**280**	**258**
Antimony	6	ug/L	ND	ND	ND	ND
Arsenic	3	ug/L	**27.3**	**12.6**	**13.6**	**4.38**
Barium	2000	ug/L	233	135	154	258
Beryllium	1	ug/L	ND	ND	ND	0.166
Cadmium	4	ug/L	0.986	0.872	1.12	1.47
Calcium	NLE	ug/L	25500	15300	18700	34100
Chromium	70	ug/L	7.1	1.92	1.15	1.4
Cobalt	NLE	ug/L	6.28	2.09	1.9	2.29
Copper	1300	ug/L	ND	ND	ND	ND
Iron	300	ug/L	**32300**	**14600**	**16400**	**44700**
Lead	5	ug/L	1.6	ND	ND	ND
Magnesium	NLE	ug/L	10100	5350	6890	13700
Manganese	50	ug/L	**85.6**	45.2	**84.7**	**136**
Nickel	100	ug/L	15.3	7.06	7.31	9.46
Potassium	NLE	ug/L	5000	4750	4860	7210
Selenium	40	ug/L	4.27	ND	ND	ND
Sodium	50000	ug/L	43300	26800	25800	**57800**
Vanadium	NLE	ug/L	1.78	1.98	1.3	1.14
Zinc	2000	ug/L	32.8	36.3	17.1	57.1

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds
PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-7 (cont'd)
MW16 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#27	#28	#29	#30	#31	#32	#33	#34
WELL ID			M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16	M5MW16
Date Collected			10/8/2003	1/14/2004	5/13/2004	8/20/2004	12/15/2004	3/14/2005	6/3/2005	9/16/2005
ANALYTE / Lab ID			3063809	4002909	4035909	4061409	4084505	5015205	5028409	5047308
VOCs										
2-Butanone	300	ug/L	2.49	ND	ND	ND	ND	ND	ND	ND
Acetone	6000	ug/L	ND	ND	2.06	ND	ND	ND	ND	ND
Bromoform	4	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	70	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
cis-l,2-Dichloroethene	10	ug/L	**68.16**	**83.66**	**22.47**	**66.66**	**47.94**	**32.37**	**33.74**	**283.79**
Tetrachloroethene	1	ug/L	**23.44**	**34.59**	**38.41**	**7.63**	**59.14**	**6.22**	**90.59**	**9.51**
Trichloroethene	1	ug/L	**15.5**	**13.1**	**14.68**	**9.48**	**19.57**	**2.8**	**34.2**	**34.1**
Vinyl chloride	5	ug/L	ND	ND	ND	ND	1.21	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb);
Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-8
MW18 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#9A	#9B	#10
WELL ID			M5MW18	M5MW18	M5MW18
ANALYTE / Lab ID			4416.10	4444.10	4788.06
Date Collected			4/13/1999	4/27/1999	9/14/1999
VOCs					
Tetrachloroethene	1	ug/L	ND	ND	ND
SVOCs					
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND
Di-n-butylphthalate	700	ug/L	ND	ND	ND
Pest/PCBs					
4,4'-DDD	.1	ug/L	ND	ND	ND
4,4'-DDE	.1	ug/L	ND	ND	ND
4,4'-DDT	.1	ug/L	ND	ND	ND
alpha-BHC	.02	ug/L	ND	ND	ND
delta-BHC	NLE	ug/L	ND	ND	ND
Gamma-BHC	0.20	ug/L	ND	ND	ND
Dieldrin	.03	ug/L	ND	ND	ND
Endrin ketone	NLE	ug/L	ND	ND	ND
gamma-Chlordane	.5	ug/L	ND	ND	ND
Heptachlor Epoxide	.2	ug/L	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; Historical Data for rounds 9 through 10 derived from previous RAPR
PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-8 (cont'd)
MW18 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#9A	#9B	#10
WELL ID			M5MW18	M5MW18	M5MW18
ANALYTE / Lab ID			4416.10	4444.10	4788.06
Date Collected			4/13/1999	4/27/1999	9/14/1999
Metals					
Aluminum	200	ug/L	**327**	61.1	**541**
Barium	2000	ug/L	41.8	47.0	104
Cadmium	4	ug/L	0.621	1.99	1.30
Calcium	NLE	ug/L	18700	22200	22600
Chromium	70	ug/L	1.97	1.02	4.06
Cobalt	NLE	ug/L	0.996	0.916	3.11
Copper	1300	ug/L	5.04	ND	4.58
Iron	300	ug/L	**6550**	**8140**	**9640**
Lead	5	ug/L	**11.8**	ND	ND
Magnesium	NLE	ug/L	3380	3920	5800
Manganese	50	ug/L	40.9	42.1	**65.8**
Mercury	2	ug/L	0.12	ND	ND
Nickel	100	ug/L	2.63	1.86	7.64
Potassium	NLE	ug/L	6660	8150	7540
Sodium	50000	ug/L	8680	10200	15100
Thallium	2	ug/L	ND	**4.32**	ND
Zinc	2000	ug/L	34.2	19.6	52.9

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; Historical Data for rounds 9 through 10 derived from previous RAPR
PCBs = polychlorinated biphenyls; NLE= No Limit Established; ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb)
NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-8 (cont'd)
MW18 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#11	#12	#13	#14	#15	#16A	#16B	#17	#18	#19	#20	#21	#22
WELL ID			M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18
Date Collected			11/18/1999	3/3/2000	5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001	6/5/2001	9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002
ANALYTE / Lab ID			4955.15	5220.11	5445.11	5644.11	5903.11	785	1600711	16166.11	16407.11	16491.11	2002911	2021911	2059411
VOCs															
Tetrachloroethene	1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	**1.34**	ND	ND
SVOCs															
1,2-Dichlorobenzene	600	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	600	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	75	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	100	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	400	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Anthracene	2000	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Diethylphthalate	6000	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Di-n-butylphthalate	700	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Di-n-octylphthalate	100	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	300	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Fluorene	300	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Naphthalene	300	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	10	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Phenol	2000	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Pyrene	200	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Pest/PCBs															
4,4'-DDD	.1	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE	.1	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
4,4'-DDT	.1	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
alpha-BHC	.02	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
delta-BHC	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Dieldrin	.03	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Endrin ketone	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
gamma-Chlordane	.5	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	0.018	ND	ND	ND
Heptachlor Epoxide	.2	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable;
Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-8 (cont'd)
MW18 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#11	#12	#13	#14	#15	#16A	#16B	#17	#18	#19	#20	#21	#22
WELL ID			M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18
Date Collected			11/18/1999	3/3/2000	5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001	6/5/2001	9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002
ANALYTE / Lab ID			4955.15	5220.11	5445.11	5644.11	5903.11	785	1600711	16166.11	16407.11	16491.11	2002911	2021911	2059411
Metals															
Aluminum	200	ug/L	27.0	131	28.0	**325**	**942**	NA	60.0	63	38.3	111	113	**541**	162
Antimony	6	ug/L	ND	ND	ND	2.54	ND	NA	ND	ND	ND	ND	ND	ND	ND
Arsenic	3	ug/L	ND	ND	ND	ND	**14.2**	NA	ND	**11.0**	2.68	ND	**3.84**	**16.8**	**6.70**
Barium	2000	ug/L	52.2	115	132	83.3	3030	NA	182	1690	177	142	201	752	119
Beryllium	1	ug/1	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	ug/L	0.640	0.724	ND	ND	**5.52**	NA	1.7	**10.4**	ND	**7.35**	1.32	1.53	ND
Calcium	NLE	ug/L	15900	20000	21500	23800	31300	NA	23700	28000	24200	24700	20800	27500	22500
Chromium	70	ug/L	0.573	ND	1.46	ND	4.74	NA	5.3	ND	1.74	1.68	1.64	3.20	ND
Cobalt	NLE	ug/L	0.566	ND	ND	ND	ND	NA	ND	ND	1.02	1.02	4.50	1.11	ND
Copper	1300	ug/L	14.9	ND	ND	ND	ND	NA	12.0	8.52	5.99	ND	2.82	2.92	4.49
Iron	300	ug/L	**10300**	**19800**	**16200**	**14900**	**357000**	NA	**26200**	**98600**	**16500**	**21000**	**18400**	**82000**	**16500**
Lead	5	ug/L	ND	ND	ND	1.89	ND	NA	ND	3.08	1.14	ND	ND	1.35	ND
Magnesium	NLE	ug/L	2990	3840	3990	4390	4560	NA	43600	4500	5260	4980	7120	4630	4080
Manganese	50	ug/L	34.6	48.6	**50.2**	**53.7**	**88.4**	NA	**59.1**	**70.5**	**69.7**	**60.2**	240	**66.8**	49.0
Mercury	2	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	0.1	0.15	ND
Nickel	100	ug/L	1.73	3.39	2.84	ND	ND	NA	3.0	3.13	2.48	1.73	16.5	ND	1.25
Potassium	NLE	ug/L	5610	6060	6690	7580	10300	NA	67200	7740	7770	7770	5170	7760	7650
Selenium	40	ug/L	ND	ND	ND	ND	5.77	NA	4.0	ND	ND	ND	12.6	ND	5.92
Silver	40	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Sodium	50000	ug/L	7320	6360	10100	10300	7400	NA	11200	10600	15300	13300	34100	8880	10000
Thallium	2	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Vanadium	NLE	ug/L	ND	1.36	ND	ND	ND	NA	ND	ND	0.798	ND	ND	3.83	ND
Zinc	2000	ug/L	19.3	19.4	ND	23.1	109	NA	27.0	46.5	ND	11.2	64.8	20.7	19.4

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-8 (cont'd)
MW18 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#23	#24	#25	#26
WELL ID			M5MW18	M5MW18	M5MW18	M5MW18
Date Collected			10/28/2002	1/22/2003	4/21/2003	7/30/2003
ANALYTE / Lab ID			2076011	3003211	3018011	3043911
VOCs						
2-Butanone	300	ug/L	ND	ND	ND	ND
Acetone	6000	ug/L	ND	ND	ND	ND
Bromoform	4	ug/L	ND	ND	ND	ND
Chloroform	70	ug/L	ND	ND	ND	ND
cis-l,2-Dichloroethene	10	ug/L	ND	ND	ND	ND
Tetrachloroethene	1	ug/L	ND	ND	ND	ND
Trichloroethene	1	ug/L	ND	ND	ND	ND
Vinyl chloride	5	ug/L	ND	ND	ND	ND
SVOCs						
4-Methylphenol	NLE	ug/L	ND	ND	ND	ND
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND	ND
Metals						
Aluminum	200	ug/L	27.1	**293**	**800**	87.4
Antimony	6	ug/L	ND	ND	ND	ND
Arsenic	3	ug/L	**6.73**	**8.4**	**20.8**	ND
Barium	2000	ug/L	78.9	561	4490	202
Beryllium	1	ug/L	ND	ND	0.62	ND
Cadmium	4	ug/L	ND	3.6	**11.4**	1.11
Calcium	NLE	ug/L	22200	27200	41500	27600
Chromium	70	ug/L	1.27	1.19	2.05	ND
Cobalt	NLE	ug/L	0.805	ND	ND	ND
Copper	1300	ug/L	ND	40.1	ND	ND
Iron	300	ug/L	**13500**	**62100**	**204000**	**27900**
Lead	5	ug/L	ND	4.38	**5.65**	ND
Magnesium	NLE	ug/L	4060	4580	5390	4920
Manganese	50	ug/L	**53.7**	**65.5**	**137**	**58.5**
Nickel	100	ug/L	ND	2.87	ND	1.06
Potassium	NLE	ug/L	7280	9430	10400	8700
Selenium	40	ug/L	3.59	ND	ND	ND
Sodium	50000	ug/L	9290	8490	8130	9810
Vanadium	NLE	ug/L	ND	ND	ND	0.408
Zinc	2000	ug/L	13.6	72.6	82.5	8.15

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds
PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-8 (cont'd)
MW18 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#27	#28	#29	#30	#31	#32	#33	#34
WELL ID			M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18	M5MW18
Date Collected			10/8/2003	1/14/2004	5/13/2004	8/20/2004	12/14/2004	3/14/2005	6/3/2005	9/16/2005
ANALYTE / Lab ID			3063810	4002910	4035910	4061410	4083303	5015206	5028410	5047309
VOCs										
2-Butanone	300	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	6000	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	4	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	70	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
cis-l,2-Dichloroethene	10	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	5	ug/L	ND	ND	ND	ND	ND	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb);
Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-9
MW19 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#9A	#9B	#10
WELL ID			M5MW19	M5MW19	M5MW19
ANALYTE / Lab ID			4416.09	4444.09	4788.07
Date Collected			4/13/1999	4/27/1999	9/14/1999
VOCs					
Tetrachloroethene	1	ug/L	**11.53**	**3.72**	**10.24**
SVOCs					
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND
Di-n-butylphthalate	700	ug/L	ND	ND	ND
Pest/PCBs					
4,4'-DDD	.1	ug/L	ND	ND	ND
4,4'-DDE	.1	ug/L	ND	ND	ND
4,4'-DDT	.1	ug/L	ND	ND	ND
alpha-BHC	.02	ug/L	ND	ND	ND
delta-BHC	NLE	ug/L	ND	ND	ND
Gamma-BHC	0.20	ug/L	ND	ND	ND
Dieldrin	.03	ug/L	ND	ND	ND
Endrin ketone	NLE	ug/L	ND	ND	ND
gamma-Chlordane	.5	ug/L	ND	ND	ND
Heptachlor Epoxide	.2	ug/L	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; Historical Data for rounds 9 through 10 derived from previous RAPR
PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-9 (cont'd)
MW19 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#9A	#9B	#10
WELL ID			M5MW19	M5MW19	M5MW19
ANALYTE / Lab ID			4416.09	4444.09	4788.07
Date Collected			4/13/1999	4/27/1999	9/14/1999
Metals					
Aluminum	200	ug/L	**1110**	**1710**	**2320**
Antimony	6	ug/L	ND	ND	3.01
Barium	2000	ug/L	39.7	67.2	61.3
Cadmium	4	ug/L	ND	3.22	2.74
Calcium	NLE	ug/L	18400	20000	14400
Chromium	70	ug/L	10.6	12.1	32.8
Cobalt	NLE	ug/L	0.888	1.36	4.79
Copper	1300	ug/L	6.31	ND	5.35
Iron	300	ug/L	**7900**	**12300**	**9230**
Lead	5	ug/L	4.92	ND	ND
Magnesium	NLE	ug/L	3800	4220	6380
Manganese	50	ug/L	**50.1**	49.1	33.8
Mercury	2	ug/L	0.11	ND	ND
Nickel	100	ug/L	3.22	1.80	14.0
Potassium	NLE	ug/L	8060	9650	8200
Sodium	50000	ug/L	9830	11300	24900
Thallium	2	ug/L	ND	**4.93**	ND
Vanadium	NLE	ug/L	4.13	5.20	11.1
Zinc	2000	ug/L	34.5	21.3	56.2

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; Historical Data for rounds 9 through 10 derived from previous RAPR
PCBs = polychlorinated biphenyls; NLE= No Limit Established; ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb)
NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-9 (cont'd)
MW19 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#11	#12	#13	#14	#15	#16A	#16B	#17	#18	#19	#20	#21	#22
WELL ID			M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19
Date Collected			11/18/1999	3/6/2000	5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001	6/5/2001	9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002
ANALYTE / Lab ID			4955.14	5222.01	5445.12	5644.12	5903.12	786	1600712	16166.12	16407.12	16491.12	2002912	2021912	2059412
VOCs															
Chloroform	70	ug/l	ND	ND	ND	ND	ND	ND	ND	6.59	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	10	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	3.87	1.84	**16.64**	5.93	**51.33**
Tetrachloroethene	1	ug/L	**69.22**	**5.44**	ND	**4.77**	**3.80**	ND	**2.43**	**6.89**	**34.94**	**13.62**	**284.64D**	**18.20**	**34.31**
Trichloroethene	1	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	**1.66**	ND	**17.44**	**2.80**	**6.44**
SVOCs															
1,2-Dichlorobenzene	600	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	600	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	75	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	100	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	7.57	10.10	ND	ND	ND
Acenaphthene	400	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Anthracene	2000	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	**7.95**	ND	ND	ND
Dibenzofuran	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Diethylphthalate	6000	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Di-n-butylphthalate	700	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Di-n-octylphthalate	100	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	300	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Fluorene	300	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Naphthalene	300	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	10	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Phenol	2000	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Pyrene	200	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Pest/PCBs															
4,4'-DDD	.1	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE	.1	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
4,4'-DDT	.1	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
alpha-BHC	.02	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
delta-BHC	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Dieldrin	.03	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Endrin ketone	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
gamma-Chlordane	.5	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Heptachlor Epoxide	.2	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable;
Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-9 (cont'd)
MW19 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#11	#12	#13	#14	#15	#16A	#16B	#17	#18	#19	#20	#21	#22
WELL ID			M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19
Date Collected			11/18/1999	3/6/2000	5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001	6/5/2001	9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002
ANALYTE / Lab ID			4955.14	5222.01	5445.12	5644.12	5903.12	786	1600712	16166.12	16407.12	16491.12	2002912	2021912	2059412
Metals															
Aluminum	200	ug/L	130	133	47.8	**227**	**271**	NA	**740**	ND	ND	ND	185	**562**	152
Antimony	6	ug/L	2.85	ND	ND	3.46	ND	NA	ND	ND	ND	ND	ND	ND	ND
Arsenic	3	ug/L	ND	ND	ND	ND	2.99	NA	**5.0**	**11.7**	**5.70**	**8.10**	**13.7**	**16.9**	**9.08**
Barium	2000	ug/L	79.3	104	80.9	78.9	345	NA	63.6	55	59.8	47.4	40.8	81.9	36.7
Beryllium	1	ug/1	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	ug/L	0.750	ND	ND	ND	ND	NA	1.3	2.35	0.769	2.96	1.13	ND	ND
Calcium	NLE	ug/L	15600	20300	21200	22900	21800	NA	25000	26100	25000	23400	11800	19800	13000
Chromium	70	ug/L	1.65	ND	1.69	ND	ND	NA	4.7	1.34	ND	ND	0.874	6.20	0.845
Cobalt	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	0.731	ND	ND	0.735	ND	ND
Copper	1300	ug/L	33.0	ND	ND	ND	ND	NA	18.0	ND	20.8	ND	ND	9.43	ND
Iron	300	ug/L	**11700**	**15000**	**12100**	**12400**	**39600**	NA	**17800**	**27300**	**22100**	**21700**	**30100**	**28900**	**20800**
Lead	5	ug/L	ND	ND	ND	1.14	ND	NA	ND	ND	2.10	ND	ND	ND	ND
Magnesium	NLE	ug/L	3080	3840	3770	4230	4020	NA	46300	4780	4720	4540	4100	4240	3440
Manganese	50	ug/L	39.0	**53.9**	**51.6**	**71.7**	**56.2**	NA	**78.5**	**72.3**	**75.3**	**66.3**	**229**	**83.1**	**74.3**
Mercury	2	ug/L	ND	ND	ND	0.4	ND	NA	ND	0.12	ND	ND	ND	0.17	ND
Nickel	100	ug/L	2.38	4.19	2.30	ND	ND	NA	3.0	2.36	ND	ND	11.73	ND	ND
Potassium	NLE	ug/L	7080	6870	7830	8620	9180	NA	74200	7380	7890	7100	2710	5270	3700
Selenium	40	ug/L	ND	ND	ND	ND	ND	NA	ND	4.72	ND	ND	10.2	ND	5.94
Silver	40	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Sodium	50000	ug/L	8790	5770	8600	10300	8730	NA	9600	16000	11100	9430	21000	16900	20200
Thallium	2	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Vanadium	NLE	ug/L	ND	1.53	ND	ND	ND	NA	ND	2.19	ND	ND	0.737	7.32	1.74
Zinc	2000	ug/L	26.9	33.3	ND	18.4	32.5	NA	40.0	23.5	ND	14.1	37.3	16.7	11.8

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-9 (cont'd)
MW19 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#23	#24	#25	#26
WELL ID			M5MW19	M5MW19	M5MW19	M5MW19
Date Collected			10/28/2002	1/22/2003	4/21/2003	7/30/2003
ANALYTE / Lab ID			2076012	3003212	3018012	3043912
VOCs						
2-Butanone	300	ug/L	3.93	1.18	ND	ND
Acetone	6000	ug/L	ND	ND	ND	ND
Bromoform	4	ug/L	ND	ND	ND	ND
Chloroform	70	ug/L	ND	ND	ND	ND
cis-l,2-Dichloroethene	10	ug/L	2.28	ND	ND	ND
Tetrachloroethene	1	ug/L	**3.1**	**1.54**	**1.73**	**1.01**
Trichloroethene	1	ug/L	**1.0**	ND	ND	ND
Vinyl chloride	5	ug/L	ND	ND	ND	ND
SVOCs						
4-Methylphenol	NLE	ug/L	3.13	ND	ND	ND
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND	ND
Metals						
Aluminum	200	ug/L	73.6	33.7	97.4	71.3
Antimony	6	ug/L	ND	ND	ND	ND
Arsenic	3	ug/L	**8.1**	ND	ND	2.37
Barium	2000	ug/L	69.1	48	52.5	65.8
Beryllium	1	ug/L	ND	ND	ND	ND
Cadmium	4	ug/L	ND	0.735	0.724	0.689
Calcium	NLE	ug/L	27500	22900	22100	28800
Chromium	70	ug/L	2.42	0.711	ND	ND
Cobalt	NLE	ug/L	ND	ND	ND	ND
Copper	1300	ug/L	ND	2.57	ND	ND
Iron	300	ug/L	**21500**	**11700**	**11800**	**17600**
Lead	5	ug/L	1.39	ND	ND	ND
Magnesium	NLE	ug/L	5410	4160	4090	5390
Manganese	50	ug/L	**81.3**	**55**	**55.2**	**71.5**
Nickel	100	ug/L	ND	ND	ND	ND
Potassium	NLE	ug/L	7280	8120	7780	8920
Selenium	40	ug/L	ND	ND	ND	ND
Sodium	50000	ug/L	9950	8420	8440	15300
Vanadium	NLE	ug/L	ND	ND	ND	0.738
Zinc	2000	ug/L	13.6	7.41	8.6	6.35

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds
PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-9 (cont'd)
MW19 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#27	#28	#29	#30	#31	#32	#33	#34
WELL ID			M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19	M5MW19
Date Collected			10/8/2003	1/14/2004	5/13/2004	8/20/2004	12/14/2004	3/14/2005	6/3/2005	9/16/2005
ANALYTE / Lab ID			3063811	4002911	4035911	4061411	4083302	5015207	5028411	5047310
VOCs										
2-Butanone	300	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	6000	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	4	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	70	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
cis-l,2-Dichloroethene	10	ug/L	3.04	0.49	ND	0.81	ND	ND	ND	1.58
Tetrachloroethene	1	ug/L	**5.42**	**1.89**	ND	0.84	ND	ND	ND	**5.73**
Trichloroethene	1	ug/L	**1.92**	**1.04**	**1.41**	ND	**1.33**	0.91	ND	**3.12**
Vinyl chloride	5	ug/L	ND	ND	ND	ND	ND	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb);
Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-10
MW20 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#9A	#9B	#10
WELL ID			M5MW20	M5MW20	M5MW20
ANALYTE / Lab ID			4416.08	4444.08	4447.09
Date Collected			4/13/1999	4/27/1999	9/13/1999
VOCs					
Tetrachloroethene	1	ug/L	**142.59**	**169.54**	**156.58**
SVOCs					
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND
Di-n-butylphthalate	700	ug/L	ND	ND	ND
Pest/PCBs					
4,4'-DDD	.1	ug/L	ND	ND	ND
4,4'-DDE	.1	ug/L	ND	ND	ND
4,4'-DDT	.1	ug/L	ND	ND	ND
alpha-BHC	.02	ug/L	ND	ND	ND
delta-BHC	NLE	ug/L	ND	ND	ND
Gamma-BHC	0.20	ug/L	ND	ND	ND
Dieldrin	.03	ug/L	ND	ND	ND
Endrin ketone	NLE	ug/L	ND	ND	ND
gamma-Chlordane	.5	ug/L	ND	ND	ND
Heptachlor Epoxide	.2	ug/L	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; Historical Data for rounds 9 through 10 derived from previous RAPR
PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-10 (cont'd)
MW20 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#9A	#9B	#10
WELL ID			M5MW20	M5MW20	M5MW20
ANALYTE / Lab ID			4416.08	4444.08	4447.09
Date Collected			4/13/1999	4/27/1999	9/13/1999
Metals					
Aluminum	200	ug/L	**3150**	**2980**	64.6
Antimony	6	ug/L	ND	ND	ND
Barium	2000	ug/L	45.2	36.3	38.7
Cadmium	4	ug/L	ND	3.16	2.45
Calcium	NLE	ug/L	17000	21600	14400
Chromium	70	ug/L	30.7	24.9	2.80
Cobalt	NLE	ug/L	1.84	2.11	2.15
Copper	1300	ug/L	4.46	6.08	6.05
Iron	300	ug/L	**9380**	**7520**	**376**
Lead	5	ug/L	**9.54**	2.50	ND
Magnesium	NLE	ug/L	6060	7270	5790
Manganese	50	ug/L	36.6	29.2	28.0
Mercury	2	ug/L	0.12	ND	ND
Nickel	100	ug/L	6.43	5.41	6.13
Potassium	NLE	ug/L	5860	6670	4330
Sodium	50000	ug/L	29200	35000	22000
Thallium	2	ug/L	ND	ND	ND
Vanadium	NLE	ug/L	12.9	9.93	ND
Zinc	2000	ug/L	40.5	32.7	20.3

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; Historical Data for rounds 9 through 10 derived from previous RAPR
PCBs = polychlorinated biphenyls; NLE= No Limit Established; ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb)
NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-10 (cont'd)

MW20 Groundwater Sampling Results

M-5 Landfill Site

Fort Monmouth, New Jersey

Round	Criterion	Units	#11	#12	#13	#14	#15	#16A	#16B	#17	#18	#19	#20	#21	#22
WELL ID			M5MW20	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20
Date Collected			11/18/1999	3/3/2000	5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001	6/5/2001	9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002
ANALYTE / Lab ID			4955.11	5220.05	5445.13	5644.13	5903.13	787	1600713	16166.13	16407.13	16491.13	2002913	2021913	2059413
VOCs															
Acetone	6000	ug/l	ND	ND	ND	ND	8.20	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	70	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	10	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	1.22	3.38	3.09	ND	ND
Tetrachloroethene	1	ug/L	**143.93**	**90.03**	**43.44**	**23.85**	**110.95D**	**48.11**	**65.73**	**45.30**	**111.58D**	**83.81**	**85.31**	**76.89**	**79.41**
Trichloroethene	1	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	**1.18**	**3.56**	**4.27**	ND	ND
SVOCs															
1,2-Dichlorobenzene	600	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	600	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	75	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	100	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	400	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Anthracene	2000	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Diethylphthalate	6000	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Di-n-butylphthalate	700	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Di-n-octylphthalate	100	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	300	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Fluorene	300	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Naphthalene	300	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	10	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Phenol	2000	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Pyrene	200	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Pest/PCBs															
4,4'-DDD	.1	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE	.1	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
4,4'-DDT	.1	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
alpha-BHC	.02	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
delta-BHC	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Dieldrin	.03	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Endrin ketone	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
gamma-Chlordane	.5	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.005	ND	ND	ND
Heptachlor Epoxide	.2	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable;
Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-10 (cont'd)
MW20 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#11	#12	#13	#14	#15	#16A	#16B	#17	#18	#19	#20	#21	#22
WELL ID			M5MW20	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20
Date Collected			11/18/1999	3/3/2000	5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001	6/5/2001	9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002
ANALYTE / Lab ID			4955.11	5220.05	5445.13	5644.13	5903.13	787	1600713	16166.13	16407.13	16491.13	2002913	2021913	2059413
Metals															
Aluminum	200	ug/L	143	**500**	**248**	**1910**	96.6	NA	**280**	ND	**204**	198	**452**	**216**	**1580**
Antimony	6	ug/L	ND	ND	ND	2.87	ND	NA	ND	ND	ND	ND	ND	3.53	ND
Arsenic	3	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	2.58	ND	ND	**3.46**
Barium	2000	ug/L	30.7	25.8	3.70	15.8	16.0	NA	24.3	19.1	24.4	20.1	22.1	24.3	30.1
Beryllium	1	ug/1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	ug/L	ND	ND	ND	ND	ND	NA	0.6	ND	ND	**10.2**	ND	ND	ND
Calcium	NLE	ug/L	12500	15200	20800	12900	11000	NA	44600	29000	12000	13400	16400	20900	27400
Chromium	70	ug/L	3.37	4.34	4.37	3.94	ND	NA	3.6	1.03	4.96	3.00	5.43	2.64	12.6
Cobalt	NLE	ug/L	1.59	1.09	ND	ND	0.577	NA	1.1	1.24	0.906	1.19	1.31	1.19	1.62
Copper	1300	ug/L	4.14	ND	ND	ND	ND	NA	16.0	ND	11.3	3.03	ND	13.1	2.97
Iron	300	ug/L	**676**	**1640**	**914**	**4060**	**502**	NA	**900**	**495**	**1320**	**1640**	**2020**	**1510**	**5320**
Lead	5	ug/L	ND	ND	ND	1.66	ND	NA	ND	ND	ND	ND	ND	1.29	ND
Magnesium	NLE	ug/L	4540	4900	5850	4060	3400	NA	13200	7980	4180	4740	5720	6510	9770
Manganese	50	ug/L	21.1	17.8	13.2	14.9	11.9	NA	40.3	15.4	26.9	23.9	**159**	27.3	34.5
Mercury	2	ug/L	ND	ND	ND	0.3	ND	NA	ND	0.12	ND	ND	ND	0.16	0.11
Nickel	100	ug/L	5.65	4.92	2.77	ND	ND	NA	9.0	3.59	4.84	3.35	5.00	4.33	5.24
Potassium	NLE	ug/L	3320	2510	3100	3980	2730	NA	30800	3000	3280	3130	3080	2690	5280
Selenium	40	ug/L	ND	ND	3.42	ND	ND	NA	ND	5.04	ND	ND	10.7	5.55	4.15
Silver	40	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	50000	ug/L	20300	20400	44000	40700	29000	NA	**79100**	**82500**	34300	33200	41200	44000	**51200**
Thallium	2	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	NLE	ug/L	ND	4.45	1.57	4.80	ND	NA	0.7	0.716	2.55	1.54	2.01	2.37	7.57
Zinc	2000	ug/L	23.2	26.7	ND	18.2	16.4	NA	36.0	22.4	18	17.0	31.1	53.4	25.7

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-10 (cont'd)
MW20 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#23	#24	#25	#26
WELL ID			M5MW20	M5MW20	M5MW20	M5MW20
Date Collected			10/28/2002	1/22/2003	4/21/2003	7/30/2003
ANALYTE / Lab ID			2076013	3003213	3018013	3043913
VOCs						
2-Butanone	300	ug/L	ND	ND	ND	ND
Acetone	6000	ug/L	ND	ND	ND	ND
Bromoform	4	ug/L	ND	ND	ND	ND
Chloroform	70	ug/L	ND	ND	ND	ND
cis-l,2-Dichloroethene	10	ug/L	ND	ND	ND	1.1
Tetrachloroethene	1	ug/L	**12.99**	**27.87**	**27.99**	**15.26**
Trichloroethene	1	ug/L	ND	ND	ND	ND
Vinyl chloride	5	ug/L	ND	ND	ND	ND
SVOCs						
4-Methylphenol	NLE	ug/L	ND	ND	ND	ND
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND	ND
Metals						
Aluminum	200	ug/L	**6000**	109	**431**	**844**
Antimony	6	ug/L	ND	ND	ND	ND
Arsenic	3	ug/L	**5.22**	ND	ND	ND
Barium	2000	ug/L	22.1	9.36	30.7	11.3
Beryllium	1	ug/L	ND	ND	ND	0.0825
Cadmium	4	ug/L	ND	ND	ND	ND
Calcium	NLE	ug/L	11700	17100	63300	27800
Chromium	70	ug/L	40.3	1.4	3.3	6.62
Cobalt	NLE	ug/L	1.43	ND	ND	0.381
Copper	1300	ug/L	4.93	ND	ND	1.33
Iron	300	ug/L	**11500**	292	**1370**	**4650**
Lead	5	ug/L	4.41	ND	ND	ND
Magnesium	NLE	ug/L	4790	5050	19700	8670
Manganese	50	ug/L	19.6	9.34	32.9	22.8
Nickel	100	ug/L	3.36	1.53	3.21	2.08
Potassium	NLE	ug/L	4960	2440	3940	4090
Selenium	40	ug/L	4.13	ND	ND	6.37
Sodium	50000	ug/L	38000	**57200**	**115000**	**92600**
Vanadium	NLE	ug/L	21.7	1.04	2.23	4.63
Zinc	2000	ug/L	20.2	6.89	12.9	10.0

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds
PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-10 (cont'd)
MW20 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#27	#28	#29	#30	#31	#32	#33	#34
WELL ID			M5MW20	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20	M5MW20
Date Collected			10/8/2003	1/14/2004	5/13/2004	8/20/2004	12/14/2004	3/14/2005	6/3/2005	9/16/2005
ANALYTE / Lab ID			3063812	4002912	4035912	4061412	4083301	5015208	5028412	5047311
VOCs										
2-Butanone	300	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	6000	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	4	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	70	ug/L	ND	ND	ND	ND	ND	ND	ND	0.6
cis-l,2-Dichloroethene	10	ug/L	5.33	0.96	ND	4.12	2.77	1.87	**13.2**	4.21
Tetrachloroethene	1	ug/L	**43.96**	**21.69**	**13.74**	**7.51**	**3.96**	**4.93**	**13.75**	**8.74**
Trichloroethene	1	ug/L	**4.81**	**1.9**	0.92	**2.05**	ND	**1.11**	**8.55**	**2.67**
Vinyl chloride	5	ug/L	ND	ND	ND	ND	ND	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb);
Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-11
MW23 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#9A	#9B	#10
WELL ID			M5MW23	M5MW23	M5MW23
ANALYTE / Lab ID			4419.08	4447.08	4447.03
Date Collected			4/13/1999	4/27/1999	9/13/1999
VOCs					
Tetrachloroethene	1	ug/L	**84.93**	**44.43**	**29.53**
SVOCs					
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND
Di-n-butylphthalate	700	ug/L	ND	ND	ND
Pest/PCBs					
4,4'-DDD	.1	ug/L	ND	ND	ND
4,4'-DDE	.1	ug/L	ND	ND	ND
4,4'-DDT	.1	ug/L	ND	ND	ND
alpha-BHC	.02	ug/L	ND	ND	ND
delta-BHC	NLE	ug/L	ND	ND	ND
Gamma-BHC	0.20	ug/L	ND	ND	ND
Dieldrin	.03	ug/L	ND	ND	ND
Endrin ketone	NLE	ug/L	ND	ND	ND
gamma-Chlordane	.5	ug/L	ND	ND	ND
Heptachlor Epoxide	.2	ug/L	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; Historical Data for rounds 9 through 10 derived from previous RAPR
PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-11 (cont'd)
MW23 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#9A	#9B	#10
WELL ID			M5MW23	M5MW23	M5MW23
ANALYTE / Lab ID			4419.08	4447.08	4447.03
Date Collected			4/13/1999	4/27/1999	9/13/1999
Metals					
Aluminum	200	ug/L	148	195	**1410**
Antimony	6	ug/L	ND	ND	ND
Barium	2000	ug/L	12.7	28.0	21.5
Cadmium	4	ug/L	1.17	2.89	0.786
Calcium	NLE	ug/L	11700	24400	7180
Chromium	70	ug/L	13.4	8.97	22.6
Cobalt	NLE	ug/L	1.07	1.53	1.09
Copper	1300	ug/L	ND	ND	6.92
Iron	300	ug/L	**848**	**1590**	**10700**
Lead	5	ug/L	ND	ND	ND
Magnesium	NLE	ug/L	2990	6840	2580
Manganese	50	ug/L	9.64	19.8	10.4
Mercury	2	ug/L	ND	ND	ND
Nickel	100	ug/L	3.94	6.27	2.59
Potassium	NLE	ug/L	3720	5640	3670
Sodium	50000	ug/L	16500	28300	12700
Thallium	2	ug/L	ND	**6.70**	ND
Vanadium	NLE	ug/L	ND	ND	9.78
Zinc	2000	ug/L	30.8	31.2	17.8

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; Historical Data for rounds 9 through 10 derived from previous RAPR
PCBs = polychlorinated biphenyls; NLE= No Limit Established; ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb)
NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-11 (cont'd)

MW23 Groundwater Sampling Results

M-5 Landfill Site

Fort Monmouth, New Jersey

Round	Criterion	Units	#11	#12	#13	#14	#15	#16A	#16B	#17	#18	#19	#20	#21	#22
WELL ID			M5MW23	M5MW23	M5MW23	M5MW23	M5MW23	M5MW23	M5MW23	M5MW23	M5MW23	M5MW23	M5MW23	M5MW23	M5MW23
Date Collected			11/18/1999	3/3/2000	5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001	6/5/2001	9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002
ANALYTE / Lab ID			4955.12	5220.04	5445.14	5644.14	5903.14	788	1600714	16166.14	16407.14	16491.14	2002914	2021914	2059414
VOCs															
2-Butanone	300	ug/l	ND	ND	ND	ND	4.92	ND	ND	ND	ND	ND	ND	ND	14.45
Acetone	6000	ug/l	ND	ND	ND	ND	ND	6.79	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	NLE	ug/l	ND	ND	ND	ND	1.40	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	70	ug/l	9.01	1.18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	10	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	1.48	1.77	1.77	3.31	ND
Tetrachloroethene	1	ug/L	**59.02**	**11.53**	**23.13**	**4.22**	**14.27**	ND	**6.39**	**33.84**	**3.41**	**3.85**	**8.26**	**8.97**	**15.68**
Trichloroethene	1	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs															
1,2-Dichlorobenzene	600	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	600	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	75	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	100	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol	NLE	ug/L	ND	ND	ND	ND	1.37	NA	ND	ND	ND	ND	ND	ND	3.66
Acenaphthene	400	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Anthracene	2000	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	1.40	ND	ND	ND
Dibenzofuran	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Diethylphthalate	6000	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Di-n-butylphthalate	700	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Di-n-octylphthalate	100	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	300	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Fluorene	300	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Naphthalene	300	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	10	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Phenol	2000	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Pyrene	200	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Pest/PCBs															
4,4'-DDD	.1	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE	.1	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
4,4'-DDT	.1	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
alpha-BHC	.02	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
delta-BHC	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Dieldrin	.03	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Endrin ketone	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
gamma-Chlordane	.5	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor Epoxide	.2	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable;
Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-11 (cont'd)
MW23 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#11	#12	#13	#14	#15	#16A	#16B	#17	#18	#19	#20	#21	#22
WELL ID			M5MW23	M5MW23	M5MW23	M5MW23	M5MW23	M5MW23	M5MW23	M5MW23	M5MW23	M5MW23	M5MW23	M5MW23	M5MW23
Date Collected			11/18/1999	3/3/2000	5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001	6/5/2001	9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002
ANALYTE / Lab ID			4955.12	5220.04	5445.14	5644.14	5903.14	788	1600714	16166.14	16407.14	16491.14	2002914	2021914	2059414
Metals															
Aluminum	200	ug/L	157	**248**	ND	**332**	108	NA	**810**	ND	**1300**	**1270**	**1340**	**5120**	**426**
Antimony	6	ug/L	ND	ND	ND	2.39	ND	NA	ND	ND	ND	ND	ND	ND	ND
Arsenic	3	ug/L	ND	2.80	2.02	**4.00**	**4.52**	NA	ND	**4.15**	**6.46**	**5.77**	**6.81**	**11.5**	**8.70**
Barium	2000	ug/L	16.9	52.0	131	110	57.7	NA	53.2	15.3	46.1	33.5	111	303	21.7
Beryllium	1	ug/1	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	ug/L	ND	ND	ND	ND	ND	NA	1.0	ND	0.992	3.41	1.32	1.35	ND
Calcium	NLE	ug/L	10400	25400	18100	9460	10900	NA	10400	20300	5570	5440	7310	9280	11600
Chromium	70	ug/L	3.29	1.52	1.71	ND	ND	NA	13.6	1.12	17.5	15.6	16.0	53.6	11.9
Cobalt	NLE	ug/L	0.745	ND	0.644	ND	ND	NA	2.3	1.64	0.583	1.53	0.842	1.75	ND
Copper	1300	ug/L	ND	ND	ND	ND	ND	NA	8.0	ND	8.27	3.40	3.29	4.89	ND
Iron	300	ug/L	**1290**	**13600**	**25100**	**20300**	**19200**	NA	**31400**	**3280**	**21600**	**13000**	**36400**	**67900**	**15400**
Lead	5	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	2.41	2.00	4.02	4.22	ND
Magnesium	NLE	ug/L	3110	6710	4880	2420	2930	NA	46900	5270	1900	1890	1930	2530	2770
Manganese	50	ug/L	10.4	23.1	23.6	30.9	27.1	NA	26.6	31.1	21.1	16.5	**185**	42.8	37.6
Mercury	2	ug/L	ND	ND	ND	0.2	ND	NA	ND	ND	0.3	0.1	0.1	0.18	0.11
Nickel	100	ug/L	2.73	4.97	2.21	ND	ND	NA	10.0	4.06	ND	2.20	2.22	1.11	ND
Potassium	NLE	ug/L	2690	3470	3240	3010	2470	NA	33000	2590	2180	2190	3070	4850	3060
Selenium	40	ug/L	ND	ND	ND	ND	ND	NA	ND	7.08	ND	ND	10.3	ND	ND
Silver	40	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Sodium	50000	ug/L	12100	28100	37500	29200	14300	NA	43500	**85600**	29100	23200	17100	19300	19400
Thallium	2	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Vanadium	NLE	ug/L	1.40	4.37	1.45	ND	1.13	NA	3.3	1.26	12.3	10.6	8.86	32.3	4.28
Zinc	2000	ug/L	26.5	25.6	1.35	19.3	24.5	NA	250	27	ND	17.8	31.2	32.4	7.62

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-11 (cont'd)
MW23 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#23	#24	#25	#26
WELL ID			M5MW23	M5MW23	M5MW23	M5MW23
Date Collected			10/28/2002	1/22/2003	4/21/2003	7/30/2003
ANALYTE / Lab ID			2076014	3003214	3018014	3043914
VOCs						
2-Butanone	300	ug/L	ND	ND	ND	2.75
Acetone	6000	ug/L	ND	ND	ND	ND
Bromoform	4	ug/L	ND	ND	ND	ND
Chloroform	70	ug/L	ND	ND	ND	ND
cis-l,2-Dichloroethene	10	ug/L	ND	ND	1.37	4.6
Tetrachloroethene	1	ug/L	ND	**79.46**	**17.35**	**20.45**
Trichloroethene	1	ug/L	ND	**3.97**	**3.15**	**2.51**
Vinyl chloride	5	ug/L	ND	ND	ND	ND
SVOCs						
4-Methylphenol	NLE	ug/L	ND	ND	ND	ND
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND	ND
Metals						
Aluminum	200	ug/L	100	**6920**	**1060**	**255**
Antimony	6	ug/L	ND	ND	ND	ND
Arsenic	3	ug/L	**16.5**	**86.7**	**13.2**	**13.3**
Barium	2000	ug/L	5.5	39.1	15.7	119
Beryllium	1	ug/L	ND	0.57	ND	0.0632
Cadmium	4	ug/L	ND	**8.11**	1.93	1.45
Calcium	NLE	ug/L	8910	19300	8980	14200
Chromium	70	ug/L	2.4	**72.5**	12.9	3.55
Cobalt	NLE	ug/L	0.911	4.67	ND	ND
Copper	1300	ug/L	ND	ND	ND	ND
Iron	300	ug/L	**14000**	**137000**	**37000**	**37800**
Lead	5	ug/L	1.29	**8.02**	ND	ND
Magnesium	NLE	ug/L	2300	5710	2070	2990
Manganese	50	ug/L	24.3	49.2	22.2	37.7
Nickel	100	ug/L	ND	3.96	ND	0.89
Potassium	NLE	ug/L	1410	5610	3080	4470
Selenium	40	ug/L	ND	ND	ND	ND
Sodium	50000	ug/L	23900	**96300**	**70100**	31600
Vanadium	NLE	ug/L	2.17	50	8.82	2.6
Zinc	2000	ug/L	ND	35.3	15.2	9.86

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds
PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-11 (cont'd)
MW23 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#27	#28	#29	#30	#31	#32	#33	#34
WELL ID			M5MW23	M5MW23	M5MW23	M5MW23	M5MW23	M5MW23	M5MW23	M5MW23
Date Collected			10/8/2003	1/14/2004	5/13/2004	8/20/2004	12/15/2004	3/14/2005	6/3/2005	9/16/2005
ANALYTE / Lab ID			3063813	4002913	4035913	4061413	4084506	5015209	5028413	5047312
VOCs										
2-Butanone	300	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	6000	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	4	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	70	ug/L	ND	ND	ND	ND	ND	0.57	ND	ND
cis-l,2-Dichloroethene	10	ug/L	ND	0.69	0.59	ND	ND	ND	ND	1.42
Tetrachloroethene	1	ug/L	**1.6**	**4.35**	**13.33**	ND	**2.15**	**13.75**	**23.07**	**7.24**
Trichloroethene	1	ug/L	ND	**1.02**	**2.07**	ND	ND	ND	ND	0.89
Vinyl chloride	5	ug/L	ND	ND	ND	ND	ND	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb);
Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-12
MW25 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#9A	#9B	#10
WELL ID			M5MW25	M5MW25	M5MW25
ANALYTE / Lab ID			4419.06	4447.04	4788.08
Date Collected			4/14/1999	4/28/1999	9/14/1999
VOCs					
Chloroform	70	ug/L	1.47	ND	ND
SVOCs					
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND
Di-n-butylphthalate	700	ug/L	ND	ND	ND
Pest/PCBs					
4,4'-DDD	.1	ug/L	ND	ND	ND
4,4'-DDE	.1	ug/L	ND	ND	ND
4,4'-DDT	.1	ug/L	ND	ND	ND
alpha-BHC	.02	ug/L	ND	ND	ND
delta-BHC	NLE	ug/L	ND	ND	ND
Gamma-BHC	0.20	ug/L	ND	ND	ND
Dieldrin	.03	ug/L	ND	ND	ND
Endrin ketone	NLE	ug/L	ND	ND	ND
gamma-Chlordane	.5	ug/L	ND	ND	ND
Heptachlor Epoxide	.2	ug/L	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; Historical Data for rounds 9 through 10 derived from previous RAPR
PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-12 (cont'd)
MW25 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#9A	#9B	#10
WELL ID			M5MW25	M5MW25	M5MW25
ANALYTE / Lab ID			4419.06	4447.04	4788.08
Date Collected			4/14/1999	4/28/1999	9/14/1999
Metals					
Aluminum	200	ug/L	**5640**	**4630**	151
Antimony	6	ug/L	ND	ND	2.66
Barium	2000	ug/L	47.5	37.2	50.1
Cadmium	4	ug/L	1.05	3.63	0.895
Calcium	NLE	ug/L	12100	15500	17700
Chromium	70	ug/L	56.3	40.5	2.32
Cobalt	NLE	ug/L	3.67	2.81	0.970
Copper	1300	ug/L	ND	14.3	ND
Iron	300	ug/L	**18000**	**12300**	**8930**
Lead	5	ug/L	4.75	**6.35**	ND
Magnesium	NLE	ug/L	6120	4960	3440
Manganese	50	ug/L	41.9	48.3	43.9
Mercury	2	ug/L	ND	0.16	ND
Nickel	100	ug/L	8.13	7.43	ND
Potassium	NLE	ug/L	9700	8700	8110
Sodium	50000	ug/L	18900	25200	8680
Thallium	2	ug/L	ND	**3.58**	ND
Vanadium	NLE	ug/L	22.4	15.6	ND
Zinc	2000	ug/L	78.4	94.1	22.1

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; Historical Data for rounds 9 through 10 derived from previous RAPR
PCBs = polychlorinated biphenyls; NLE= No Limit Established; ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb)
NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-12 (cont'd)

MW25 Groundwater Sampling Results

M-5 Landfill Site

Fort Monmouth, New Jersey

Round	Criterion	Units	#11	#12	#13	#14	#15	#16A	#16B	#17	#18	#19	#20	#21	#22
WELL ID			M5MW25	M5MW25	M5MW25	M5MW25	M5MW25	M5MW25	M5MW25	M5MW25	M5MW25	M5MW25	M5MW25	M5MW25	M5MW25
Date Collected			11/18/1999	3/3/2000	5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001	6/5/2001	9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002
ANALYTE / Lab ID			4955.13	5220.08	5445.15	5644.15	5903.15	789	1600715	16166.15	16407.15	16491.15	2002915	2021915	2059415
VOCs															
2-Butanone	300	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	6000	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	NLE	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	70	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	10	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs															
1,2-Dichlorobenzene	600	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	600	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	75	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	100	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	400	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Anthracene	2000	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Diethylphthalate	6000	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Di-n-butylphthalate	700	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Di-n-octylphthalate	100	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	300	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Fluorene	300	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Naphthalene	300	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	10	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Phenol	2000	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Pyrene	200	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Pest/PCBs															
4,4'-DDD	.1	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE	.1	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
4,4'-DDT	.1	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
alpha-BHC	.02	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
delta-BHC	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Dieldrin	.03	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Endrin ketone	NLE	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
gamma-Chlordane	.5	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor Epoxide	.2	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable;
Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-12 (cont'd)
MW25 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#11	#12	#13	#14	#15	#16A	#16B	#17	#18	#19	#20	#21	#22
WELL ID			M5MW25	M5MW25	M5MW25	M5MW25	M5MW25	M5MW25	M5MW25	M5MW25	M5MW25	M5MW25	M5MW25	M5MW25	M5MW25
Date Collected			11/18/1999	3/3/2000	5/31/2000	8/21/2000	12/11/2000	2/13/2001	3/19/2001	6/5/2001	9/5/2001	10/4/2001	1/14/2002	4/23/2002	8/21/2002
ANALYTE / Lab ID			4955.13	5220.08	5445.15	5644.15	5903.15	789	1600715	16166.15	16407.15	16491.15	2002915	2021915	2059415
Metals															
Aluminum	200	ug/L	**3560**	**220**	ND	**250**	**209**	NA	140	ND	**527**	**6880**	**388**	70.2	**262**
Antimony	6	ug/L	ND	ND	ND	3.92	ND	NA	ND	ND	ND	ND	ND	4.97	ND
Arsenic	3	ug/L	ND	ND	ND	ND	ND	NA	**3.0**	**3.55**	ND	**4.89**	ND	2.90	2.42
Barium	2000	ug/L	62.6	57.4	42.6	59.5	46.5	NA	50.7	99.3	141	114	93.5	77.5	78.4
Beryllium	1	ug/1	ND	ND	ND	ND	ND	NA	ND	ND	ND	**1.08**	ND	ND	ND
Cadmium	4	ug/L	1.54	0.934	ND	0.619	ND	NA	1.2	ND	ND	**5.98**	0.942	ND	ND
Calcium	NLE	ug/L	14100	11000	8680	13200	9160	NA	38800	20900	27800	20300	18400	16300	17500
Chromium	70	ug/L	53.4	4.77	2.72	ND	ND	NA	6.4	2.5	8.32	99.0	6.34	1.88	2.82
Cobalt	NLE	ug/L	4.25	1.38	1.34	1.94	1.73	NA	1.9	5.78	7.67	8.56	5.26	3.19	4.48
Copper	1300	ug/L	3.45	ND	ND	35.4	ND	NA	5.0	ND	12.1	6.99	99.1	4.87	ND
Iron	300	ug/L	**15400**	**783**	191	**453**	**877**	NA	**10900**	295	**2120**	**26500**	**1570**	101	**836**
Lead	5	ug/L	ND	ND	ND	1.91	ND	NA	ND	ND	1.42	**6.17**	**11.0**	1.59	ND
Magnesium	NLE	ug/L	7040	4100	3460	4620	4130	NA	10400	10400	13400	13200	8590	7320	8210
Manganese	50	ug/L	35.1	25.3	13.8	46.7	18.7	NA	43.1	27.7	**62.8**	**56.4**	**182**	27.8	40.6
Mercury	2	ug/L	0.1	ND	ND	0.9	ND	NA	ND	ND	ND	ND	ND	0.15	ND
Nickel	100	ug/L	14.8	10.7	4.92	10.7	2.38	NA	7.0	17.0	21.8	21.4	21.3	10.7	14.5
Potassium	NLE	ug/L	9990	2740	2120	2990	2950	NA	30500	3000	5970	13200	5490	1930	4250
Selenium	40	ug/L	ND	ND	ND	ND	ND	NA	ND	7.38	ND	ND	10.6	5.15	5.78
Silver	40	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Sodium	50000	ug/L	25700	22900	49100	42900	42000	NA	**153000**	**76100**	**69000**	**56900**	48300	**80400**	**64100**
Thallium	2	ug/L	ND	ND	ND	ND	ND	NA	ND	ND	ND	ND	ND	ND	ND
Vanadium	NLE	ug/L	19.2	1.92	ND	ND	ND	NA	ND	ND	3.34	32.5	1.12	1.86	1.01
Zinc	2000	ug/L	117	205	172	283	140	NA	6.0	181	116	142	170	245	86.9

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-12 (cont'd)
MW25 Groundwater Sampling Results
M-5 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#23	#24	#25	#26
WELL ID			M5MW25	M5MW25	M5MW25	M5MW25
Date Collected			10/28/2002	1/22/2003	4/21/2003	7/30/2003*
ANALYTE / Lab ID			2076015	3003215	3018015	3043915
VOCs						
2-Butanone	300	ug/L	ND	ND	ND	ND
Acetone	6000	ug/L	ND	ND	ND	ND
Bromoform	4	ug/L	ND	ND	ND	ND
Chloroform	70	ug/L	ND	ND	ND	ND
cis-l,2-Dichloroethene	10	ug/L	ND	ND	ND	ND
Tetrachloroethene	1	ug/L	ND	ND	ND	ND
Trichloroethene	1	ug/L	ND	ND	ND	ND
Vinyl chloride	5	ug/L	ND	ND	ND	ND
SVOCs						
4-Methylphenol	NLE	ug/L	ND	ND	ND	ND
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND	ND
Metals						
Aluminum	200	ug/L	129	185	194	**275**
Antimony	6	ug/L	ND	ND	ND	ND
Arsenic	3	ug/L	**7.50**	2.72	ND	ND
Barium	2000	ug/L	57.9	50.5	47.5	147
Beryllium	1	ug/L	ND	ND	ND	0.373
Cadmium	4	ug/L	1.25	1.53	0.84	1.02
Calcium	NLE	ug/L	13000	12200	9460	33300
Chromium	70	ug/L	5.80	7.09	9.55	1.99
Cobalt	NLE	ug/L	3.27	1.99	1.41	7.54
Copper	1300	ug/L	ND	30.8	25.9	4.77
Iron	300	ug/L	**6510**	**12400**	**2500**	**2160**
Lead	5	ug/L	ND	ND	ND	ND
Magnesium	NLE	ug/L	4370	4550	3480	17800
Manganese	50	ug/L	**101**	41.7	24.1	46.7
Nickel	100	ug/L	13.0	13.1	9.36	17.3
Potassium	NLE	ug/L	2890	3550	2410	5140
Selenium	40	ug/L	3.38	ND	ND	6.21
Sodium	50000	ug/L	49300	43500	35100	**149000**
Vanadium	NLE	ug/L	ND	1.08	0.88	1.07
Zinc	2000	ug/L	522	380	305	180

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds
PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

* Sampling discontinued after July 30, 2003.

Table 5-13

MW12 Groundwater Sampling Results

M-8 Landfill Site

Fort Monmouth, New Jersey

Round	Criterion	Units	#1	#2	#3	#4	#5	#6	#7	#8	#9A	#9B	#9C	#10
WELL ID			M8MW12	M8MW12	M8MW12	M8MW12	M8MW12	M8MW12	M8MW12	M8MW12	M8MW12	M8MW12	M8MW12	M8MW12
ANALYTE / Lab ID			2731.03	2930.06	3125.06	3366.03	3619.03	3843.07	4029.03	4227.03	4419.07	4447.05	4566.03	4811.04
Date Collected			6/24/97	8/25/97	10/31/97	2/25/98	6/4/98	8/28/98	11/4/98	1/27/99	4/14/99	4/28/99	6/22/99	9/23/99
VOCs														
Methylene Chloride	3	ug/L	ND	ND	**3.75**	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	ug/L	ND	ND	ND	ND	ND	2.50	ND	ND	ND	ND	2.89	ND
Toluene	1000	ug/L	ND	ND	1.02	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	ug/L	**5.04**	**4.96**	**7.64**	**2.25**	**5.49**	**5.56**	**21.68**	**4.27**	ND	ND	**46.06**	**11.77**
SVOCs														
4 - Methylphenol	NLE	ug/L	ND	ND	ND	ND	1.03	ND	ND	ND	ND	ND	ND	ND
Di-n-butylphthalate	700	ug/L	ND	ND	23.36	5.49 B	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexy l)phthalate	3	ug/L	1.51	ND	ND	2.48	ND	ND	2.23	ND	ND	ND	ND	ND
Pest/PCBs														
4,4'-DDD	.1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE	.1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDT	.1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
alpha-BHC	.02	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
delta-BHC	NLE	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Gamma-BHC	0.20	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	.03	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin ketone	NLE	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
gamma-Chlordane	.5	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor Epoxide	.2	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; Historical Data for rounds 1 through 10 derived from previous RAPR
PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable;
Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-13 (cont'd)
MW12 Groundwater Sampling Results
M-8 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#1	#2	#3	#4	#5	#6	#7	#8	#9A	#9B	#9C	#10
WELL ID			M8MW12	M8MW12	M8MW12	M8MW12	M8MW12	M8MW12	M8MW12	M8MW12	M8MW12	M8MW12	M8MW12	M8MW12
ANALYTE / Lab ID			2731.03	2930.06	3125.06	3366.03	3619.03	3843.07	4029.03	4227.03	4419.07	4447.05	4566.03	4811.04
Date Collected			6/24/97	8/25/97	10/31/97	2/25/98	6/4/98	8/28/98	11/4/98	1/27/99	4/14/99	4/28/99	6/22/99	9/23/99
Metals														
Aluminum	200	ug/L	56.4	170.4	182	**7205**	**1210**	**6580**	**1110**	**5040**	**373**	**265**	197	**1930**
Antimony	6	ug/L	ND	ND	ND	ND	ND	4.83	ND	ND	ND	ND	ND	ND
Arsenic	3	ug/L	ND	ND	ND	**7.0**	2.6	**6.10**	ND	ND	ND	ND	ND	ND
Barium	2000	ug/L	6.4	ND	5.8	28.6	9.3	25.9	7.16	14.8	7.85	7.26	8.49	9.31
Beryllium	1	ug/L	ND	ND	ND	ND	ND	0.797	ND	ND	ND	ND	ND	ND
Cadmium	4	ug/L	ND	ND	ND	ND	ND	ND	ND	1.81	ND	0.579	0.841	ND
Calcium	NLE	ug/L	10240	8750	7750	4190	5161	9480	10300	4950	6210	6660	18200	7650
Chromium	70	ug/L	ND	**83.0**	2.3	53.3	1.4	56.0	8.23	42.5	2.91	1.52	1.53	14.40
Cobalt	NLE	ug/L	ND	ND	ND	1.2	ND	1.06	0.778	1.54	0.959	0.703	0.947	0.636
Copper	1300	ug/L	5.0	9.0	9.0	16	3.6	ND	ND	36.8	ND	ND	ND	11.0
Iron	300	ug/L	**370**	**760**	**378**	**18860**	**6520**	**18800**	**3360**	**16700**	**3750**	**2040**	**1380**	**5190**
Lead	5	ug/L	ND	1.0	**19.0**	**10**	ND	**12.6**	ND	3.00	ND	ND	ND	ND
Magnesium	NLE	ug/L	3330.0	43.0	1990.0	2690	1337	3890	3120	2390	1390	1350	4410	2330
Manganese	50	ug/L	22	**4000**	7.7	34.8	14.1	**55.5**	13.0	27.3	8.98	6.31	13.6	12.9
Mercury	2	ug/L	ND	ND	ND	0.5	ND	0.11	ND	ND	ND	0.14	ND	ND
Nickel	100	ug/L	ND	ND	1.9	6.0	3.9	5.18	12.7	6.04	ND	ND	4.40	3.26
Potassium	NLE	ug/L	2510	2550	2310	5710	2692	12000	3400	4430	1750	1560	3120	3130
Selenium	40	ug/L	2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	40	ug/L	28	25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	50000	ug/L	38400	32350	18610	15640	16820	30700	ND	20800	14300	13700	38000	25000
Thallium	2	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	**4.10**	**6.04**	ND	ND
Vanadium	NLE	ug/L	ND	ND	ND	29	7.8	28.3	4.96	20.7	2.27	1.55	1.21	8.26
Zinc	2000	ug/L	18.0	2.0	51.0	55	7.7	ND	43.4	39.8	11.9	9.70	ND	16.2

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; Historical Data for rounds 1 through 10 derived from previous RAPR
PCBs = polychlorinated biphenyls; NLE= No Limit Established; ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb);
NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-13 (cont'd)
MW12 Groundwater Sampling Results
M-8 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20	#21	#22	#23
WELL ID			M8MW12	M8MW12	M8MW12	M8MW12	M8MW12	M8MW12	M8MW12	M8MW12	M8MW12	M8MW12	M8MW12	M8MW12	M8MW12
Date Collected			12/28/1999	3/15/2000	6/5/2000	9/6/2000	12/13/2000	3/21/2001	6/8/2001	9/24/2001	12/17/2001	3/21/2002	6/11/2002	9/23/2002	12/13/2002
ANALYTE / Lab ID			5051.04	5250.04	5454.04	5693.04	5906.04	1601104	1617404	1644804	1666204	2016204	2036104	2067804	2088504
VOCs															
2-Butanone	300	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	14.04	59.8
Acetone	6000	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	NLE	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	10	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.03
Methyl-tert-Butyl ether	70	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	ug/L	**19.76**	**15.64**	**10.89**	**7.63**	**3.42**	**4.72**	**6.59**	**7.24**	**25.43**	**29.19**	**29.04**	**11.44**	**9.51**
Toluene	1000	ug/L	3.29	22.06	3.29	22.06	ND	ND	ND	ND	ND	ND	ND	1.18	2.66
Trichloroethene	1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs															
1,2-Dichlorobenzene	600	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	600	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	75	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	100	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol	NLE	ug/L	ND	1.72	ND	1.79	ND	ND	ND	ND	ND	ND	ND	17.6	4.45
Acenaphthene	400	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	NLE	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Anthracene	2000	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	NLE	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diethylphthalate	6000	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-n-butylphthalate	700	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-n-octylphthalate	100	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	300	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorene	300	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	300	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	10	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenol	2000	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	200	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pest/PCBs															
4,4'-DDD	.1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE	.1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDT	.1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
alpha-BHC	.02	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
delta-BHC	NLE	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	.03	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin ketone	NLE	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
gamma-Chlordane	.5	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor Epoxide	.2	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable;
Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-13 (cont'd)
MW12 Groundwater Sampling Results
M-8 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20	#21	#22	#23
WELL ID			M8MW12	M8MW12	M8MW12	M8MW12	M8MW12	M8MW12	M8MW12	M8MW12	M8MW12	M8MW12	M8MW12	M8MW12	M8MW12
Date Collected			12/28/1999	3/15/2000	6/5/2000	9/6/2000	12/13/2000	3/21/2001	6/8/2001	9/24/2001	12/17/2001	3/21/2002	6/11/2002	9/23/2002	12/13/2002
ANALYTE / Lab ID			5051.04	5250.04	5454.04	5693.04	5906.04	1601104	1617404	1644804	1666204	2016204	2036104	2067804	2088504
Metals															
Aluminum	200	ug/L	ND	1240	**355**	**1760**	**401**	**870**	**508**	**2530**	**290**	**568**	**553**	**847**	133
Antimony	6	ug/L	5.95	ND	ND	ND	ND	**7.0**	ND	ND	ND	2.62	ND	ND	ND
Arsenic	3	ug/L	ND	ND	ND	**3.59**	ND	ND	**5.65**	ND	ND	**4.44**	ND	**16.8**	**6.46**
Barium	2000	ug/L	4.28	10.4	13.4	10.5	5.6	5.7	15.2	18.9	7.28	7.49	8.19	12.9	7.47
Beryllium	1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.31	ND o	2.37	0.669
Calcium	NLE	ug/L	9020	8710	14700	13800	6710	7880	48100	47500	16800	9240	8900	28800	15700
Chromium	70	ug/L	0.978	4.78	5.75	ND	4.12	8.6	4.84	22	3.56	4.66	4.79	9.05	1.14
Cobalt	NLE	ug/L	ND	ND	ND	1.05	0.744	1.4	3.84	6.24	2.7	0.75	0.895	3.78	1.15
Copper	1300	ug/L	9.22	6.83	ND	ND	ND	6.0	2.37	3.66	8.16	3.21	ND	6.81	ND
Iron	300	ug/L	144	3860	**3090**	**8540**	**2100**	**3420**	**14000**	**23300**	**14800**	**4750**	**3890**	**42100**	**24900**
Lead	5	ug/L	ND	ND	ND	ND	ND	3.0	1.46	2.97	2.08	ND	ND	3.78	ND
Magnesium	NLE	ug/L	2410	2390	3620	3750	1950	2370	13900	16600	5340	2690	2560	9530	4610
Manganese	50	ug/L	6.80	12.0	12.4	13.9	6.29	19.3	**136**	**148**	**67.8**	19.6	21.1	**156**	**64.2**
Mercury	2	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	100	ug/L	2.78	3.43	4.51	ND	1.46	3.0	6.87	10.1	2.65	ND	1.11	2.66	ND
Potassium	NLE	ug/L	1960	2440	2690	4020	2260	2070	3150	6760	2820	2540	2090	3360	2560
Selenium	40	ug/L	ND	ND	ND	ND	ND	7.0	6.47	ND	ND	ND	3.51	4.25	ND
Silver	40	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	50000	ug/L	24100	16800	36400	43600	27000	29800	**82300**	**125000**	**101000**	**74000**	**62700**	**51200**	**50400**
Thallium	2	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	NLE	ug/L	ND	7.03	2.88	3.76	2.61	4.7	4.0	11.7	2.86	3.54	3.3	8.3	3.77
Zinc	2000	ug/L	15.5	30.1	18.4	49.4	ND	10	29.3	47.1	ND o	10.2	17	34.5	10.7

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-13 (cont'd)
MW12 Groundwater Sampling Results
M-8 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#24	#25	#26
WELL ID			M8MW12	M8MW12	M8MW12
Date Collected			3/21/2003	5/30/2003	8/22/2003
ANALYTE / Lab ID			3013204	3025404	3054104
VOCs					
2-Butanone	300	ug/L	2.78	ND	9.29
Acetone	6000	ug/L	ND	ND	ND
Bromoform	4	ug/L	ND	ND	ND
Chloroform	70	ug/L	ND	ND	ND
cis-l,2-Dichloroethene	10	ug/L	ND	ND	2.73
Tetrachloroethene	1	ug/L	**4.45**	**3.1**	ND
Trichloroethene	1	ug/L	0.92	ND	ND
Vinyl chloride	5	ug/L	ND	ND	ND
SVOCs					
4-Methylphenol	NLE	ug/L	ND	ND	ND
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND
Pest/PCBs					
4,4'-DDD	.1	ug/L	0.002	ND	ND
4,4'-DDE	.1	ug/L	0.002	ND	ND
4,4'-DDT	.1	ug/L	ND	ND	ND
alpha-BHC	.02	ug/L	ND	ND	ND
delta-BHC	NLE	ug/L	ND	ND	ND
Dieldrin	.03	ug/L	ND	ND	ND
Endrin ketone	NLE	ug/L	ND	ND	ND
gamma-Chlordane	.5	ug/L	ND	ND	ND
Heptachlor Epoxide	.2	ug/L	ND	ND	ND
Metals					
Aluminum	200	ug/L	80.3	**4000**	**264**
Antimony	6	ug/L	ND	ND	ND
Arsenic	3	ug/L	**4.3**	**3.05**	**7.08**
Barium	2000	ug/L	10.1	21.7	29.9
Beryllium	1	ug/L	ND	0.451	ND
Cadmium	4	ug/L	ND	1.1	3.97
Calcium	NLE	ug/L	7940	17000	79700
Chromium	70	ug/L	ND	33	2.57
Cobalt	NLE	ug/L	ND	0.5	ND
Copper	1300	ug/L	2.45	8.02	ND
Iron	300	ug/L	**5310**	**27900**	**118000**
Lead	5	ug/L	ND	**8.61**	3.52
Magnesium	NLE	ug/L	2000	5950	26300
Manganese	50	ug/L	20.6	**62.6**	**341**
Mercury	2	ug/L	ND	ND	ND
Nickel	100	ug/L	ND	12.7	1.7
Potassium	NLE	ug/L	2090	5890	12100
Selenium	40	ug/L	ND	ND	ND
Silver	40	ug/L	ND	ND	ND
Sodium	50000	ug/L	24700	**51900**	**355000**
Thallium	2	ug/L	ND	ND	ND
Vanadium	NLE	ug/L	2.08	18.5	3.33
Zinc	2000	ug/L	20.6	120	10.6

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds
PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-13 (cont'd)
MW12 Groundwater Sampling Results
M-8 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#27	#28	#29	#30	#31	#32	#33	#34
WELL ID			M8MW12	M8MW12	M8MW12	M8MW12	M8MW12	M8MW12	M8MW12	M8MW12
Date Collected			12/12/2003	3/9/2004	6/28/2004	8/30/2004	12/21/2004	3/16/2005	6/7/2005	9/22/2005
ANALYTE / Lab ID			3080404	4015704	4049404	4063704	4086004	5015704	5029104	5048304
VOCs										
2-Butanone	300	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	6000	ug/L	4.04	ND	ND	ND	ND	ND	ND	ND
Bromoform	4	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	70	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
cis-l,2-Dichloroethene	10	ug/L	1.18	6.5	3.05	5.47	ND	ND	6.85	6.29
Tetrachloroethene	1	ug/L	ND	ND	ND	ND	ND	**3.67**	ND	ND
Trichloroethene	1	ug/L	ND	**3.7**	ND	ND	ND	**1.89**	ND	ND
Toluene	1000	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	5	ug/L	ND	ND	ND	ND	ND	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb);
Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-14
MW23 Groundwater Sampling Results
M-8 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#9A	#9B	#10
WELL ID			M8MW23	M8MW23	M8MW23
ANALYTE / Lab ID			4419.09	4447.09	4811.16
Date Collected			4/13/1999	4/27/1999	9/23/1999
VOCs					
cis-1,2-Dichloroethene	10	ug/L	ND	2.74	6.44
Vinyl Chloride	5	ug/L	ND	ND	1.18
Trichloroethene	1	ug/L	ND	ND	**1.94**
Tetrachloroethene	1	ug/L	**6.56**	ND	**1.62**
SVOCs					
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND
Di-n-butylphthalate	700	ug/L	ND	ND	ND
Pest/PCBs					
4,4'-DDD	.1	ug/L	ND	ND	ND
4,4'-DDE	.1	ug/L	ND	ND	ND
4,4'-DDT	.1	ug/L	ND	ND	ND
alpha-BHC	.02	ug/L	ND	ND	ND
delta-BHC	NLE	ug/L	ND	ND	ND
Gamma-BHC	0.20	ug/L	ND	ND	ND
Dieldrin	.03	ug/L	ND	ND	ND
Endrin ketone	NLE	ug/L	ND	ND	ND
gamma-Chlordane	.5	ug/L	ND	ND	ND
Heptachlor Epoxide	.2	ug/L	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; Historical Data for rounds 9 through 10 derived from previous RAPR
PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-14 (cont'd)
MW23 Groundwater Sampling Results
M-8 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#9A	#9B	#10
WELL ID			M8MW23	M8MW23	M8MW23
ANALYTE / Lab ID			4419.09	4447.09	4811.16
Date Collected			4/13/1999	4/27/1999	9/23/1999
Metals					
Aluminum	200	ug/L	**8440**	150	27.6
Arsenic	3	ug/L	**26.4**	**15.8**	**3.47**
Antimony	6	ug/L	ND	ND	ND
Barium	2000	ug/L	142	65.9	89.9
Beryllium	1	ug/L	0.723	ND	ND
Cadmium	4	ug/L	**6.11**	1.13	0.607
Calcium	NLE	ug/L	24900	30700	28000
Chromium	70	ug/L	58.9	4.30	5.63
Cobalt	NLE	ug/L	18.2	13.2	1.55
Copper	1300	ug/L	371	ND	21.4
Iron	300	ug/L	**27700**	**1940**	**5290**
Lead	5	ug/L	**464**	**8.10**	**5.92**
Magnesium	NLE	ug/L	10800	7640	10700
Manganese	50	ug/L	**1720**	**787**	**1280**
Mercury	2	ug/L	**2.74**	0.18	ND
Nickel	100	ug/L	47.4	31.8	6.15
Potassium	NLE	ug/L	10100	5780	5260
Sodium	50000	ug/L	19200	28200	46900
Thallium	2	ug/L	ND	ND	ND
Vanadium	NLE	ug/L	31.5	ND	ND
Zinc	2000	ug/L	**5440**	**3690**	237

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; Historical Data for rounds 9 through 10 derived from previous RAPR
PCBs = polychlorinated biphenyls; NLE= No Limit Established; ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb)
NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-14 (cont'd)
MW23 Groundwater Sampling Results
M-8 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20	#21	#22	#23
WELL ID			M8MW23	M8MW23	M8MW23	M8MW23	M8MW23	M8MW23	M8MW23	M8MW23	M8MW23	M8MW23	M8MW23	M8MW23	M8MW23
Date Collected			12/28/1999	3/15/2000	6/5/2000	9/6/2000	12/13/2000	3/21/2001	6/8/2001	9/24/2001	12/17/2001	3/21/2002	6/11/2002	9/23/2002	12/10/2002
ANALYTE / Lab ID			5051.15	5250.16	5454.15	5693.15	5906.15	1601115	1617415	1644815	1666215	2016215	2036115	2067805	2087611
VOCs															
2-Butanone	300	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	22.19	ND	7.98
Acetone	6000	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	NLE	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.7	6.13	ND
Chloroform	70	ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	10	ug/l	ND	5.47	ND	6.81	**10.99**	3.92	8.29	**16.42**	**18.47**	6.85	**15.89**	5.86	5.78
Tetrachloroethene	1	ug/L	**7.38**	ND	**4.5**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1000	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.79
Trichloroethene	1	ug/l	ND	**2.70**	ND	ND	ND	ND	ND	ND	ND	**1.2**	ND	ND	ND
Vinyl Chloride	5	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.06
SVOCs															
1,2-Dichlorobenzene	600	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	600	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	75	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	100	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol	NLE	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	11.97	10.11	34.0
Acenaphthene	400	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	NLE	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Anthracene	2000	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.86	ND	ND
Dibenzofuran	NLE	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diethylphthalate	6000	ug/L	ND	ND	ND	ND	2.79	ND	ND	ND	ND	ND	ND	ND	ND
Di-n-butylphthalate	700	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-n-octylphthalate	100	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	300	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorene	300	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	300	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	10	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenol	2000	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	200	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pest/PCBs															
4,4'-DDD	.1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDE	.1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDT	.1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
alpha-BHC	.02	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
delta-BHC	NLE	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	.03	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin ketone	NLE	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
gamma-Chlordane	.5	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor Epoxide	.2	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable;
Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-14 (cont'd)
MW23 Groundwater Sampling Results
M-8 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20	#21	#22	#23
WELL ID			M8MW23	M8MW23	M8MW23	M8MW23	M8MW23	M8MW23	M8MW23	M8MW23	M8MW23	M8MW23	M8MW23	M8MW23	M8MW23
Date Collected			12/28/1999	3/15/2000	6/5/2000	9/6/2000	12/13/2000	3/21/2001	6/8/2001	9/24/2001	12/17/2001	3/21/2002	6/11/2002	9/23/2002	12/10/2002
ANALYTE / Lab ID			5051.15	5250.16	5454.15	5693.15	5906.15	1601115	1617415	1644815	1666215	2016215	2036115	2067805	2087611
Metals															
Aluminum	200	ug/L	71.6	63.0	15.1	110	ND	ND	46.6	139	**292**	**394**	**490**	62.4	45.8
Antimony	6	ug/L	**6.84**	ND	3.55	ND	ND	ND	ND	ND	ND	3.2	ND	ND	ND
Arsenic	3	ug/L	ND	2.61	ND	ND	ND	**12**	**3.41**	**3.87**	**6.74**	**4.93**	ND	2.43	ND
Barium	2000	ug/L	65.6	49.5	76.7	45.8	34.4	39.3	56.1	57.3	91	41.6	96.6	142	91.1
Beryllium	1	ug/1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	ug/L	0.634	ND	ND	ND	ND	**5.0**	ND	ND	ND	ND	ND	ND	ND
Calcium	NLE	ug/L	10500	33700	15200	30100	27100	26700	30000	32200	54500	39100	52200	27100	44900
Chromium	70	ug/L	4.78	1.74	4.08	ND	ND	ND	ND	1.86	3.27	3.03	2.58	1.14	ND
Cobalt	NLE	ug/L	1.58	1.69	2.2	2.0	0.647	7.2	1.31	1.26	1.84	6.49	1.15	ND	ND
Copper	1300	ug/L	3.34	4.02	5.63	ND	ND	ND	3.93	6.93	18.5	6.49	11.2	2.34	ND
Iron	300	ug/L	**910**	**2580**	203	**3880**	**5180**	**2650**	**6260**	**6650**	**8300**	**4900**	**12300**	**7410**	**17100**
Lead	5	ug/L	3.82	ND	3.06	2.79	3.94	**7.0**	**12.2**	**13.5**	**33.5**	**9.98**	**21.9**	4.0	ND
Magnesium	NLE	ug/L	11500	8980	10300	8190	5860	5810	6270	9090	17400	7670	9100	5230	9230
Manganese	50	ug/L	**986**	**748**	**1800**	**1020**	**739**	**585**	**2280**	**1600**	**1400**	**640**	**2080**	**548**	**2190**
Mercury	2	ug/L	0.2	0.2	ND	ND	ND	ND	ND	ND	0.1	ND	ND	ND	ND
Nickel	100	ug/L	5.74	9.03	11.5	ND	ND	22	10.4	5.4	5.41	27.2	1.86	ND	ND
Potassium	NLE	ug/L	6670	4240	6140	5150	3440	2050	3270	5560	7290	5310	5130	3890	5050
Selenium	40	ug/L	ND	ND	ND	ND	ND	ND	9.13	ND	ND	ND	8.43	ND	ND
Silver	40	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.31
Sodium	50000	ug/L	28900	30600	23000	46100	36600	20600	23300	46300	**80200**	41100	27300	25800	27700
Thallium	2	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	NLE	ug/L	ND	1.38	ND	ND	1.19	ND	0.923	1.16	2.18	2.66	6.81	1.89	1.39
Zinc	2000	ug/L	660	261	1680	490	57.7	1040	784	856	1720	882	1000	226	111

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-14 (cont'd)
MW23 Groundwater Sampling Results
M-8 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#24	#25	#26
WELL ID			M8MW23	M8MW23	M8MW23
Date Collected			3/21/2003	5/30/2003	8/22/2003
ANALYTE / Lab ID			3013215	3025415	3054115
VOCs					
2-Butanone	300	ug/L	ND	ND	ND
Acetone	6000	ug/L	ND	ND	ND
Bromoform	4	ug/L	ND	ND	ND
Chloroform	70	ug/L	ND	ND	ND
cis-l,2-Dichloroethene	10	ug/L	ND	1.01	**11.74**
Tetrachloroethene	1	ug/L	ND	ND	ND
Trichloroethene	1	ug/L	ND	ND	ND
Vinyl chloride	5	ug/L	ND	ND	4.07
SVOCs					
4-Methylphenol	NLE	ug/L	ND	ND	ND
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	ND
Pest/PCBs					
4,4'-DDD	.1	ug/L	ND	ND	ND
4,4'-DDE	.1	ug/L	ND	ND	ND
4,4'-DDT	.1	ug/L	ND	ND	ND
alpha-BHC	.02	ug/L	ND	ND	ND
delta-BHC	NLE	ug/L	ND	ND	ND
Dieldrin	.03	ug/L	ND	ND	ND
Endrin ketone	NLE	ug/L	ND	ND	ND
gamma-Chlordane	.5	ug/L	ND	ND	ND
Heptachlor Epoxide	.2	ug/L	ND	ND	ND
Metals					
Aluminum	200	ug/L	**524**	**500**	**599**
Antimony	6	ug/L	4.16	ND	ND
Arsenic	3	ug/L	**3.17**	ND	**10.1**
Barium	2000	ug/L	21.3	9.54	75.8
Beryllium	1	ug/L	0.144	0.155	0.109
Cadmium	4	ug/L	0.513	ND	0.723
Calcium	NLE	ug/L	48200	73500	31200
Chromium	70	ug/L	3.25	4.39	5.12
Cobalt	NLE	ug/L	0.575	0.397	1.79
Copper	1300	ug/L	7.07	2.59	14.7
Iron	300	ug/L	**3190**	**3370**	**4110**
Lead	5	ug/L	**32.4**	2.76	**42.6**
Magnesium	NLE	ug/L	4930	7220	5820
Manganese	50	ug/L	**70.2**	**160**	**430**
Mercury	2	ug/L	ND	ND	0.19
Nickel	100	ug/L	4.47	2.98	5.26
Potassium	NLE	ug/L	3020	3130	5590
Selenium	40	ug/L	ND	7.15	ND
Silver	40	ug/L	ND	ND	ND
Sodium	50000	ug/L	6130	7460	15100
Thallium	2	ug/L	ND	**2.08**	ND
Vanadium	NLE	ug/L	5.52	3.36	3.82
Zinc	2000	ug/L	**2010**	35.6	**2570**

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds
PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-14 (cont'd)
MW23 Groundwater Sampling Results
M-8 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#27	#28	#29	#30	#31	#32	#33	#34
WELL ID			M8MW23	M8MW23	M8MW23	M8MW23	M8MW23	M8MW23	M8MW23	M8MW23
Date Collected			12/30/2003	3/9/2004	6/28/2004	8/30/2004	12/21/2004	3/16/2005	6/8/2005	9/22/2005
ANALYTE / Lab ID			3083107	4015708	4049415	4063715	4086005	5015712	5029910	5048312
VOCs										
2-Butanone	300	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	6000	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	4	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	70	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
cis-l,2-Dichloroethene	10	ug/L	0.47	2.12	5.46	8.29	2.66	2.15	1.06	5.99
Tetrachloroethene	1	ug/L	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1	ug/L	ND	ND	ND	0.95	ND	ND	ND	ND
Vinyl chloride	5	ug/L	ND	2.4	**5.13**	**13.71**	ND	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb);
Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-15
MW24 Groundwater Sampling Results
M-8 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#9A	#9B	#10
WELL ID			M8MW24	M8MW24	M8MW24
ANALYTE / Lab ID			4419.03	4447.03	4811.17
Date Collected			4/14/1999	4/28/1999	9/23/1999
VOCs					
Chlorobenzene	4	ug/L	ND	ND	1.01
Ethylbenzene	700	ug/L	1.78	ND	4.05
Total Xylenes	1000	ug/L	6.04	1.16	10.76
SVOCs					
2,4-Dimethylphenol	100	ug/L	ND	3.14	ND
Naphthalene	NLE	ug/L	1.24	ND	3.24
Bis(2-ethylhexy l)phthalate	3	ug/L	ND	ND	1.74
Pest/PCBs					
4,4'-DDD	.1	ug/L	ND	ND	ND
4,4'-DDE	.1	ug/L	ND	ND	ND
4,4'-DDT	.1	ug/L	ND	ND	ND
alpha-BHC	.02	ug/L	ND	ND	ND
delta-BHC	NLE	ug/L	ND	ND	ND
Gamma-BHC	0.20	ug/L	ND	ND	ND
Dieldrin	.03	ug/L	ND	ND	ND
Endrin ketone	NLE	ug/L	ND	ND	ND
gamma-Chlordane	.5	ug/L	ND	ND	ND
Heptachlor Epoxide	.2	ug/L	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; Historical Data for rounds 9 through 10 derived from previous RAPR
PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-15 (cont'd)
MW24 Groundwater Sampling Results
M-8 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#9A	#9B	#10
WELL ID			M8MW24	M8MW24	M8MW24
ANALYTE / Lab ID			4419.03	4447.03	4811.17
Date Collected			4/14/1999	4/28/1999	9/23/1999
Metals					
Aluminum	200	ug/L	**531**	**5960**	**327**
Arsenic	3	ug/L	ND	**7.16**	**3.77**
Antimony	6	ug/L	ND	3.50	ND
Barium	2000	ug/L	96.1	262	276
Beryllium	1	ug/L	ND	ND	ND
Cadmium	4	ug/L	ND	2.89	1.83
Calcium	NLE	ug/L	384000	409000	470000
Chromium	70	ug/L	8.01	39.3	8.75
Cobalt	NLE	ug/L	1.17	2.07	ND
Copper	1300	ug/L	22.4	196	29.3
Iron	300	ug/L	**13100**	**13500**	**36600**
Lead	5	ug/L	**50.5**	**385**	**27.1**
Magnesium	NLE	ug/L	21100	25500	29200
Manganese	50	ug/L	**885**	**1260**	**1500**
Mercury	2	ug/L	ND	1.03	0.2
Nickel	100	ug/L	1.51	7.97	3.59
Potassium	NLE	ug/L	10000	15100	16700
Silver	40	ug/L	ND	18.6	ND
Sodium	50000	ug/L	15400	29600	**59600**
Thallium	2	ug/L	ND	ND	ND
Vanadium	NLE	ug/L	2.64	21.3	3.74
Zinc	2000	ug/L	85.3	779	69.1

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; Historical Data for rounds 9 through 10 derived from previous RAPR
PCBs = polychlorinated biphenyls; NLE= No Limit Established; ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb)
NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-15 (cont'd)
MW24 Groundwater Sampling Results
M-8 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20	#21	#22	#23
WELL ID			M8MW24	M8MW24	M8MW24	M8MW24	M8MW24	M8MW24	M8MW24	M8MW24	M8MW24	M8MW24	M8MW24	M8MW24	M8MW24
Date Collected			12/28/1999	3/15/2000	6/5/2000	9/6/2000	12/26/2000	4/2/2001	6/23/2001	9/26/2001	12/10/2001	3/27/2002	6/22/2002	9/26/2002	12/13/2002
ANALYTE / Lab ID			5051.15	5250.17	5454.16	5693.16	5919.01	1601701	1620704	1646001	1663401	2017101	2039001	2068801	2088601
VOCs															
1,3-Dichlorobenzene	600	ug/l	NA	ND	ND	ND	ND	4.17	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	75	ug/l	NA	ND	ND	ND	ND	13.51	ND	ND	ND	ND	ND	ND	ND
2-Butanone	300	ug/l	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	6000	ug/l	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	1	ug/L	NA	**1.67**	**1.35**	**1.49**	ND	**3.97**	ND	**1.28**	**1.4**	ND	**1.33**	ND	ND
Carbon Disulfide	NLE	ug/l	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	4	ug/l	NA	1.99	2.74	2.91	1.37	**39.77**	1.7	2.8	1.94	ND	1.78	2.51	1.42
Chloroform	70	ug/l	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	10	ug/l	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	700	ug/L	NA	1.06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
m+p-Xylenes	NLE	ug/L	NA	2.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	1	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1000	ug/L	NA	3.75	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1	ug/l	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	5	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOCs															
1,2-Dichlorobenzene	600	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	600	ug/L	NA	ND	ND	ND	ND	2.37	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	75	ug/L	NA	ND	ND	ND	ND	7.68	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	100	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol	NLE	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	400	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	NLE	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Anthracene	2000	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-ethylhexy l)phthalate	3	ug/L	NA	1.78	ND	ND	ND	3.38	ND	ND	1.44	ND	ND	ND	ND
Dibenzofuran	NLE	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diethylphthalate	6000	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-n-butylphthalate	700	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-n-octylphthalate	100	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	300	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorene	300	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	300	ug/L	NA	ND	ND	ND	ND	10.97	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	10	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	NLE	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenol	2000	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	200	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pest/PCBs															
4,4'-DDD	.1	ug/L	NA	ND	ND	**0.15**	ND	ND	ND	ND	0.004	ND	ND	ND	ND
4,4'-DDE	.1	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4,4'-DDT	.1	ug/L	NA	ND	ND	0.042	ND	ND	ND	ND	ND	ND	ND	ND	ND
Alpha-Chlordane	.5	ug/L	NA	ND	ND	0.065	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arochlor 1242	.5	ug/L	NA	ND	**1.08**	**1.8**	ND	ND	ND	ND	ND	ND	ND	ND	ND
alpha-BHC	.02	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
delta-BHC	NLE	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	.03	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endrin ketone	NLE	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
gamma-Chlordane	.5	ug/L	NA	ND	ND	0.066	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor Epoxide	.2	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable;
Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-15 (cont'd)
MW24 Groundwater Sampling Results
M-8 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20	#21	#22	#23
WELL ID			M8MW24	M8MW24	M8MW24	M8MW24	M8MW24	M8MW24	M8MW24	M8MW24	M8MW24	M8MW24	M8MW24	M8MW24	M8MW24
Date Collected			12/28/1999	3/15/2000	6/5/2000	9/6/2000	12/26/2000	4/2/2001	6/23/2001	9/26/2001	12/10/2001	3/27/2002	6/22/2002	9/26/2002	12/13/2002
ANALYTE / Lab ID			5051.15	5250.17	5454.16	5693.16	5919.01	1601701	1620704	1646001	1663401	2017101	2039001	2068801	2088601
Metals															
Aluminum	200	ug/L	NA	124	ND	56.9	23.2	ND	ND	ND	ND	ND	ND	ND	18.9
Antimony	6	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	3	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	**4.17**	ND	**3.49**	ND
Barium	2000	ug/L	NA	137	120	113	65.9	601	173	289	186	85	137	201	136
Beryllium	1	ug/1	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	4	ug/L	NA	ND	ND	ND	ND	2.7	1.06	ND	ND	ND	ND	ND	ND
Calcium	NLE	ug/L	NA	54000	50800	49200	41100	201000	55000	78400	57500	46600	48000	61600	54500
Chromium	70	ug/L	NA	2.75	3.93	ND	ND	ND	ND	0.844	3.49	ND	ND	ND	ND
Cobalt	NLE	ug/L	NA	ND	ND	ND	ND	ND	ND	0.778	ND	ND	ND	ND	ND
Copper	1300	ug/L	NA	ND	ND	ND	ND	10	ND	24.4	2.32	ND	ND	ND	ND
Iron	300	ug/L	NA	7840	**7150**	**7450**	**3130**	**30600**	**11300**	**22200**	**12700**	**6080**	**8000**	**13900**	**7080**
Lead	5	ug/L	NA	ND	**5.61**	ND	ND	**25**	ND	4.76	2.37	ND	ND	ND	ND
Magnesium	NLE	ug/L	NA	8450	7920	7480	4970	34000	7920	14900	9800	6320	7200	11500	7700
Manganese	50	ug/L	NA	110	**103**	**78.6**	42.6	**461**	**87.6**	**179**	**93.1**	**55.9**	**66**	**90.5**	**56.1**
Mercury	2	ug/L	NA	0.2	ND	ND	ND	0.25	ND	ND	ND	ND	ND	ND	ND
Nickel	100	ug/L	NA	1.78	3.86	ND	ND	7.0	ND	2.32	1.81	ND	ND	ND	ND
Potassium	NLE	ug/L	NA	11400	10500	10900	7930	20500	9360	13700	11100	8460	8840	12300	9710
Selenium	40	ug/L	NA	ND	ND	ND	ND	ND	9.87	ND	ND	ND	5.68	5.88	ND
Silver	40	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	50000	ug/L	NA	21400	24000	26800	10100	**92800**	32000	**57500**	34500	21500	24400	45500	23300
Thallium	2	ug/L	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	NLE	ug/L	NA	1.46	ND	ND	ND	1.3	ND	ND	ND	ND	ND	ND	ND
Zinc	2000	ug/L	NA	23.0	38.9	25.9	ND	ND	23.5	34.4	ND	6.03	5.97	22	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-15 (cont'd)
MW24 Groundwater Sampling Results
M-8 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#24	#25	#26
WELL ID			M8MW24	M8MW24	M8MW24
Date Collected			3/20/2003	6/25/2003	9/8/2003
ANALYTE / Lab ID			3012704	3032103	3058004
VOCs					
1,3-Dichlorobenzene	600	ug/l	ND	ND	ND
1,4-Dichlorobenzene	75	ug/l	ND	ND	ND
2-Butanone	300	ug/l	1.15	ND	ND
Acetone	6000	ug/l	ND	ND	ND
Benzene	1	ug/L	ND	ND	ND
Carbon Disulfide	NLE	ug/l	ND	ND	1.08
Chlorobenzene	4	ug/l	ND	ND	ND
Chloroform	70	ug/l	5.0	3.02	2.15
cis-1,2-Dichloroethene	10	ug/l	ND	ND	ND
Ethylbenzene	700	ug/L	ND	ND	ND
m+p-Xylenes	NLE	ug/L	ND	ND	ND
Tetrachloroethene	1	ug/L	ND	ND	ND
Toluene	1000	ug/L	ND	ND	ND
Trichloroethene	1	ug/l	ND	ND	ND
Vinyl Chloride	5	ug/L	ND	ND	ND
SVOCs					
Diethylphthalate	6000	ug/L	ND	1.05	ND
Pest/PCBs					
4,4'-DDD	.1	ug/L	ND	ND	ND
4,4'-DDE	.1	ug/L	ND	ND	ND
4,4'-DDT	.1	ug/L	ND	ND	ND
alpha-BHC	.02	ug/L	ND	ND	ND
delta-BHC	NLE	ug/L	ND	ND	ND
Dieldrin	.03	ug/L	ND	ND	ND
Endrin ketone	NLE	ug/L	ND	ND	ND
gamma-Chlordane	.5	ug/L	ND	ND	ND
Heptachlor Epoxide	.2	ug/L	ND	ND	ND
Metals					
Aluminum	200	ug/L	**292**	74.7	33.4
Antimony	6	ug/L	ND	ND	ND
Arsenic	3	ug/L	ND	ND	ND
Barium	2000	ug/L	26	194	173
Beryllium	1	ug/L	0.0717	0.0528	0.037
Cadmium	4	ug/L	0.672	0.661	0.452
Calcium	NLE	ug/L	11400	60800	56200
Chromium	70	ug/L	3.4	1.35	ND
Cobalt	NLE	ug/L	1.89	ND	ND
Copper	1300	ug/L	3.77	ND	ND
Iron	300	ug/L	**8220**	**12200**	**10800**
Lead	5	ug/L	1.49	1.36	1.28
Magnesium	NLE	ug/L	4190	11700	9420
Manganese	50	ug/L	23.9	**87.2**	**79.2**
Mercury	2	ug/L	ND	ND	ND
Nickel	100	ug/L	12.2	1.01	ND
Potassium	NLE	ug/L	2020	12000	11600
Selenium	40	ug/L	ND	ND	ND
Silver	40	ug/L	ND	ND	ND
Sodium	50000	ug/L	30100	44700	35000
Thallium	2	ug/L	ND	ND	ND
Vanadium	NLE	ug/L	3.97	0.719	0.462
Zinc	2000	ug/L	34.7	6.85	4.98

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds
PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable; Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-15 (cont'd)
MW24 Groundwater Sampling Results
M-8 Landfill Site
Fort Monmouth, New Jersey

Round	Criterion	Units	#27	#28	#29	#30	#31	#32	#33	#34
WELL ID			M8MW24	M8MW24	M8MW24	M8MW24	M8MW24	M8MW24	M8MW24	M8MW24
Date Collected			11/21/2003	2/25/2004	6/28/2004	8/30/2004	12/21/2004	3/17/2005	6/7/2005	9/23/2005
ANALYTE / Lab ID			3075504	4014201	4049901	4063716	4086006	5015807	5029109	5048607
VOCs										
1,2-Dichlorobenzene	600	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	600	ug/l	ND	ND	ND	ND	0.44	ND	ND	ND
1,4-Dichlorobenzene	75	ug/l	ND	0.74	0.72	0.7	1.51	ND	0.62	0.85
2-Butanone	300	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	6000	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	1	ug/l	0.65	**1.2**	0.98	**1.16**	**1.19**	**1.24**	0.28	0.37
Carbon Disulfide	NLE	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	4	ug/l	1.45	3.11	2.61	2.56	**6.70**	3.76	2.14	3.04
Chloroform	70	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	10	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	700	ug/l	ND	ND	ND	0.42	ND	ND	ND	ND
Methylene Chloride	3	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
Methyl-tert-Butyl ether	70	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	1	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1000	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene	1	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	NLE	ug/l	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	5	ug/l	ND	ND	ND	ND	ND	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; NLE= No Limit Established.
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb);
Shaded block identifies sample and associated constituent concentration that exceeds the criterion.
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-16
Groundwater Exceedance Summary
M-5 Landfill Site
Fort Monmouth, New Jersey

Analyte	Criterion	Field ID	Round	Date Collected	Lab Sample ID	Result
VOCs						
Tetrachloroethene	**1**	M-5MW11	#27	10/8/2003	3063805	**1.08**
			#28	1/14/2004	4002905	**2.01**
			#29	5/13/2004	4035905	**3.10**
			#30	8/20/2004	4061405	**2.05**
			#31	12/16/2004	4084604	**3.05**
			#32	3/14/2005	5015204	**2.30**
			#33	6/3/2005	5028405	**2.86**
		M-5MW16	#27	10/8/2003	3063809	**23.44**
			#28	1/14/2004	4002909	**34.59**
			#29	5/13/2004	4035909	**38.41**
			#30	8/20/2004	4061409	**7.63**
			#31	12/15/2004	4084505	**59.14**
			#32	3/14/2005	5015205	**6.22**
			#33	6/3/2005	5028409	**90.59**
			#34	9/16/2005	5047308	**9.51**
		M-5MW19	#27	10/8/2003	3063811	**5.42**
			#28	1/14/2004	4002911	**1.89**
			#34	9/16/2005	5047310	**5.73**
		M-5MW20	#27	10/8/2003	3063812	**43.96**
			#28	1/14/2004	4002912	**21.69**
			#29	5/13/2004	4035912	**13.74**
			#30	8/20/2004	4061412	**7.51**
			#31	12/14/2004	4083301	**3.96**
			#32	3/14/2005	5015208	**4.93**
			#33	6/3/2005	5028412	**13.75**
			#34	9/16/2005	5047311	**8.74**
		M-5MW23	#27	10/8/2003	3063813	**1.60**
			#28	1/14/2004	4002913	**4.35**
			#29	5/13/2004	4035913	**13.33**
			#31	12/15/2004	4084506	**2.15**
			#32	3/14/2005	5015209	**13.75**
			#33	6/3/2005	5028413	**23.07**
			#34	9/16/2005	5047312	**7.24**
		M-8MW12	#32	3/16/2005	5015704	**3.67**
Trichloroethene	**1**	M-5MW11	#29	5/13/2004	4035905	**1.20**
		M-5MW16	#27	10/8/2003	3063809	**15.50**
			#28	1/14/2004	4002909	**13.10**
			#29	5/13/2004	4035909	**14.68**
			#30	8/20/2004	4061409	**9.48**
			#31	12/15/2004	4084505	**19.57**

Notes:
All results are reported in micrograms per liter (ug/L).
VOCs = Volatile Organic Compounds

Table 5-16
Groundwater Exceedance Summary
M-5 Landfill Site
Fort Monmouth, New Jersey

Analyte	Criterion	Field ID	Round	Date Collected	Lab Sample ID	Result
VOCs						
			#32	3/14/2005	5015205	**2.80**
			#33	6/3/2005	5028409	**34.20**
			#34	9/16/2005	5047308	**34.10**

Notes:
All results are reported in micrograms per liter (ug/L).
VOCs = Volatile Organic Compounds

Table 5-16
Groundwater Exceedance Summary
M-5 Landfill Site
Fort Monmouth, New Jersey

Analyte	Criterion	Field ID	Round	Date Collected	Lab Sample ID	Result
VOCs						
Trichloroethene	**1**	M-5MW19	#27	10/8/2003	3063811	**1.92**
			#28	1/14/2004	4002911	**1.04**
			#29	5/13/2004	4035911	**1.41**
			#31	12/14/2004	4083302	**1.33**
			#34	9/16/2005	5047310	**3.12**
		M-5MW20	#27	10/8/2003	3063812	**4.81**
			#28	1/14/2004	4002912	**1.90**
			#30	8/20/2004	4061412	**2.05**
			#32	3/14/2005	5015208	**1.11**
			#33	6/3/2005	5028412	**8.55**
			#34	9/16/2005	5047311	**2.67**
		M-5MW23	#28	1/14/2004	4002913	**1.02**
			#29	5/13/2004	4035913	**2.07**
		M-8MW12	#28	3/9/2004	4015704	**3.70**
			#32	3/16/2005	5015704	**1.89**
cis-1,2-DCE	**10**	M-5MW16	#27	10/8/2003	3063809	**68.16**
			#28	1/14/2004	4002909	**83.66**
			#29	5/13/2004	4035909	**22.47**
			#30	8/20/2004	4061409	**66.66**
			#31	12/15/2004	4084505	**47.94**
			#32	3/14/2005	5015205	**32.37**
			#33	6/3/2005	5028409	**33.74**
			#34	9/16/2005	5047308	**283.79**
		M-5MW20	#33	6/3/2005	5028412	**13.20**
Vinyl Chloride	**5**	M-8MW23	#29	6/28/2004	4049415	**5.13**
			#30	8/30/2004	4063715	**13.71**
Benzene	**1**	M-8MW24	#28	2/25/2004	4014201	**1.20**
		M-8MW24	#30	8/30/2004	4063716	**1.16**
		M-8MW24	#31	12/21/2004	4086006	**1.19**
		M-8MW24	#32	3/17/2005	5015807	**1.24**
Chlorobenzene	**4**	M-8MW24	#31	12/21/2004	4086006	**6.70**

Notes:
All results are reported in micrograms per liter (ug/L).
VOCs = Volatile Organic Compounds

Table 5-16
Groundwater Exceedance Summary
M-5 Landfill Site
Fort Monmouth, New Jersey

Analyte	Criterion	Field ID	Round	Date Collected	Lab Sample ID	Result
VOCs						
2-Butanone	**300**	M-5MW11	#27	10/8/2003	3063805	**448.97**

Notes:
All results are reported in micrograms per liter (ug/L).
VOCs = Volatile Organic Compounds

Table 5-17
SS-4 Stream Sampling Results
Fort Monmouth, New Jersey

Round		#1A	#1B	#1C	#2A	#2B	#2C	#3	#4	#5	#6
Date Collected		10/8/1996	11/25/1996	12/12/1996	1/29/1997	2/26/1997	3/10/1997	4/8/1997	7/17/1997	10/30/1997	2/10/1998
Analyte/Lab ID	Criteria	2178.04	2223.12	2246.12	2298.12	2361.12	2375.12	2439.12	2810.12	3121.12	3331.12
VOCs											
Acetone	NLE	NA	NA	NA	30.91	ND	ND	ND	ND	ND	ND
Benzene	71	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	21000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	470	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NLE	NA	NA	NA	1.16	1.14	ND	2.18	1.63	ND	ND
Dibromochloromethane	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	27900	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	1600	3.75	3.03	3.62	2.50	ND	ND	ND	ND	ND	ND
Methyl-tert-Butyl ether	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	4.29	2.35	**6.26**	2.28	**4.42**	**6.37**	2.33	ND	1.61	1.24	**6.61**
Toluene	200000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	81	0.64	1.60	0.75	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	525	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Round		#7	#8	#9	#10	#11	#12	#13	#14	#15
Date Collected		4/21/1998	8/19/1998	11/17/1998	2/25/1999	6/29/1999	9/22/1999	12/8/1999	3/1/2000	6/12/2000
Analyte/Lab ID	Criteria	3499.12	3816.12	4069.09	4300.12	4579.14	4806.05	4997.10	5211.10	5468.16
VOCs										
Acetone	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	71	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	21000	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	470	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NLE	ND	1.92	1.19	ND	2.41	2.02	ND	1.23	ND
Dibromochloromethane	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	27900	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	1600	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl-tert-Butyl ether	NLE	ND	ND	ND	ND	ND	ND	ND	2.18	ND
Tetrachloroethene	4.29	**4.42**	2.85	1.62	**5.61**	**5.27**	1.85	ND	**6.18**	**4.37**
Toluene	200000	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	81	ND	1.1	ND	ND	1.56	ND	ND	1.26	ND
Vinyl Chloride	525	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

ND= Not Detected; NLE= No Limit Established; NA=Not Analyzed/Not Applicable/Not Available; B=Found in the Blank.

All results reported in micrograms/liter (µg/L).

Bolded and shaded results exceed the associated constituent criterion. Bolded analytes are contaminants of concern at this site.

Criteria (salt water)=NJDEP Surface Water Quality Criteria (SWQC) per N.J.A.C. 7:9B-1.14, 18 May 1998

Table 5-17
SS-4 Stream Sampling Results
Fort Monmouth, New Jersey

Round		#16	#17	#18	#19	#20	#21	#22	#23	#24	#25	#26
Date Collected		8/24/2000	11/20/2000	3/8/2001	5/16/2001	9/25/2001	11/14/2001	2/11/2002	6/18/2002	9/18/2002	11/5/2002	3/13/2003
Analyte/Lab ID	Criteria	5658.16	5868.16	1310	16120.16	16449.14	16579.19	2008619	2037619	2066610	2078012	3011817
VOCs												
Acetone	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	71	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	21000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	470	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NLE	1.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.57
Dibromochloromethane	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	27900	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	1600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl-tert-Butyl ether	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	4.29	3.19	3.70	2.52	2.95	ND	ND	1.64	1.97	ND	ND	2.33
Toluene	200000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	81	1.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.51
Vinyl Chloride	525	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Round		#27	#28	#29	#30	#31	#32
Date Collected		5/21/2003	9/17/2003	11/4/2003	3/17/2004	6/29/2004	8/26/2004
Analyte/Lab ID	Criteria	3024716	3059215	3070015	4018215	4050015	4063215
VOCs							
Acetone	NLE	ND	ND	ND	0.65	6.62	1.48
Benzene	71	ND	ND	ND	ND	ND	ND
Carbon Disulfide	NLE	ND	ND	ND	ND	ND	ND
Chlorobenzene	21000	ND	ND	ND	ND	ND	ND
Chloroform	470	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NLE	ND	1.14	1.03	ND	ND	0.97
Dibromochloromethane	NLE	ND	ND	ND	ND	ND	ND
Ethylbenzene	27900	ND	ND	ND	ND	ND	ND
Methylene Chloride	1600	ND	ND	ND	ND	ND	ND
Methyl-tert-Butyl ether	NLE	ND	ND	ND	ND	ND	ND
Tetrachloroethene	4.29	ND	1.13	ND	0.81	ND	0.61
Toluene	200000	ND	ND	ND	ND	ND	ND
Trichloroethene	81	ND	ND	ND	ND	ND	ND
Vinyl Chloride	525	ND	ND	ND	ND	ND	ND

Notes:

ND= Not Detected; NLE= No Limit Established; NA=Not Analyzed/Not Applicable/Not Available.

All results reported in micrograms/liter (µg/L).

Bolded and shaded results exceed the associated constituent criterion. Bolded analytes are contaminants of concern at this site.

Criteria (fresh water)=NJDEP Surface Water Quality Criteria (SWQC) per N.J.A.C. 7:9B-1.14, 18 May 1998

Table 5-18
SS-5 Stream Sampling Results
Fort Monmouth, New Jersey

Round		#1A	#1B	#1C	#2A	#2B	#2C	#3	#4	#5	#6
Date Collected		10/8/1996	11/25/1996	12/12/1996	1/29/1997	2/26/1997	3/10/1997	4/8/1997	7/17/1997	10/30/1997	2/10/1998
Analyte/Lab ID	Criteria	2178.05	2223.14	2246.14	2298.14	2361.13	2375.13	2439.13	2810.13	3121.13	3331.13
VOCs											
Acetone	NLE	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND
Benzene	71	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	21000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	470	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NLE	NA	NA	NA	1.19	ND	ND	1.8	3.66	1.83	ND
Dibromochloromethane	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	27900	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	1600	3.52	3.08	3.47	3.41	ND	ND	1.96	ND	ND	ND
Methyl-tert-Butyl ether	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	4.29	2.76	**7.53**	2.98	**4.76**	**5.32**	2.42	2.28	3.54	1.7	**6.34**
Toluene	200000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	81	0.81	1.86	0.71	1.04	ND	ND	ND	ND	ND	ND
Vinyl Chloride	525	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Round		#7	#8	#9	#10	#11	#12	#13	#14	#15
Date Collected		4/21/1998	8/19/1998	11/17/1998	2/25/1999	6/29/1999	9/22/1999	12/8/1999	3/1/2000	6/12/2000
Analyte/Lab ID	Criteria	3499.13	3816.11	4060.10	4300.13	4579.15	4806.06	4997.11	5211.11	5468.15
VOCs										
Acetone	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	71	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	21000	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	470	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NLE	ND	2.28	1.67	ND	2.74	1.96	1.6	1.27	ND
Dibromochloromethane	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	27900	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	1600	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl-tert-Butyl ether	NLE	ND	ND	ND	ND	ND	ND	ND	2.34	ND
Tetrachloroethene	4.29	**4.48**	3.39	2.17	**5.45**	**6.04**	1.82	3.82	**6.62**	**4.38**
Toluene	200000	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	81	ND	1.27	ND	ND	1.74	ND	ND	1.36	ND
Vinyl Chloride	525	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

ND= Not Detected; NLE= No Limit Established; NA=Not Analyzed/Not Applicable/Not Available; B=Found in the Blank.

All results reported in micrograms/liter (µg/L).

Bolded and shaded results exceed the associated constituent criterion. Bolded analytes are contaminants of concern at this site.

Criteria (salt water)=NJDEP Surface Water Quality Criteria (SWQC) per N.J.A.C. 7:9B-1.14, 18 May 1998

Table 5-18
SS-5 Stream Sampling Results
Fort Monmouth, New Jersey

Round		#16	#17	#18	#19	#20	#21	#22	#23	#24	#25	#26
Date Collected		8/24/2000	11/20/2000	3/8/2001	5/16/2001	9/25/2001	11/14/2001	2/11/2002	6/18/2002	9/18/2002	11/4/2002	3/13/2003
Analyte/Lab ID	Criteria	5658.15	5868.15	1309	16120.15	16449.16	16579.20	2008620	2037620	2066622	2078014	3011818
VOCs												
Acetone	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	71	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	21000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	470	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NLE	1.19	ND	ND	0.97	ND	1.51	ND	ND	ND	ND	0.81
Dibromochloromethane	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	27900	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	1600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl-tert-Butyl ether	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	4.29	3.44	3.58	ND	4.09	ND	1.99	2.44	2.39	ND	ND	3.08
Toluene	200000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	81	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.71
Vinyl Chloride	525	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Round		#27	#28	#29	#30	#31	#32	#33	#34	#35	#36
Date Collected		5/21/2003	9/17/2003	11/4/2003	3/17/2004	6/29/2004	8/26/2004	11/23/2004	3/3/2005	6/15/2005	9/13/2005
Analyte/Lab ID	Criteria	3024715	3059216	3070016	4018216	4050016	4063216	4080406	5011706	5031304	5046204
VOCs											
Acetone	NLE	ND	ND	ND	0.66	ND	1.51	ND	ND	ND	ND
Benzene	71	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	21000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	470	ND	ND	ND	ND	ND	ND	1.07	ND	ND	ND
cis-1,2-Dichloroethene	NLE	ND	1.36	1.34	0.57	1.19	1.61	1.29	0.87	1.60	1.77
Dibromochloromethane	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	27900	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	1600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl-tert-Butyl ether	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	4.29	3.54	1.23	ND	2.21	1.31	1.09	1.23	1.84	1.30	ND
Toluene	200000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	81	ND	ND	ND	0.57	ND	0.73	ND	ND	0.66	ND
Vinyl Chloride	525	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

ND= Not Detected; NLE= No Limit Established; NA=Not Analyzed/Not Applicable/Not Available.

All results reported in micrograms/liter (µg/L).

Bolded and shaded results exceed the associated constituent criterion. Bolded analytes are contaminants of concern at this site.

Criteria (fresh water)=NJDEP Surface Water Quality Criteria (SWQC) per N.J.A.C. 7:9B-1.14, 18 May 1998

Table 5-19
SS-15 Stream Sampling Results
Fort Monmouth, New Jersey

Round		#1A	#1B	#1C	#2A	#2B	#2C	#3	#4	#5	#6
Date Collected		10/8/1996	11/25/1996	12/12/1996	1/29/1997	2/26/1997	3/10/1997	4/8/1997	7/17/1997	10/30/1997	2/10/1998
Analyte/Lab ID	Criteria	2178.15	2223.09	2246.09	2298.09	2361.09	2375.09	2439.09	2810.09	3121.09	3331.09
VOCs											
Acetone	NLE	NA	NA	NA	4.22	ND	ND	ND	ND	ND	ND
Benzene	0.15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	0.266	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	48.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	22	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	5.67	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NLE	NA	NA	NA	1.57	1.46	ND	2.69	5.53	2.57	ND
Dibromochloromethane	72.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	3030	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	NLE	NA	NA	NA	NA	NA	NA	NA	ND	ND	ND
Methylene Chloride	2.49	**3.85B**	**2.98B**	**5.51**	**2.68**	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.388	**8.41**	**10.38**	**5.63**	**5.68**	**7.84**	**3.39**	**6.00**	**7.12**	**2.72**	**6.90**
Toluene	7440	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1.09	**2.58**	**2.54**	**1.31**	**1.33**	ND	ND	**1.6**	**2.5**	ND	1.03
Vinyl Chloride	0.08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Round		#7	#8	#9	#10	#11	#12	#13	#14	#15
Date Collected		4/21/1998	8/19/1998	11/18/1998	2/25/1999	6/29/1999	9/21/1999	12/8/1999	3/1/2000	6/12/2000
Analyte/Lab ID	Criteria	3499.09	3816.09	4069.08	4300.09	4579.11	4802.11	4997.17	5211.17	5468.12
VOCs										
Acetone	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	0.266	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	48.4	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	0.15	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	22	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	5.67	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NLE	1.22	3.89	ND	ND	4.17	3.59	ND	1.39	ND
Dibromochloromethane	72.6	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	3030	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	NLE	ND	ND	ND	ND	ND	ND	ND	2.38	ND
Methylene Chloride	2.49	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.388	**5.72**	**5.39**	ND	**7.33**	**7.86**	**2.61**	**4.08**	**6.95**	**5.94**
Toluene	7440	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1.09	**1.21**	**2.06**	ND	ND	**2.4**	**1.37**	ND	**1.39**	ND
Vinyl Chloride	0.08	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

ND= Not Detected; NLE= No Limit Established; NA=Not Analyzed/Not Applicable/Not Available; B=Found in the Blank.

All results reported in micrograms/liter (µg/L).

Bolded and shaded results exceed the associated constituent criterion. Bolded analytes are contaminants of concern at this site.

Criteria (fresh water)=NJDEP Surface Water Quality Criteria (SWQC) per N.J.A.C. 7:9B-1.14, 18 May 1998

B = Compound found in related blank.

Table 5-19
SS-15 Stream Sampling Results
Fort Monmouth, New Jersey

Round		#16	#17	#18	#19	#20	#21	#22	#23	#24	#25	#26
Date Collected		8/24/2000	11/20/2000	2/21/2001	5/16/2001	9/25/2001	11/14/2001	2/11/2002	6/18/2002	9/18/2002	11/5/2002	3/24/2003
Analyte/Lab ID	Criteria	5658.12	5868.12	962	16120.12	16449.08	16579.12	2008612	2037611	2066607	2078707	3013404
VOCs												
Acetone	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	0.15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	0.266	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	48.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	22	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	5.67	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.44
Dibromochloromethane	72.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	3030	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	2.49	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.388	**5.2**	**6.29**	**7.19**	**6.64**	ND	**3.49**	**2.65**	**2.67**	**2.55**	**1.52**	**3.96**
Toluene	7440	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1.09	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	0.08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Round		#27	#28	#29	#30	#31	#32	#33	#34	#35	#36
Date Collected		5/21/2003	9/17/2003	11/4/2003	3/17/2004	6/29/2004	8/26/2004	11/23/2004	3/3/2005	6/14/2005	9/12/2005
Analyte/Lab ID	Criteria	3024712	3059220	3070020	4050020	4050020	4063220	4080412	5011712	5031206	5046006
VOCs											
Acetone	NLE	ND	ND	ND	0.69	ND	2.15	ND	ND	ND	ND
Benzene	0.15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	0.266	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	48.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	22	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	5.67	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NLE	1.89	1.64	1.71	0.55	1.18	1.78	2.17	1.51	3.23	5.05
Dibromochloromethane	72.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	3030	ND	ND	0.69	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	NLE	ND	ND	535.08	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	2.49	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.388	**3.84**	**1.60**	**1.49**	**2.26**	**1.28**	**1.25**	**2.00**	**2.92**	**2.34**	**1.25**
Toluene	7440	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	1.09	ND	ND	0.53	0.55	ND	0.78	ND	ND	**1.24**	0.91
Vinyl Chloride	0.08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	NLE	ND	ND	6.27	ND	ND	ND	ND	ND	ND	ND

Notes:

ND= Not Detected; NLE= No Limit Established; NA=Not Analyzed/Not Applicable/Not Available.

All results reported in micrograms/liter (µg/L).

Bolded and shaded results exceed the associated constituent criterion. Bolded analytes are contaminants of concern at this site.

Criteria (fresh water)=NJDEP Surface Water Quality Criteria (SWQC) per N.J.A.C. 7:9B-1.14, 18 May 1998

Table 5-20
SS-16 Stream Sampling Results
Fort Monmouth, New Jersey

Round		#1B	#1C	#2A	#2B	#2C	#3	#4	#5	#6
Date Collected		11/25/1996	12/12/1996	1/29/1997	2/26/1997	3/10/1997	4/8/1997	7/17/1997	10/30/1997	2/10/1998
Analyte/Lab ID	Criteria	2223.10	2246.10	2298.10	2361.10	2375.10	2439.10	2810.10	3121.10	3331.10
VOCs										
Acetone	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	71	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	21000	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	470	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NLE	ND	ND	1.30	1.27	ND	2.05	2.55	1.76	ND
Dibromochloromethane	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	27900	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	1600	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	NLE	3.08	4.65	3.01	ND	ND	ND	ND	ND	ND
Tetrachloroethene	4.29	**7.53**	3.82	**5.19**	**6.75**	2.31	**4.47**	**4.72**	1.86	**6.23**
Toluene	200000	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	81	1.86	1.00	1.14	1.20	ND	1.26	ND	ND	ND
Vinyl Chloride	525	ND	ND	ND	ND	ND	ND	ND	ND	ND

Round		#7	#8	#9	#10	#11	#12	#13	#14	#15
Date Collected		4/21/1998	8/19/1998	11/17/1998	2/25/1999	6/29/1999	9/21/1999	12/8/1999	3/1/2000	6/12/2000
Analyte/Lab ID	Criteria	3499.10	3816.10	4069.06	4300.10	4579.12	4806.03	4997.12	5211.13	5468.14
VOCs										
Acetone	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	71	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	21000	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	470	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NLE	ND	2.94	ND	ND	3.56	2.74	1.79	1.28	ND
Dibromochloromethane	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	27900	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	1600	ND	ND	ND	ND	ND	ND	ND	2.33	ND
Methylene Chloride	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	4.29	**4.58**	**4.33**	1.48	**6.06**	**7.70**	2.63	4.13	**6.47**	3.74
Toluene	200000	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	81	ND	1.63	ND	ND	2.25	ND	ND	1.27	ND
Vinyl Chloride	525	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

ND= Not Detected; NLE= No Limit Established; NA=Not Analyzed/Not Applicable/Not Available; B=Found in the Blank.

All results reported in micrograms/liter (µg/L).

Bolded and shaded results exceed the associated constituent criterion. Bolded analytes are contaminants of concern at this site.

Criteria (fresh water)=NJDEP Surface Water Quality Criteria (SWQC) per N.J.A.C. 7:9B-1.14, 18 May 1998

Table 5-20
SS-16 Stream Sampling Results
Fort Monmouth, New Jersey

Round		#16	#17	#18	#19	#20	#21	#22	#23	#24	#25	#26
Date Collected		8/24/2000	11/20/2000	2/21/2001	5/16/2001	9/25/2001	11/14/2001	2/11/2002	6/18/2002	9/18/2002	11/5/2002	3/13/2003
Analyte/Lab ID	Criteria	5658.14	5868.14	963	16120.14	16449.15	16579.15	2008615	2037615	2066623	2078710	3011813
VOCs												
Acetone	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	71	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	21000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	470	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NLE	1.68	ND	ND	1.23	ND	1.41	ND	1.35	ND	ND	0.9
Dibromochloromethane	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	27900	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	1600	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	NLE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	4.29	**4.47**	**4.49**	**6.25**	**4.91**	ND	2.00	2.47	2.46	ND	1.49	3.21
Toluene	200000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	81	1.28	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.74
Vinyl Chloride	525	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Round		#27	#28	#29	#30	#31	#32
Date Collected		5/21/2003	9/17/2003	11/4/2003	3/17/2004	6/29/2004	8/26/2004
Analyte/Lab ID	Criteria	3024714	3059217	3070017	4018217	4050017	4063217
VOCs							
Acetone	NLE	ND	ND	ND	0.67	6.4	ND
Benzene	71	ND	ND	ND	ND	ND	ND
Carbon Disulfide	NLE	ND	ND	ND	ND	ND	ND
Chlorobenzene	21000	ND	ND	ND	ND	ND	ND
Chloroform	470	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	NLE	1.85	1.79	1.31	0.54	1.23	1.63
Dibromochloromethane	NLE	ND	ND	ND	ND	ND	ND
Ethylbenzene	27900	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	1600	ND	ND	ND	ND	ND	ND
Methylene Chloride	NLE	ND	ND	ND	ND	ND	ND
Tetrachloroethene	4.29	3.68	1.70	ND	2.26	1.32	1.17
Toluene	200000	ND	ND	ND	ND	ND	ND
Trichloroethene	81	ND	ND	ND	ND	ND	0.74
Vinyl Chloride	525	ND	ND	ND	ND	ND	ND

Notes:

ND= Not Detected; NLE= No Limit Established; NA=Not Analyzed/Not Applicable/Not Available.

All results reported in micrograms/liter (µg/L).

Bolded and shaded results exceed the associated constituent criterion. Bolded analytes are contaminants of concern at this site.

Criteria (fresh water)=NJDEP Surface Water Quality Criteria (SWQC) per N.J.A.C. 7:9B-1.14, 18 May 1998

Table 5-21
Surface Water Exceedance Summary
M-5 Landfill Site
Fort Monmouth, New Jersey

Analyte	Criterion	Field ID	Round	Date Collected	Lab Sample ID	Result
VOCs						
Tetrachloroethene	**0.388**	SS-15	#29	11/4/2003	3070020	**1.49**
			#30	3/17/2004	4018220	**2.26**
			#31	6/29/2004	4050020	**1.28**
			#32	8/26/2004	4063220	**1.25**
			#33	11/23/2004	4080412	**2.00**
			#34	3/3/2005	5011712	**2.92**
			#35	6/14/2005	5031206	**2.34**
			#36	9/12/2005	5046006	**1.25**
Trichloroethene	**1.09**	SS-15	#35	6/14/2005	5031206	**1.24**

Notes:
All results are in micrograms per liter (µg/l).
VOCs = Volatile Organic Compounds

Table 5-22
M-5 (FTMM-05) Tentatively Identified Compounds (TICs)
Fort Monmouth, New Jersey

	MW-10	MW-11	MW-12	MW-13	MW-14	MW-15	MW-16	MW-18	MW-19	MW-20
Sampling Round										
4th Qtr. 2003	ND	8/1	ND	ND	ND	NS	ND	ND	ND	ND
1st Qtr. 2004	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND
2nd Qtr. 2004	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND
3rd Qtr. 2004	ND	ND	14/3	ND	ND	NS	ND	ND	5/1	ND
4th Qtr. 2004	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND
1st Qtr. 2005	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND
2nd Qtr. 2005	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND
3rd Qtr. 2005	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND

Notes:
Exceedances are bolded and shaded.
Exceedances based on 100 ug/L for individual TIC concentrations and 500 ug/L for total combined TICs.
Results are given as Total TIC concentrations/# TICs.

Table 5-22
M-5 (FTMM-05) Tentatively Identified Compounds (TICs)
Fort Monmouth, New Jersey

	MW-23	MW-25	M-8MW12	M-8MW-23	M-8MW-24
Sampling Round					
4th Qtr. 2003	3/1	NS	ND	ND	4/1
1st Qtr. 2004	ND	NS	ND	ND	11/2
2nd Qtr. 2004	ND	NS	ND	ND	NA
3rd Qtr. 2004	ND	NS	ND	ND	ND
4th Qtr. 2004	ND	NS	6/1	ND	3/1
1st Qtr. 2005	ND	NS	ND	ND	29/2
2nd Qtr. 2005	ND	NS	ND	ND	ND
3rd Qtr. 2005	ND	NS	ND	ND	4/1

Notes:
Exceedances are bolded and shaded.
Exceedances based on 100 ug/L for individual TIC concentrations and 500 ug/L for total combined TICs.
Results are given as Total TIC concentrations/# TICs.

APPENDICES

Appendix A

Roy F. Weston, Inc., December 1995. ***Final Site Investigation, Fort Monmouth, New Jersey, Main Post and Charles Wood Areas***
(Included on disc only)

APPENDIX B

ATC Associates, Inc., February 2000. ***Remedial Action Workplan – Landfill M-5, Main Post, Fort Monmouth, New Jersey***
(Included on disc only)

Appendix C

Material Safety Data Sheet for Hydrogen Release Compound®

MATERIAL SAFETY DATA SHEET

Last Revised: March 1, 2001

****

Section 1 - Material Identification

****

Supplier: Regenesis Bioremediation Products
1011 Calle Sombra
San Clemente, CA 92673
Telephone: (949) 366-8000
Facsimile: (949) 366-8090

Chemical Name: Propanoic acid, 2-[2-[2-(2-hydroxy-1-oxopropoxy)-1-oxopropoxy]

-1-oxopropoxy]-1,2,3-propanetriyl ester

Chemical Family: Organic Chemical

Trade Name: Glycerol tripolylactate

Product Name: Hydrogen Release Compound® (HRC®)

****

Section 2 - Hazardous Ingredients

****

CAS #: 201167-72-8

One should anticipate the potential for eye irritation and skin irritation with large scale exposure or in sensitive individuals.

****

Section 3 - Physical Data

****

Melting Point: NA

Boiling Point: ND

Flash Point: ND

Density: 1.347

Solubility: Acetone and DMSO

Appearance: Amber semi-solid

Odor: Not detectable

Vapor Pressure: None

****

Section 4 - Fire and Explosion Hazard Data

****

Extinguishing Media: Carbon Dioxide, Dry Chemical Powder or Appropriate Foam.

Water may be used to keep exposed containers cool.

For large quantities involved in a fire, one should wear full protective clothing and a NIOSH approved self contained breathing apparatus with full face piece operated in the pressure demand or positive pressure mode as for a situation where lack of oxygen and excess heat are present.

****

Section 5 - Toxicological Information

****

Acute Effects: May be harmful by inhalation, ingestion, or skin absorption.

May cause irritation. To the best of our knowledge, the chemical, physical, and toxicological properties of the glycerol tripolylactate have not been investigated. Listed below are the toxicological information for glycerol and lactic acid.

RTECS#: MA8050000

Glycerol

Irritation data: SKN-RBT 500 MG/24H MLD 85JCAE-,207,1986

EYE-RBT 126 MG MLD BIOFX* 9-4/1970

EYE-RBT 500 MG/24H MLD 85JCAE-,207,1986

Toxicity data: ORL-MUS LD50:4090 MG/KG FRZKAP (6),56,1977

SCU-RBT LD50:100 MG/KG NIIRDN 6,215,1982

ORL-RAT LD50:12600 MG/KG FEPRA7 4,142,1945

IHL-RAT LC50: >570 MG/M3/1H BIOFX* 9-4/1970

IPR-RAT LD50: 4420 MG/KG RCOCB8 56,125,1987

IVN-RAT LD50:5566 MG/KG ARZNAD 26,1581,1976

IPR-MUS LD50: 8700 MG/KG ARZNAD 26,1579,1978

SCU-MUS LD50:91 MG/KG NIIRDN 6,215,1982

IVN-MUS LD50: 4250 MG/KG JAPMA8 39,583,1950

ORL-RBT LD50: 27 GM/KG DMDJAP 31,276,1959

SKN-RBT LD50:>10GM/KG BIOFX* 9-4/1970

IVN-RBT LD50: 53 GM/KG NIIRDN 6,215,1982

ORL-GPG LD50: 7750 MG/KG JIHTAB 23,259,1941

Target Organ data: Behavioral (headache), gastrointestinal (nausea or vomiting), Paternal effects (spermatogenesis, testes, epididymis, sperm duct), effects of fertility (male fertility index, post-implantation mortality).

RTECS#: OD2800000

Lactic acid

Irritation data: SKN-RBT 5MG/24H SEV 85JCAE -,656,86

EYE-RBT 750 UG SEV AJOPAA 29,1363,46

Toxicity data: ORL-RAT LD50:3543 MG/KG FMCHA2-,C252,91

SKN-RBT LD50:>2 GM/KG FMCHA2-,C252,91

ORL-MUS LD50: 4875 MG/KG FAONAU 40,144,67

ORL-GPG LD50: 1810 MG/KG JIHTAB 23,259,41

ORL-QAL LD50: >2250 MG/KG FMCHA2-,C252,91

Only selected registry of toxic effects of chemical substances (RTECS) data is presented here. See actual entry in RTECS for complete information on lactic acid and glycerol.

****

Section 6 - Health Hazard Data

****

Handling: Avoid continued contact with skin.

Avoid contact with eyes.

In any case of any exposure which elicits a response, a physician should be consulted immediately.

First Aid Procedures:

Inhalation: Remove to fresh air. If not breathing give artificial respiration. In case of labored breathing give oxygen. Call a physician.

Ingestion: No effects expected. Do not give anything to an unconscious person. Call a physician immediately.

Skin Contact: Flush with plenty of water. Contaminated clothing may be washed or dry cleaned normally.

Eye contact: Wash eyes with plenty of water for at least 15 minutes lifting both upper and lower lids. Call a physician.

****

Section 7 - Reactivity Data

****

Conditions to Avoid: Strong oxidizing agents, bases and acids

Hazardous Polymerization: None known

Further Information: Hydrolyses in water to form Lactic Acid and Glycerol.

****

Section 8 - Spill, Leak or Accident Procedures

****

After Spillage or Leakage: Neutralization is not required. This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber.

Disposal: Laws and regulations for disposal vary widely by locality. Observe all applicable regulations and laws. This material, may be disposed of in solid waste. Material is readily degradable and hydrolyses in several hours.

No requirement for a reportable quantity (CERCLA) of a spill is known.

****

Section 9 - Special Protection or Handling

****

Should be stored in plastic lined steel, plastic, glass, aluminum, stainless steel, or reinforced fiberglass containers.

Protective Gloves: Vinyl or Rubber

Eyes: Splash Goggles or Full Face Shield

Area should have approved means of washing

eyes.

Ventilation: General exhaust.

Storage: Store in cool, dry, ventilated area.

Protect from imcompatible materials.

****

Section 10 - Other Information

****

This material will degrade in the environment by hydrolysis to lactic acid and glycerol.

Materials containing reactive chemicals should be used only by personnel with appropriate chemical training.

The information contained in this document is the best available to the supplier as of the time of writing. Some possible hazards have been determined by analogy to similar classes of material. No separate tests have been performed on the toxicity of this material. The items in this document are subject to change and clarification as more information becomes available.

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Appendix D

Groundwater Monitoring Well Laboratory Analytical Data,
4th Quarter 2003 through 3rd Quarter 2005
(Included on disc only.)

Appendix E

Surface Water Laboratory Analytical Data,
4th Quarter 2003 through 3rd Quarter 2005
(Included on disc only.)

APPENDIX F

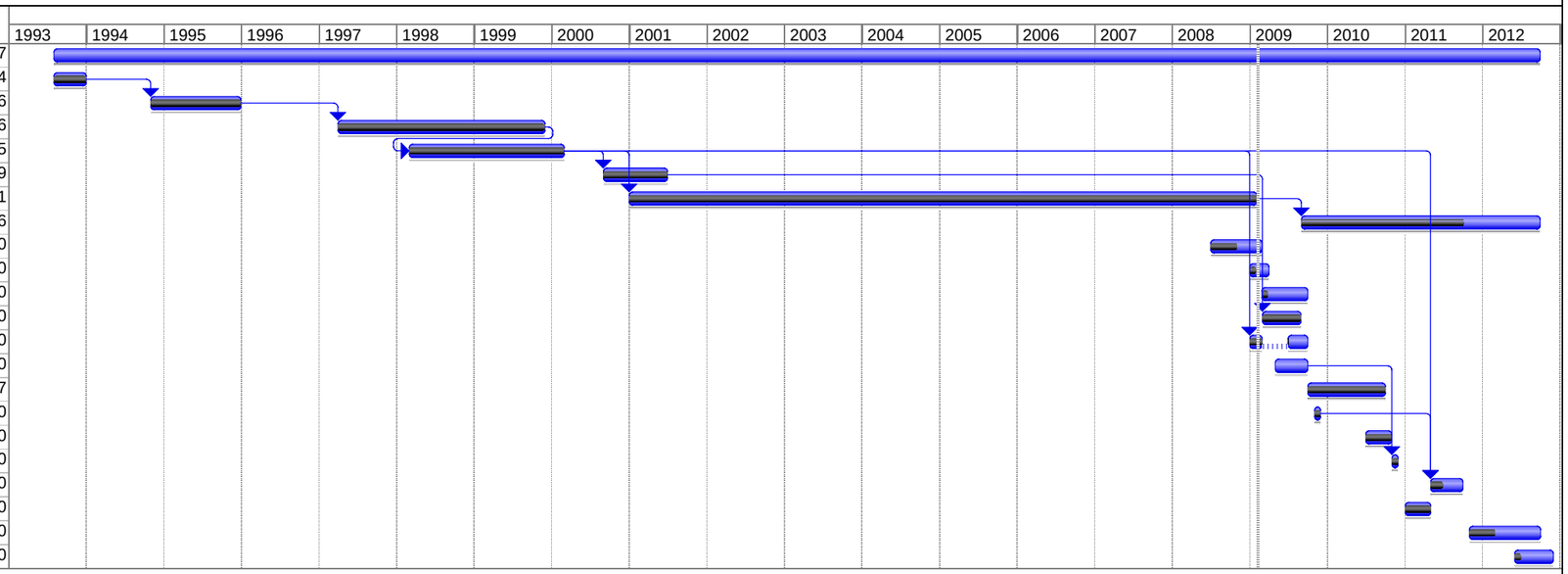
Fort Monmouth Directorate of Public Works
Analytical Sampling Standard Operating Procedures

Appendix G

Final Costs and Schedule for the M-5 Landfill Site

Fort Monmouth Installation Restoration Program, M-5 Landfill Site, Schedule and Cost Summary

ID	Task Name	Start	Finish	COST ($000)
1	M2- Landfill FTMM-02, Total Cost	Mon 8/2/93	Fri 9/28/12	$1,277
2	Preliminary Assessment	Mon 8/2/93	Fri 12/31/93	$4
3	Site Investigation	Tue 11/1/94	Fri 12/29/95	$46
4	Remedial Investigation / Feasability Study	Tue 4/1/97	Tue 11/30/99	$306
5	Remedial Design / Action Selection / CEA	Mon 3/2/98	Tue 2/29/00	$25
6	Remedial Action - Construction	Fri 9/1/00	Fri 6/29/01	$39
7	Remedial Action - Operation	Mon 1/1/01	Mon 2/2/09	$571
8	LTM (Qtrly Monitoring Mar, May Aug & Dec)	Tue 9/1/09	Fri 9/28/12	$286
9	Annual RAPR 2003-2005 (4th qtr '03 to 3rd qtr '05)	Tue 7/1/08	Fri 2/27/09	$0
10	Annual MW Inspections 2008	Thu 1/1/09	Tue 3/31/09	$0
11	Annual RAPR 2005-2006 (4th qtr '05 to 3rd qtr '06)	Fri 2/27/09	Wed 9/30/09	$0
12	Post Remedial Injection Sampling & Rpt	Mon 3/2/09	Sun 8/30/09	$0
13	CEA Report 2009	Thu 1/1/09	Wed 9/30/09	$0
14	Annual RAPR 2007-2008 (4th qtr '06 to 3rd qtr '08)	Fri 5/1/09	Wed 9/30/09	$0
15	Landfill Cap	Thu 10/1/09	Thu 9/30/10	$317
16	Annual MW Inspections 2009	Mon 11/2/09	Mon 11/30/09	$0
17	Annual RAPR 2009 (4th qtr '08 to 4th qtr '09)	Thu 7/1/10	Sun 10/31/10	$0
18	Annual MW Inspections 2010	Mon 11/1/10	Tue 11/30/10	$0
19	Biennial CEA Report 2011	Mon 5/2/11	Fri 9/30/11	$0
20	Annual RAPR 2010	Mon 1/3/11	Mon 5/2/11	$0
21	Final RA Report and CEA	Tue 11/1/11	Sun 9/30/12	$0
22	MW Abandonment / Site Restoration	Fri 6/1/12	Thu 11/29/12	$0



Costs are primarily based on the DPW Obligation List.
Dated 10-29-08

Task | Progress | Summary | External Tasks | Deadline
Split | Milestone | Project Summary | External Milestone

FINAL

Remedial Action Progress Report

M-5 Landfill Site

U. S. Army Installation Fort Monmouth
Fort Monmouth, New Jersey

Directorate of Public Works

September 7, 2005

4700 South McClintock Drive, Suite 150
Tempe, Arizona 85282

Contract No. DACA 51-02-D-0007
Delivery Order No. 2V19

United States Army

Fort Monmouth, New Jersey

M-5 Landfill Site
Remedial Action Progress Report

Hydrogen Release Compound Injection/
Long Term Monitoring Program
(4th Quarter 2002 through 3rd Quarter 2003)

Fort Monmouth, Main Post
Fort Monmouth, New Jersey

September 7, 2005

U.S. Army, Directorate of Public Works
Planning & Environmental Branch
Attn: IMNE-MON-PWE, 173 Riverside Ave.
Fort Monmouth, NJ 07703

TRANSMITTAL

TO:
Gregory Zalaskus,
Case Manager
NJ DEP
Bureau of Case Management
401 E. State St., 5th Fl, West Wing
PO Box 028
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DATE:
October 13, 2005

☐ URGENT ☑ FOR REVIEW ☐ PLEASE COMMENT ☐ PLEASE REPLY ☐ PLEASE RECYCLE

SUBJECT:

Document Submittal

Enclosed Please Find:

(1) Two Copies of the *M-5 Landfill, Remedial Action Progress Report*, September 2005 prepared by Versar, Inc. Additional copy is for John Prendergast. A CD of the entire report including lab data is also provided.

Greg,

This is a standard progress report with results indicating steady decreasing contaminants of concern at the site. Subsequent reports are being prepared.

DOUGLAS C. GUENTHER
Environmental Protection Specialist

PREPARED BY:

4700 South McClintock Drive, Suite 150
Tempe, AZ 85282

September 7, 2005

VERSAR PROJECT NO. 110571.0571.419

TABLE OF CONTENTS

EXECUTIVE SUMMARY i
1.0 INTRODUCTION **1-1**
1.1 Objectives 1-1
1.2 Report Organization 1-1
2.0 SITE BACKGROUND **2-1**
2.1 Site Location and Description 2-1
2.2 Site History and Background Investigations 2-1
2.2.1 Site Investigation Report - Weston 2-2
2.2.2 Remedial Investigation/Remedial Action Work Plan - ATC 2-2
2.2.3 Remedial Investigation Report for Near-Surface Soils - Versar 2-3
2.2.4 Remedial Action Progress Report – Versar 2-3
3.0 REMEDIAL ACTIVITIES **3-1**
3.1 Hydrogen Release Compound® Injections 3-1
3.2 Discharge to Groundwater Permit 3-1
4.0 MONITORING AND SAMPLING ACTIVITIES **4-1**
4.1 Groundwater Monitoring 4-1
4.2 Groundwater Sampling 4-1
4.3 Surface Water Sampling 4-2
5.0 SITE CHEMICAL RESULTS **5-1**
5.1 Groundwater Sampling Results 5-1
5.1.1 Contaminant of Concern 5-2
5.1.2 Remaining Analyte Exceedences 5-2
5.1.2.1 Volatile Organic Compounds 5-2
5.1.2.2 Semi-Volatile OrganicCompounds 5-2
5.1.2.3 Pesticides and PCBs 5-2
5.1.2.4 TAL Metals 5-3
5.2 Surface Water Sampling Results 5-3
5.3 Quality Assurance/Quality Control (QA/QC) 5-4
6.0 REMEDIAL ACTION PROGRESS **6-1**
6.1 Progress 6-1
6.2 Costs 6-1
6.3 Discharge to Groundwater Permit 6-2
6.4 Recommendations 6-2
7.0 REFERENCES **7-1**

TABLES

Table 4-1 Groundwater Elevation Summary
Table 4-2 Groundwater Sampling Summary
Table 4-3 Surface Water Sampling Summary
Table 5-1 M5-MW10 Groundwater Sampling Results
Table 5-2 M5-MW11 Groundwater Sampling Results
Table 5-3 M5-MW12 Groundwater Sampling Results
Table 5-4 M5-MW13 Groundwater Sampling Results
Table 5-5 M5-MW14 Groundwater Sampling Results
Table 5-6 M5-MW15 Groundwater Sampling Results
Table 5-7 M5-MW16 Groundwater Sampling Results
Table 5-8 M5-MW18 Groundwater Sampling Results
Table 5-9 M5-MW19 Groundwater Sampling Results
Table 5-10 M5-MW20 Groundwater Sampling Results
Table 5-11 M5-MW23 Groundwater Sampling Results
Table 5-12 M5-MW25 Groundwater Sampling Results
Table 5-13 Groundwater Exceedence Summary
Table 5-14 SS-4 Surface Water Sampling Results
Table 5-15 SS-5 Surface Water Sampling Results
Table 5-16 SS-15 Surface Water Sampling Results
Table 5-17 SS-16 Surface Water Sampling Results
Table 5-18 Surface Water Exceedence Summary

FIGURES

Figure 2-1 Site Location Map
Figure 2-2 Site Map
Figure 3-1 Bioremediation Areas
Figure 4-1 Groundwater Contour Map (28 OCT 02)
Figure 4-2 Groundwater Contour Map (22 JAN 03)
Figure 4-3 Groundwater Contour Map (21 APR 03)
Figure 4-4 Groundwater Contour Map (30 JUL 03)
Figure 5-1 Groundwater and Surface Water Sampling Results for PCE
Figure 5-2 PCE Observations at Well M5-MW11
Figure 5-3 PCE Observations at Well M5-MW16
Figure 5-4 PCE Observations at Well M5-MW18
Figure 5-5 PCE Observations at Well M5-MW19
Figure 5-6 PCE Observations at Well M5-MW20
Figure 5-7 PCE Observations at Well M5-MW23
Figure 5-8 PCE Observations at Well M8-MW12
Figure 5-9 PCE Observations at Well M8-MW23

APPENDICES

Appendix A	ATC Associates, Inc., February 2000. *Remedial Action Workplan – Landfill M-5, Main Post, Fort Monmouth, New Jersey.*
Appendix B	Material Safety Data Sheet for Hydrogen Release Compound®
Appendix C	Groundwater Monitoring Well Laboratory Analytical Data, 4th Quarter 2002 through 3rd Quarter 2003
Appendix D	Surface Water Laboratory Analytical Data, 4th Quarter 2002 through 3rd Quarter 2003

EXECUTIVE SUMMARY

A Hydrogen Release Compound® (HRC®) injection program was implemented to remediate tetrachloroethene (PCE) identified in shallow groundwater at the M-5 Landfill site, Main Post, Fort Monmouth, New Jersey. The application of anaerobic bioremediation was conducted in accordance with the M-5 Landfill site Remedial Investigation Report (RIR)/Remedial Action Work Plan (RAWP), prepared by ATC Associates, Inc. (ATC), dated February 2000. The HRC® direct injection program involved seven distinct areas in and around the M-5 Landfill site, where elevated concentrations of PCE were detected in the shallow groundwater. This Remedial Action Progress Report (RAPR) documents groundwater quality conditions over time and evaluates the impact of the HRC® injection program undertaken from September 2002 through August 2003.

A general decreasing trend of PCE concentrations in groundwater was observed at the site throughout the period of groundwater sampling (4th Quarter 2002 through 3rd Quarter 2003). Similarly, concentrations of trichloroethene (TCE) and cis-1,2-dichloroethene (cis-1,2-DCE) were detected in groundwater during several sampling rounds at more than one monitoring well location. This evidence of an increase in daughter (i.e., breakdown) products supports the contention that PCE degradation is occurring at the M-5 Landfill site, presumably due to the effectiveness of the HRC® to support the degradation processes.

Based on the observed decreasing trend of PCE concentrations and the increased presence of degradation products in the groundwater, the HRC® subsurface injection program will continue. Remedial action progress will be monitored and reported to the New Jersey Department of Environmental Protection (NJDEP) periodically.

1.0 INTRODUCTION

VERSAR, Inc. (Versar) was contracted by the United States (U.S.) Army Garrison, Fort Monmouth (Fort Monmouth), Directorate of Public Works (DPW), Fort Monmouth, New Jersey to prepare an RAPR to document the activities performed for the remediation of PCE in the shallow groundwater at the M-5 Landfill site located at Fort Monmouth. The application of a HRC® injection program to remediate PCE was conducted in accordance with the M-5 Landfill site RIR/RAWP, prepared by ATC, dated February 2000 and approved by the NJDEP in March 2001. This report includes all information contained in the RIR/RAWP and describes the effectiveness of the remedial activities performed by the DPW as of August 2003.

1.1 Objectives

The objective of this RAPR is to document the implementation of the remedial action program performed at the M-5 Landfill site during the reporting period of 4th Quarter 2002 through 3rd Quarter 2003. The purpose of the remedial action was to treat the PCE affected areas through use of HRC® and thereby reduce PCE concentrations to comply with the NJDEP Class II-A Groundwater Quality Criteria (GWQC). The remedial activities were conducted in accordance with NJDEP *Technical Requirements for Site Remediation* (July 1999), NJAC 7:26E, et seq.

The remedial action and subsequent preparation of the RAPR encompassed the following:

- Applying HRC® treatment to seven zones within the M-5 Landfill site area where the highest groundwater impacts were observed/documented.
- Conducting quarterly rounds of groundwater and surface water sampling to evaluate effectiveness of the remedial action.
- Comparison of the results of the groundwater and surface water quality monitoring programs with the NJDEP GWQC and Surface Water Quality Standards (SWQS).
- Identifying and discussing recommendations for the continuation of this remedial action.
- Documenting all remedial activities as required by the NJDEP *Technical Requirements for Site Remediation* NJAC 7:26E et seq.

1.2 Report Organization

This report is organized to minimize repetition. **Section 2.0** provides background information on the activities performed at the M-5 Landfill site. **Section 3.0** describes and summarizes the remedial activities (HRC® injection) conducted at the M-5 Landfill site, including groundwater and surface water sampling. **Section 4.0** discusses groundwater flow at the M-5 Landfill site. **Section 5.0** presents the chemical results of the groundwater and surface water sampling. **Section 6.0** discusses the progress of the remedial action and provides recommendations for the M-5 Landfill site.

2.0 SITE BACKGROUND

The following sections describe the site background of the M-5 Landfill site. Included is a description of the site location, site history and background investigations.

2.1 Site Location and Description

The M-5 Landfill site is located on the western portion of the Main Post, just west of the Eatontown/Oceanport Borough line (**Figure 2-1**). The site is located on the northwest corner of the intersection of North Drive and Wilson Avenue, and is bordered by Mill Creek and Parkers Creek to the west (**Figure 2-2**). The approximate area of the M-5 Landfill is 138,200 ft^2 (3.2 acres). The M-5 Landfill was constructed in a former swamp and was reportedly used for the disposal of automobiles as well as for domestic and industrial wastes (Weston, 1995). The environmental setting (regional/local geology and hydrogeology) of the M-5 Landfill site is described in the ATC RIR/RAWP, dated February 2000 (**Appendix A**).

2.2 Site History and Background Investigations

The U.S. Army Corps of Engineers (USACE), Baltimore District, initially contracted Weston to perform a field investigation at Fort Monmouth, New Jersey. Suspected hazardous waste sites were initially identified at Fort Monmouth in a report prepared by the U.S. Army Toxic and Hazardous Materials Agency (USATHAMA, 1980). The USATHAMA report identified 37 sites with known or suspected waste materials on the Main Post and the two subposts (Charles Wood and Evans Area). Roy F. Weston, Inc. (Weston) conducted a background investigation of the 37 sites, as well as eight additional sites that were identified by Fort Monmouth and the NJDEP. Weston's findings were described in a report titled, *Investigation of Suspected Hazardous Waste Sites at Fort Monmouth, New Jersey* (1993).

As part of a NJPDES permit, surface-water samples have been collected at two locations (one upstream on Mill Creek and one downstream on Lafetra Creek) since February 1986. The results indicated that one volatile organic compound (VOC), PCE, was detected at concentrations exceeding the NJDEP SWQS (Weston, 1995). In the background report, additional investigations (including sampling and other field work) were recommended at 22 of the sites on the Main Post and Charles Wood areas, including the M-5 Landfill site. NJDEP approved the recommendations on April 20, 1995.

The 1995 Weston Site Investigation (SI) Report presents the results of field investigation activities that were performed at 13 sites at the Main Post Area and eight sites at the Charles Wood Area. The results of the investigation of the M-5 Landfill site are included in the Weston SI report. Initial field investigation activities were performed between November 1994 and November 1995. The field investigation activities included surface geophysical investigations, sediment and surface water sampling, transformer site sampling, surface and subsurface soil sampling, groundwater monitoring well installation and sampling, and tidal monitoring. The Weston SI report was used as the basis for

subsequent remedial investigations at the Main Post and Charles Wood areas, which progressed to the development of remedial actions, including the remediation program at the M-5 Landfill site.

2.2.1 Site Investigation Report - Weston

In February 1995, Weston, as part of an SI of the M-5 Landfill site, conducted a surface geophysical investigation and a hydrogeologic interpretation of the fill site. Shallow monitoring wells, M5-MW10 (downgradient) and M5-MW11 (upgradient), were installed at strategic locations to monitor groundwater in the area. The monitoring wells were sampled twice for Target Compound List (TCL) plus 30 parameters (TCL+30), semi-volatile organic compounds (SVOCs), and Target Analyte List (TAL) metals, sulfate and cyanide.

Groundwater quality data for the two monitoring wells indicated that PCE exceeded the NJDEP GWQC in M5-MW11, the upgradient well, in both sampling rounds. There were no exceedences of the NJDEP GWQC for SVOCs, sulfate or cyanide. Four metals (aluminum, iron, manganese and sodium) were identified at concentrations exceeding the NJDEP GWQC.

The Weston SI Report also presented a DPW proposal for the M-5 Landfill site that was subsequently implemented. A long-term groundwater and surface water monitoring program was developed utilizing the existing monitoring wells and supplemental wells installed during follow-up investigations, as well as surface water sampling locations, to document and monitor surface water and groundwater quality over time.

2.2.2 Remedial Investigation/Remedial Action Work Plan - ATC

In April 1995, the DPW began its remedial investigation (RI) of the M-5 Landfill site at Fort Monmouth, Main Post. The purpose of this investigation was to collect samples to evaluate the soil, groundwater and surface water quality at and in the vicinity of the M-5 Landfill site, and to prepare a RAWP (**Appendix A**) to address the need for remediation of these media, if necessary. ATC was contracted by the DPW to evaluate the data collected during the remedial investigation.

The RI involved drilling and sampling 261 Geoprobe® locations for soil and groundwater, installing 12 new shallow groundwater monitoring wells (see Appendix B and Appendix D of the ATC RIR/RAWP presented in **Appendix A**), drilling three deep soil borings, and sampling two groundwater monitoring wells during 11 quarterly sampling events, three groundwater monitoring wells for six quarterly sampling events, and ten groundwater monitoring wells for three quarterly sampling events (see Tables 1 through 18 of the ATC RIR/RAWP presented in **Appendix A**). The results of this investigation indicate that the shallow groundwater contained VOCs, particularly PCE, which exceeded the NJDEP GWQC. Analytical results indicated that PCE concentrations in soil borings at the M-5 Landfill site were only marginally above NJDEP Impact to Groundwater Soil Cleanup Criteria (IGWSCC). The end result of the

RI identified PCE as a Contaminant of Concern (COC) in groundwater at the M-5 Landfill site.

The moderate concentrations and areal distribution of PCE in the soil and groundwater at the M-5 Landfill site suggest that this location is suitable for a bioremediation program. In general, PCE concentrations are expected to come into compliance with the NJDEP Class II GWQC within a five-year period. Although PCE concentrations are expected to naturally attenuate to acceptable levels, the DPW wishes to shorten the time required for compliance with the GWQC. Therefore, the DPW proposes to actively remediate existing concentrations of PCE by treating the affected areas with HRC®. The DPW proposed to treat seven PCE-affected areas with a specific HRC® application protocol. A groundwater sampling program was designed to measure the effectiveness of the HRC® treatment program and to monitor COC concentrations in groundwater (discussed further in **Section 3.0**). The RIR/RAWP was submitted by ATC in February 2000 and approved by the NJDEP in March 2001.

2.2.3 Remedial Investigation Report for Near-Surface Soils - Versar

Versar performed an RI for the M-5 Landfill site which included the 1995 Weston findings as well as data from recent surface soil sampling performed by the DPW. Sampling of the near surface soils was performed by the DPW to demonstrate compliance equivalence with respect to the Solid Waste Disposal Act of 1965. To characterize the near-surface soils, which cover the M-5 Landfill site, the DPW obtained samples from the top 2 feet of soil at 173 locations throughout the site, from April through August 1998. The sampling data did not identify a significant prevalent source of contamination exceeding the NJDEP Residential Direct Contact Soil Cleanup Criteria (RDCSCC). Only minor localized exceedences were identified after compliance averaging. Evaluation of the concentrations of organic and inorganic soil contaminants indicated that the site does not pose a risk from direct contact with surface and near-surface soils. No Further Action was recommended regarding the surface and near-surface soils throughout the M-5 Landfill site. These findings are described in detail in Versar's Remedial Investigation Report for Near-Surface Soils (March 2004).

2.2.4 Remedial Action Progress Report – Versar

After the first HRC® application to Site 812 and nine subsequent rounds of groundwater monitoring well sampling (3rd Quarter 2000 through 3rd Quarter 2002), an RAPR was prepared by Versar, dated December 2003. The RAPR documented the groundwater quality conditions over time and evaluated the impact of the HRC® injection program.

The initial injection of HRC® was performed by DPW using a GeoProbe® from September 2000 through December 2000 under the provisions of the NJDEP Permit-by-Rule program. The second injection of HRC® was performed by DPW from February 2002 through September 2002, also under the provisions of the NJDEP Permit-by-Rule program.

A decreasing trend of PCE concentrations in groundwater was observed at the site throughout the period of groundwater sampling. Similarly, concentrations of trichloroethene (TCE) and cis-1,2-dichloroethene (cis-1,2-DCE) were detected in groundwater during several sampling rounds at more than one monitoring well location. This evidence of an increase in daughter (e.g., breakdown) products supports the contention that PCE degradation is occurring at the M-5 Landfill site, presumably due to the effectiveness of the HRC® to support the degradation processes.

Based on the observed decreasing trend of PCE concentrations and the increased presence of degradation products in the groundwater, the HRC® subsurface injection program was continued.

3.0 REMEDIAL ACTIVITIES

In the RIR/RAWP for the M-5 Landfill site (ATC, 2000), sampling results indicated that the shallow groundwater contained PCE concentrations in excess of the NJDEP GWQC. Although PCE concentrations in groundwater are expected to gradually decrease through natural attenuation, the DPW implemented an anaerobic bioremediation program to actively address the PCE groundwater contamination at the M-5 Landfill site. This anaerobic bioremediation involved treatment of seven areas of chlorinated hydrocarbon contamination with HRC®.

3.1 Hydrogen Release Compound® Injections

HRC® is a slow-release compound that provides a steady hydrogen source for between six months and one year, and has been shown to enhance the natural attenuation of PCE at study sites. HRC® is a proprietary, food quality, polylactate ester that, upon being deposited into the subsurface, creates anaerobic aquifer conditions and causes the release of hydrogen. Under anaerobic conditions, naturally occurring microorganisms use the hydrogen to progressively remove chlorine atoms from chlorinated hydrocarbons via reductive dechlorination.

The third HRC® injection for the remediation of the COC at the M-5 Landfill site used the methodology as described in the RAWP prepared by ATC, dated February 2000 (**Appendix A**) and was performed from June 2003 through August 2003. This HRC® direct injection program included seven distinct areas in and around the M-5 Landfill site, where elevated concentrations of PCE were detected in the shallow groundwater. These seven HRC® injection areas (HRC-1 through HRC-7) are illustrated in **Figure 3-1**. Placement of the treatment areas was intended to provide direct treatment of the areas of highest groundwater impact. The injection points were located within a 12 foot by 12 foot grid over each of the seven treatment areas. The injections were applied at a rate of 4 pounds per vertical foot using direct push technology through 1.25-inch (outer diameter) Geoprobe® rods to a depth approximately 15 feet below ground surface (bgs). After completion of each injection point, a high-pressure pump was used to inject the HRC® compounds from bottom to top. Approximately 8,670 pounds of HRC® was injected into the subsurface at the M-5 Landfill site during the third injection event.

Subsequent injections will be conducted periodically to achieve an overall reduction of PCE concentrations to below the NJDEP GWQC of 1.0 ug/L.

3.2 Discharge to Groundwater Permit

The purpose of the NJPDES DGW permit is to request formal approval of the HRC® subsurface injection program at the M-5 Landfill site as described in the RAWP prepared by ATC (**Appendix A**). The third injection (June-Aug 2003) was completed with the prior approval of the NJDEP under the provisions of a Permit by Rule agreement. VERSAR prepared the DGW permit application package in November 2001, which was subsequently presented to the NJDEP for approval.

As described in the ATC RAWP, the HRC® injections will not result in the discharge of any hazardous compounds. Because there is no influent or effluent associated with the injection of HRC® to groundwater, the HRC® and clean tap water are the only substances that will be injected into the aquifer. A Material Data Safety Sheet (MSDS) for the HRC® is presented in **Appendix B**.

4.0 MONITORING AND SAMPLING ACTIVITIES

As part of the approved RIR/RAWP implementation which consists of HRC® injection and evaluation, and a Long Term Monitoring (LTM) program, quarterly groundwater and surface water sampling was performed by DPW's base operations contractor, TECOM-Vinnell Sevices, Inc. (TVS) from 4th Quarter 2002 through 3rd Quarter 2003. Sampling activities were performed in accordance with the *Fort Monmouth Standard Sampling Operating Procedure* (December 1997). Laboratory analyses of the samples collected at the M-5 Landfill site were conducted at the Fort Monmouth Environmental Testing Laboratory (FMETL), a New Jersey certified laboratory (Certification No. 13461).

4.1 Groundwater Monitoring

During the groundwater sampling program at the M-5 Landfill site (four quarterly rounds from 4th Quarter 2002 through 3rd Quarter 2003), groundwater was encountered in the 12 monitoring wells at the M-5 Landfill site at depths ranging from 2.03 to 11.73 feet bgs (**Table 4-1**) with a varying gradient toward the southwest.

To determine if groundwater flow conditions have changed since the onset of remedial actions regarding groundwater contamination at the M-5 Landfill site, four groundwater elevation contour maps were generated based on groundwater depth measurements collected from 12 monitoring wells at the M-5 Landfill (wells M5-MW10, M5-MW11, M5-MW12, M5-MW13, M5-MW14, M5-MW15, M5-MW16, M5-MW18, M5-MW19, M5-MW20, M5-MW23, and M5-MW25). These contour maps (**Figure 4-1** through **Figure 4-4**) were constructed using static depth to water measurements (**Table 4-1**) observed within the same day.

The groundwater underlying the M-5 Landfill site consistently flows to the southwest towards Parkers Creek at elevations ranging from 2.32 to 10.13 feet above mean sea level (amsl) with site gradients ranging from 0.0095 feet per foot on January 22, 2003 and April 21, 2003 to 0.0131 feet per foot on October 28, 2002. No significant variations in groundwater flow conditions were observed in these four groundwater contour maps.

4.2 Groundwater Sampling

Quarterly groundwater sampling was performed by the DPW at the M-5 Landfill site from 4th Quarter 2002 through 3rd Quarter 2003 as part of the ongoing groundwater monitoring and sampling program approved by the NJDEP. Groundwater samples were collected from 12 monitoring wells (M5-MW10, M5-MW11, M5-MW12, M5-MW13, M5-MW14, M5-MW15, M5-MW16, M5-MW18, M5-MW19, M5-MW20, M5-MW23 and M5-MW25) during four quarterly sampling events performed during the last reporting period.

A total of 48 groundwater samples were collected using protocols as described in the *New Jersey DEP Field Sampling Procedures Manual* (1992). The samples were analyzed for

VOCs plus 15 tentatively identified compounds (TICs), SVOCs plus 15 TICs, pesticides, polychlorinated biphenyls (PCBs) and TAL metals.

Sampling equipment was thoroughly decontaminated before and after each use, in accordance with the *Fort Monmouth Standard Sampling Operating Procedure* (1997). Following collection, the groundwater samples were immediately placed in laboratory-supplied bottleware. The sample containers were labeled, sealed, packed in ice and transported to the FMETL under proper chain-of-custody procedures.

Copies of the chain-of-custody forms for the laboratory analyses and laboratory data sheets are presented in **Appendix C**. A summary of the groundwater sampling activities, including rounds, well IDs, sample IDs, sample locations, collection/analysis date, analytical parameters and analysis method, is provided in **Table 4-2**. **Figure 2-2** shows the locations of the monitoring wells at the M-5 Landfill site. The results of these analyses are discussed in **Section 5.1**.

4.3 Surface Water Sampling

Surface water sampling was conducted by the DPW from 4th Quarter 2002 through 3rd Quarter 2003. A total of 16 surface water samples were collected over four rounds of sampling from four distinct surface water sample collection points (SS-4, SS-5, SS-15 and SS-16). **Figure 2-2** shows the locations of the surface water sample collection points at the M-5 Landfill site. The samples were analyzed by FMETL for VOCs plus 15 TICs, pesticides and PCBs. The results of these analyses are discussed in **Section 5.2**.

Sampling equipment was thoroughly decontaminated before and after each use, in accordance with the *Fort Monmouth Standard Sampling Operating Procedure* (1997). The surface water samples were collected and immediately placed in laboratory-supplied bottleware. The sample containers were labeled, sealed, packed in ice and transported to the FMETL under proper chain-of-custody procedures.

Copies of the chain-of-custody forms and the laboratory analyses are presented in **Appendix D**. A summary of the surface water sampling activities, including rounds, sample IDs, stream sampling locations, collection/analysis date, analytical parameters and analysis method is provided in **Table 4-3**.

5.0 SITE CHEMICAL RESULTS

This section includes a summary discussion of the chemical characterization of the site based on the various samples collected and analyzed, including four quarterly rounds of monitoring well samples and four rounds of surface water samples. Sample analyses were performed by the FMETL.

5.1 Groundwater Sampling Results

A total of 48 quarterly groundwater samples were collected to evaluate the effectiveness of the HRC injection and LTM program with respect to PCE contamination at the M-5 Landfill site. The laboratory analytical results for each monitoring well are summarized in **Table 5-1** through **Table 5-12**. This section presents a summary of the laboratory results performed for the four rounds of groundwater samples collected from 4th Quarter 2002 through 3rd Quarter 2003. Groundwater samples were collected from the 12 monitoring wells (M5-MW10, M5-MW11, M5-MW12, M5-MW13, M5-MW14, M5-MW15, M5-MW16, M5-MW18, M5-MW19, M5-MW20, M5-MW23 and M5-MW25) at the M-5 Landfill site. The groundwater samples were collected and analyzed for VOCs plus 15 TICs, SVOCs plus 15 TICs, pesticides, PCBs and TAL metals.

Analytes detected in groundwater samples at concentrations above the NJDEP GWQC are highlighted **Table 5-1** through **Table 5-12**. The laboratory chain of custody forms and laboratory data sheets for groundwater samples are provided in **Appendix C**. Historical groundwater monitoring well sampling results, conducted between May 1997 and September 1999, are presented in Table 3 through Table 17 in the ATC RAWP in **Appendix A**. **Figure 5-1** shows the groundwater contaminant distribution of the current data within the area of the M-5 Landfill site, including the historical groundwater sampling results.

During four quarterly sampling events conducted from 4th Quarter 2002 through 3rd Quarter 2003, a total of six VOCs were detected in site groundwater. Three VOCs were detected at concentrations that exceed the respective GWQC in at least one sample, while the remaining three VOCs were detected below the respective GWQC. A total of two SVOCs were detected in site groundwater at concentrations below the respective GWQC. No pesticides or PCBs were detected in site groundwater. A total of 20 metals were detected in site groundwater. Seven metals were detected at concentrations that exceed the respective GWQC in at least one sample, while the remaining 13 metals were detected below the respective GWQC. A groundwater exceedence summary is presented in **Table 5-13**.

The following sections present the analytes detected above the GWQC found in the groundwater at the M-5 Landfill site.

5.1.1 Contaminant of Concern

Based on the ATC RIR/RAWP (2000), PCE is considered to be the only COC at the M-5 Landfill site. **Figure 5-2** through **Figure 5-7** present the trend of PCE concentrations detected in groundwater monitoring wells M5-MW11, M5-MW16, M5-MW18, M5-MW19, M5-MW20 and M5-MW23 over time. PCE was not detected in the remaining monitoring wells. The following paragraphs present the results of the COC, PCE, and its daughter products [trichloroethene (TCE) and cis-1,2-dichloroethene (cis-1,2-DCE)] detected above the GWQC found in the groundwater at the M-5 Landfill site. **Section 6.0** presents the discussion of the PCE trend occurring in relation to the progress of the HRC remediation program at the M-5 Landfill site.

PCE was detected at concentrations above the GWQC of 1.0 ug/L during four separate rounds of sampling collected from five separate monitoring well locations. Concentrations ranged from 1.01 ug/L in M5-MW19 (sampling round #17) to 79.46 ug/L in M5-MW23 (sampling round #15).

TCE was detected at concentrations exceeding the GWQC of 1.0 ug/L during four separate rounds of sampling collected at three separate monitoring well locations. Concentrations ranged from 1.06 ug/L in M5-MW11 (sampling round #15) to 5.61 ug/L in M5-MW16 (sampling round #17).

cis-1,2-DCE was detected at concentrations exceeding the GWQC of 10 ug/L during four separate rounds of sampling collected at one monitoring well location (M5-MW16). Concentrations ranged from 16.12 ug/L (sampling round #16) to 103.82 ug/L (sampling round #14).

5.1.2 Remaining Analyte Exceedences

The remaining contaminants, detected above the GWQC, occur at low to moderate concentrations in a limited number of groundwater monitoring well samples collected during this reporting period. **Sections 5.1.2.1** through **5.1.2.4** summarize these results.

5.1.2.1 Volatile Organic Compounds

No other VOCs were detected above the appropriate GWQC at the site.

5.1.2.2 Semi-Volatile OrganicCompounds

No SVOCs were detected above the appropriate GWQC at the site.

5.1.2.3 Pesticides and PCBs

No pesticides or PCBs were detected above the appropriate GWQC at the site.

5.1.2.4 TAL Metals

During four quarterly sampling events conducted from 4th Quarter 2002 through 3rd Quarter 2003, a total of seven metals (aluminum, arsenic, barium, cadmium, iron, manganese and sodium) were detected in site groundwater at concentrations that exceed the respective GWQC in at least one sample.

Aluminum was detected at concentrations exceeding the GWQC of 200 ug/L during four separate rounds of sampling collected at ten separate monitoring well locations. Concentrations ranged from 202 ug/L in M5-MW11 (sampling round #15) to 6,920 ug/L in M5-MW23 (sampling round #15).

Arsenic was detected at concentrations exceeding the GWQC of 8.0 ug/L during four separate rounds of sampling collected at four separate monitoring well locations. Concentrations ranged from 8.1 ug/L in M5-MW19 (sampling round #14) to 86.7 ug/L in M5-MW23 (sampling round #15).

Barium was detected at concentrations exceeding the GWQC of 2,000 ug/L during one round of sampling collected at one monitoring well location at a concentration of 4,490 ug/L in M5-MW18 (sampling round #16).

Cadmium was detected at concentrations exceeding the GWQC of 4.0 ug/L during two separate rounds of sampling collected at two separate monitoring well locations. Concentrations ranged from 8.11 ug/L in M5-MW23 (sampling round #15) to 11.4 ug/L in M5-MW18 (sampling round #16).

Iron was detected at concentrations exceeding the GWQC of 300 ug/L during four separate rounds of sampling collected at 12 separate monitoring well locations. Concentrations ranged from 586 ug/L in M5-MW15 (sampling round #16) to 204,000 ug/L in M5-MW18 (sampling round #16).

Manganese was detected at concentrations exceeding the GWQC of 50 ug/L during four separate rounds of sampling collected at nine separate monitoring well locations. Concentrations ranged from 53.7 ug/L in M5-MW18 (sampling round #14) to 1,060 ug/L in M5-MW10 (sampling round #16).

Sodium was detected at concentrations exceeding the GWQC of 50,000 ug/L during four separate rounds of sampling collected at seven separate monitoring well locations. Concentrations ranged from 53,500 ug/L in M5-MW12 (sampling round #15) to 149,000 ug/L in M5-MW25 (sampling round #17).

5.2 Surface Water Sampling Results

A total of 16 quarterly surface water samples were collected by DPW to determine if PCE identified in groundwater has impacted the surface water quality at the M-5 Landfill site. The laboratory analytical results for each surface water site are summarized in

Table 5-14 through **Table 5-17**. This section presents a summary of the laboratory results performed for the four rounds of sampling collected from 4th Quarter 2002 through 3rd Quarter 2003. Surface water samples were collected from four distinct surface water sample collection points (SS-4, SS-5, SS-15 and SS-16) which are in proximity to the M-5 Landfill site. The surface water samples were collected and analyzed for VOC plus 15 TICs, pesticides and PCBs.

The stream sampling results were compared to the NJDEP SWQS. Analytes detected above the respective NJDEP SWQS are highlighted in **Table 5-14** through **Table 5-17**. Historical surface water stream sampling results, conducted between October 1996 and June 1999, are presented in Table 18 of the ATC RAWP in **Appendix A**. **Figure 5-1** shows the surface water stream sites contaminant distribution of the current data within the area of the M-5 Landfill site, including the historical surface water sampling results. The laboratory chain of custody forms for surface water samples are provided in **Appendix D**.

During four quarterly sampling events conducted from 4th Quarter 2002 through 3rd Quarter 2003, a total of three VOCs were detected in site surface water at concentrations below their respective SWQS. No pesticides or PCBs were detected in site surface water.

5.3 Quality Assurance/Quality Control (QA/QC)

In order to verify the reliability of the analytical results, Versar reviewed the holding times for each sample and the results of the analysis of seven method blanks for VOCs, four method blanks for SVOCs, four method blanks for pesticides and PCBs, four method blanks for TAL metals, four trip blanks, four field blanks, and four field duplicate samples. All samples were analyzed by the FMETL within the prescribed holding time requirements for each analytical method.

Method Blanks

Laboratory method blanks accompanied each batch of samples for the M-5 Landfill site. These method blanks consist of laboratory grade water that is processed identically to the samples and analyzed with the sample batch. A total of seven method blanks for VOCs, four method blanks for SVOCs, four method blanks for pesticides and PCBs and four method blanks for TAL metals were analyzed with the M-5 Landfill site samples.

No VOCs, SVOCs, pesticides or PCBs were detected in any method blank samples.

Several metals were detected in at least one method blank sample, including aluminum, antimony, arsenic, calcium, chromium, copper, magnesium, potassium, selenium and sodium. All of the metals were detected below their respective NJDEP criteria. Any subsequent evaluation of the metals analytical results must account for the possibility of laboratory contamination resulting in false positives for the environmental samples; however, metals are not the primary COCs for the M-5 Landfill site, so the impact to the project results is minimal.

Trip Blanks

Four trip blanks were included as part of the M-5 Landfill site sampling programs to document that volatile organics were not introduced into the samples during the handling process. The trip blanks were prepared by FMETL and consisted of sample bottles filled with laboratory deionized water. The trip blanks remained with the sample bottles in coolers and were returned to the laboratory for analysis with the groundwater samples.

One VOC, chloroform, was detected in each of the four trip blanks at concentrations below its NJDEP criteria. The detections of chloroform indicate that the sample handling procedures, including the sample glassware, may have introduced contamination into the sampling and analysis process. However, the primary contaminant of concern, PCE, was not detected in any of the trip blanks.

Field Blanks

One field blank sample was obtained during each day's sampling activities to document the equipment decontamination procedures. A total of four field samples (e.g., field blanks) were collected during the M-5 Landfill site sampling events. The field blanks were collected by rinsing deionized water, supplied by the laboratory, over the sampling equipment used for each day's activities. The water was collected in clean laboratory-supplied sample jars and submitted for analysis along with the M-5 Landfill site groundwater samples.

The results of the field blank analyses showed that one VOC, chloroform, was detected in each of the four field blanks. As noted for the trip blanks, the detections of chloroform indicate that the sample handling procedures, including the sample glassware, may have introduced contamination into the sampling and analysis process. In addition, the same VOC found in the field blanks were also found in the trip blanks, suggesting that the sampling and decontamination procedures did not introduce additional contamination. The primary contaminant of concern, PCE, was not detected in any of the field blanks.

As noted for the method blanks, several metals were detected in at least one field blank sample, including aluminum, barium, beryllium, calcium, copper, iron, lead, magnesium, manganese, potassium, selenium, sodium and zinc. Most of the metals were detected in only a few samples at very low concentrations. However, aluminum was detected in one field blank at a concentration greater than its NJDEP criteria. Because some of these metals were also detected in the method blank samples, the sampling and decontamination procedures do not appear to have been the source of sample contamination. However, any subsequent evaluation of the metals analytical results must account for the possibility of laboratory contamination resulting in false positives for the environmental samples.

Duplicate Samples

Four field duplicate samples were also collected during the M-5 Landfill site sampling events to verify the consistency of the entire sampling and analytical procedure. The results for all of the duplicate samples were close to those obtained for the original samples. The relative percent differences (RPDs) for the duplicate samples VOCs ranged

from 3.3% to 29.6%, and the RPDs for PCE ranged from 4.2% to 14.2%. These RPDs are well below the established limit of 30% for laboratory duplicate samples and indicate that a high level of precision was maintained throughout the sampling and analytical procedures.

The RPDs for the duplicate samples metals analyses ranged from 0.0% to 87.8%, however, the average RPD for all of the metals results is 15.3%. This indicates that, overall, good precision was maintained, but that the metals results were much more varied than those for the VOCs. The apparent metals contamination noted in the method and field blanks may have impacted the precision of the metals analysis.

The QC sample results indicate good precision for all of the analyses. However, the presence of metals in the method blanks and field blanks indicate that contamination may have been introduced by the sampling and analysis procedures. Therefore, any subsequent evaluation of the metals analytical results must account for the possibility of laboratory contamination resulting in false positives for the environmental samples.

6.0 REMEDIAL ACTION PROGRESS

The data support the effectiveness of HRC® treatment program. A general decreasing trend of PCE concentrations (**Figure 5-2** through **Figure 5-7**) was observed in groundwater monitoring wells M5-MW11, M5-MW18, M5-MW19, M5-MW20 and M5-MW23 during this period of groundwater sampling (4th Quarter 2002 through 3rd Quarter 2003).

6.1 Progress

As PCE continued to decrease over time, there was a significant increase in the daughter products - TCE and cis-1,2-DCE over time. The groundwater analytical results presented in **Table 5-1** through **5-12** indicate that concentrations of TCE and cis-1,2-DCE were detected in groundwater during several sampling rounds at more than one monitoring well location. **Figure 5-2** through **Figure 5-7** illustrated the decreasing trend of PCE concentrations as well as the increase of daughter product concentrations observed in groundwater monitoring wells M5-MW11, M5-MW18, M5-MW19, M5-MW20 and M5-MW23 during 4th Quarter 2002 through 3rd Quarter 2003 of groundwater sampling. Overall, the evidence of an increase in daughter products supports the contention that PCE degradation is occurring at the M-5 Landfill site.

Based on the general decreasing trend of PCE concentrations and the increasing indication of degradation products detected in the groundwater, as well as surface water sampling results for the M-5 Landfill site, the HRC® subsurface injection program appears to continue to be effective in remediating PCE contamination at this site.

6.2 Costs

The estimated costs for implementation of the remedial actions performed at the M-5 Landfill site per injection event are provided below:

Estimated Costs of Remedial Actions Performed at the M-5 Landfill Per Injection Event

TASK	ESTIMATED COSTS
1. Third HRC® Injection (8,480 lbs)	$ 51,900
2. Total Labor Cost	$ 38,000
3. Laboratory Cost (one quarter)	$ 10,300
TOTAL ESTIMATED COSTS	$ 100,000

6.3 Discharge to Groundwater Permit

A NJPDES DGW permit application was submitted in November 2001 to obtain approval for continuation of the HRC® injection program at the M-5 Landfill site. The third round of HRC® injections commenced as of June 2003 as an extension of the NJDEP Permit by Rule approval. Subsequent injections will be performed under NJDEP regulatory requirements.

6.4 Recommendations

The HRC treatment program for the remediation of the PCE at the M-5 Landfill site will continue using the same methodology as during the first and second treatments, described in the RAWP prepared by ATC (**Appendix A**). A maximum of two treatments per year will follow. There are no recommendations for changes to the M-5 Landfill site remediation program at this time. The effectiveness of the HRC® treatment, methodologies, field activities and analytical data will continue to be reported to the NJDEP in progress reports. Groundwater and surface water monitoring and sampling will continue as part of the LTM Program at the installation. The final injection of HRC is expected to be performed in the fall of 2005.

The table below provides a summary of the proposed changes to the current quarterly groundwater and surface water sampling program at the M-5 Landfill site. Alterations involving laboratory analyses and the elimination of certain wells from the program are based on the distribution of PCE over time. Proposed changes will be implemented unless otherwise directed by the NJDEP.

Monitoring Well	Analyzed for	Future Sampling Status	Reason
M5-MW10	VOCs, SVOCs, pesticides, PCBs, Metals	Continue VOCs Quarterly	No COC exceedences for four rounds, but is downgradient of exceeding wells
M5-MW11	VOCs, SVOCs, pesticides, PCBs, Metals	Continue VOCs Quarterly	COC exceedences
M5-MW12	VOCs, SVOCs, pesticides, PCBs, Metals	Continue VOCs Quarterly	No COC exceedences for four rounds, but is downgradient of exceeding wells
M5-MW13	VOCs, SVOCs, pesticides, PCBs, Metals	Continue VOCs Quarterly	No COC exceedences for four rounds, but is downgradient of exceeding wells

Monitoring Well	Analyzed for	Future Sampling Status	Reason
M5-MW14	VOCs, SVOCs, pesticides, PCBs, Metals	Continue VOCs Quarterly	No COC exceedences for four rounds, but is downgradient of exceeding wells
M5-MW15	VOCs, SVOCs, pesticides, PCBs, Metals	Eliminate	No COC exceedences for four rounds, upgradient
M5-MW16	VOCs, SVOCs, pesticides, PCBs, Metals	Continue VOCs Quarterly	COC exceedences
M5-MW18	VOCs, SVOCs, pesticides, PCBs, Metals	Eliminate	No COC exceedences for four rounds, upgradient
M5-MW19	VOCs, SVOCs, pesticides, PCBs, Metals	Continue VOCs Quarterly	COC exceedences
M5-MW20	VOCs, SVOCs, pesticides, PCBs, Metals	Continue VOCs Quarterly	COC exceedences
M5-MW23	VOCs, SVOCs, pesticides, PCBs, Metals	Continue VOCs Quarterly	COC exceedences
M5-MW25	VOCs, SVOCs, pesticides, PCBs, Metals	Eliminate	No COC exceedences for four rounds, upgradient

Stream Site	Analyzed for	Future Sampling Status	Reason
SS-4	VOCs, pesticides, PCBs	Eliminate	COC detections; no exceedences for four rounds, but is downgradient of exceeding wells.
SS-5	VOCs, pesticides, PCBs	Continue VOCs Quarterly	COC detections; no exceedences for four rounds, but is downgradient of exceeding wells.
SS-15	VOCs, pesticides, PCBs	Continue VOCs Quarterly	COC detections; no exceedences for four rounds.
SS-16	VOCs, pesticides, PCBs	Eliminate	COC detections; no exceedences for four rounds.

7.0 REFERENCES

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TABLES

Table 4-1
Groundwater Elevation Summary
M-5 Landfill
Fort Monmouth, New Jersey

Groundwater Sampling Round:		#14			#15			#16		
Well ID	Elev. of Inner Casing Survey Mark	Date	Depth to Water	Ground-water Elev.	Date	Depth to Water	Ground-water Elev.	Date	Depth to Water	Ground-water Elev.
M5-MW10	6.91	10/28/02	4.14	2.77	01/22/03	4.43	2.48	04/21/03	4.07	2.84
M5-MW11	11.70	10/28/02	6.81	4.89	01/22/03	7.00	4.70	04/21/03	6.70	5.00
M5-MW12	8.58	10/28/02	5.60	2.98	01/22/03	5.95	2.63	04/21/03	5.53	3.05
M5-MW13	5.42	10/28/02	2.08	3.34	01/22/03	2.37	3.05	04/21/03	2.03	3.39
M5-MW14	5.74	10/28/02	2.29	3.45	01/22/03	3.42	2.32	04/21/03	3.17	2.57
M5-MW15	17.40	10/28/02	7.87	9.53	01/22/03	7.91	9.49	04/21/03	7.27	10.13
M5-MW16	15.18	10/28/02	6.84	8.34	01/22/03	6.45	8.73	04/21/03	6.04	9.14
M5-MW18	14.47	10/28/02	6.76	7.71	01/22/03	6.99	7.48	04/21/03	6.72	7.75
M5-MW19	14.02	10/28/02	6.47	7.55	01/22/03	6.58	7.44	04/21/03	6.35	7.67
M5-MW20	12.64	10/28/02	5.45	7.19	01/22/03	5.73	6.91	04/21/03	5.47	7.17
M5-MW23	13.00	10/28/02	7.72	5.28	01/22/03	7.75	5.25	04/21/03	7.54	5.46
M5-MW25	18.01	10/28/02	10.93	7.08	01/22/03	10.75	7.26	04/21/03	10.60	7.41

Notes:
1) Elev.: Elevation in feet
above mean sea level.
2) Depth to water: depth in feet
from the inner casing survey mark.

Table 4-1
Groundwater Elevation Summary
M-5 Landfill
Fort Monmouth, New Jersey

Groundwater Sampling Round: #17

Well ID	Elev. of Inner Casing Survey Mark	Date	Depth to Water	Ground-water Elev.	Min. Depth to Water	Min. Ground-water Elev.	Max. Depth to Water	Max. Ground-water Elev.	Average Groundwater Elev.
M5-MW10	6.91	07/30/03	4.48	2.43	4.07	2.43	4.48	2.84	2.63
M5-MW11	11.70	07/30/03	7.38	4.32	6.70	4.32	7.38	5.00	4.73
M5-MW12	8.58	07/30/03	6.08	2.50	5.53	2.50	6.08	3.05	2.79
M5-MW13	5.42	07/30/03	2.80	2.62	2.03	2.62	2.80	3.39	3.10
M5-MW14	5.74	07/30/03	3.37	2.37	2.29	2.32	3.42	3.45	2.68
M5-MW15	17.40	07/30/03	8.97	8.43	7.27	8.43	8.97	10.13	9.40
M5-MW16	15.18	07/30/03	7.05	8.13	6.04	8.13	7.05	9.14	8.59
M5-MW18	14.47	07/30/03	7.48	6.99	6.72	6.99	7.48	7.75	7.48
M5-MW19	14.02	07/30/03	7.12	6.90	6.35	6.90	7.12	7.67	7.39
M5-MW20	12.64	07/30/03	6.15	6.49	5.45	6.49	6.15	7.19	6.94
M5-MW23	13.00	07/30/03	8.44	4.56	7.54	4.56	8.44	5.46	5.14
M5-MW25	18.01	07/30/03	11.73	6.28	10.60	6.28	11.73	7.41	7.01

Notes:
1) Elev.: Elevation in feet above mean sea level.
2) Depth to water: depth in feet from the inner casing survey mark.

Entire Site:			
2.03	2.32	11.73	10.13

Table 4-2
Groundwater Sampling Summary
Site M-5
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#14						
	M5MW10	2076004	10/28/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW11	2076005	10/28/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW12	2076006	10/28/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW13	2076007	10/28/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW14	2076008	10/28/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW15	2076009	10/28/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW16	2076010	10/28/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW18	2076011	10/28/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW19	2076012	10/28/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW20	2076013	10/28/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW23	2076014	10/28/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW25	2076015	10/28/2002	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
#15						
	M5MW10	3003204	1/22/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW11	3003205	1/22/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW12	3003206	1/22/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW13	3003207	1/22/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW14	3003208	1/22/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW15	3003209	1/22/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW16	3003210	1/22/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW18	3003211	1/22/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW19	3003212	1/22/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW20	3003213	1/22/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW23	3003214	1/22/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW25	3003215	1/22/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
#16						
	M5MW10	3018004	4/21/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW11	3018005	4/21/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW12	3018006	4/21/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW13	3018007	4/21/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW14	3018008	4/21/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW15	3018009	4/21/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW16	3018010	4/21/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW18	3018011	4/21/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;

Notes: Metals = Target Analyte List Metals
VOCs = Volatile Organic Compounds
SVOCs = Semi-Volatile Organic Compounds
Pest/PCBs = Pesticides/Polychlorinated Biphenyls

Table 4-2
Groundwater Sampling Summary
Site M-5
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
	M5MW19	3018012	4/21/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW20	3018013	4/21/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW23	3018014	4/21/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW25	3018015	4/21/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
#17						
	M5MW10	3043904	7/30/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW11	3043905	7/30/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW12	3043906	7/30/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW13	3043907	7/30/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW14	3043908	7/30/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW15	3043909	7/30/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW16	3043910	7/30/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW18	3043911	7/30/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW19	3043912	7/30/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW20	3043913	7/30/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW23	3043914	7/30/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;
	M5MW25	3043915	7/30/2003	Aqueous	Metals; Pest/PCBs; SVOCs; VOCs	Methods 3112B and 3120B, SW 846 - 3115B and 3120; Method 608; Method 8270;

Notes: Metals = Target Analyte List Metals
VOCs = Volatile Organic Compounds
SVOCs = Semi-Volatile Organic Compounds
Pest/PCBs = Pesticides/Polychlorinated Biphenyls

Table 4-3
Surface Water Sampling Summary
Site M-5
Fort Monmouth, New Jersey

Round	Field Sample ID	Lab Sample ID	Date Collected	Matrix	Analytical Parameters	Analytical Methods
#29						
	SS-4	2078012	11/4/2002	Aqueous	Pest/PCBs; VOCs	Method 608; Method 601/602, Method 624, Method 8260, Method 8260A
	SS-5	2078014	11/4/2002	Aqueous	Pest/PCBs; VOCs	Method 608; Method 601/602, Method 624, Method 8260, Method 8260A
	SS-15	2078707	11/5/2002	Aqueous	Pest/PCBs; VOCs	Method 608; Method 601/602, Method 624, Method 8260, Method 8260A
	SS-16	2078710	11/5/2002	Aqueous	Pest/PCBs; VOCs	Method 608; Method 601/602, Method 624, Method 8260, Method 8260A
#30						
	SS-16	3011813	3/13/2003	Aqueous	Pest/PCBs; VOCs	Method 608; Method 601/602, Method 624, Method 8260, Method 8260A
	SS-4	3011817	3/13/2003	Aqueous	Pest/PCBs; VOCs	Method 608; Method 601/602, Method 624, Method 8260, Method 8260A
	SS-5	3011818	3/13/2003	Aqueous	Pest/PCBs; VOCs	Method 608; Method 601/602, Method 624, Method 8260, Method 8260A
	SS-15	3013404	3/24/2003	Aqueous	Pest/PCBs; VOCs	Method 608; Method 601/602, Method 624, Method 8260, Method 8260A
#31						
	SS-15	3024712	5/21/2003	Aqueous	Pest/PCBs; VOCs	Method 608; Method 601/602, Method 624, Method 8260, Method 8260A
	SS-16	3024714	5/21/2003	Aqueous	Pest/PCBs; VOCs	Method 608; Method 601/602, Method 624, Method 8260, Method 8260A
	SS-5	3024715	5/21/2003	Aqueous	Pest/PCBs; VOCs	Method 608; Method 601/602, Method 624, Method 8260, Method 8260A
	SS-4	3024716	5/21/2003	Aqueous	Pest/PCBs; VOCs	Method 608; Method 601/602, Method 624, Method 8260, Method 8260A
#32						
	SS-4	3059215	9/17/2003	Aqueous	Pest/PCBs; VOCs	Method 608; Method 601/602, Method 624, Method 8260, Method 8260A
	SS-5	3059216	9/17/2003	Aqueous	Pest/PCBs; VOCs	Method 608; Method 601/602, Method 624, Method 8260, Method 8260A
	SS-16	3059217	9/17/2003	Aqueous	Pest/PCBs; VOCs	Method 608; Method 601/602, Method 624, Method 8260, Method 8260A
	SS-15	3059220	9/17/2003	Aqueous	Pest/PCBs; VOCs	Method 608; Method 601/602, Method 624, Method 8260, Method 8260A

Notes: Metals = Target Analyte List Metals
VOCs = Volatile Organic Compounds
SVOCs = Semi-Volatile Organic Compounds
Pest/PCBs = Pesticides/Polychlorinated Biphenyls

Table 5-1
Groundwater Sampling Results
Site M-5
Fort Monmouth, New Jersey

Round			#14	#15	#16	#17
WELL ID			M5MW10	M5MW10	M5MW10	M5MW10
Date Collected			10/28/2002	1/22/2003	4/21/2003	7/30/2003
ANALYTE / Lab ID	Criterion	Units	2076004	3003204	3018004	3043904
VOCs						
2-Butanone	300	ug/l	ND	ND	ND	ND
Acetone	700	ug/l	ND	ND	ND	ND
Chloroform	6	ug/l	ND	ND	ND	ND
cis-1,2-Dichloroethene	10	ug/l	ND	ND	ND	ND
Tetrachloroethene	1	ug/l	ND	ND	ND	ND
Trichloroethene	1	ug/l	ND	ND	ND	ND
SVOCs						
4-Methylphenol	NLE *	ug/l	ND	ND	ND	ND
Bis(2-ethylhexyl)phthalate	30	ug/l	ND	ND	ND	ND
Metals						
Aluminum	200	ug/l	281	306	241	93.2
Antimony	20	ug/l	ND	5.95	ND	ND
Arsenic	8	ug/l	4.68	2.65	ND	ND
Barium	2000	ug/l	66.7	183	172	55.9
Beryllium	20	ug/l	ND	ND	ND	ND
Cadmium	4	ug/l	ND	1.13	1.49	0.545
Calcium	NLE	ug/l	15700	14900	29400	11400
Chromium	100	ug/l	2.45	5.53	1.46	2.23
Cobalt	100 *	ug/l	ND	ND	3.37	ND
Copper	1000	ug/l	10.8	6.26	8.87	3.78
Iron	300	ug/l	6260	17100	15400	4280
Lead	10	ug/l	4.45	3.39	2.34	ND
Magnesium	NLE	ug/l	9840	10800	18000	13700
Manganese	50	ug/l	304	252	1060	106
Nickel	100	ug/l	ND	ND	3.59	ND
Potassium	NLE	ug/l	7580	7500	6630	15600
Selenium	50	ug/l	7.86	ND	ND	6.64
Sodium	50000	ug/l	57600	43100	93800	26100
Vanadium	NLE	ug/l	1.49	2.27	1.39	1.49
Zinc	5000	ug/l	38.2	27.7	99.3	26.8

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds;
PCBs = polyhloronated biphenyls; MDL = Method Detection Limit;
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billoion (ppb); NA = Not Analyzed/Not Applicable;
Shaded block identifies sample and associated constituent concentration that exceeds the criterion. * = Interim Criterion;
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-2
Groundwater Sampling Results
Site M-5
Fort Monmouth, New Jersey

Round			#14	#15	#16	#17
WELL ID			M5MW11	M5MW11	M5MW11	M5MW11
Date Collected			10/28/2002	1/22/2003	4/21/2003	7/30/2003
ANALYTE / Lab ID	Criterion	Units	2076005	3003205	3018005	3043905
VOCs						
2-Butanone	300	ug/l	ND	ND	ND	ND
Acetone	700	ug/l	ND	ND	ND	ND
Chloroform	6	ug/l	ND	ND	ND	ND
cis-1,2-Dichloroethene	10	ug/l	ND	ND	ND	ND
Tetrachloroethene	1	ug/l	8.14	5.2	4.5	5.74
Trichloroethene	1	ug/l	ND	1.06	ND	1.42
SVOCs						
4-Methylphenol	NLE *	ug/l	ND	ND	ND	ND
Bis(2-ethylhexyl)phthalate	30	ug/l	ND	ND	ND	ND
Metals						
Aluminum	200	ug/l	111	202	185	240
Antimony	20	ug/l	2.23	ND	ND	ND
Arsenic	8	ug/l	3.04	2.6	2.8	4.12
Barium	2000	ug/l	15.4	5.68	6.33	8.91
Beryllium	20	ug/l	ND	ND	ND	ND
Cadmium	4	ug/l	ND	ND	0.51	0.759
Calcium	NLE	ug/l	17600	11800	14400	20500
Chromium	100	ug/l	2.26	2.49	1.75	3.03
Cobalt	100 *	ug/l	ND	ND	ND	2.03
Copper	1000	ug/l	ND	ND	1.15	1.54
Iron	300	ug/l	2240	5250	4000	11100
Lead	10	ug/l	1.84	ND	ND	0.804
Magnesium	NLE	ug/l	4130	3610	4890	7710
Manganese	50	ug/l	15.8	15.6	22.3	69
Nickel	100	ug/l	ND	ND	1.27	2.78
Potassium	NLE	ug/l	3740	1950	1840	3690
Selenium	50	ug/l	5.26	ND	ND	ND
Sodium	50000	ug/l	13000	13400	16600	47300
Vanadium	NLE	ug/l	2.03	8.52	3.92	8.22
Zinc	5000	ug/l	79.8	75.7	101	111

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds;
PCBs = polyhloronated biphenyls; MDL = Method Detection Limit;
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billoion (ppb); NA = Not Analyzed/Not Applicable;
Shaded block identifies sample and associated constituent concentration that exceeds the criterion. * = Interim Criterion;
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-3
Groundwater Sampling Results
Site M-5
Fort Monmouth, New Jersey

Round			#14	#15	#16	#17
WELL ID			M5MW12	M5MW12	M5MW12	M5MW12
Date Collected			10/28/2002	1/22/2003	4/21/2003	7/30/2003
ANALYTE / Lab ID	Criterion	Units	2076006	3003206	3018006	3043906
VOCs						
2-Butanone	300	ug/l	ND	ND	ND	ND
Acetone	700	ug/l	ND	ND	ND	ND
Chloroform	6	ug/l	ND	ND	ND	ND
cis-1,2-Dichloroethene	10	ug/l	ND	ND	ND	ND
Tetrachloroethene	1	ug/l	ND	ND	ND	ND
Trichloroethene	1	ug/l	ND	ND	ND	ND
SVOCs						
4-Methylphenol	NLE *	ug/l	ND	ND	ND	ND
Bis(2-ethylhexyl)phthalate	30	ug/l	1.3	1.3	ND	ND
Metals						
Aluminum	200	ug/l	90.9	830	639	1310
Antimony	20	ug/l	ND	ND	ND	ND
Arsenic	8	ug/l	ND	ND	ND	ND
Barium	2000	ug/l	11.6	24.6	29.3	56.8
Beryllium	20	ug/l	ND	ND	ND	0.0923
Cadmium	4	ug/l	ND	0.646	1.07	1.01
Calcium	NLE	ug/l	18600	18900	20100	22700
Chromium	100	ug/l	1.95	7.71	6.11	13.3
Cobalt	100 *	ug/l	ND	ND	ND	ND
Copper	1000	ug/l	5.87	13.3	7.5	3.01
Iron	300	ug/l	6090	10700	13000	19500
Lead	10	ug/l	2.12	4.16	1.72	2.15
Magnesium	NLE	ug/l	27700	25900	26300	32600
Manganese	50	ug/l	54.6	45.9	67.1	81.1
Nickel	100	ug/l	ND	ND	ND	1.47
Potassium	NLE	ug/l	20700	20100	18600	23700
Selenium	50	ug/l	10.6	4.1	ND	ND
Sodium	50000	ug/l	61100	53500	49400	76200
Vanadium	NLE	ug/l	1.35	5.02	3.7	7.58
Zinc	5000	ug/l	5.69	31.3	16.4	36.5

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds;
PCBs = polyhloronated biphenyls; MDL = Method Detection Limit;
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billoion (ppb); NA = Not Analyzed/Not Applicable;
Shaded block identifies sample and associated constituent concentration that exceeds the criterion. * = Interim Criterion;
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-4
Groundwater Sampling Results
Site M-5
Fort Monmouth, New Jersey

Round			#14	#15	#16	#17
WELL ID			M5MW13	M5MW13	M5MW13	M5MW13
Date Collected			10/28/2002	1/22/2003	4/21/2003	7/30/2003
ANALYTE / Lab ID	Criterion	Units	2076007	3003207	3018007	3043907
VOCs						
2-Butanone	300	ug/l	ND	ND	ND	ND
Acetone	700	ug/l	ND	2.3	ND	ND
Chloroform	6	ug/l	ND	ND	ND	ND
cis-1,2-Dichloroethene	10	ug/l	ND	ND	ND	ND
Tetrachloroethene	1	ug/l	ND	ND	ND	ND
Trichloroethene	1	ug/l	ND	ND	ND	ND
SVOCs						
4-Methylphenol	NLE *	ug/l	ND	ND	ND	ND
Bis(2-ethylhexyl)phthalate	30	ug/l	1.45	1.14	ND	ND
Metals						
Aluminum	200	ug/l	132	246	152	449
Antimony	20	ug/l	ND	ND	ND	ND
Arsenic	8	ug/l	ND	ND	ND	ND
Barium	2000	ug/l	105	132	133	142
Beryllium	20	ug/l	ND	ND	ND	0.375
Cadmium	4	ug/l	ND	1.64	1.54	0.99
Calcium	NLE	ug/l	21700	19100	25800	30300
Chromium	100	ug/l	1.94	3.56	1.64	2.55
Cobalt	100 *	ug/l	ND	0.685	ND	3.91
Copper	1000	ug/l	ND	2.52	ND	4.84
Iron	300	ug/l	10900	29600	20900	16100
Lead	10	ug/l	2.02	3.26	ND	ND
Magnesium	NLE	ug/l	15500	11300	15200	3530
Manganese	50	ug/l	364	339	415	236
Nickel	100	ug/l	ND	ND	ND	15.4
Potassium	NLE	ug/l	6960	5090	5430	3980
Selenium	50	ug/l	7.1	ND	ND	ND
Sodium	50000	ug/l	92700	67000	89600	71400
Vanadium	NLE	ug/l	1.53	3.49	2.06	2.02
Zinc	5000	ug/l	104	20.1	7.67	65

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds;
PCBs = polyhloronated biphenyls; MDL = Method Detection Limit;
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billoion (ppb); NA = Not Analyzed/Not Applicable;
Shaded block identifies sample and associated constituent concentration that exceeds the criterion. * = Interim Criterion;
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-5
Groundwater Sampling Results
Site M-5
Fort Monmouth, New Jersey

Round			#14	#15	#16	#17
WELL ID			M5MW14	M5MW14	M5MW14	M5MW14
Date Collected			10/28/2002	1/22/2003	4/21/2003	7/30/2003
ANALYTE / Lab ID	Criterion	Units	2076008	3003208	3018008	3043908
VOCs						
2-Butanone	300	ug/l	ND	ND	ND	ND
Acetone	700	ug/l	ND	ND	ND	ND
Chloroform	6	ug/l	ND	ND	ND	ND
cis-1,2-Dichloroethene	10	ug/l	ND	ND	ND	ND
Tetrachloroethene	1	ug/l	ND	ND	ND	ND
Trichloroethene	1	ug/l	ND	ND	ND	ND
SVOCs						
4-Methylphenol	NLE *	ug/l	ND	ND	ND	ND
Bis(2-ethylhexyl)phthalate	30	ug/l	ND	ND	ND	ND
Metals						
Aluminum	200	ug/l	18.3	72.5	174	60.8
Antimony	20	ug/l	ND	ND	ND	ND
Arsenic	8	ug/l	ND	ND	ND	ND
Barium	2000	ug/l	50.4	217	210	75.5
Beryllium	20	ug/l	ND	ND	ND	ND
Cadmium	4	ug/l	ND	0.602	1.15	ND
Calcium	NLE	ug/l	42700	57900	58500	45100
Chromium	100	ug/l	1.97	2.35	3.81	ND
Cobalt	100 *	ug/l	8.54	2.8	ND	ND
Copper	1000	ug/l	ND	2.96	ND	1.22
Iron	300	ug/l	1110	20100	21100	3830
Lead	10	ug/l	ND	ND	ND	ND
Magnesium	NLE	ug/l	16600	18100	20900	16400
Manganese	50	ug/l	632	221	35.7	32.7
Nickel	100	ug/l	3.7	1.46	ND	ND
Potassium	NLE	ug/l	10500	10600	14000	12400
Selenium	50	ug/l	8.11	ND	ND	7.05
Sodium	50000	ug/l	36000	32400	9900	11200
Vanadium	NLE	ug/l	ND	0.686	0.819	0.496
Zinc	5000	ug/l	13.9	13.3	7.59	7.65

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds;
PCBs = polyhloronated biphenyls; MDL = Method Detection Limit;
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billoion (ppb); NA = Not Analyzed/Not Applicable;
Shaded block identifies sample and associated constituent concentration that exceeds the criterion. * = Interim Criterion;
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-6
Groundwater Sampling Results
Site M-5
Fort Monmouth, New Jersey

Round			#14	#15	#16	#17
WELL ID			M5MW15	M5MW15	M5MW15	M5MW15
Date Collected			10/28/2002	1/22/2003	4/21/2003	7/30/2003
ANALYTE / Lab ID	Criterion	Units	2076009	3003209	3018009	3043909
VOCs						
2-Butanone	300	ug/l	ND	ND	ND	ND
Acetone	700	ug/l	ND	ND	ND	ND
Chloroform	6	ug/l	ND	ND	ND	ND
cis-1,2-Dichloroethene	10	ug/l	ND	ND	ND	ND
Tetrachloroethene	1	ug/l	ND	ND	ND	ND
Trichloroethene	1	ug/l	ND	ND	ND	ND
SVOCs						
4-Methylphenol	NLE *	ug/l	ND	ND	ND	ND
Bis(2-ethylhexyl)phthalate	30	ug/l	ND	ND	ND	ND
Metals						
Aluminum	200	ug/l	511	708	1790	1590
Antimony	20	ug/l	ND	ND	ND	ND
Arsenic	8	ug/l	ND	ND	ND	ND
Barium	2000	ug/l	115	72.1	163	121
Beryllium	20	ug/l	1.4	1.14	2.22	2.28
Cadmium	4	ug/l	ND	ND	1.28	0.553
Calcium	NLE	ug/l	4980	6770	13000	11300
Chromium	100	ug/l	1.25	1.01	1.81	2.09
Cobalt	100 *	ug/l	7.22	8.04	17.2	12.5
Copper	1000	ug/l	ND	ND	ND	0.563
Iron	300	ug/l	797	276	586	2480
Lead	10	ug/l	1.32	ND	ND	ND
Magnesium	NLE	ug/l	9370	11300	24100	20100
Manganese	50	ug/l	15.5	17.5	34.7	28.9
Nickel	100	ug/l	13.2	16.9	33.9	23.9
Potassium	NLE	ug/l	4040	4210	4950	7280
Selenium	50	ug/l	3.44	ND	ND	5.03
Sodium	50000	ug/l	10700	11500	17700	16400
Vanadium	NLE	ug/l	ND	0.624	0.821	1.11
Zinc	5000	ug/l	87.7	108	221	152

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds;
PCBs = polyhloronated biphenyls; MDL = Method Detection Limit;
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billoion (ppb); NA = Not Analyzed/Not Applicable;
Shaded block identifies sample and associated constituent concentration that exceeds the criterion. * = Interim Criterion;
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-7
Groundwater Sampling Results
Site M-5
Fort Monmouth, New Jersey

Round			#14	#15	#16	#17
WELL ID			M5MW16	M5MW16	M5MW16	M5MW16
Date Collected			10/28/2002	1/22/2003	4/21/2003	7/30/2003
ANALYTE / Lab ID	Criterion	Units	2076010	3003210	3018010	3043910
VOCs						
2-Butanone	300	ug/l	2.59	ND	ND	ND
Acetone	700	ug/l	ND	ND	ND	ND
Chloroform	6	ug/l	ND	ND	ND	ND
cis-1,2-Dichloroethene	10	ug/l	103.82	22.02	16.12	20.3
Tetrachloroethene	1	ug/l	42.41	31.09	8.5	18.57
Trichloroethene	1	ug/l	2.23	1.36	2.16	5.61
SVOCs						
4-Methylphenol	NLE *	ug/l	7.99	ND	ND	ND
Bis(2-ethylhexyl)phthalate	30	ug/l	ND	ND	ND	ND
Metals						
Aluminum	200	ug/l	446	301	280	258
Antimony	20	ug/l	ND	ND	ND	ND
Arsenic	8	ug/l	27.3	12.6	13.6	4.38
Barium	2000	ug/l	233	135	154	258
Beryllium	20	ug/l	ND	ND	ND	0.166
Cadmium	4	ug/l	0.986	0.872	1.12	1.47
Calcium	NLE	ug/l	25500	15300	18700	34100
Chromium	100	ug/l	7.1	1.92	1.15	1.4
Cobalt	100 *	ug/l	6.28	2.09	1.9	2.29
Copper	1000	ug/l	ND	ND	ND	ND
Iron	300	ug/l	32300	14600	16400	44700
Lead	10	ug/l	1.6	ND	ND	ND
Magnesium	NLE	ug/l	10100	5350	6890	13700
Manganese	50	ug/l	85.6	45.2	84.7	136
Nickel	100	ug/l	15.3	7.06	7.31	9.46
Potassium	NLE	ug/l	5000	4750	4860	7210
Selenium	50	ug/l	4.27	ND	ND	ND
Sodium	50000	ug/l	43300	26800	25800	57800
Vanadium	NLE	ug/l	1.78	1.98	1.3	1.14
Zinc	5000	ug/l	32.8	36.3	17.1	57.1

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds;
PCBs = polyhloronated biphenyls; MDL = Method Detection Limit;
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billoion (ppb); NA = Not Analyzed/Not Applicable;
Shaded block identifies sample and associated constituent concentration that exceeds the criterion. * = Interim Criterion;
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-8
Groundwater Sampling Results
Site M-5
Fort Monmouth, New Jersey

Round			#14	#15	#16	#17
WELL ID			M5MW18	M5MW18	M5MW18	M5MW18
Date Collected			10/28/2002	1/22/2003	4/21/2003	7/30/2003
ANALYTE / Lab ID	Criterion	Units	2076011	3003211	3018011	3043911
VOCs						
2-Butanone	300	ug/l	ND	ND	ND	ND
Acetone	700	ug/l	ND	ND	ND	ND
Chloroform	6	ug/l	ND	ND	ND	ND
cis-1,2-Dichloroethene	10	ug/l	ND	ND	ND	ND
Tetrachloroethene	1	ug/l	ND	ND	ND	ND
Trichloroethene	1	ug/l	ND	ND	ND	ND
SVOCs						
4-Methylphenol	NLE *	ug/l	ND	ND	ND	ND
Bis(2-ethylhexyl)phthalate	30	ug/l	ND	ND	ND	ND
Metals						
Aluminum	200	ug/l	27.1	293	800	87.4
Antimony	20	ug/l	ND	ND	ND	ND
Arsenic	8	ug/l	6.73	8.4	20.8	ND
Barium	2000	ug/l	78.9	561	4490	202
Beryllium	20	ug/l	ND	ND	0.62	ND
Cadmium	4	ug/l	ND	3.6	11.4	1.11
Calcium	NLE	ug/l	22200	27200	41500	27600
Chromium	100	ug/l	1.27	1.19	2.05	ND
Cobalt	100 *	ug/l	0.805	ND	ND	ND
Copper	1000	ug/l	ND	40.1	ND	ND
Iron	300	ug/l	13500	62100	204000	27900
Lead	10	ug/l	ND	4.38	5.65	ND
Magnesium	NLE	ug/l	4060	4580	5390	4920
Manganese	50	ug/l	53.7	65.5	137	58.5
Nickel	100	ug/l	ND	2.87	ND	1.06
Potassium	NLE	ug/l	7280	9430	10400	8700
Selenium	50	ug/l	3.59	ND	ND	ND
Sodium	50000	ug/l	9290	8490	8130	9810
Vanadium	NLE	ug/l	ND	ND	ND	0.408
Zinc	5000	ug/l	13.6	72.6	82.5	8.15

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds;
PCBs = polyhloronated biphenyls; MDL = Method Detection Limit;
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billoion (ppb); NA = Not Analyzed/Not Applicable;
Shaded block identifies sample and associated constituent concentration that exceeds the criterion. * = Interim Criterion;
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-9
Groundwater Sampling Results
Site M-5
Fort Monmouth, New Jersey

Round			#14	#15	#16	#17
WELL ID			M5MW19	M5MW19	M5MW19	M5MW19
Date Collected			10/28/2002	1/22/2003	4/21/2003	7/30/2003
ANALYTE / Lab ID	Criterion	Units	2076012	3003212	3018012	3043912
VOCs						
2-Butanone	300	ug/l	3.93	1.18	ND	ND
Acetone	700	ug/l	ND	ND	ND	ND
Chloroform	6	ug/l	ND	ND	ND	ND
cis-1,2-Dichloroethene	10	ug/l	2.28	ND	ND	ND
Tetrachloroethene	1	ug/l	5.1	1.54	1.73	1.01
Trichloroethene	1	ug/l	1	ND	ND	ND
SVOCs						
4-Methylphenol	NLE *	ug/l	3.13	ND	ND	ND
Bis(2-ethylhexyl)phthalate	30	ug/l	ND	ND	ND	ND
Metals						
Aluminum	200	ug/l	73.6	33.7	97.4	71.3
Antimony	20	ug/l	ND	ND	ND	ND
Arsenic	8	ug/l	8.1	ND	ND	2.37
Barium	2000	ug/l	69.1	48	52.5	65.8
Beryllium	20	ug/l	ND	ND	ND	ND
Cadmium	4	ug/l	ND	0.735	0.724	0.689
Calcium	NLE	ug/l	27500	22900	22100	28800
Chromium	100	ug/l	2.42	0.711	ND	ND
Cobalt	100 *	ug/l	ND	ND	ND	ND
Copper	1000	ug/l	ND	2.57	ND	ND
Iron	300	ug/l	21500	11700	11800	17600
Lead	10	ug/l	1.39	ND	ND	ND
Magnesium	NLE	ug/l	5410	4160	4090	5390
Manganese	50	ug/l	81.3	55	55.2	71.5
Nickel	100	ug/l	ND	ND	ND	ND
Potassium	NLE	ug/l	7280	8120	7780	8920
Selenium	50	ug/l	ND	ND	ND	ND
Sodium	50000	ug/l	9950	8420	8440	15300
Vanadium	NLE	ug/l	0.609	ND	ND	0.738
Zinc	5000	ug/l	ND	7.41	8.6	6.35

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds;
PCBs = polyhloronated biphenyls; MDL = Method Detection Limit;
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billoion (ppb); NA = Not Analyzed/Not Applicable;
Shaded block identifies sample and associated constituent concentration that exceeds the criterion. * = Interim Criterion;
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-10
Groundwater Sampling Results
Site M-5
Fort Monmouth, New Jersey

Round			#14	#15	#16	#17
WELL ID			M5MW20	M5MW20	M5MW20	M5MW20
Date Collected			10/28/2002	1/22/2003	4/21/2003	7/30/2003
ANALYTE / Lab ID	Criterion	Units	2076013	3003213	3018013	3043913
VOCs						
2-Butanone	300	ug/l	ND	ND	ND	ND
Acetone	700	ug/l	ND	ND	ND	ND
Chloroform	6	ug/l	ND	ND	ND	ND
cis-1,2-Dichloroethene	10	ug/l	ND	ND	ND	1.1
Tetrachloroethene	1	ug/l	12.99	27.87	27.99	15.26
Trichloroethene	1	ug/l	ND	ND	ND	ND
SVOCs						
4-Methylphenol	NLE *	ug/l	ND	ND	ND	ND
Bis(2-ethylhexyl)phthalate	30	ug/l	ND	ND	ND	ND
Metals						
Aluminum	200	ug/l	6000	109	431	844
Antimony	20	ug/l	ND	ND	ND	ND
Arsenic	8	ug/l	5.22	ND	ND	ND
Barium	2000	ug/l	22.1	9.36	30.7	11.3
Beryllium	20	ug/l	ND	ND	ND	0.0825
Cadmium	4	ug/l	ND	ND	ND	ND
Calcium	NLE	ug/l	11700	17100	63300	27800
Chromium	100	ug/l	40.3	1.4	3.3	6.62
Cobalt	100 *	ug/l	1.43	ND	ND	0.381
Copper	1000	ug/l	4.93	ND	ND	1.33
Iron	300	ug/l	11500	292	1370	4650
Lead	10	ug/l	4.41	ND	ND	ND
Magnesium	NLE	ug/l	4790	5050	19700	8670
Manganese	50	ug/l	19.6	9.34	32.9	22.8
Nickel	100	ug/l	3.36	1.53	3.21	2.08
Potassium	NLE	ug/l	4960	2440	3940	4090
Selenium	50	ug/l	4.13	ND	ND	6.37
Sodium	50000	ug/l	38000	57200	115000	92600
Vanadium	NLE	ug/l	21.7	1.04	2.23	4.63
Zinc	5000	ug/l	20.2	6.89	12.9	10

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds;
PCBs = polyhloronated biphenyls; MDL = Method Detection Limit;
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billoion (ppb); NA = Not Analyzed/Not Applicable;
Shaded block identifies sample and associated constituent concentration that exceeds the criterion. * = Interim Criterion;
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-11
Groundwater Sampling Results
Site M-5
Fort Monmouth, New Jersey

Round			#14	#15	#16	#17
WELL ID			M5MW23	M5MW23	M5MW23	M5MW23
Date Collected			10/28/2002	1/22/2003	4/21/2003	7/30/2003
ANALYTE / Lab ID	Criterion	Units	2076014	3003214	3018014	3043914
VOCs						
2-Butanone	300	ug/l	ND	ND	ND	2.75
Acetone	700	ug/l	ND	ND	ND	ND
Chloroform	6	ug/l	ND	ND	ND	ND
cis-1,2-Dichloroethene	10	ug/l	ND	ND	1.37	4.6
Tetrachloroethene	1	ug/l	ND	79.46	17.35	20.45
Trichloroethene	1	ug/l	ND	3.97	3.15	2.51
SVOCs						
4-Methylphenol	NLE *	ug/l	ND	ND	ND	ND
Bis(2-ethylhexyl)phthalate	30	ug/l	ND	ND	ND	ND
Metals						
Aluminum	200	ug/l	100	6920	1060	255
Antimony	20	ug/l	ND	ND	ND	ND
Arsenic	8	ug/l	16.5	86.7	13.2	13.3
Barium	2000	ug/l	5.5	39.1	15.7	119
Beryllium	20	ug/l	ND	0.57	ND	0.0632
Cadmium	4	ug/l	ND	8.11	1.93	1.45
Calcium	NLE	ug/l	8910	19300	8980	14200
Chromium	100	ug/l	2.4	72.5	12.9	3.55
Cobalt	100 *	ug/l	0.911	4.67	ND	ND
Copper	1000	ug/l	ND	ND	ND	ND
Iron	300	ug/l	14000	137000	37000	37800
Lead	10	ug/l	1.29	8.02	ND	ND
Magnesium	NLE	ug/l	2300	5710	2070	2990
Manganese	50	ug/l	24.3	49.2	22.2	37.7
Nickel	100	ug/l	ND	3.96	ND	0.89
Potassium	NLE	ug/l	1410	5610	3080	4470
Selenium	50	ug/l	ND	ND	ND	ND
Sodium	50000	ug/l	23900	96300	70100	31600
Vanadium	NLE	ug/l	2.17	50	8.82	2.6
Zinc	5000	ug/l	ND	35.3	15.2	9.86

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds;
PCBs = polyhloronated biphenyls; MDL = Method Detection Limit;
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billoion (ppb); NA = Not Analyzed/Not Applicable;
Shaded block identifies sample and associated constituent concentration that exceeds the criterion. * = Interim Criterion;
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-12
Groundwater Sampling Results
Site M-5
Fort Monmouth, New Jersey

Round			#14	#15	#16	#17
WELL ID			M5MW25	M5MW25	M5MW25	M5MW25
Date Collected			10/28/2002	1/22/2003	4/21/2003	7/30/2003
ANALYTE / Lab ID	Criterion	Units	2076015	3003215	3018015	3043915
VOCs						
2-Butanone	300	ug/l	ND	ND	ND	ND
Acetone	700	ug/l	ND	ND	ND	ND
Chloroform	6	ug/l	ND	ND	ND	ND
cis-1,2-Dichloroethene	10	ug/l	ND	ND	ND	ND
Tetrachloroethene	1	ug/l	ND	ND	ND	ND
Trichloroethene	1	ug/l	ND	ND	ND	ND
SVOCs						
4-Methylphenol	NLE *	ug/l	ND	ND	ND	ND
Bis(2-ethylhexyl)phthalate	30	ug/l	ND	ND	ND	ND
Metals						
Aluminum	200	ug/l	129	18.5	194	275
Antimony	20	ug/l	ND	ND	ND	ND
Arsenic	8	ug/l	7.5	2.72	ND	ND
Barium	2000	ug/l	57.9	50.5	47.5	147
Beryllium	20	ug/l	ND	ND	ND	0.373
Cadmium	4	ug/l	1.25	1.53	0.84	1.02
Calcium	NLE	ug/l	13000	12200	9460	33300
Chromium	100	ug/l	5.8	7.09	9.55	1.99
Cobalt	100 *	ug/l	3.27	1.99	1.41	7.54
Copper	1000	ug/l	ND	30.8	25.9	4.77
Iron	300	ug/l	6510	12400	2500	2160
Lead	10	ug/l	ND	ND	ND	ND
Magnesium	NLE	ug/l	4370	4550	3480	17800
Manganese	50	ug/l	101	41.7	24.1	46.7
Nickel	100	ug/l	13	13.1	9.36	17.3
Potassium	NLE	ug/l	2890	3550	2410	5140
Selenium	50	ug/l	3.38	ND	ND	6.21
Sodium	50000	ug/l	49300	43500	35100	149000
Vanadium	NLE	ug/l	ND	1.08	0.88	1.07
Zinc	5000	ug/l	522	380	305	180

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds;
PCBs = polyhloronated biphenyls; MDL = Method Detection Limit;
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billoion (ppb); NA = Not Analyzed/Not Applicable;
Shaded block identifies sample and associated constituent concentration that exceeds the criterion. * = Interim Criterion;
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-13
Groundwater Exceedance Summary
Site M-5
Fort Monmouth, New Jersey

Analyte	Criterion	Field ID	Round	Date Collected	Lab Sample ID	Result	Units
VOCs							
cis-1,2-Dichloroethene	**10**						
		M5MW16				**Maximum Result: 103.82**	ug/l
			#14	10/28/2002	2076010	103.82	ug/l
			#15	1/22/2003	3003210	22.02	ug/l
			#16	4/21/2003	3018010	16.12	ug/l
			#17	7/30/2003	3043910	20.3	ug/l
Tetrachloroethene	**1**						
		M5MW11				**Maximum Result: 8.14**	ug/l
			#14	10/28/2002	2076005	8.14	ug/l
			#15	1/22/2003	3003205	5.2	ug/l
			#16	4/21/2003	3018005	4.5	ug/l
			#17	7/30/2003	3043905	5.74	ug/l
		M5MW16				**Maximum Result: 42.41**	ug/l
			#14	10/28/2002	2076010	42.41	ug/l
			#15	1/22/2003	3003210	31.09	ug/l
			#16	4/21/2003	3018010	8.5	ug/l
			#17	7/30/2003	3043910	18.57	ug/l
		M5MW19				**Maximum Result: 5.1**	ug/l
			#14	10/28/2002	2076012	5.1	ug/l
			#15	1/22/2003	3003212	1.54	ug/l
			#16	4/21/2003	3018012	1.73	ug/l
			#17	7/30/2003	3043912	1.01	ug/l
		M5MW20				**Maximum Result: 27.99**	ug/l
			#14	10/28/2002	2076013	12.99	ug/l
			#15	1/22/2003	3003213	27.87	ug/l
			#16	4/21/2003	3018013	27.99	ug/l
			#17	7/30/2003	3043913	15.26	ug/l
		M5MW23				**Maximum Result: 79.46**	ug/l
			#15	1/22/2003	3003214	79.46	ug/l
			#16	4/21/2003	3018014	17.35	ug/l
			#17	7/30/2003	3043914	20.45	ug/l
Trichloroethene	**1**						
		M5MW11				**Maximum Result: 1.42**	ug/l
			#15	1/22/2003	3003205	1.06	ug/l
			#17	7/30/2003	3043905	1.42	ug/l
		M5MW16				**Maximum Result: 5.61**	ug/l
			#14	10/28/2002	2076010	2.23	ug/l
			#15	1/22/2003	3003210	1.36	ug/l
			#16	4/21/2003	3018010	2.16	ug/l
			#17	7/30/2003	3043910	5.61	ug/l
		M5MW23				**Maximum Result: 3.97**	ug/l
			#15	1/22/2003	3003214	3.97	ug/l
			#16	4/21/2003	3018014	3.15	ug/l
			#17	7/30/2003	3043914	2.51	ug/l
Metals							
Aluminum	**200**						
		M5MW10				**Maximum Result: 306**	ug/l
			#14	10/28/2002	2076004	281	ug/l
			#15	1/22/2003	3003204	306	ug/l
			#16	4/21/2003	3018004	241	ug/l

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; MDL = Method Detection Limit;
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable;
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6
Shaded block identifies sample and associated constituent concentration that exceeds the criterion. * = Interim Criterion.

Table 5-13
Groundwater Exceedance Summary
Site M-5
Fort Monmouth, New Jersey

Analyte	Criterion	Field ID	Round	Date Collected	Lab Sample ID	Result	Units
		M5MW11				**Maximum Result: 240**	ug/l
			#15	1/22/2003	3003205	202	ug/l
			#17	7/30/2003	3043905	240	ug/l
		M5MW12				**Maximum Result: 1310**	ug/l
			#15	1/22/2003	3003206	830	ug/l
			#16	4/21/2003	3018006	639	ug/l
			#17	7/30/2003	3043906	1310	ug/l
		M5MW13				**Maximum Result: 449**	ug/l
			#15	1/22/2003	3003207	246	ug/l
			#17	7/30/2003	3043907	449	ug/l
		M5MW15				**Maximum Result: 1790**	ug/l
			#14	10/28/2002	2076009	511	ug/l
			#15	1/22/2003	3003209	708	ug/l
			#16	4/21/2003	3018009	1790	ug/l
			#17	7/30/2003	3043909	1590	ug/l
		M5MW16				**Maximum Result: 446**	ug/l
			#14	10/28/2002	2076010	446	ug/l
			#15	1/22/2003	3003210	301	ug/l
			#16	4/21/2003	3018010	280	ug/l
			#17	7/30/2003	3043910	258	ug/l
		M5MW18				**Maximum Result: 800**	ug/l
			#15	1/22/2003	3003211	293	ug/l
			#16	4/21/2003	3018011	800	ug/l
		M5MW20				**Maximum Result: 6000**	ug/l
			#14	10/28/2002	2076013	6000	ug/l
			#16	4/21/2003	3018013	431	ug/l
			#17	7/30/2003	3043913	844	ug/l
		M5MW23				**Maximum Result: 6920**	ug/l
			#15	1/22/2003	3003214	6920	ug/l
			#16	4/21/2003	3018014	1060	ug/l
			#17	7/30/2003	3043914	255	ug/l
		M5MW25				**Maximum Result: 275**	ug/l
			#17	7/30/2003	3043915	275	ug/l
Arsenic	**8**						
		M5MW16				**Maximum Result: 27.3**	ug/l
			#14	10/28/2002	2076010	27.3	ug/l
			#15	1/22/2003	3003210	12.6	ug/l
			#16	4/21/2003	3018010	13.6	ug/l
		M5MW18				**Maximum Result: 20.8**	ug/l
			#15	1/22/2003	3003211	8.4	ug/l
			#16	4/21/2003	3018011	20.8	ug/l
		M5MW19				**Maximum Result: 8.1**	ug/l
			#14	10/28/2002	2076012	8.1	ug/l
		M5MW23				**Maximum Result: 86.7**	ug/l
			#14	10/28/2002	2076014	16.5	ug/l
			#15	1/22/2003	3003214	86.7	ug/l
			#16	4/21/2003	3018014	13.2	ug/l
			#17	7/30/2003	3043914	13.3	ug/l

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; MDL = Method Detection Limit;
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable;
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6
Shaded block identifies sample and associated constituent concentration that exceeds the criterion. * = Interim Criterion.

Table 5-13
Groundwater Exceedance Summary
Site M-5
Fort Monmouth, New Jersey

Analyte	Criterion	Field ID	Round	Date Collected	Lab Sample ID	Result	Units
Barium	**2000**						
		M5MW18				**Maximum Result: 4490**	ug/l
			#16	4/21/2003	3018011	4490	ug/l
Cadmium	**4**						
		M5MW18				**Maximum Result: 11.4**	ug/l
			#16	4/21/2003	3018011	11.4	ug/l
		M5MW23				**Maximum Result: 8.11**	ug/l
			#15	1/22/2003	3003214	8.11	ug/l
Iron	**300**						
		M5MW10				**Maximum Result: 17100**	ug/l
			#14	10/28/2002	2076004	6260	ug/l
			#15	1/22/2003	3003204	17100	ug/l
			#16	4/21/2003	3018004	15400	ug/l
			#17	7/30/2003	3043904	4280	ug/l
		M5MW11				**Maximum Result: 11100**	ug/l
			#14	10/28/2002	2076005	2240	ug/l
			#15	1/22/2003	3003205	5250	ug/l
			#16	4/21/2003	3018005	4000	ug/l
			#17	7/30/2003	3043905	11100	ug/l
		M5MW12				**Maximum Result: 19500**	ug/l
			#14	10/28/2002	2076006	6090	ug/l
			#15	1/22/2003	3003206	10700	ug/l
			#16	4/21/2003	3018006	13000	ug/l
			#17	7/30/2003	3043906	19500	ug/l
		M5MW13				**Maximum Result: 29600**	ug/l
			#14	10/28/2002	2076007	10900	ug/l
			#15	1/22/2003	3003207	29600	ug/l
			#16	4/21/2003	3018007	20900	ug/l
			#17	7/30/2003	3043907	16100	ug/l
		M5MW14				**Maximum Result: 21100**	ug/l
			#14	10/28/2002	2076008	1110	ug/l
			#15	1/22/2003	3003208	20100	ug/l
			#16	4/21/2003	3018008	21100	ug/l
			#17	7/30/2003	3043908	3830	ug/l
		M5MW15				**Maximum Result: 2480**	ug/l
			#14	10/28/2002	2076009	797	ug/l
			#16	4/21/2003	3018009	586	ug/l
			#17	7/30/2003	3043909	2480	ug/l
		M5MW16				**Maximum Result: 44700**	ug/l
			#14	10/28/2002	2076010	32300	ug/l
			#15	1/22/2003	3003210	14600	ug/l
			#16	4/21/2003	3018010	16400	ug/l
			#17	7/30/2003	3043910	44700	ug/l
		M5MW18				**Maximum Result: 204000**	ug/l
			#14	10/28/2002	2076011	13500	ug/l
			#15	1/22/2003	3003211	62100	ug/l
			#16	4/21/2003	3018011	204000	ug/l
			#17	7/30/2003	3043911	27900	ug/l
		M5MW19				**Maximum Result: 21500**	ug/l
			#14	10/28/2002	2076012	21500	ug/l
			#15	1/22/2003	3003212	11700	ug/l

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; MDL = Method Detection Limit;
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable;
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6
Shaded block identifies sample and associated constituent concentration that exceeds the criterion. * = Interim Criterion.

Table 5-13
Groundwater Exceedance Summary
Site M-5
Fort Monmouth, New Jersey

Analyte	Criterion	Field ID	Round	Date Collected	Lab Sample ID	Result	Units
			#16	4/21/2003	3018012	11800	ug/l
			#17	7/30/2003	3043912	17600	ug/l
		M5MW20				**Maximum Result: 11500**	ug/l
			#14	10/28/2002	2076013	11500	ug/l
			#16	4/21/2003	3018013	1370	ug/l
			#17	7/30/2003	3043913	4650	ug/l
		M5MW23				**Maximum Result: 137000**	ug/l
			#14	10/28/2002	2076014	14000	ug/l
			#15	1/22/2003	3003214	137000	ug/l
			#16	4/21/2003	3018014	37000	ug/l
			#17	7/30/2003	3043914	37800	ug/l
		M5MW25				**Maximum Result: 12400**	ug/l
			#14	10/28/2002	2076015	6510	ug/l
			#15	1/22/2003	3003215	12400	ug/l
			#16	4/21/2003	3018015	2500	ug/l
			#17	7/30/2003	3043915	2160	ug/l
Manganese	**50**						
		M5MW10				**Maximum Result: 1060**	ug/l
			#14	10/28/2002	2076004	304	ug/l
			#15	1/22/2003	3003204	252	ug/l
			#16	4/21/2003	3018004	1060	ug/l
			#17	7/30/2003	3043904	106	ug/l
		M5MW11				**Maximum Result: 69**	ug/l
			#17	7/30/2003	3043905	69	ug/l
		M5MW12				**Maximum Result: 81.1**	ug/l
			#14	10/28/2002	2076006	54.6	ug/l
			#16	4/21/2003	3018006	67.1	ug/l
			#17	7/30/2003	3043906	81.1	ug/l
		M5MW13				**Maximum Result: 415**	ug/l
			#14	10/28/2002	2076007	364	ug/l
			#15	1/22/2003	3003207	339	ug/l
			#16	4/21/2003	3018007	415	ug/l
			#17	7/30/2003	3043907	236	ug/l
		M5MW14				**Maximum Result: 632**	ug/l
			#14	10/28/2002	2076008	632	ug/l
			#15	1/22/2003	3003208	221	ug/l
		M5MW16				**Maximum Result: 136**	ug/l
			#14	10/28/2002	2076010	85.6	ug/l
			#16	4/21/2003	3018010	84.7	ug/l
			#17	7/30/2003	3043910	136	ug/l
		M5MW18				**Maximum Result: 137**	ug/l
			#14	10/28/2002	2076011	53.7	ug/l
			#15	1/22/2003	3003211	65.5	ug/l
			#16	4/21/2003	3018011	137	ug/l
			#17	7/30/2003	3043911	58.5	ug/l
		M5MW19				**Maximum Result: 81.3**	ug/l
			#14	10/28/2002	2076012	81.3	ug/l
			#15	1/22/2003	3003212	55	ug/l
			#16	4/21/2003	3018012	55.2	ug/l
			#17	7/30/2003	3043912	71.5	ug/l

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; MDL = Method Detection Limit;
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable;
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6
Shaded block identifies sample and associated constituent concentration that exceeds the criterion. * = Interim Criterion.

Table 5-13
Groundwater Exceedance Summary
Site M-5
Fort Monmouth, New Jersey

Analyte	Criterion	Field ID	Round	Date Collected	Lab Sample ID	Result	Units
		M5MW25				**Maximum Result: 101**	ug/l
			#14	10/28/2002	2076015	101	ug/l
Sodium	**50000**						
		M5MW10				**Maximum Result: 93800**	ug/l
			#14	10/28/2002	2076004	57600	ug/l
			#16	4/21/2003	3018004	93800	ug/l
		M5MW12				**Maximum Result: 76200**	ug/l
			#14	10/28/2002	2076006	61100	ug/l
			#15	1/22/2003	3003206	53500	ug/l
			#17	7/30/2003	3043906	76200	ug/l
		M5MW13				**Maximum Result: 92700**	ug/l
			#14	10/28/2002	2076007	92700	ug/l
			#15	1/22/2003	3003207	67000	ug/l
			#16	4/21/2003	3018007	89600	ug/l
			#17	7/30/2003	3043907	71400	ug/l
		M5MW16				**Maximum Result: 57800**	ug/l
			#17	7/30/2003	3043910	57800	ug/l
		M5MW20				**Maximum Result: 115000**	ug/l
			#15	1/22/2003	3003213	57200	ug/l
			#16	4/21/2003	3018013	115000	ug/l
			#17	7/30/2003	3043913	92600	ug/l
		M5MW23				**Maximum Result: 96300**	ug/l
			#15	1/22/2003	3003214	96300	ug/l
			#16	4/21/2003	3018014	70100	ug/l
		M5MW25				**Maximum Result: 149000**	ug/l
			#17	7/30/2003	3043915	149000	ug/l

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; PCBs = polychlorinated biphenyls; MDL = Method Detection Limit;
ND = Not Detected; ug/L = micrograms per liter, equivalent to parts per billion (ppb); NA = Not Analyzed/Not Applicable;
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6
Shaded block identifies sample and associated constituent concentration that exceeds the criterion. * = Interim Criterion.

Table 5-14
Surface Water Sampling Results
Site M-5
Fort Monmouth, New Jersey

Round			#29	#30	#31	#32
WELL ID			SS-4	SS-4	SS-4	SS-4
Date Collected			11/4/2002	3/13/2003	5/21/2003	9/17/2003
ANALYTE / Lab ID	Criterion	Units	2078012	3011817	3024716	3059215
VOCs						
Acetone	NLE	ug/l	ND	ND	ND	ND
Benzene	71	ug/l	ND	ND	ND	ND
Carbon Disulfide	NLE	ug/l	ND	ND	ND	ND
Chlorobenzene	21000	ug/l	ND	ND	ND	ND
Chloroform	NLE	ug/l	ND	ND	ND	ND
cis-1,2-Dichloroethene	NLE	ug/l	ND	0.57	ND	1.14
Ethylbenzene	27900	ug/l	ND	ND	ND	ND
Methylene Chloride	1600	ug/l	ND	ND	ND	ND
Tetrachloroethene	4.29	ug/l	ND	2.33	ND	1.13
Toluene	200000	ug/l	ND	ND	ND	ND
Trichloroethene	81	ug/l	ND	0.51	ND	ND
Vinyl chloride	525	ug/l	ND	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds;
PCBs = polyhloronated biphenyls; MDL = Method Detection Limit;
ND = Not Detected; ug/L =micrograms per liter, equivalent to parts per billoion (ppb); NA = Not Analyzed/Not Applicable;
Shaded block identifies sample and associated constituent concentration that exceeds the criterion. * = Interim Criterion;
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-15
Surface Water Sampling Results
Site M-5
Fort Monmouth, New Jersey

Round			#29	#30	#31	#32
WELL ID			SS-5	SS-5	SS-5	SS-5
Date Collected			11/4/2002	3/13/2003	5/21/2003	9/17/2003
ANALYTE / Lab ID	Criterion	Units	2078014	3011818	3024715	3059216
VOCs						
Acetone	NLE	ug/l	ND	ND	ND	ND
Benzene	71	ug/l	ND	ND	ND	ND
Carbon Disulfide	NLE	ug/l	ND	ND	ND	ND
Chlorobenzene	21000	ug/l	ND	ND	ND	ND
Chloroform	NLE	ug/l	ND	ND	ND	ND
cis-1,2-Dichloroethene	NLE	ug/l	ND	0.81	ND	1.36
Ethylbenzene	27900	ug/l	ND	ND	ND	ND
Methylene Chloride	1600	ug/l	ND	ND	ND	ND
Tetrachloroethene	4.29	ug/l	ND	3.08	3.54	1.23
Toluene	200000	ug/l	ND	ND	ND	ND
Trichloroethene	81	ug/l	ND	0.71	ND	ND
Vinyl chloride	525	ug/l	ND	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds;
PCBs = polyhloronated biphenyls; MDL = Method Detection Limit;
ND = Not Detected; ug/L =micrograms per liter, equivalent to parts per billoion (ppb); NA = Not Analyzed/Not Applicable;
Shaded block identifies sample and associated constituent concentration that exceeds the criterion. * = Interim Criterion;
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-16
Surface Water Sampling Results
Site M-5
Fort Monmouth, New Jersey

Round			#29	#30	#31	#32
WELL ID			SS-15	SS-15	SS-15	SS-15
Date Collected			11/5/2002	3/24/2003	5/21/2003	9/17/2003
ANALYTE / Lab ID	Criterion	Units	2078707	3013404	3024712	3059220
VOCs						
Acetone	NLE	ug/l	ND	ND	ND	ND
Benzene	71	ug/l	ND	ND	ND	ND
Carbon Disulfide	NLE	ug/l	ND	ND	ND	ND
Chlorobenzene	21000	ug/l	ND	ND	ND	ND
Chloroform	NLE	ug/l	ND	ND	ND	ND
cis-1,2-Dichloroethene	NLE	ug/l	ND	1.44	1.89	1.64
Ethylbenzene	27900	ug/l	ND	ND	ND	ND
Methylene Chloride	1600	ug/l	ND	ND	ND	ND
Tetrachloroethene	4.29	ug/l	1.52	3.96	3.84	1.6
Toluene	200000	ug/l	ND	ND	ND	ND
Trichloroethene	81	ug/l	ND	1.11	ND	ND
Vinyl chloride	525	ug/l	ND	ND	ND	ND

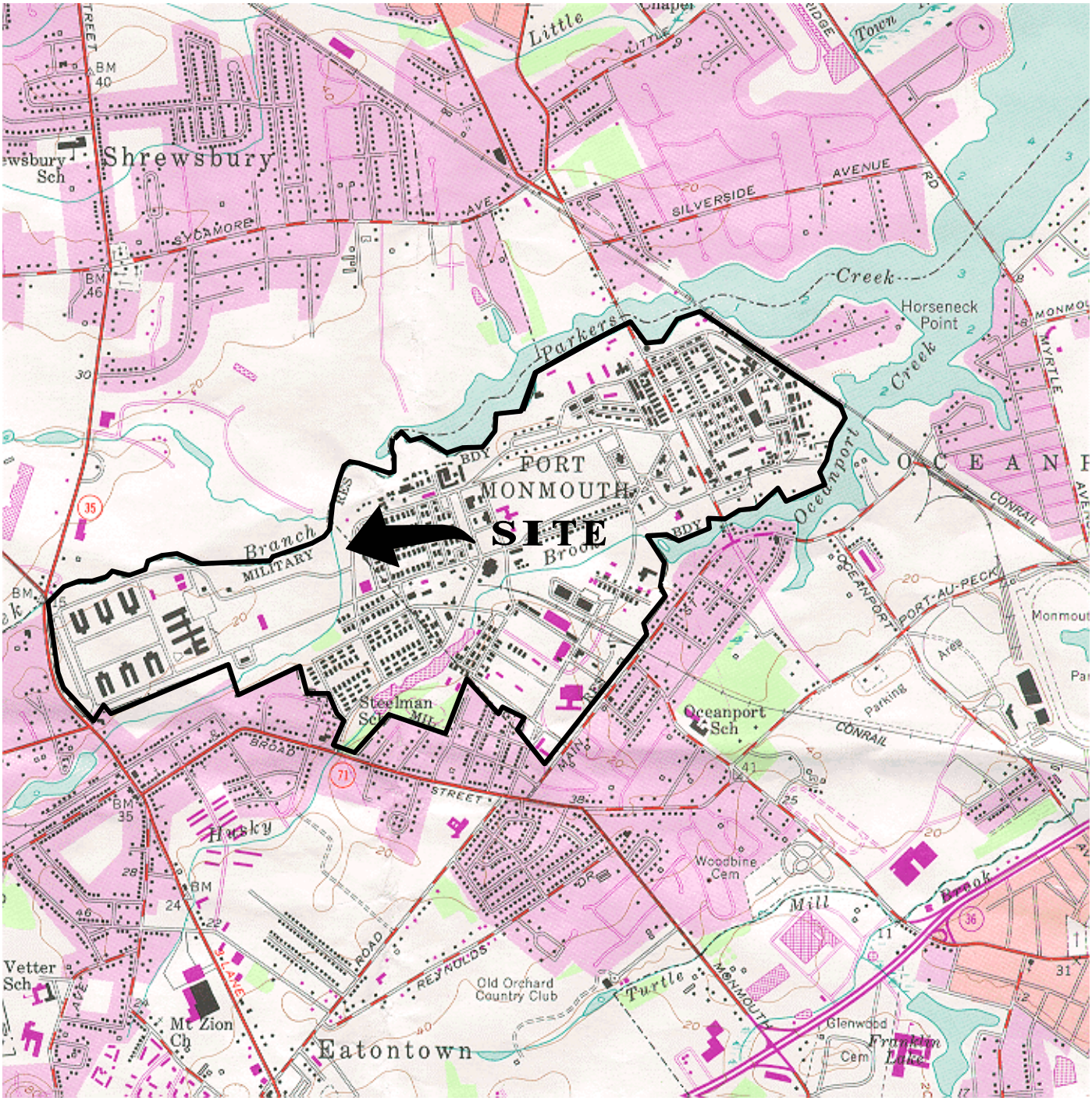
Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds;
PCBs = polyhloronated biphenyls; MDL = Method Detection Limit;
ND = Not Detected; ug/L =micrograms per liter, equivalent to parts per billoion (ppb); NA = Not Analyzed/Not Applicable;
Shaded block identifies sample and associated constituent concentration that exceeds the criterion. * = Interim Criterion;
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

Table 5-17
Surface Water Sampling Results
Site M-5
Fort Monmouth, New Jersey

Round			#29	#30	#31	#32
WELL ID			SS-16	SS-16	SS-16	SS-16
Date Collected			11/5/2002	3/13/2003	5/21/2003	9/17/2003
ANALYTE / Lab ID	Criterion	Units	2078710	3011813	3024714	3059217
VOCs						
Acetone	NLE	ug/l	ND	ND	ND	ND
Benzene	71	ug/l	ND	ND	ND	ND
Carbon Disulfide	NLE	ug/l	ND	ND	ND	ND
Chlorobenzene	21000	ug/l	ND	ND	ND	ND
Chloroform	NLE	ug/l	ND	ND	ND	ND
cis-1,2-Dichloroethene	NLE	ug/l	ND	0.9	1.85	1.79
Ethylbenzene	27900	ug/l	ND	ND	ND	ND
Methylene Chloride	1600	ug/l	ND	ND	ND	ND
Tetrachloroethene	4.29	ug/l	1.49	3.21	3.68	1.7
Toluene	200000	ug/l	ND	ND	ND	ND
Trichloroethene	81	ug/l	ND	0.74	ND	ND
Vinyl chloride	525	ug/l	ND	ND	ND	ND

Notes: VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds;
PCBs = polyhloronated biphenyls; MDL = Method Detection Limit;
ND = Not Detected; ug/L =micrograms per liter, equivalent to parts per billoion (ppb); NA = Not Analyzed/Not Applicable;
Shaded block identifies sample and associated constituent concentration that exceeds the criterion. * = Interim Criterion;
Criterion = GW Criterion: NJDEP Groundwater Quality Criteria (Higher of GWQC and PQL) per N.J.A.C. 7:9-6.

FIGURES



LONG BRANCH, N. J.

40073-C8-TF-024

1954

PHOTOREVISED 1981

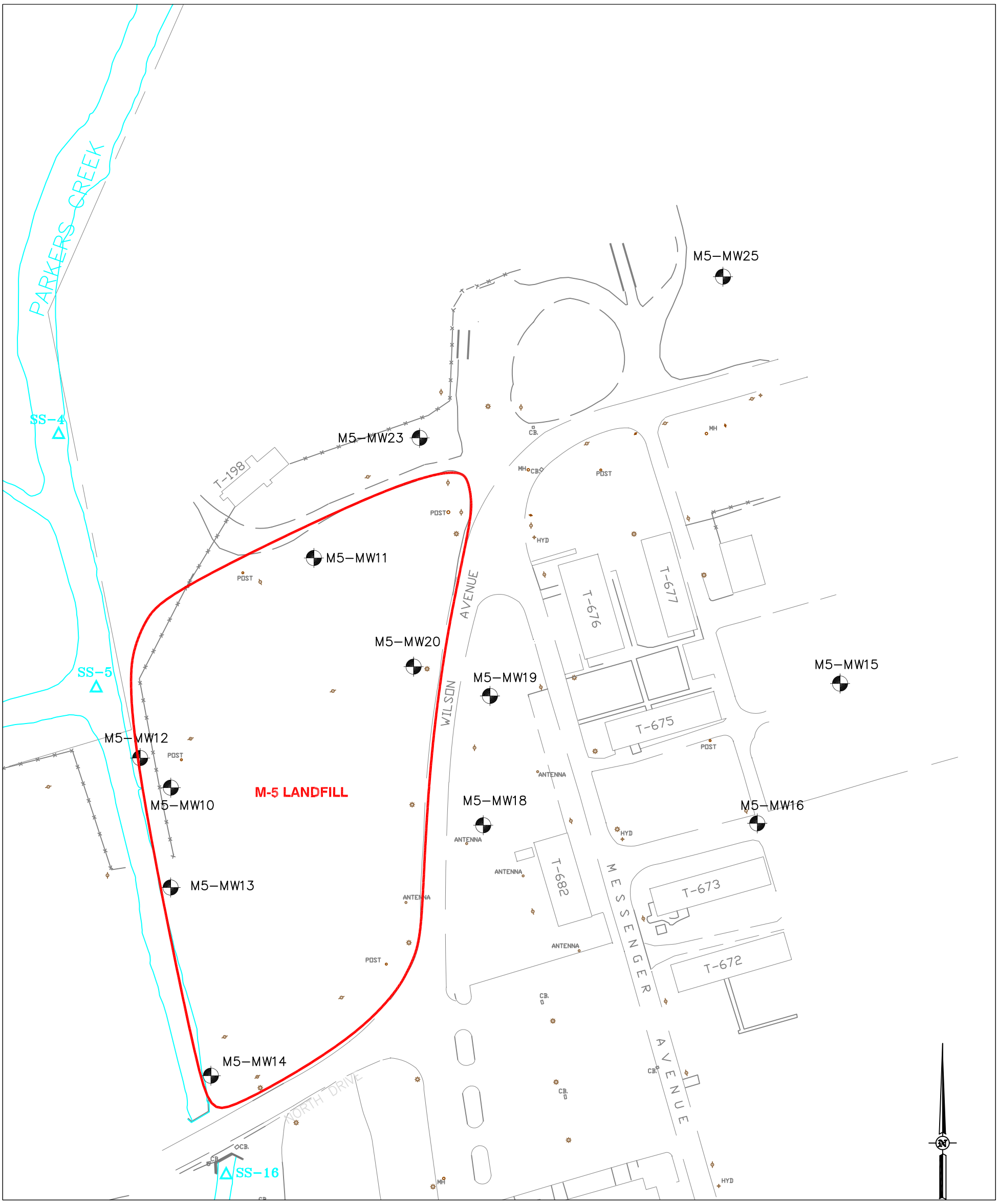
DMA 6164 I SE-SERIES V822

QUADRANGLE LOCATION

Mapped, edited and published by the Geological Survey

Figure 2-1
Site Location Map
M-5 Landfill Site
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Road, Suite 100
Horsham, PA 19044
(215) 957-0955



100 50 0 100

SCALE IN FEET

LEGEND

MONITORING WELL LOCATION

SOURCE: ATC ASSOCIATES, INC., 1998, REMEDIAL ACTION WORK PLAN LANDFILL M-5, FORT MONMOUTH, NEW JERSEY

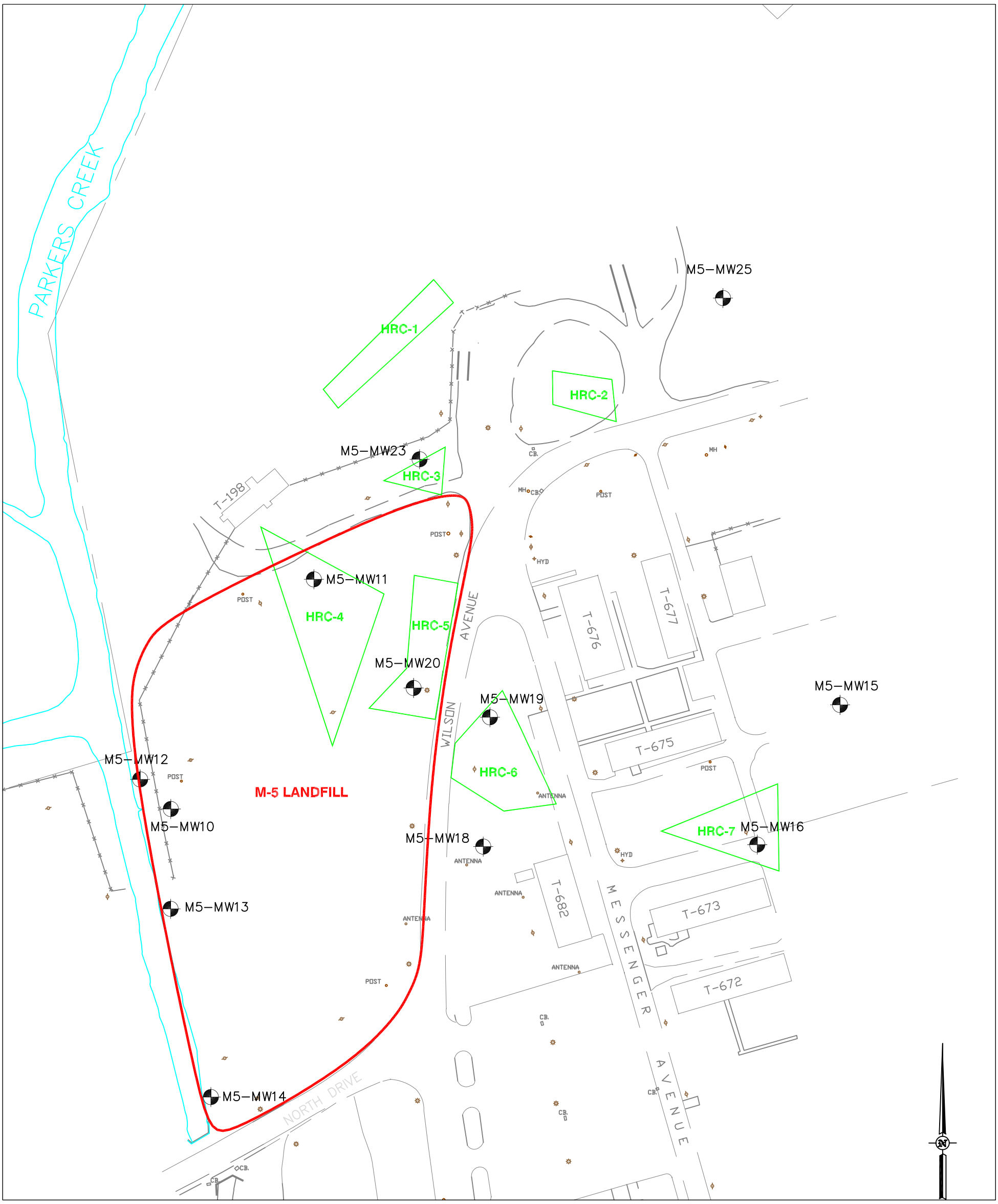
REV.	REVISIONS	APPROVED	DATE	DRAWN BY

TITLE:

FIGURE 2-2
SITE MAP
M-5 LANDFILL
FORT MONMOUTH, NEW JERSEY

DRAWN BY: TJK	DATE DRAWN: 15 MAR 02
CHECKED BY:	DATE CHECKED:
APPROVED BY:	DATE APPROVED:
	DRAWING No.: FIGURE 2-2
	PROJECT No.: 4936-141
	SCALE: 1" = 100'
	SHEET 1 OF 1 REV.: A

Versar INC.
201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044
(215) 957-0955



Treatment Area	Area (square feet)	Number of Injection Points
HRC-1	3,200	22
HRC-2	1,800	13
HRC-3	900	6
HRC-4	8,500	59
HRC-5	7,000	49
HRC-6	6,000	42
HRC-7	6,000	42

100 50 0 100

SCALE IN FEET

LEGEND

MONITORING WELL LOCATION

HRC-3 HYDROGEN RELEASING COMPOUND TREATMENT AREA

SOURCE: ATC ASSOCIATES, INC., 1998, REMEDIAL ACTION WORK PLAN LANDFILL M–5, FORT MONMOUTH, NEW JERSEY

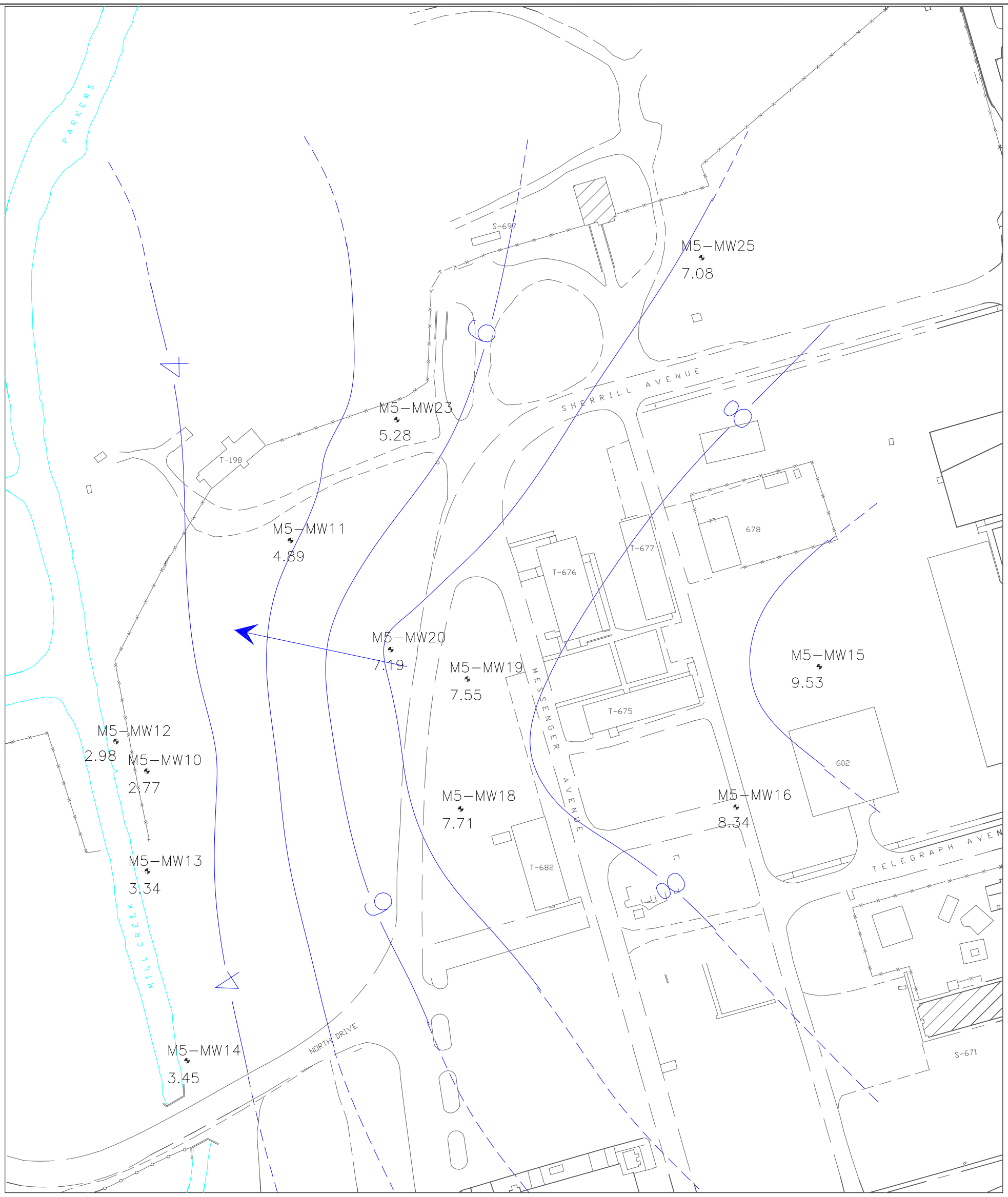
REV.	REVISIONS	APPROVED	DATE	DRAWN BY

TITLE:

FIGURE 3-1
BIOREMEDIATION AREAS
M-5 LANDFILL
FORT MONMOUTH, NEW JERSEY

DRAWN BY: TJK	DATE DRAWN: 15 MAR 02
CHECKED BY:	DATE CHECKED:
APPROVED BY:	DATE APPROVED:
	DRAWING No.: FIGURE 3-1
	PROJECT No.: 4936-141
	SCALE: 1" = 100'
	SHEET 1 OF 1 REV.: A

Versar INC.
201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044
(215) 957-0955



NOTES

M5-MW14
3.34
4

SEE TABLE 4-1 FOR DEPTH TO WATER AND CASING ELEVATIONS.

MONITORING WELL LOCATION

GROUNDWATER CONTOUR (DASHED WHERE INFERRED)

GROUNDWATER FLOW DIRECTION

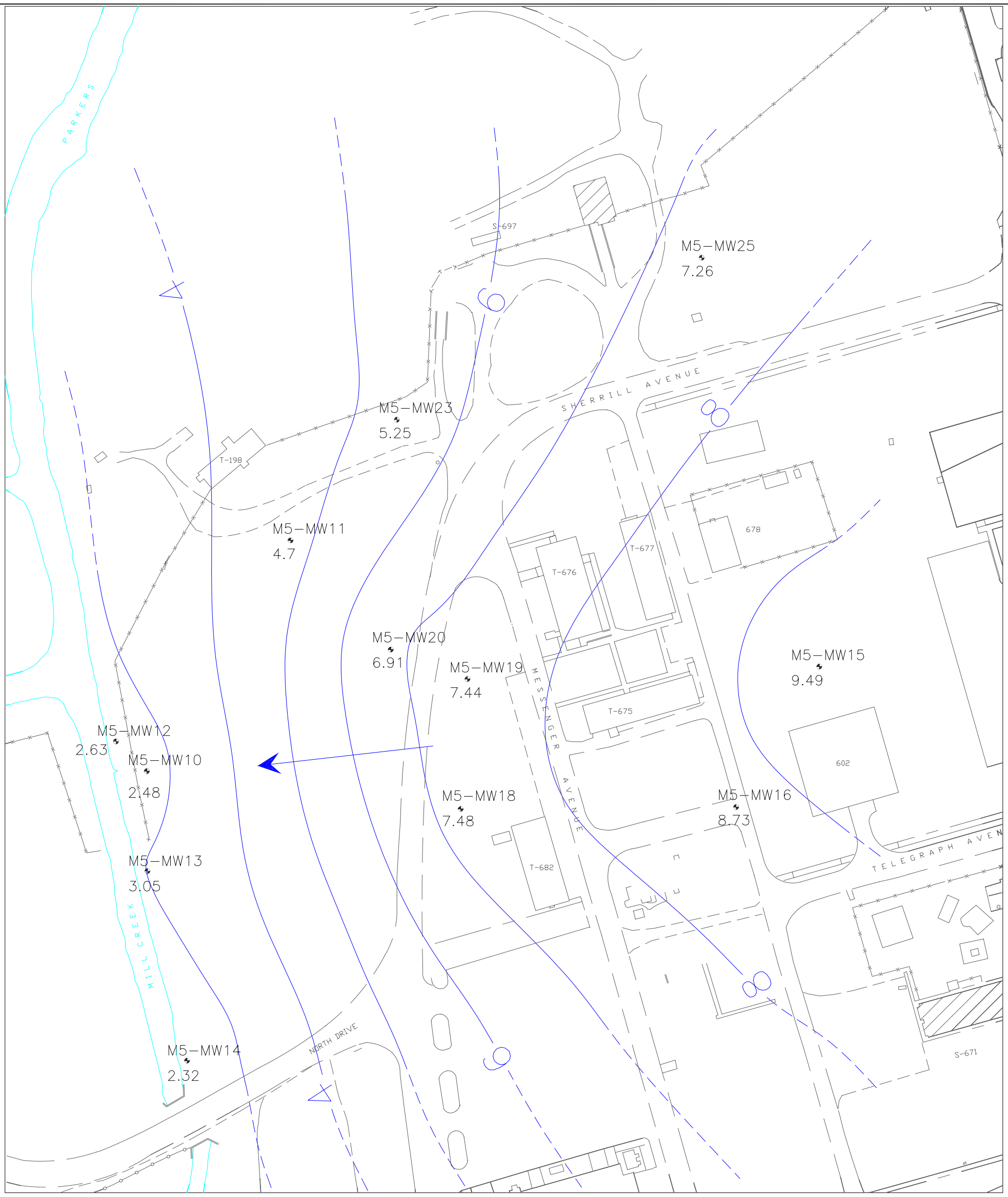
N

REV.	REVISIONS	APPROVED	DATE	DRAWN BY

TITLE:
FIGURE 4-1
GROUNDWATER COUNTOUR MAP (28 OCT 02)
M-5 LANDFILL
FORT MONMOUTH, NEW JERSEY

DRAWN BY: CAW	DATE DRAWN: 22 AUG 05
CHECKED BY:	DATE CHECKED:
APPROVED BY:	DATE APPROVED:
	DRAWING No.: FIGURE 4-1
	PROJECT No.: 110571.0571.411
	SCALE: 1" = 100'
	SHEET 1 OF 1 REV.: A

Versar INC.
4700 S. Mc CLINTOCK DR., STE. 150
TEMPE, ARIZONA 85282
*TELEPHONE (480)838-5352
*FAX (480)838-6990



100 50 0 100

SCALE IN FEET

NOTES

M5-MW14 — SEE TABLE 4-1 FOR DEPTH TO WATER AND CASING ELEVATIONS.

3.34 — MONITORING WELL LOCATION

4 — GROUNDWATER CONTOUR (DASHED WHERE INFERRED)

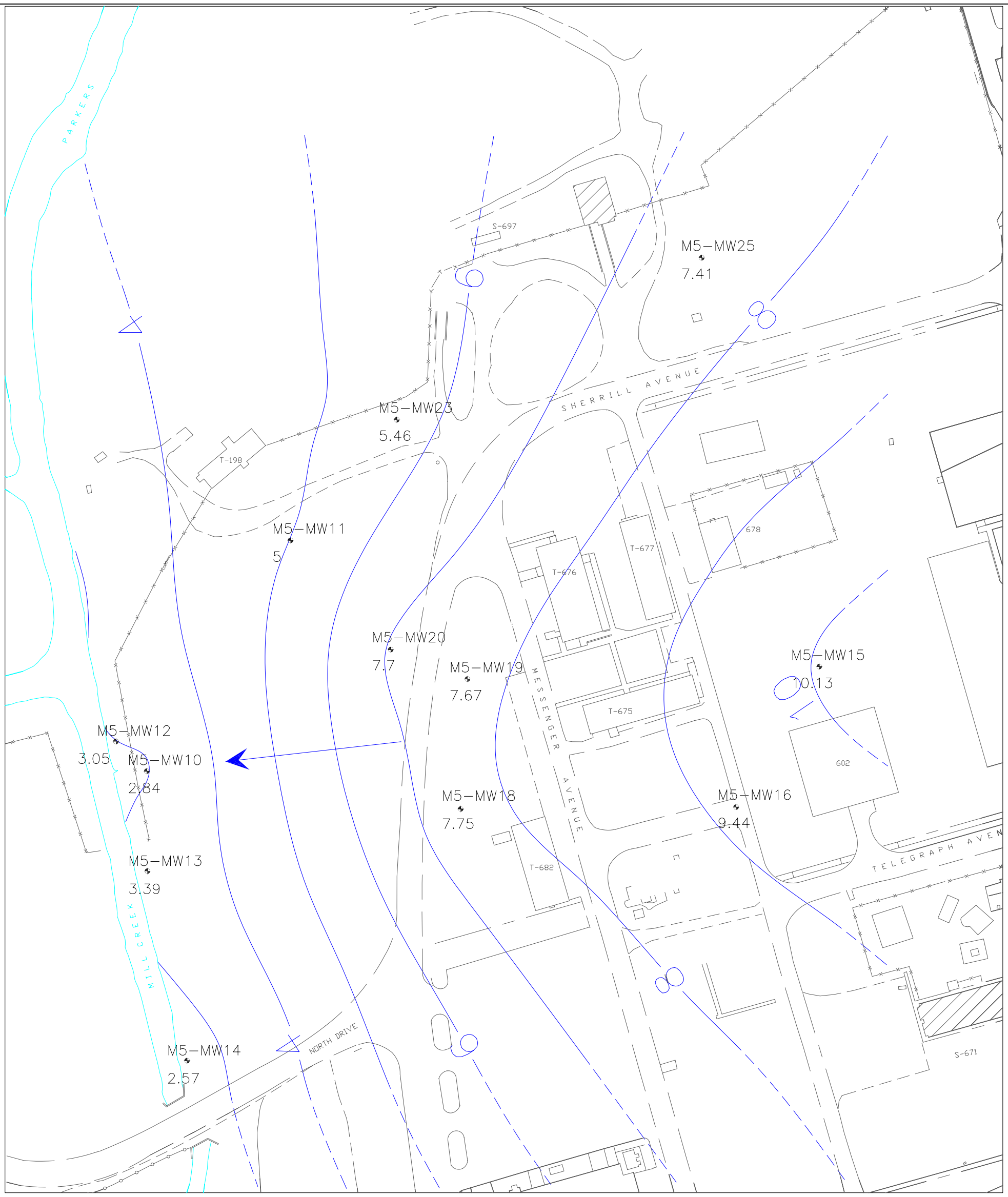
GROUNDWATER FLOW DIRECTION

N

REV.	REVISIONS	APPROVED	DATE	DRAWN BY

TITLE:
FIGURE 4-2
GROUNDWATER COUNTOUR MAP (22 JAN 03)
M-5 LANDFILL
FORT MONMOUTH, NEW JERSEY

DRAWN BY: CAW	DATE DRAWN: 22 AUG 05
CHECKED BY:	DATE CHECKED:
APPROVED BY:	DATE APPROVED:
Versar INC.	DRAWING No.: FIGURE 4-2
4700 S. Mc CLINTOCK DR., STE. 150 TEMPE, ARIZONA 85282	PROJECT No.: 110571.0571.411
*TELEPHONE (480)838-5352	SCALE: 1" = 100'
*FAX (480)838-6990	SHEET 1 OF 1 REV.: A



100 50 0 100

SCALE IN FEET

NOTES

M5-MW14 SEE TABLE 4-1 FOR DEPTH TO WATER AND CASING ELEVATIONS.

MONITORING WELL LOCATION

3.34
4 GROUNDWATER CONTOUR (DASHED WHERE INFERRED)

GROUNDWATER FLOW DIRECTION

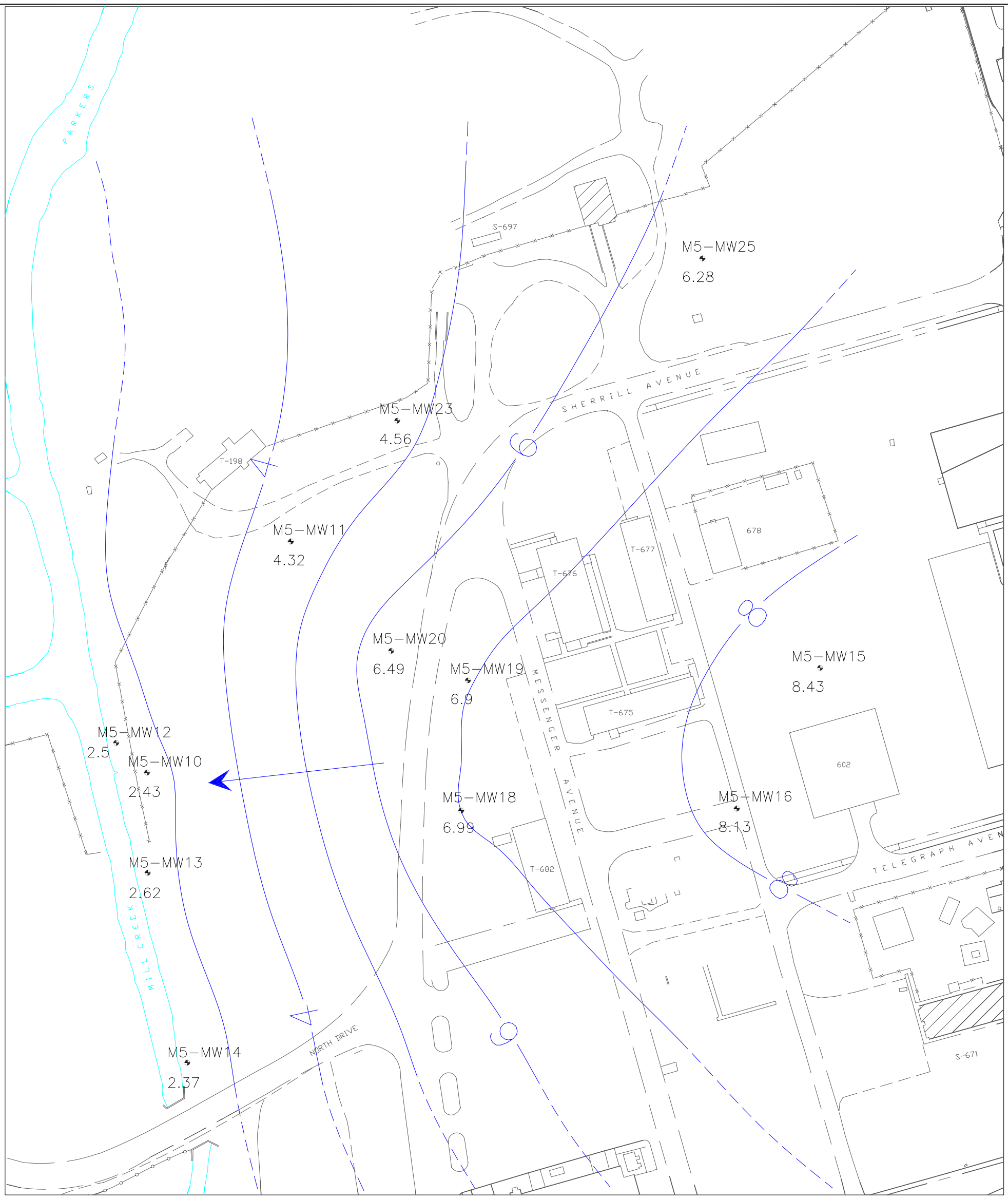
N

REV.	REVISIONS	APPROVED	DATE	DRAWN BY

TITLE:
FIGURE 4-3
GROUNDWATER COUNTOUR MAP (21 APR 03)
M-5 LANDFILL
FORT MONMOUTH, NEW JERSEY

DRAWN BY: CAW	DATE DRAWN: 22 AUG 05
CHECKED BY:	DATE CHECKED:
APPROVED BY:	DATE APPROVED:
	DRAWING No.: FIGURE 4-3
	PROJECT No.: 110571.0571.411
	SCALE: 1" = 100'
	SHEET 1 OF 1 REV.: A

Versar INC.
4700 S. Mc CLINTOCK DR., STE. 150
TEMPE, ARIZONA 85282
* TELEPHONE (480)838-5352
* FAX (480)838-6990



100 50 0 100

SCALE IN FEET

NOTES

M5-MW14
3.34
4

SEE TABLE 4-1 FOR DEPTH TO WATER AND CASING ELEVATIONS.

MONITORING WELL LOCATION

GROUNDWATER CONTOUR (DASHED WHERE INFERRED)

GROUNDWATER FLOW DIRECTION

N

REV.	REVISIONS	APPROVED	DATE	DRAWN BY

TITLE:
FIGURE 4-4
GROUNDWATER COUNTOUR MAP (30 JUL 03)
M-5 LANDFILL
FORT MONMOUTH, NEW JERSEY

DRAWN BY: CAW	DATE DRAWN: 22 AUG 05
CHECKED BY:	DATE CHECKED:
APPROVED BY:	DATE APPROVED:
	DRAWING No.: FIGURE 4-4
	PROJECT No.: 110571.0571.411
	SCALE: 1" = 100'
	SHEET 1 OF 1 REV.: A

Versar INC.
4700 S. Mc CLINTOCK DR., STE. 150
TEMPE, ARIZONA 85282
* TELEPHONE (480)838-5352
* FAX (480)838-6990

Sample Date	08-Oct-96	25-Nov-96	12-Dec-96	29-Jan-97	26-Feb-97	10-Mar-97	08-Apr-97	17-Jul-97	30-Oct-97	10-Feb-98	21-Apr-98	19-Aug-98	17-Nov-98	25-Feb-99	29-Jun-99	08-Dec-99
Tetrachloroethene	2.35	6.26	2.28	4.42	6.37	2.33	ND	1.61	1.24	6.61	ND	2.85	1.62	5.61	5.27	ND
Sample Date	01-Mar-00	12-June-00	24-Aug-00	20-Nov-00	08-Mar-01	16-May-01	25-Sep-01	14-Nov-01	11-Feb-02	18-Jun-02	18-Sep-02	04-Nov-02	13-Mar-03	21-May-03	17-Sep-03	
Tetrachloroethene	6.18	4.37	3.19	3.70	2.52	2.95	ND	ND	1.64	1.97	ND	ND	2.33	ND	1.13	

SS-4

M5-MW23

Sample Date	13-Apr-99	27-Apr-99	13-Sep-99	18-Nov-99	03-Mar-00	31-May-00	21-Aug-00	11-Dec-00	13-Feb-01	19-Mar-01
Tetrachloroethene	84.93	44.43	29.53	59.02	11.53	23.13	4.22	14.27	ND	6.39
Sample Date	05-Jun-01	05-Sep-01	04-Oct-01	14-Jan-02	23-Apr-02	21-Aug-02	28-Oct-02	22-Jan-03	21-Apr-03	30-Jul-03
Tetrachloroethene	33.84	3.41	3.85	8.26	8.97	15.68	ND	79.46	17.35	20.45

M5-MW11

Sample Date	08-May-97	08-Aug-97	29-Oct-97	18-Feb-98	06-May-98	04-Aug-98	27-Oct-98	02-Feb-99	13-Apr-99	27-Apr-99	13-Sep-99	18-Nov-99	03-Mar-00	31-May-00
Tetrachloroethene	62.85	57.74	64.96	39.33	24.39	18.37	52.64	5.16	33.38	12.84	49.25	74.12	30.62	13.38
Sample Date	21-Aug-00	11-Dec-00	13-Feb-01	19-Mar-01	05-Jun-01	05-Sep-01	4-Oct-01	14-Jan-02	23-Apr-02	21-Aug-02	28-Oct-02	22-Jan-03	21-Apr-03	30-Jul-03
Tetrachloroethene	18.79	18.86	12.42	11.01	11.27	6.11	15.13	19.04	14.43	8.90	8.14	5.20	4.50	5.74

SS-5

ND

M5-MW12

ND

M5-MW10

Sample Date	08-Oct-96	25-Nov-96	12-Dec-96	29-Jan-97	26-Feb-97	10-Mar-97	08-Apr-97	17-Jul-97	30-Oct-97	10-Feb-98	21-Apr-98	19-Aug-98	17-Nov-98	25-Feb-99	29-Jun-99	08-Dec-99
Tetrachloroethene	2.76	7.53	2.98	4.76	5.32	2.42	2.28	3.54	1.70	6.54	4.48	3.39	2.17	5.45	6.04	3.82
Sample Date	01-Mar-00	12-Jun-00	24-Aug-00	20-Nov-00	8-Mar-01	16-May-01	25-Sep-01	14-Nov-01	11-Feb-02	18-Jun-02	18-Sep-02	04-Nov-02	13-Mar-03	21-May-03	17-Sep-03	
Tetrachloroethene	6.62	4.38	3.44	3.58	ND	4.09	ND	1.99	2.44	2.39	ND	ND	3.08	3.54	1.23	

M5-MW13

ND

Sample Date	25-Nov-96	12-Dec-96	29-Jan-97	26-Feb-97	10-Mar-97	08-Apr-97	17-Jul-97	30-Oct-97	10-Feb-98	21-Apr-98	19-Aug-98	18-Nov-98	25-Feb-99	29-Jun-99	08-Dec-99	01-Mar-00
Tetrachloroethene	8.20	3.82	5.19	6.75	2.31	6.47	6.72	1.86	6.23	4.58	4.33	1.48	6.06	7.76	4.13	6.47
Sample Date	12-Jun-00	24-Aug-00	20-Nov-00	21-Feb-01	16-May-01	25-Sep-01	14-Nov-01	11-Feb-02	18-Jun-02	18-Sep-02	05-Nov-02	13-Mar-03	21-May-03	17-Sep-03		
Tetrachloroethene	3.74	4.47	4.49	6.25	6.91	NS	7.05	2.47	2.46	ND	1.49	3.21	3.68	1.7		

ND

M5-MW14

SS-16

Sample Date	08-Oct-96	25-Nov-96	12-Dec-96	29-Jan-97	26-Feb-97	10-Mar-97	08-Apr-97	17-Jul-97	30-Oct-97	10-Feb-98	21-Apr-98	19-Aug-98	18-Nov-98	25-Feb-99	29-Jun-99	08-Dec-99
Tetrachloroethene	8.41	10.58	5.63	5.68	7.84	3.39	6.00	7.12	2.72	8.90	5.72	5.39	ND	7.33	7.86	4.08
Sample Date	01-Mar-00	12-Jun-00	24-Aug-00	20-Nov-00	21-Feb-01	16-May-01	25-Sept-01	14-Nov-01	11-Feb-02	18-Jun-02	18-Sept-02	05-Nov-02	24-Mar-03	21-May-03	17-Sep-03	
Tetrachloroethene	6.95	5.94	5.20	6.29	7.19	6.84	ND	3.49	2.65	2.67	2.55	1.52	3.96	3.84	1.6	

ND

M5-MW25

Sample Date	13-Apr-99	27-Apr-99	13-Sep-99	18-Nov-99	03-Mar-00	31-May-00	21-Aug-00	11-Dec-00	13-Feb-01	19-Mar-01
Tetrachloroethene	142.59	169.54	156.58	143.93	90.03	43.44	23.85	110.95 D	48.11	65.73
Sample Date	05-Jun-01	05-Sep-01	04-Oct-01	14-Jan-02	23-Apr-02	21-Aug-02	28-Oct-02	22-Jan-03	21-Apr-03	30-Jul-03
Tetrachloroethene	45.30	111.58 D	83.81	85.31	76.89	79.41	12.99	27.87	27.99	15.26

M5-MW20

M5-MW15

Sample Date	13-Apr-99	27-Apr-99	14-Sep-99	18-Nov-99	03-Mar-00	31-May-00	21-Aug-00	11-Dec-00	13-Feb-01	19-Mar-01
Tetrachloroethene	ND	ND	2.15	ND	ND	ND	ND	ND	ND	ND
Sample Date	05-Jun-01	05-Sep-01	04-Oct-01	14-Jan-02	23-Apr-02	21-Aug-02	28-Oct-02	22-Jan-03	21-Apr-03	30-Jul-03
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

M5-MW19

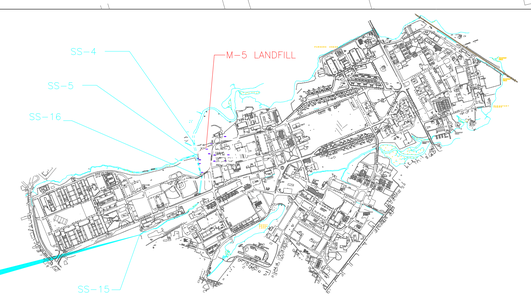
Sample Date	13-Apr-99	27-Apr-99	13-Sep-99	18-Nov-99	06-Mar-00	31-May-00	21-Aug-00	11-Dec-00	13-Feb-01	19-Mar-01
Tetrachloroethene	11.53	3.72	10.24	69.22	5.44	ND	4.77	3.80	ND	2.43
Sample Date	05-Jun-01	05-Sep-01	04-Oct-01	14-Jan-02	23-Apr-02	21-Aug-02	28-Oct-02	22-Jan-03	21-Apr-03	30-Jul-03
Tetrachloroethene	6.89	34.94	13.62	284.64 D	18.20	34.31	5.10	1.54	1.73	1.01

M5-MW16

Sample Date	13-Apr-99	27-Apr-99	14-Sep-99	18-Nov-99	03-Mar-00	31-May-00	21-Aug-00	11-Dec-00	13-Feb-01	19-Mar-01
Tetrachloroethene	96.37	8.35	639.74	54.42	37.76	27.79	20.36	23.20	14.84	17.88
Sample Date	05-Jun-01	05-Sep-01	04-Oct-01	14-Jan-02	23-Apr-02	21-Aug-02	28-Oct-02	22-Jan-03	21-Apr-03	30-Jul-03
Tetrachloroethene	24.47	205.77 D	620.81 D	839.50 D	213.53 D	416.79 D	42.41	31.09	8.50	18.57

M5-MW18

Sample Date	18-Nov-99	03-Mar-00	31-May-00	21-Aug-00	11-Dec-00	13-Feb-01	19-Mar-01	05-Jun-01	05-Sep-01
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sample Date	04-Oct-01	14-Jan-02	23-Apr-02	21-Aug-02	28-Oct-02	22-Jan-03	21-Apr-03	30-Jul-03	
Tetrachloroethene	2.95	1.34	ND	ND	ND	ND	ND	ND	



NOTES

1. ALL MAPPED SAMPLING POINTS WERE SAMPLED; ONLY DATA FROM SAMPLING POINTS WITH EXCEEDENCES OF THE NJDEP GWQC OR SWQS ARE SHOWN.
2. ONLY MONITORING WELLS THAT WERE PART OF THE M5 INVESTIGATION ARE MAPPED.
3. SEVERAL OTHER CONTAMINANTS WERE DETECTED AT THESE SAMPLING POINTS, AND SOME OF THE DETECTED CONTAMINANTS WERE IN EXCEEDANCE OF THE APPLICABLE NJDEP STANDARDS. HOWEVER, THESE OTHER CONTAMINANTS ARE NOT CONSIDERED TO BE OF CONCERN FOR THIS SITE. FOR A DISCUSSION OF THE OTHER CONTAMINANTS DETECTED AT THIS SITE, PLEASE SEE SECTION 1.5 OF THE REMEDIAL ACTION WORK PLAN.

LEGEND

EXISTING MONITORING WELL LOCATION

SURFACE WATER SAMPLING LOCATION

CONTAMINANT OF CONCERN	NJDEP GWQC	NJDEP SWQS
TETRACHLOROETHENE (PCE)	1.0 ug/L	4.29 ug/L

NOTE:

PCE EXCEEDANCES OF THE GWQC AND SWQS ARE HIGHLIGHTED IN YELLOW

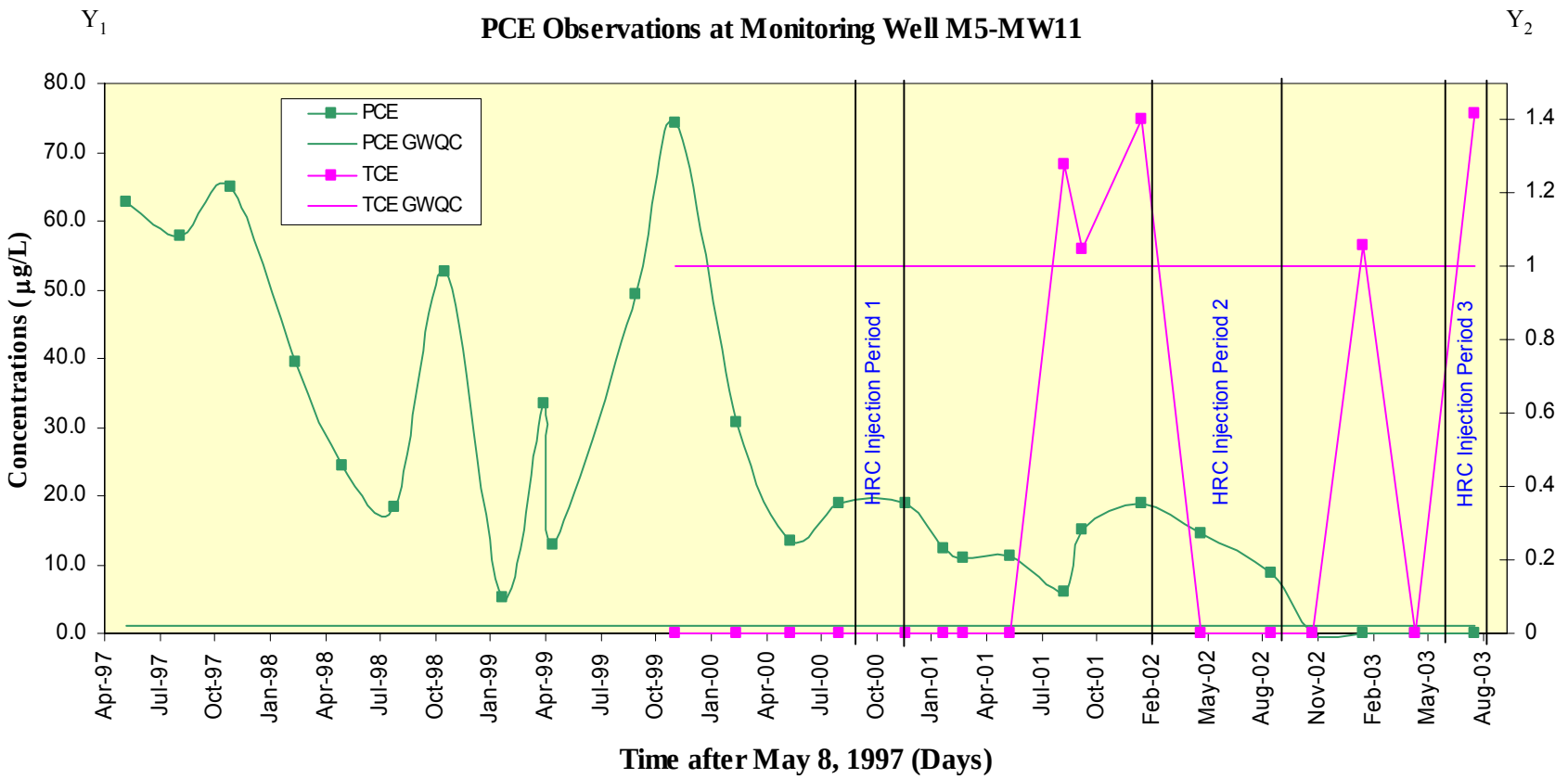
Versar INC.
ARCHITECTURE • ENGINEERING • CONSTRUCTION
201 GIBRALTAR ROAD, SUITE 100, HORSHAM, PA 19044
TEL: 215.957.0955 FAX: 215.957.0497

FIGURE 5-1

GROUNDWATER AND SURFACE WATER SAMPLING RESULTS FOR PCE M-5 LANDFILL

Fort Monmouth, New Jersey

Designed: T_WILLANS	Scale: 1:40	Drawing No.: A-1
Drawn: T_WILLANS	Client No.: 110571.0571.411	
Checked: J_HOUDLA	File No.: FIGURE_5-1	
Approved:	Date: 09-APR-03	

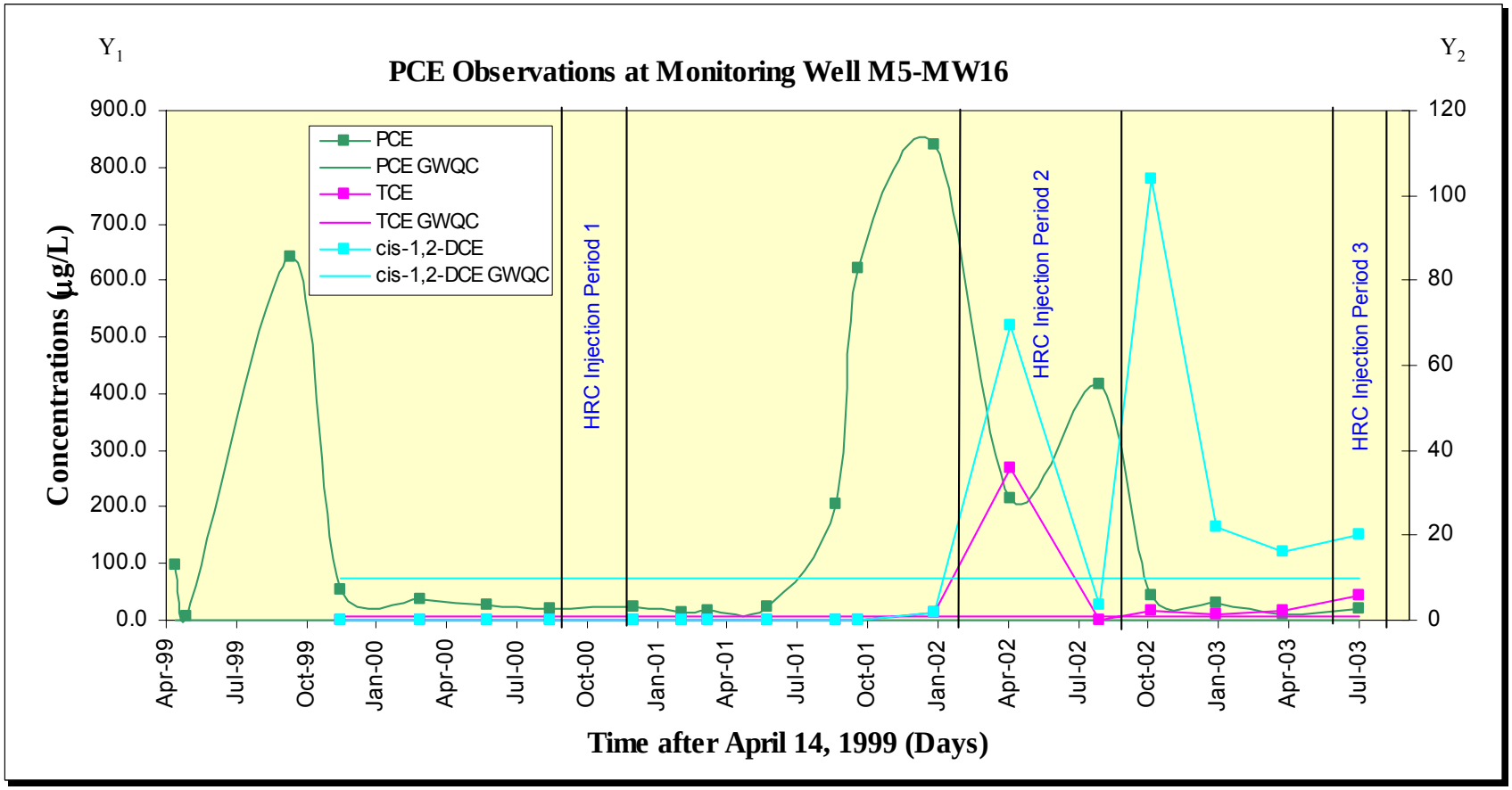


Notes:
1) Concentration is shown in micrograms per liter (ug/L), equivalent to parts per billion.
2) Observed PCE concentrations at well M5-MW11 are shown starting on May 8, 1997.
3) Observed daughter product, TCE, concentrations at well M5-MW11 are shown starting on September 5, 2001.
4) PCE is graphed along the Y_1 axis and TCE is graphed along the Y_2 axis.
5) For graphing purposes, the concentrations which were observed as non-detected (ND) are shown as zero (0) concentration.

FIGURE 5-2

PCE Observations
at Well M5-MW11
M-5 Landfill
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Road, Suite 100
Horsham, PA 19044-2314
(215) 957-0955

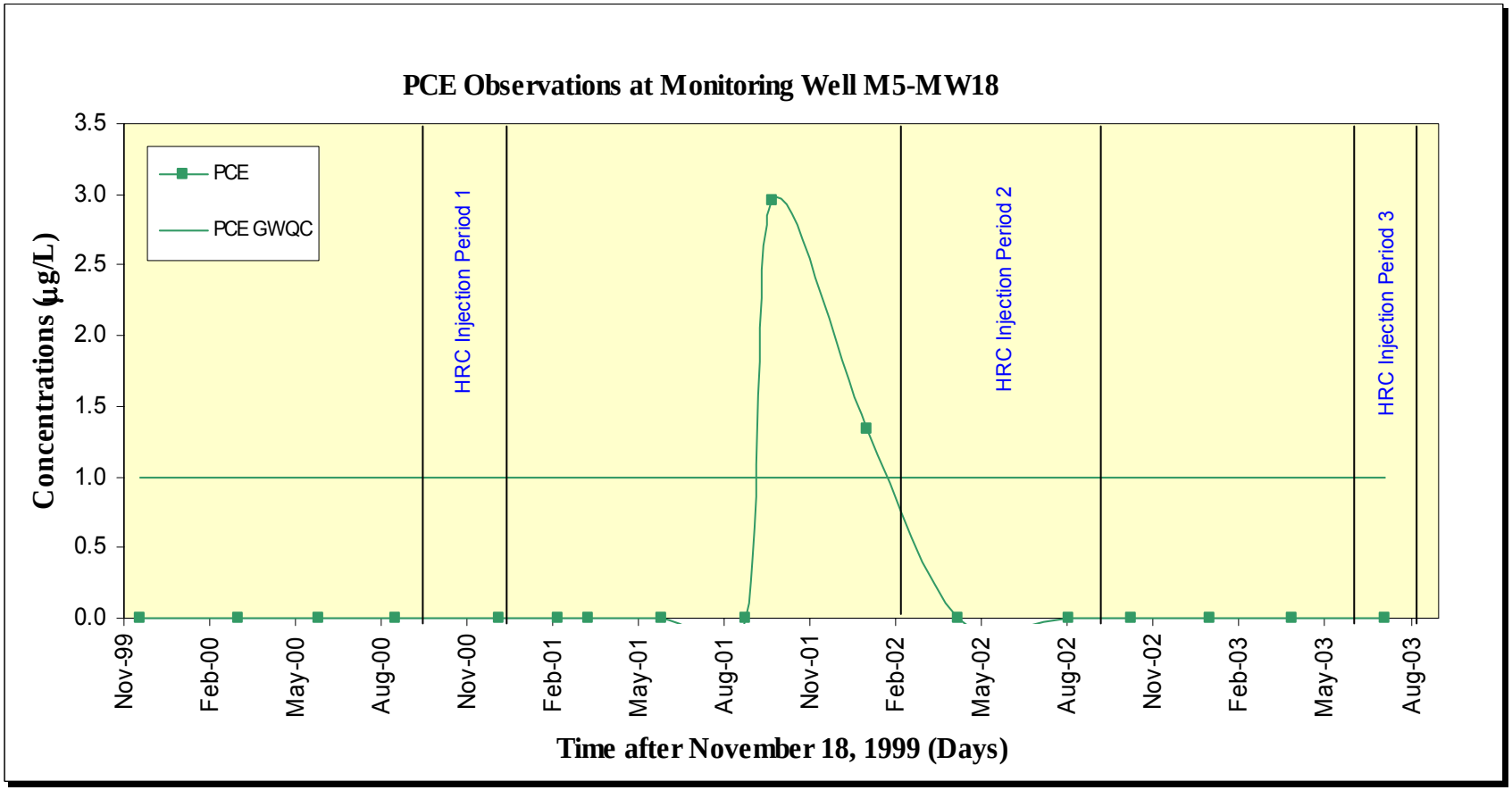


Notes:
1) Concentration is shown in micrograms per liter (ug/L), equivalent to parts per billion.
2) Observed PCE concentrations at well M5-MW16 are shown starting on April 14, 1999.
3) Observed daughter product, TCE, concentrations at well M5-MW16 are shown starting on Januray 14, 2002.
3) Observed daughter product, cis-1,2-DCE, concentrations at well M5-MW16 are shown starting on April 23, 2002.
4) PCE is graphed along the Y_1 axis and TCE and cis-1,2-DCE are graphed along the Y_2 axis.
5) For graphing purposes, the concentrations which were observed as non-detected (ND) are shown as zero (0) concentration.

FIGURE 5-3

PCE Observations
at Well M5-MW16
M-5 Landfill
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Road, Suite 100
Horsham, PA 19044-2314
(215) 957-0955

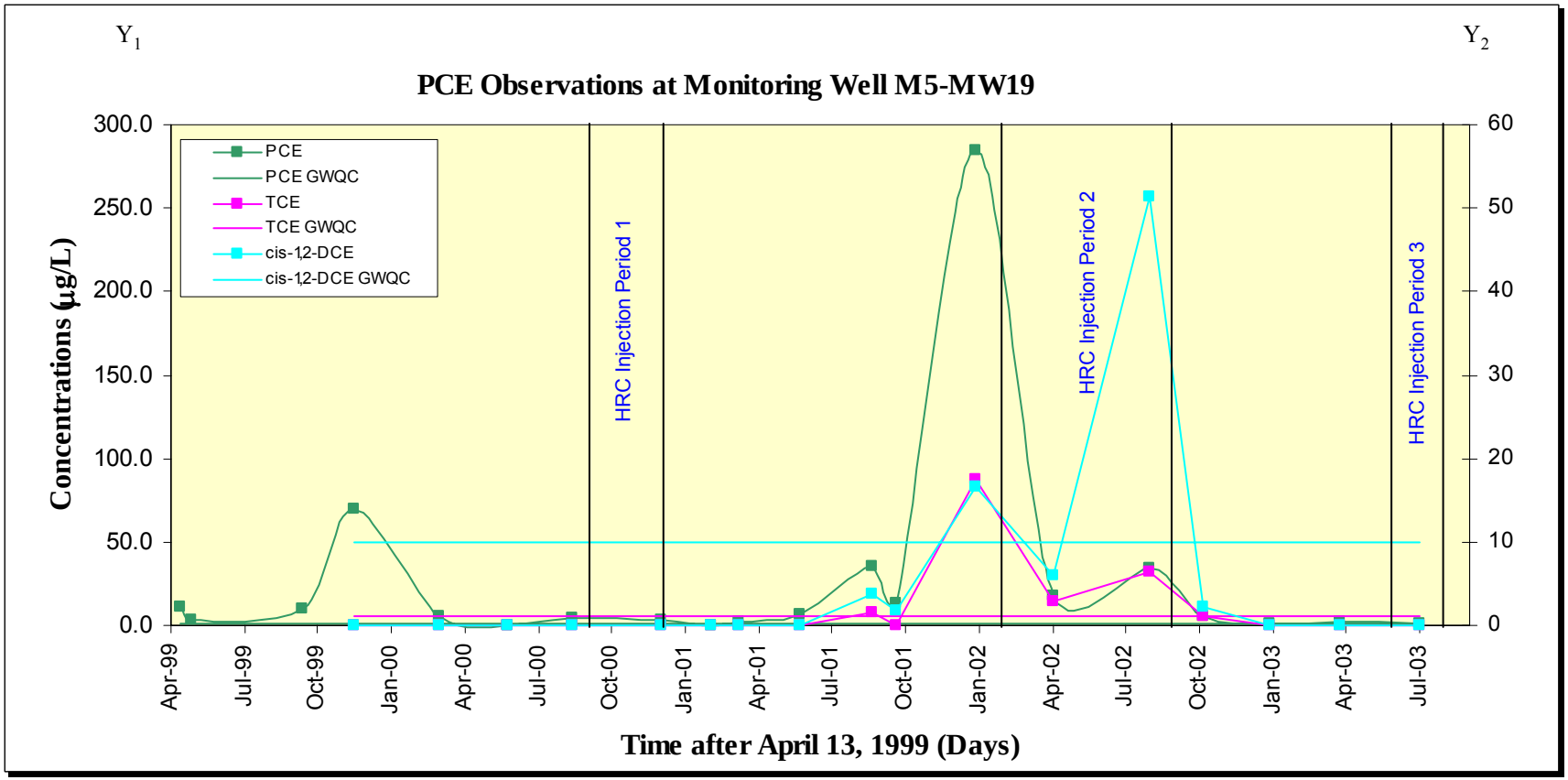


Notes:
1) Concentration is shown in micrograms per liter (ug/L), equivalent to parts per billion.
2) Observed PCE concentrations at well M5-MW18 are shown starting on November 18, 1999.
3) For graphing purposes, the concentrations which were observed as non-detected (ND) are shown as zero (0) concentration.

FIGURE 5-4

PCE Observations
at Well M5-MW18
M5-Landfill
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Road, Suite 100
Horsham, PA 19044-2314
(215) 957-0955

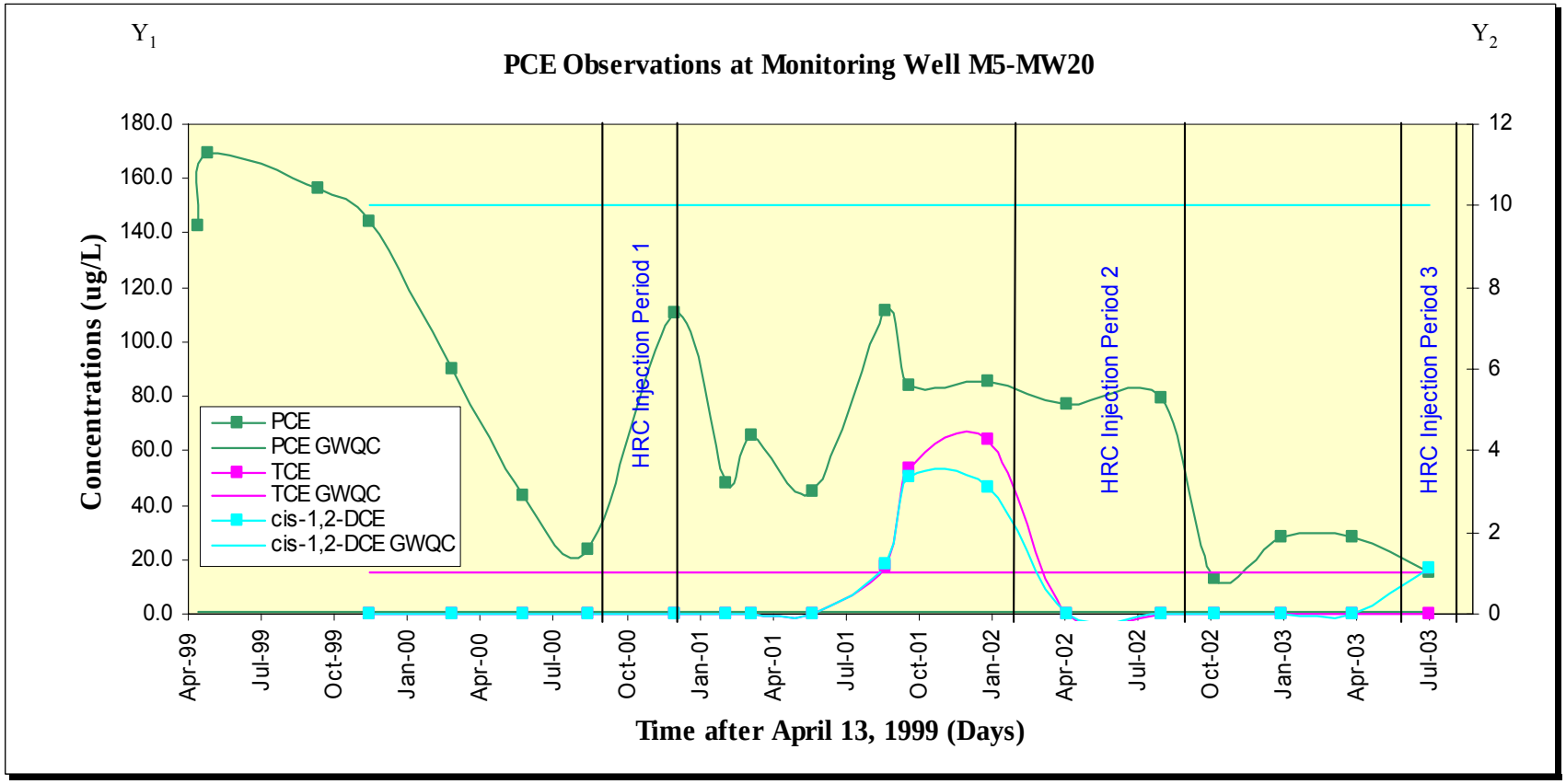


Notes:
1) Concentration is shown in micrograms per liter (ug/L), equivalent to parts per billion.
2) Observed PCE concentrations at well M5-MW19 are shown starting on April 13, 1999.
3) Observed daughter product, TCE, concentrations at well M5-MW19 are shown starting on September 5, 2001.
4) Observed daughter product, cis-1,2-DCE, concentrations at well M5-MW19 are shown starting on September 5, 2001.
5) PCE is graphed along the Y_1 axis and TCE and cis-1,2-DCE are graphed along the Y_2 axis.
6) For graphing purposes, the concentrations which were observed as non-detected (ND) are shown as zero (0) concentration.

FIGURE 5-5

PCE Observations
at Well M5-MW19
M5-Landfill
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Road, Suite 100
Horsham, PA 19044-2314
(215) 957-0955

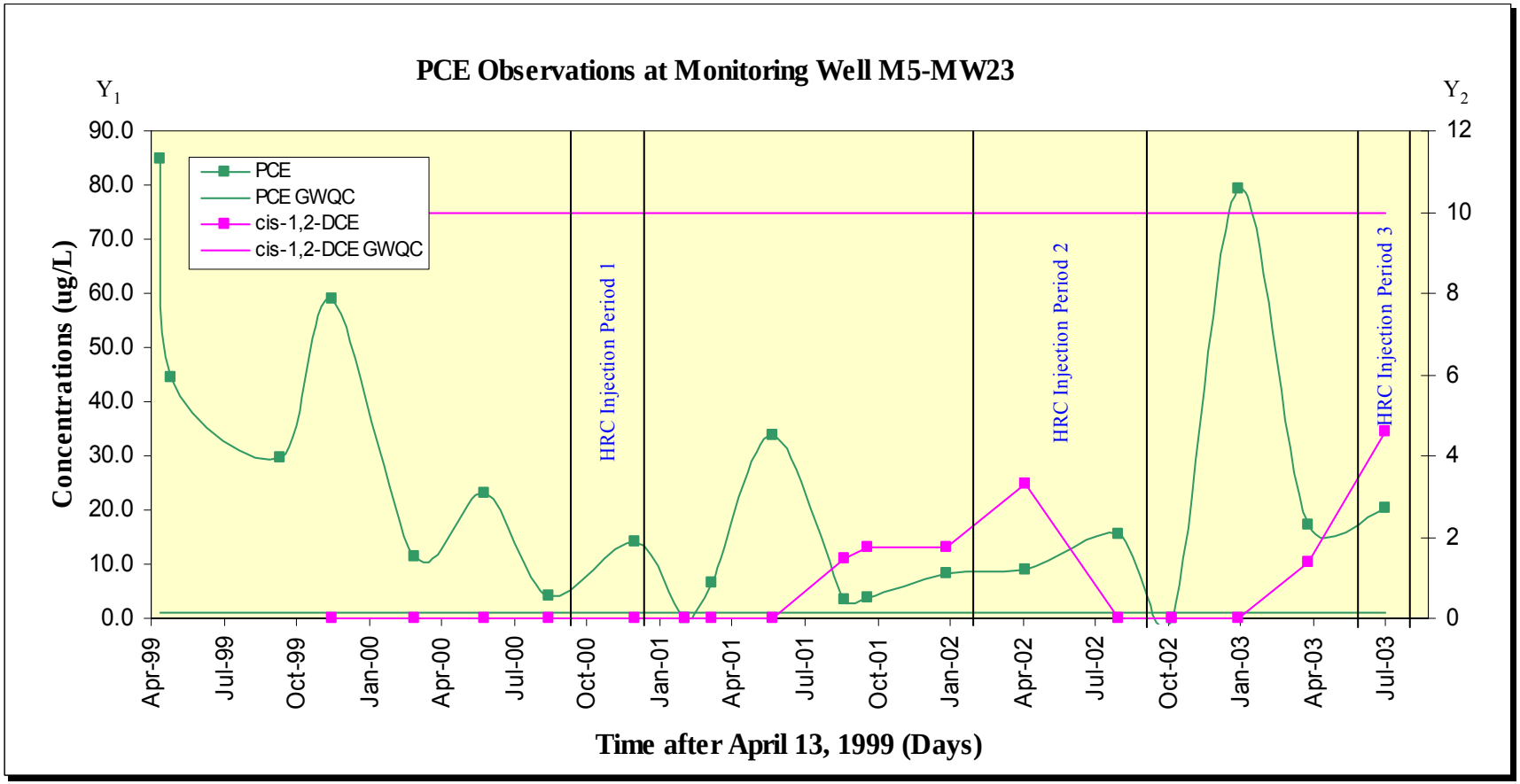


Notes:
1) Concentration is shown in micrograms per liter (ug/L), equivalent to parts per billion.
2) Observed PCE concentrations at well M5-MW20 are shown starting on April 13, 1999.
3) Observed daughter product, TCE, concentrations at well M5-MW20 are shown starting on September 5, 2002.
4) Observed daughter product, cis-1,2-DCE, concentrations at well M5-MW20 are shown starting on September 5, 2002.
5) PCE is graphed along the Y_1 axis and TCE and cis-1,2-DCE are graphed along the Y_2 axis.
6) For graphing purposes, the concentrations which were observed as non-detected (ND) are shown as zero (0) concentration.

FIGURE 5-6

PCE Observations
at Well M5-MW20
M5-Landfill
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Road, Suite 100
Horsham, PA 19044-2314
(215) 957-0955



Notes:
1) Concentration is shown in micrograms per liter (ug/L), equivalent to parts per billion.
2) Observed PCE concentrations at well M5-MW23 are shown starting on April 13, 1999.
3) Observed daughter product, cis-1,2-DCE, concentrations at well M5-MW23 are shown on September 5, 2002.
4) PCE is graphed along the Y_1 axis and cis-1,2-DCE is graphed along the Y_2 axis.
5) For graphing purposes, the concentrations which were observed as non-detected (ND) are shown as zero (0) concentration.

FIGURE 5-7

PCE Observations
at Well M5-MW23
M-5 Landfill
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Road, Suite 100
Horsham, PA 19044-2314
(215) 957-0955

APPENDICES

Appendix A

ATC Associates, Inc., February 2000. ***Remedial Action Workplan – Landfill M-5, Main Post, Fort Monmouth, New Jersey.***

United States Army
Fort Monmouth, New Jersey

Remedial Action Work Plan

Landfill M-5
Main Post
Fort Monmouth, New Jersey

REMEDIAL ACTION WORK PLAN

LANDFILL M-5

MAIN POST
FORT MONMOUTH, NEW JERSEY

FEBRUARY 2000

PROJECT NO.: 02711.00002
CONTRACT NO.: DACA51-96-D-0018

PREPARED FOR:

UNITED STATES ARMY, FORT MONMOUTH, NEW JERSEY
DIRECTORATE OF PUBLIC WORKS
BUILDING 167
FORT MONMOUTH, NJ 07703

PREPARED BY:

ATC ASSOCIATES, INC.
BROMLEY CORPORATE CENTER
THREE TERRI LANE
BURLINGTON, NEW JERSEY 08016

CERTIFICATION

For: Remedial Action Work Plan, M5 Landfill Site, Fort Monmouth, New Jersey

"I certify under penalty of law that the information provided in this document is true, accurate, and complete to the best of my knowledge. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties."

Joseph Fallon Environmental Protection Specialist		
Name, Title	**Signature**	**Date**

"I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete to the best of my knowledge. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties."

Mark H. Johnson, LTC, MI		
Name, Title	**Signature**	**Date**

This Remedial Action Work Plan has been reviewed and approved.

Ian Curtis Case Manager NJDEP, Bureau of Federal Case Management		
Name, Title	**Signature**	**Date**

TABLE OF CONTENTS

EXECUTIVE SUMMARY **1**

1.0 REMEDIAL INVESTIGATION REPORT **2**

1.1 Historical Information **2**

1.2 Physical Setting **2**
1.2.1 Site Description *2*
1.2.2 Regional Geology *2*
1.2.3 Local Geology *3*
1.2.4 Hydrogeology *3*

1.3 Technical Overview **4**
1.3.1 Reliability of Laboratory Data *4*
1.3.2 Summary of Contamination *4*

1.4 Remedial Investigation Methodology **4**
1.4.1 Geoprobe Borings/ Soil and Groundwater Sampling *4*
1.4.2 Soil Borings *5*
1.4.3 Monitoring Well Installation *5*
1.4.4 Groundwater Monitoring and Sampling *6*
1.4.5 Survey of the Monitoring Wells *7*
1.4.6 Surface Water Sampling *7*
1.4.7 Aquifer Pump Testing *7*

1.5 Remedial Investigation Results **8**
1.5.1 Soil Quality *8*
1.5.2 Groundwater Quality *8*
1.5.3 Surface Water Quality *9*
1.5.4 Aquifer Pump Test Results *10*

1.6 Sensitive Receptor Survey **11**
1.6.1 Well Search Data *11*
1.6.2 Receptor Evaluation *11*

1.7 Classification Exception Area **12**

1.8 Conclusions and Recommendations **16**

2.0 STATEMENT OF INTENT TO COMPLETE N.J.A.C. 7:26E **18**

3.0 APPLICABLE REMEDIATION STANDARDS **19**

TABLE OF CONTENTS (CON'T)

4.0 REMEDIAL ACTION ALTERNATIVES 20

4.1 Considered Remedial Actions 20

4.1 Proposed Remedial Actions 21

4.1.1 Natural Remediation 22

4.1.2 Anaerobic Bioremediation 22

5.0 QUALITY ASSURANCE PROJECT PLAN 24

6.0 REQUIRED PERMITS 25

7.0 EROSION, DUST, AND ODOR CONTROL 26

8.0 HEALTH AND SAFETY PLAN 27

9.0 SITE RESTORATION 28

10.0 POST-REMEDIAL ACTION SAMPLING 29

11.0 ESTIMATED COST OF REMEDIAL ACTION WORKPLAN IMPLEMENTATION 30

12.0 PROPOSED SCHEDULE 31

TABLE OF CONTENTS (CON'T)

TABLES

Table 1 Geoprobe Soil Sampling Analytical Results
Table 2 Geoprobe Groundwater Sampling Analytical Results
Table 3 Quarterly Groundwater Sampling Results – MW-10
Table 4 Quarterly Groundwater Sampling Results – MW-11
Table 5 Quarterly Groundwater Sampling Results – MW-12
Table 6 Quarterly Groundwater Sampling Results – MW-13
Table 7 Quarterly Groundwater Sampling Results – MW-14
Table 8 Quarterly Groundwater Sampling Results – MW-15
Table 9 Quarterly Groundwater Sampling Results – MW-16
Table 10 Quarterly Groundwater Sampling Results – MW-18
Table 11 Quarterly Groundwater Sampling Results – MW-19
Table 12 Quarterly Groundwater Sampling Results – MW-20
Table 13 Quarterly Groundwater Sampling Results – M5MW23
Table 14 Quarterly Groundwater Sampling Results – M5MW25
Table 15 Quarterly Groundwater Sampling Results – M8MW12
Table 16 Quarterly Groundwater Sampling Results – M8MW23
Table 17 Quarterly Groundwater Sampling Results – M8MW24
Table 18 Periodic Stream Sampling Analytical Results
Table 19 Well Search Summary

TABLE OF CONTENTS (CON'T)

FIGURES

Figure 1 **Site Location Map**
Figure 2 **Site Map**
Figure 3 **Groundwater Elevation Contour Map - February 2, 1999**
Figure 4 **Groundwater Elevation Contour Map - April 13, 1999**
Figure 5 **Groundwater Elevation Contour Map - April 27, 1999**
Figure 6 **Groundwater Elevation Contour Map – September 13, 1999**
Figure 7 **Soil Sampling Analytical Results Map**
Figure 8 **Geoprobe Groundwater Sampling Analytical Results Map**
Figure 9 **Monitoring Well Groundwater and Surface Water Sampling Analytical Results Map for Tetrachloroethene**
Figure 10 **Historical Concentration of PCE at M5MW11**
Figure 11 **Isopleth Map, Tetrachloroethene, April 13 and 14, 1999**
Figure 12 **Isopleth Map, Tetrachloroethene, April 27 and 28, 1999**
Figure 13 **Isopleth Map, Tetrachloroethene, September 13 and 14, 1999**
Figure 14 **Well Search Map**
Figure 15 **Proposed Bioremediation Areas**
Figure 16 **Project Schedule**

TABLE OF CONTENTS (CON'T)

APPENDICES

Appendix A	**Department of Public Works – Standard Operating Procedures**
Appendix B	**Soil Boring and Monitoring Well Logs**
Appendix C	**Soil Boring Analytical Results**
Appendix D	**Monitoring Well Permits and Records**
Appendix E	**Geoprobe Groundwater Analytical Results, April – October 1998**
Appendix F	**Groundwater Monitoring Analytical Data - May 8, 1997**
Appendix G	**Groundwater Monitoring Analytical Data - August 8, 1997**
Appendix H	**Groundwater Monitoring Analytical Data - October 29, 1997**
Appendix I	**Groundwater Monitoring Analytical Data - February 18, 1998**
Appendix J	**Groundwater Monitoring Analytical Data - May 6, 1998**
Appendix K	**Groundwater Monitoring Analytical Data - August 4, 1998**
Appendix L	**Groundwater Monitoring Analytical Data - October 7, 1998**
Appendix M	**Groundwater Monitoring Analytical Data - October 21, 1998**
Appendix N	**Groundwater Monitoring Analytical Data - October 27, 1998**
Appendix O	**Groundwater Monitoring Analytical Data - February 2, 1999**
Appendix P	**Groundwater Monitoring Analytical Data - April 13 and 14, 1999**
Appendix Q	**Groundwater Monitoring Analytical Data - April 27 and 28, 1999**
Appendix R	**Groundwater Monitoring Analytical Data - September 13 and 14, 1999**
Appendix S	**NJDEP Forms A and B**
Appendix T	**Surface Water Sampling Analytical Data - October 1996-June 1999**
Appendix U	**Pump Test Data**
Appendix V	**Anaerobic Bioremediation Data**

EXECUTIVE SUMMARY

In April 1995 the Fort Monmouth Directorate of Public Works (DPW) began its Remedial Investigation of Landfill M-5 at Fort Monmouth – Main Post. The purpose of this investigation was to collect samples in order to evaluate the soil, groundwater and surface water quality at and in the vicinity of the Landfill M-5, and to prepare a Remedial Action Work Plan (RAWP) to address the need for remediation of these media, if necessary. In general, the Remedial Investigation was conducted by the DPW. ATC Associates, Inc. (ATC) was contracted by the DPW to evaluate the data, and to prepare this RAWP for Landfill M-5.

This Remedial Investigation involved drilling and sampling 261 Geoprobe soil borings for soil and groundwater, installing 12 new shallow groundwater monitoring wells, drilling three deep soil borings, and sampling two groundwater monitoring wells for eleven events, three groundwater monitoring wells for six events, and ten groundwater monitoring wells for three events. The results of this investigation indicate that the shallow groundwater contained volatile organic compounds (VOCs), particularly tetrachloroethene (PCE), in excess of the New Jersey Department of Environmental Protection (NJDEP) Groundwater Quality Criteria (GWQC).

The concentrations and distribution of PCE in the soil and groundwater at Landfill M-5 suggest that this location is suitable for a Natural Remediation program. In general, PCE concentrations are expected to come into compliance with the New Jersey Department of Environmental Protection's (NJDEP) Class II Groundwater Quality Criteria (GWQC) within a five year period, and the PCE contamination is expected to migrate approximately 54 feet during this time frame.

Although PCE concentrations are expected to naturally attenuate to acceptable levels, the DPW wishes to shorten the time required for compliance with the GWQC. Therefore, the DPW proposes to actively remediate existing concentrations of PCE by treating the affected areas with Hydrogen Releasing Compound (HRC). The DPW is proposing a specific application protocol and a groundwater sampling program designed to measure the effectiveness of groundwater remediation.

1.0 REMEDIAL INVESTIGATION REPORT

This document is a Remedial Action Work Plan (RAWP) for the soils and groundwater at Landfill M-5, located on the Main Post of Fort Monmouth, New Jersey (Figures 1 and 2). It has been prepared by ATC Associates, Inc. (ATC), on behalf of the Fort Monmouth Directorate of Public Works (DPW), and is based on the data presented in the December 1995 *Site Investigation Report* (SIR), by Roy F. Weston, Inc. (Weston), as well as groundwater and surface water sampling data collected by the DPW between May 8, 1997 and September 14, 1999 and soil sampling data collected by the DPW between April 8, 1998 and March 30, 1999. This RAWP has been prepared in accordance with the New Jersey Department of Environmental Protection's (NJDEP) July 1993 *Technical Requirements for Site Remediation - NJAC 7:26E* (Technical Requirements).

1.1 Historical Information

According to the Weston SIR, Landfill M-5 was in use as a landfill between 1952 and 1959. Materials generally found in Main Post landfills include unwashed pesticide/herbicide cans, batteries, fluorescent tubes, electronic components, garbage, asbestos wrappings from pipes, soot and boiler scale, sludge from sanitary treatment plants (STPs), small quantities of outdated drugs, outdated photographic chemicals in glass bottles, building rubble including asbestos-containing materials (ACM), incinerator ash, sand from oil spill cleanups, and other debris. Landfill M-5 also was reportedly used for the disposal of automobiles.

1.2 Physical Setting

1.2.1 Site Description

Landfill M-5 is located on the western portion of the Main Post, just west of the Eatontown/Oceanport Borough line. The site is located on the northwest corner of the intersection of North Drive and Wilson Avenue, and is bound by Mill Creek to the west (Figure 2). The approximate area of Landfill M-5 is 138,200 ft^2 (3.2 acres). This landfill was constructed in a former swamp, and is presently flat and grass covered.

1.2.2 Regional Geology

Fort Monmouth is located within the New Jersey Section of the Atlantic Coastal Plain physiographic province. In general, New Jersey Coastal Plain formations consist of northeast striking deposits of unconsolidated clay, silt, and gravel. These sediments, predominantly derived from deltaic, shallow marine, and continental shelf environments, date from Cretaceous through the Quaternary Periods. The mineralogy ranges from quartz to glauconite.

Over 20 regional geologic units are present within the sediments of the New Jersey Coastal Plain. Regressive, upward coarsening deposits are usually aquifers (e.g., Englishtown and Kirkwood Formations, and the Cohansey Sand), while the transgressive deposits act as confining units (e.g., the

Merchantville, Marshalltown, and Navesink Formations). The individual thickness for these units vary greatly (i.e., from several feet to several hundred feet).

1.2.3 Local Geology

Based on the regional geologic map (Jablonski, 1968), the Cretaceous age Red Bank and Tinton Sands outcrop at the Main Post area. The Red Bank sand conformably overlies the Navesink Formation and dips to the southeast at 35 feet per mile. The upper member (Shrewsbury) of the Red Bank sand is a yellowish-gray to reddish brown clayey, medium- to coarse-grained sand that contains abundant rock fragments, minor mica and glauconite (Jablonski). The lower member (Sandy Hook) is a dark gray to black; medium-to-fine grained sand with abundant clay, mica, and glauconite.

The Tinton sand conformably overlies the Red Bank Sand and ranges from a clayey medium to very coarse grained feldspathic quartz and glauconite sand to a glauconitic coarse sand. The color varies from dark yellowish orange or light brown to moderate brown and from light olive to grayish olive. Glauconite may constitute 60 to 80 percent of the sand fraction in the upper part of the unit (Minard, 1969). The upper part of the Tinton is often highly oxidized and iron oxide encrusted (Minard).

The boring logs from the on-site monitoring wells installed between December 1994 and March 1999, indicate that the soils in Landfill M-5 area and in the vicinity of Landfill M-5 consist of a thin soil cover of brown sandy silt (approximately one foot thick) underlain by approximately seven feet of olive/brown poorly graded sand with silt. This is in turn underlain by an 8-foot layer (8- to 16-feet below grade) of green/brown sandy silt. A dark green dense to very dense silty sand/clayey sand, with clay contents increasing with depth, extends from 16- to at least 60-feet below grade or the depth of the borings.

Over the last 80 years, the natural topography of Fort Monmouth has been altered by excavation and filling activities by the military. Topographic elevations for Landfill M-5 range from 10 feet above mean sea level (MSL) to 15 feet above MSL.

1.2.4 Hydrogeology

The water table aquifer in the Main Post area is identified as part of the "composite confining units", or minor aquifers. The minor aquifers include the Navesink formation, Red Bank Sand, Tinton Sand, Hornerstown Sand, Vincentown Formation, Manasquan Formation, Shark River Formation, Piney Point Formation, and the basal clay of the Kirkwood Formation.

Based on records of wells drilled in the Main Post area, groundwater is typically encountered at depths of 2 to 9 feet below ground surface (bgs). According to the boring logs from monitoring wells drilled at Landfill M-5, groundwater was encountered on-site between 4 foot to 8-foot bgs, during drilling activities. According to groundwater monitoring data collected during quarterly monitoring events performed at Landfill M-5 between May 8, 1997 and September 14, 1999, groundwater was encountered on site at depths between 1.40 feet to 11.59 feet. Groundwater monitoring data for the last four monitoring events – February 2, 1999, April 13, 1999, April 27, 1999, and September 13,

1999 – were used to generate groundwater elevation contour maps (Figures 3 through 6). For these groundwater monitoring events, groundwater flow was calculated to be toward the west-northwest, consistent with the Weston SIR, which reported that the site-specific groundwater flow direction was estimated to be west toward Mill Creek. Due to the proximity of the Atlantic Ocean to Fort Monmouth, shallow groundwater may be tidally influenced and may flow toward creeks and brooks as the tide goes out, and away from creeks and brooks as the tide comes in.

According to Jablonski, wells drilled in the Red Bank and Tinton Sands may produce 2 to 25 gallons per minute (gpm). Monitoring well MW-10 reportedly produced 5.0 gpm, MW-11 produced 1.5 gpm, and M5MW-19 produced approximately 3.2 gpm during the pump test. Some well owners have reported acidic water that requires treatment to remove iron.

1.3 Technical Overview

1.3.1 Reliability of Laboratory Data

The soil and groundwater samples collected during Geoprobe drilling activities and the surface water and groundwater samples collected during quarterly sampling events were analyzed within the requisite holding times by Fort Monmouth Environmental Testing Laboratory, Fort Monmouth, New Jersey (NJDEP Certification # 13461).

1.3.2 Summary of Contamination

In five of the 261 soil samples collected from Landfill M-5, tetrachloroethene (PCE) was detected at concentrations exceeding New Jersey Department of Environmental Protection's (NJDEP) Impact to Groundwater Soil Cleanup Criteria (IGWSCC) of 1.0 milligram per kilogram (mg/kg), equivalent to parts per million (ppm).

In five of the monitoring wells in the Landfill M-5 area, PCE was detected at concentrations exceeding the NJDEP Class II Groundwater Quality Criteria (GWQC) of 1.0 microgram per liter (µg/L), equivalent to parts per billion (ppb).

Detailed descriptions of the soil, groundwater, and surface water impacts in the Landfill M-5 area are presented in Section 1.5 of this document.

1.4 Remedial Investigation Methodology

1.4.1 Geoprobe Borings/ Soil and Groundwater Sampling

Between April 8, 1998 and December 17, 1998, a total of 261 Geoprobe points were drilled (B1 through B197 and B254 through B318). One soil and groundwater samples were collected from each Geoprobe location. The purpose of collecting groundwater samples using the Geoprobe was to provide a screening tool for determining the gross distribution of groundwater impacts. This data was confirmed through the installation of permanent monitoring wells, as described in Sections 1.4.3 and

1.4.4. The methodologies for collecting these soil and groundwater samples are presented as Appendix A.

1.4.2 Soil Borings

In order to determine the vertical extent of soil contamination, and in an attempt to determine the source of soil and groundwater impacts encountered during Geoprobe sampling, on March 25, 1999, March 30, 1999, and March 31, 1999, three 2-inch soil borings were drilled at M5 area. Soil borings M5SB17 and M5SB20 were advanced to a depth of approximately 60 feet and soil boring M5SB23 was advanced to a depth of approximately 42 feet. A hollow stem auger drill rig was used to advance the boring at each location. Continuous split-spoon samplers were advanced in each boring. Soil samples were collected continuously in each boring using a two-foot long, two-inch diameter split-spoon sampler that was advanced under the weight of a 140-pound hammer. Each split-spoon was visually inspected, field screened using a photoionization detector (PID) or a flame ionization detector (FID), and logged for lithology in the field. Soil boring locations are shown on Figure 7, and boring logs are included in Appendix B.

Fourteen soil samples were collected and analyzed for total organic carbon concentrations, eight soil samples were collected and analyzed for grain size analysis, and five soil samples were analyzed for volatile organic compounds, including xylenes and 15 tentatively identified compounds (VOC+15). Analytical data reports are included as Appendix C.

After completion, each boring was abandoned by tremie-grouting the boring from the bottom to the ground surface with a cement/bentonite mixture, per NJDEP requirements.

1.4.3 Monitoring Well Installation

Three monitoring wells – MW-10, MW-11, and M8MW-12 – were installed in 1995 by Weston during site investigation field activities. Well logs and well construction were included in Weston's SIR. In an attempt to delineate the groundwater contamination in the direction of Mill Creek, the potential receptor, three groundwater monitoring wells – MW-12, MW-13, and MW-14 – were drilled and installed between August 27, 1998 and August 31, 1998. A hollow stem auger drill rig was used to advance the boring at each well location. The wells were constructed of 2-inch diameter schedule 40 PVC screen and casing, and were installed at depths between approximately 15 feet to approximately 20 feet below surface grade. The screen interval in each well extends from approximately 5 feet to the bottom of the well. The annular space surrounding the screen was filled with #2 grade sand to a level at least one foot above the top of the screen in each well. The remainder of the annular space surrounding each well was filled with cement/bentonite grout to surface. Each monitoring well was finished with approximately 2.5 feet PVC casing above land surface protected by a 6-inch steel protective casing. Upon completion, the monitoring wells were developed, using a submersible pump, until the ground water was visibly free of sediments. The wells were installed and developed by Groundwater and Environmental Services, Inc., a licensed New Jersey drilling company. The monitoring wells were

installed in accordance with standard NJDEP procedures for the installation of wells in unconsolidated materials. Monitoring well locations are shown on Figure 2.

In order to confirm the results of the Geoprobe soil and groundwater investigation, between March 24, 1999 and March 30, 1999, nine additional monitoring wells (M5MW-15, M5MW-16, M5MW-18, M5MW-19, M5MW-20, M5MW-23, M5MW-25, M8MW-23, and M8MW-24) were installed at Landfill M-5 and immediately adjacent to Landfill M-5. Locations of these monitoring wells are shown on Figure 2. A hollow stem auger drill rig was used to advance the boring at each well location. Soil samples were collected using a two-foot long, two-inch diameter split-spoon sampler that was advanced under the weight of a 140-pound hammer. Each split-spoon was visually inspected, field screened using a photoionization detector (PID) or a flame ionization detector (FID), and logged for lithology in the field.

The wells were constructed of 4-inch diameter schedule 40 PVC screen and casing, and were installed at depths between approximately 14 feet to approximately 18 feet below surface grade. The screen interval in each well extends from approximately 3 to 5 feet to the bottom of the well. The annular space surrounding the screen was filled with #2 grade sand to a level at least one foot above the top of the screen in each well. The remainder of the annular space surrounding each well was filled with cement/bentonite grout to surface. Each monitoring well was finished with approximately 3.0 feet PVC casing above land surface protected by a 6-inch steel protective casing. Upon completion, the monitoring wells were developed, using a submersible pump, until the ground water was visibly free of sediments. The wells were installed and developed by Lutz Environmental Inc., a licensed New Jersey drilling company, under the direct supervision of the ATC professional geologist. The monitoring wells were installed in accordance with standard NJDEP procedures for the installation of wells in unconsolidated materials. Monitoring well logs and construction details are included as Appendix B and monitoring well records are attached in Appendix D.

1.4.4 Groundwater Monitoring and Sampling

Between May 8, 1997 and September 14, 1999, during ten consecutive quarters, 11 rounds of groundwater sampling events were performed at monitoring wells MW-10 and MW-11, six rounds of sampling events were performed at MW-12, MW-13, and MW-14 during four consecutive quarters, and three rounds of sampling events were performed at M5MW-15, M5MW-16, M5MW18, M5MW19, M5MW20, M5MW23, M5MW25, M8MW12, during two consecutive quarters. Also, between May 8, 1997 and September 14, 1999, 12 rounds of sampling events were performed at M8MW12 during ten consecutive quarters, and three rounds of sampling events were performed at M8MW23, M8MW24 during two consecutive quarters. Sampling events were performed in accordance with the NJDEP's *Field Sampling Procedures Manual* (May 1992), and the DPW - Standard Operation Procedure (SOP). For groundwater sampling procedures and methodology please refer to Appendix A. Groundwater monitoring and sampling field notes for May 8, 1997 are included in Appendix F, for August 8, 1997 in Appendix G, for October 29, 1997 in Appendix H, for February 18, 1998 in Appendix I, for May 6, 1998 in Appendix J, for August 4, 1998 in Appendix K, for October 7, 1998 in Appendix L, for October 21, 1998 in Appendix M, for October 27, 1998 in

Appendix N, for February 2, 1999 in Appendix O, for April 13, 1999 in Appendix P, for April 27, 1999 in Appendix Q, and for September 13-14, 1999 in Appendix R.

Groundwater samples were preserved, chilled to 4°C, and delivered to Fort Monmouth Environmental Testing Laboratory, Fort Monmouth, New Jersey, where they were analyzed for volatile organic compounds (VOC+15), semivolatile organic compounds (SVOC+15), priority pollutant metals, pesticides, and polychlorinated biphenyls (PCBs).

1.4.5 Survey of the Monitoring Wells

The newly installed monitoring wells MW-12, MW-13, MW-14, M5MW-15, M5MW-16, M5MW-18, M5MW-19, M5MW-20, M5MW-23, M5MW-25, M8MW-23, and M8MW-24, were surveyed relative to NJGCS Monument Number 9235, with an elevation of 56.69 feet, by Frederick W. Kocen Jr., Professional Land Surveyor (License # 34008). Copies of the Ground Water Monitoring Well Certification - Form B - Location Certifications are attached in Appendix S.

1.4.6 Surface Water Sampling

Three surface water bodies – Parkers Creek, Lafetra Creek, and Mill Creek – flow near or adjacent to the Landfill M-5 site. Due to salinity concentrations greater than 3.5 parts per thousand at mean high tide, the surface water of these creeks are classified as SC - coastal saline waters and SE - saline waters of estuaries. Surface water sample SS-5 is located to the west of Landfill M-5, near the confluence of Mill Creek and Lafetra Creek. Surface water sample SS-4 is located to the northeast and downstream of Landfill M-5, along Parkers Creek. Sampling points SS-15 and SS-16 are located upstream from Landfill M-5, along Mill Creek. Between October 1996 and June 1999, periodic rounds of samples were collected from several surface water sampling points along these water bodies.

1.4.7 Aquifer Pump Testing

An aquifer testing program was conducted on June 14, 1999 to evaluate the hydraulic conductivity of the shallow aquifer. In-situ hydraulic conductivity of the shallow, saturated, unconsolidated materials underlying the site was determined by means of a constant discharge aquifer test.

Groundwater level data was collected from five groundwater monitoring wells (M5MW-16, M5MW-18, M5MW-20, M5MW-11, and M5MW-23 prior to the pumping test. Groundwater monitoring well M5MW-19 was chosen as the pumping well, and a submersible pump was suspended approximately 2 feet from the bottom of the well. Water level in the five monitoring wells were monitored during the test, the groundwater being measured manually using an electronic water level indicator. The pumping well was monitored using a pressure transducer and an electronic datalogger. Wells measured manually were checked every 15 minutes for the first hour and every 30 minutes until the end of the test. Immediately upon pump shutdown, recovery was measured with a data logger in the pumping well for approximately 35 minutes.

1.5 Remedial Investigation Results

1.5.1 Soil Quality

Between April 1998 and December 1998, a total of 261 soil samples were collected using a Geoprobe rig. The samples were collected from six inch interval above the water table interface, at depths ranging from 17 to 142 inches below ground surface (bgs). Laboratory analysis results are summarized on Table 1. Volatile organic compound (VOC) analysis revealed that only tetrachloroethene (PCE) was present in concentrations exceeding the NJDEP Impact to Groundwater Soil Cleanup Criteria (IGWSCC). PCE concentrations ranging from 0.320 to 3.300 milligrams per kilogram (mg/kg) were detected. Five soil samples were found to contain levels of PCE greater than 1 mg/kg (the IGWSCC for PCE). Concentrations of PCE in these five soil samples ranged from 1.1 mg/kg to 3.3 mg/kg, and are mapped on Figure 7. The analytical results are presented as Table 1, and the analytical data is included in Appendix C.

As per N.J.A.C. 7:26E-4.8, the average concentration for PCE was calculated to be 1.15 mg/kg, for the contaminated area (soil borings numbers 39, 40, 41, 68, 69, 70, 71, and 72). It is important to note that these exceedances are very minor relative to NJDEP-IGWSCC, and their detection immediately above the water table is likely indicative of impacted groundwater during the seasonal water table fluctuation rather than a soil source.

In addition to the soil samples discussed above, in a attempt to vertically delineate PCE concentrations in soil, three deep soil borings were advanced in March 1999 using a hollow stem auger drill rig. Soil samples were taken from various depths between 9 and 42 feet bgs at two of these borings, M5SB17 and M5SB23. At several depths, acetone and methylene chloride were detected in the soil at concentrations above their respective NJDEP IGWSCC; however, these analytes were also detected at elevated levels in associated method blanks and trip blanks. No other analytes were detected at levels exceeding their respective NJDEP IGWSCC. A summary of soil sampling analytical results is included in Table 1, and analytical data reports are included as Appendix C.

1.5.2 Groundwater Quality

Between April and December 1998, a total of 261 groundwater samples were collected using a Geoprobe technique (hydropunch). Laboratory analysis results are summarized on Table 2. VOC analysis revealed that trichlorothene (TCE), PCE, cis-1,2-dichloroethene, chlorobenzene, benzene, toluene, ethylbenzene, and total xylenes were present in concentrations above their respective method detection limits. Of these, TCE, PCE, cis-1,2-dichloroethene, chlorobenzene, and benzene were detected at concentrations exceeding their respective NJDEP GWQCs. TCE concentrations between 1.54 µg/L and 4.40 µg/L were detected in six Geoprobe locations. PCE concentrations between 1.00 µg/L and 1459.64 µg/L were detected at 105 Geoprobe locations across the site. Cis-1,2-dichloroethene concentrations between 0.48 µg/L and 16.47 µg/L were detected at 10 Geoprobe locations. Chlorobenzene concentrations between 2.01 µg/L and 73.23 µg/L were detected at five Geoprobe locations. Benzene concentrations were reported at concentrations between 1.13 µg/L and

15.89 µg/L in nine Geoprobe locations located north of Landfill M-5, at Landfill M-8. Toluene concentrations between 1.26 µg/L and 18.11 µg/L were reported at nine Geoprobe locations. Ethylbenzene concentrations between 1.13 µg/L and 5.70 µg/L were reported at seven Geoprobe locations. Total xylene concentrations between 1.52 µg/L and 16.82 µg/L were reported at 10 locations. These exceedances are mapped on Figure 8. Analytical data is presented as Appendix E.

Eleven rounds of groundwater monitoring well sampling events were conducted between May 1997 and September 1999. A total of fifteen monitoring wells located on and around Landfill M-5, were sampled. With the exception of groundwater monitoring wells MW-10, MW-11, and M8MW12 not every well was sampled for each round of sampling. Historically, separate phase hydrocarbons were not reported in any of the monitoring wells. The historical analytical results for each well are presented in Tables 3 through 17. Eight VOCs, four semivolatile organic compounds (SVOCs), and 23 metals were detected above their respective method detection limits in at least one sampling round apiece. Of these, tetrachloroethene (PCE) and ten metals (aluminum, arsenic, cadmium, iron, lead, manganese, sodium, mercury, silver, and zinc) were detected at concentrations exceeding their respective GWQCs. The PCE exceedances, ranging from 2.15 µg/L to 639.74 µg/L, are mapped on Figure 9. Five of the metals detected (aluminum, manganese, sodium, iron, and zinc) were found in concentrations below those determined for site-specific and Monmouth County maximum background levels. As mentioned in Weston's SIR, several natural and anthropogenic factors contribute to the wide range in concentrations of metals in soils. Soils derived from the glauconitic sands contain abundant iron, aluminum, calcium, magnesium, manganese, and potassium. Anthropogenic influences on the background metal concentrations include deposition of airborne dust, and historical applications of fertilizers, pesticides, and herbicides can account for the elevated levels of lead, cadmium, and arsenic. Silver was noted in several testing rounds at elevated levels; however, this analyte was also detected at elevated levels in associated method blanks. The last metal with a noted exceedance, mercury, was detected in one monitoring well located at Landfill M-8. This contaminant will be discussed in the Remedial Action Work Plan for Landfill M-8.

Historically, a decrease in PCE concentrations has been noted in all monitoring wells, except M5MW-15 and M5MW-16. In M5MW-15, PCE concentrations slightly increased from non-detect (ND) on April 14, 1999 and April 28, 1999 to 2.15 µg/L on September 13, 1999. In M5MW-16, PCE concentrations decreased from 96.57 µg/L on April 14, 1999 to 8.65 µg/L on April 28, 1999, then increased to 639.74 µg/L on September 14, 1999. In M8MW-12, PCE concentrations decreased from 4.27 µg/L on January 27, 1999 to ND on April 14, 1999 and April 28, 1999, then increased to 46.06 µg/L on June 22, 1999. Two other monitoring wells – MW-19 and MW-20 – have shown periodic increases in measured PCE concentrations, but the overall trend of these fluctuations is downward. Three PCE isopleth maps, from April 13 and 14, 1999, April 27 and 28, 1999, and September 13 and 14, 1999, sampling events are included as Figures 11, 12, and 13, respectively. The laboratory reports are included in Appendices F through R.

1.5.3 Surface Water Quality

Laboratory analysis results from the 14 rounds of surface water sampling are summarized on Table 18. VOC analysis revealed that acetone, cis-1,2-dichloroethene, methylene chloride, TCE, and PCE were present in concentrations above their respective method detection limits. Of these, only PCE was detected at concentrations exceeding its NJDEP Surface Water Quality Standard (SWQS) of 4.29 µg/L (as per N.J.A.C. 7:9-6 2 - September 1997). PCE concentrations ranging from 1.24 µg/L to 10.38 µg/L were detected. The exceedances are mapped on Figure 9. Analytical data is presented in Appendix T.

Referring to Figure 9, the latest stream sampling data (from June 29, 1999) shows that PCE concentrations at SS-15 (7.86 µg/L) and SS-16 (7.70 µg/L) were reported at higher concentrations than surface water collected from SS-4 (5.27 µg/L) and SS-5 (6.04 µg/L). Since SS-15 is located close to where the stream enters Fort Monmouth, and since SS-15 and SS-16 are located upstream of Landfill M-5, it suggests that surface water is impacted prior to flowing into Fort Monmouth property and that Landfill M-5 is not contributing to the PCE contamination of Mill Creek. This conclusion is further supported by the fact that sentinel wells MW-12, MW-13, and MW-14, which are located along the edge of Mill Creek, historically have never shown any PCE contamination, indicating that the PCE plume has not extended to the creek.

1.5.4 Aquifer Pump Test Results

The objective of this test was to determine aquifer parameters (transmissivity and storativity) by pumping MW-19 and measuring water level drawdown in observation wells MW-11, MW-16, MW-18, MW-20, and MW-23. Monitoring well MW-19 was pumped continuously at an average rate of approximately 2.5 gallons per minute for a period of 150 minutes. The recovery of the water level in the pumping well was measured for 33 minutes. Water level response in the wells were measured and recorded using an In-Situ Inc. Model SE 1000B data logger equipped with a 10-psi pressure transducer.

During the test, drawdown recorded in the observation wells did not exceed 0.01 feet. Because sufficient drawdown was not noted in the recovery wells, a single well aquifer test method was selected to interpret the pumping well drawdown and recovery data. This methodology does not allow for the determination of aquifer storativity.

Data from the tests were downloaded to a personal computer by use of proprietary software supplied by In-Situ Inc., and were analyzed by use of Aquifer^{win32} (version 1.25, Environmental Simulations, Inc.). The Jacob (Cooper and Jacob, 1946) straight line approximation of the Theis equation was applied to the time-drawdown data for well MW-19 to determine aquifer transmissivity. The results of the constant rate aquifer tests are summarized on the following table:

Location	**Description of Test**	**Transmissivity (ft^2/day)**
MW-19	Single Well Drawdown	16.8

	Single Well Recovery	23.1

Water level responses and data interpretation are presented in Appendix U.

Because the recovery data is not influenced by perturbations in the pumping rate, it is assumed that a transmissivity of 23.1 ft^2/day is representative of the shallow unconfined aquifer.

1.6 Sensitive Receptor Survey

1.6.1 Well Search Data

All available DPW records and files were reviewed for information concerning wells within Fort Monmouth. Also, two Well Search reports prepared by Roy F. Weston, dated November 1993 and February 1994, were reviewed for information concerning wells within a one mile radius surrounding the center point of Landfill M-5. The well locations were plotted on a scaled map, included as Figure 14 and a well search summary is presented as Table 19.

The results of the well search indicate the following:

Monitoring Wells: 119 monitoring wells were identified within one mile of the site. These wells were completed at depths between ten and 28 feet, with open or screened intervals ranging between one and 28 feet.

Domestic Wells: Five domestic wells identified within one mile of the site. The depths of these wells ranged between 15 and 323 feet, with open or screened intervals ranging between 40 and 323 feet.

Irrigation Wells: Eight lawn irrigation wells were identified within one mile of the site. The depths of these wells ranged between 45 and 250 feet, with open or screened intervals ranging between 35 and 250 feet.

Public Supply Wells: No public supply wells were identified within one mile of the site.

1.6.2 Receptor Evaluation

Typically, soil, groundwater, and surface water impacts may give rise to concern about human and ecological receptors. However, in the case of Landfill M-5, based on the following, no receptors are expected to be impacted:

1. There are no concerns with respect to direct exposure by humans to impacted soil, because soil impacts were very minor and they exist at depth.
2. Since there are no domestic, irrigation or public supply wells immediately downgradient of Landfill M-5, and since impacted groundwater is expected to naturally attenuate in a very short distance (see Section 1.7), no concerns exist with respect to human exposure to impacted groundwater.

3. Although Mill Creek represents a potential ecological receptor, as discussed previously, Mill Creek is impacted by sources upgradient of Landfill M-5. Based on the discussion in Section 1.5.3 and the discussion in Section 1.7, the impacted groundwater in Landfill M-5 does not appear to have, and is not expected to adversely affect Mill Creek. This conclusion is further supported by the fact that sentinel wells MW-12, MW-13, and MW-14, which are located along the edge of Mill Creek, historically have never shown any PCE contamination, indicating that the PCE plume has not extended to the creek.

1.7 Classification Exception Area

A classification exception area (CEA) is a mechanism that has been established by the NJDEP to temporarily except a defined area where groundwater does not meet the GWQC. As required by the *Groundwater Quality Standards* (N.J.A.C 7:9-6 et seq.), a CEA must be established whenever constituent standards applicable to a groundwater classification area are not, or will not be met for the term of the remediation program. According to the NJDEP's *Final Guidance on Designation of Classification Exception Areas* (April 17, 1995), a CEA is defined by both physical boundaries, and the amount of time that will be required for the groundwater contaminant(s) to achieve compliance with the GWQC.

The Fort Monmouth DPW proposes that the CEA apply to tetrachloroethene (PCE), which is the only contaminant of concern at Landfill M-5. A CEA is appropriate for this site since all sources of contamination have been addressed, no receptors are at risk, and groundwater contamination remains above standards at a level where the residual contaminant plume will not migrate beyond the designated boundary set forth below.

The classification exception area was determined using the analytical solution model option. Darcy's law was used as the model and was used to predict the duration of the CEA and the distance the contaminant will migrate before groundwater quality standards are achieved.

Determination of the Duration of the CEA

A first order decay equation shown below, was used to calculate the duration of the CEA, since the degradation of the petroleum-based compounds has been shown to be logarithmic.

$$C = C_o * e^{-kt} \qquad \textbf{--Eq. 1}$$

where,

C = Final concentration of the contaminant
C_o = Initial concentration of the contaminant
k = Reaction rate constant
t = Time in days

The reaction rate constant k can be determined by the following equation:

$$k = \frac{0.693}{t^{1/2}} \qquad \textbf{--Eq. 2}$$

where,

$t^{1/2}$ = the half life of the corresponding contaminant in days

Data from monitoring well M5MW-20 was used to define the CEA due to its proximity to the source area, and since the consistently amount of the contaminant is detected in M5MW-20. The latest analytical data from monitoring well M5MW-20 (from the September 13, 1999 sampling event) indicated the presence of PCE at a concentration of 156.58 µg/L ($C_\circ$). The final concentration of the contaminant will be 1 µg/L (C) as per the NJDEP's Class II GWQC. As reported by John H. Montgomery in *Groundwater Chemicals Desk Reference, Second Edition* (Montgomery, 1996), significant degradation of PCE was observed after 28 days, and the amount lost due to volatilization after 10 days was 16-23%. As reported in *The Handbook of Environmental Degradation Rates* (Howard, et al., 1991) the low and high half life of PCE in ground water are estimated at 12 months and two years respectively. Based on these facts, an average value of 250 days was used for the half life ($t^{1/2}$) of PCE. Substituting the above values, the reaction rate constant, k is calculated as 0.00272 days $^{-1}$.

Rearranging **Equation 1**, the time duration of the CEA can be determined as follows:

$$t = \frac{\ln\left(\frac{C}{C_o}\right)}{-k} \qquad \textbf{-- Eq. 3}$$

Substituting the values of C, $C_\circ$ and k in **Equation 3**, the duration of the CEA is calculated as follows:

$$t = \frac{\ln\left(\frac{1}{156.58}\right)}{-0.00272}$$

t = 1,858 days (approximately 5 years)

Calculation of the CEA Boundary

The boundary of the CEA is determined by calculating the distance of travel of the contaminant. Distance of travel is calculated from the pollutant transport rate. Seepage velocity (V_s) and Retardation factor (R_d) must be calculated for this purpose. The seepage velocity was calculated using the following equation:

$$V_s = \frac{(K * i)}{n_o} \qquad \textbf{--Eq. 4}$$

where,

K= Hydraulic conductivity of the affected aquifer, (ft/day)
i = Hydraulic gradient (ft/ft)
n_o= Effective porosity

The average hydraulic conductivity from the pumping tests was determined to be 0.996 ft/day. The effective porosity of the formation (dense mixed grained sand) is taken as 30%. The hydraulic gradient at the site is calculated as 0.009 ft/ft. Substituting these values in **Equation 4**:

$$V_s = \frac{(0.996 * 0.009)}{0.3}$$

V_s = 0.029 ft/day

The retardation factor was calculated using the equation:

$$R_d = 1 + \frac{(K_d * s_b)}{n_o} \qquad \textbf{-- Eq. 5}$$

where,

ρ_b = bulk density of the formation
K_d = Distribution co-efficient
n_e = Effective porosity

The distribution co-efficient is calculated from the relation:

$$K_d = 0.63 * K_{ow} * f_{oc} \qquad \textbf{-- Eq. 6}$$

where,

K_{ow} = n-octonol/water partition coefficient
f_{oc} = fraction of the organic carbon in the matrix

The results of the Total Organic Carbon (TOC) content in soil samples collected from the groundwater/soil interface indicated that TOC at the site is present at an average level of 5 mg/kg (See Technion, Inc. Testing & Research Laboratories test results for TOC included as Appendix C). From this the fraction of TOC in the soil matrix, f_{oc} was determined to be 0.000005. According to the *Superfund Public Health Evaluation Manual* (United States Environmental Protection Agency, Office of Emergency and Remedial Response, 1986), the value of K_{ow} is 130. Substituting these values,

$$K_d = 0.63 * 130 * 0.000005$$

$K_d = 0.00041$

The bulk density of the formation was estimated as 1.5 g/cm^3. Substituting the value of K_d, ρ_b and n_e into **Equation 5**, the retardation factor R_d is calculated as follows:

$$R_d = 1 + \frac{(0.00041 * 1.5)}{0.3}$$

$R_d = 1.002$

From the above parameters, the pollutant transport rate (V_{pt}) is determined by dividing the seepage velocity (V_s) by the retardation factor (R_d)

$$V_{pt} = \frac{V_s}{R_d} \qquad \textbf{-- Eq. 7}$$

$$V_{pt} = \frac{0.029}{1.002}$$

V_{pt} = 0.0289 ft/day

The distance traveled by the contaminant is calculated by the relationship, Distance = Transport Rate * Time

$d = V_{pt} * t$ **-- Eq. 8**

$d = 0.0289$ ft/day * 1,858 days

$d = 53.70$ ft

From the calculations, it appears that the migration of contaminants from monitoring well M5MW-20 is very minimal (approximately 54 feet), and PCE concentrations can be expected to naturally attenuate within the property boundaries of the site. Monitoring wells MW-12, MW-13, and MW-14 were proposed as sentinel wells. The latitude and longitude (taken from the NJDEP Well Location Certification forms) of the monitoring wells that mark the area of the CEA are as follows:

Well No.	Latitude	Longitude
MW-12	40°18'48.9"	74°03'04.1"
MW-13	40°18'47.6"	74°03'03.7"
MW-14	40°18'45.7"	74°03'03.2"
M5MW-15	40°18'49.6"	74°02'54.9"
M5MW-18	40°18'48.2"	74°02'59.6"
M5MW-25	40°18'53.27	74°02'56.4"

Geographic Information System (GIS) format is required in cases of active or potential groundwater use within the boundaries of the CEA. Since no groundwater use within CEA boundaries is occurring or is anticipated to occur, the GIS format is not required for the Landfill M-5 site.

The DPW proposes a maximum CEA duration of five years, based on the estimated time for PCE to degrade to its GWQC of 1 µg/L, assuming natural degradation rates. The DPW anticipates that these degradation rates will be significantly increased as a result of implementation of proposed anaerobic bioremediation treatment (See Section 4.1).

1.8 Conclusions and Recommendations

Based on the investigation conducted to date the DPW concludes the following:

- A review of analytical results from Geoprobe soil samples revealed that only tetrachloroethene (PCE) concentrations exceeded the NJDEP IGWSCC, and that exceedances were discovered at five of 261 soil sample locations. It is important to note that these exceedances are very minor relative to NJDEP IGWSCC, and their detection immediately above the water table is likely indicative of impacted groundwater during the seasonal water table fluctuations rather than a soil source.
- In the Main Post area, groundwater is typically encountered at depths of 1.40 to 11.59 feet below ground surface. Ground water flow was calculated to be toward the west-northwest, toward Mill Creek, consistent with previous data.
- Historically, separate phase hydrocarbons were not reported in any of the monitoring wells.
- Groundwater analytical results from the permanent monitoring wells identified PCE as the only contaminant of concern across Landfill M-5, with exceedances of the NJDEP GWQC noted in eight monitoring wells. While several other analytes were detected at concentrations above their respective GWQC, these contaminants are not considered a concern for reasons discussed in Section 1.5 of this report.
- Historically, a decrease in PCE concentrations was noted in all monitoring wells, except M5MW-15, M5MW-16, and M8MW-12, as discussed in Section 1.5.2.
- The duration of the CEA for PCE was calculated to be 1,858 days (approximately five years).
- Groundwater PCE contamination is localized in seven areas of concern, limited in extent, and can be expected to naturally degrade overtime without significant migration.
- The surface water samples collected from four locations along Mill Creek, as well as groundwater analytical results from the sentinel wells MW-12, MW-13, and MW-14, show that the Landfill M-5 site is not a contributor of PCE contamination of Mill Creek.

Based on the above conclusions, the DPW proposes to implement a natural remediation program. Simultaneously, an aerobic and anaerobic bioremediation treatment program will be implemented to increase the degradation rate of the contaminant of concern (PCE) in groundwater at the Landfill M-5 and adjacent to Landfill M-5, below the NJDEP criteria.

2.0 STATEMENT OF INTENT TO COMPLETE N.J.A.C. 7:26E

It is the DPW's intention that adherence to the remediation program outlined in this RAWP will result in compliance with the criteria set forth in N.J.A.C. 7-26E (7/93).

3.0 APPLICABLE REMEDIATION STANDARDS

The remediation standards for the groundwater at Landfill M-5 its vicinity will be the NJDEP Ground Water Quality Criteria (GWQC) defined in N.J.A.C. 7:9-6. In the event the GWQC for a particular compound is numerically lower than the practical quantitation limit (PQL) for that compound, the PQL will be applied as the groundwater cleanup level. According to the most recent documentation from the NJDEP , the GWQC for PCE is 1.0 µg/L.

4.0 REMEDIAL ACTION ALTERNATIVES

4.1 Considered Remedial Actions

There are several technologies proven to be effective for remediating soil and groundwater contaminated with volatile organic compounds (VOCs). However, the applicability of these technologies is dependent on site-specific data, including the nature and extent of the contamination, and the geologic and hydrologic conditions. The following are brief descriptions of possible remedial alternatives based predominantly on their potential for treating VOCs. Site-specific conditions were fully considered during the selection of the best remedial alternative for Landfill M-5.

Excavation - Excavation is used to remove contaminated soils from the subsurface. Excavation can be a very effective site remedy when contamination is limited to shallow soils. Standard construction practices can excavate to a depth of 25 ft. Dewatering is required if contamination is located within the saturated zone. This is the best technology for small volumes. Excavated materials are treated either onsite or offsite, and returned to the excavation, or transported to an appropriate disposal facility. This technology only addresses soil contamination, but may be used in conjunction with other alternatives (i.e. natural attenuation) to address groundwater issues.

As mentioned in Section 1.5.1, PCE concentrations ranging from 0.320 to 3.300 mg/kg were detected in five soil samples collected from 6-inch intervals above the ground water table interface. This minor soil contamination could be attributed to vertical groundwater movement due to seasonal and tidal influences. Because these results are likely indicative of impacted seasonal groundwater rather than a soil source, the excavation remedial alternative is not suitable for Landfill M-5.

Two-Phase Vacuum Extraction - Two-Phase Vacuum Extraction (TPVE) consists of extracting contaminated ground water and soil vapors simultaneously using an array of extraction wells, separating the water and vapor phases, and passing each through a surface treatment system. The vapor phase is subsequently discharged to the atmosphere and the water phase is discharged to either the ground water, surface water, or a sanitary sewer. This technology addresses both soil and ground water contamination, and its benefits are most cost-effective when soil and groundwater concentrations are relatively high. In addition, TPVE often requires a follow-up remedial technology to further reduce contaminant concentrations to within NJDEP's regulatory limits. A pilot study must be performed to evaluate effectiveness prior to full-scale implementation.

Since PCE concentrations are relatively low at Landfill M-5, and for the reasons stated above, TPVE is not suitable for this site.

In-Situ Aeration (Air Sparging) - Air sparging treats contaminated groundwater by volatilizing organic compounds. Clean air is injected into the contaminated aquifer through vertical and/or horizontal wells. The air volatilizes the dissolved phase VOCs and transfers the contaminated vapors from the saturated zone into the unsaturated zone. The organic vapors are then extracted from the

unsaturated zone through a Soil Vapor Extraction (SVE) system and treated at a surface unit. A pilot study must be performed to evaluate effectiveness prior to full-scale implementation.

As mentioned in Section 1.2.4, ground water is typically encountered at depths of 2 to 9 feet bgs. Due to minimal thickness of the unsaturated zone, an SVE system likely could not be successfully operated. Also, the air injection into the aquifer should be performed under a rigorous control in order to prevent migration of the contamination toward the creek. Based on these factors, an air-sparging system is not suitable for Landfill M-5.

Pump and Treat - Contaminated ground water is extracted out of the ground with a system of pumping wells and is treated with an air stripper, carbon adsorption unit, or other pertinent treatment unit. Remediated water is then discharged to a ground water recharge zone, a stream, or a sanitary sewer. A pilot study must be performed to evaluate effectiveness prior to full-scale implementation. This is the most commonly used groundwater remediation technology.

As mentioned in Section 1.5.2, a decrease in PCE concentrations was noticed in all monitoring wells, except M5MW-15 and M5MW-16. Two other monitoring wells – MW-19 and MW-20 – have shown periodic increases in measured PCE concentrations, but the overall trend of these fluctuations is downward. Based on this fact and based on the aquifer pump test results (Section 1.5.4), which shows that during the pumping test drawdown recorded in the observation wells did not exceed 0.01 feet, this remedial alternative method is not suitable for Landfill M-5.

Natural Remediation - Natural remediation is a method of groundwater remediation where contaminant concentrations will decrease to applicable groundwater quality standards via degradation, retardation, or dispersion under present site conditions.

This alternative method is discussed in detail in Section 4.1.1 below.

Anaerobic Bioremediation - Biodegradation reduces contaminant mass by introducing contaminant-degrading microorganisms, or enhancing indigenous microbial activity within the contaminated area. The microorganisms convert the organic compounds to carbon dioxide, inorganic salts, and water. Bioremediation can be used in either in situ or ex situ environments. Bioremediation is a developed technology, and a variety of bioremediation systems have been used at remediation sites.

This alternative method is discussed in detail in Section 4.1.2 below.

4.1 Proposed Remedial Actions

The DPW proposes to use two corrective action remedial alternatives: natural remediation, and anaerobic bioremediation treatment. Bioremediation treatment will involve the injection of Hydrogen Release Compound (HRC) into the groundwater to increase the degradation rate of the contaminant of concern (PCE). The following sections describe the natural remediation program and the anaerobic bioremediation treatment system operation.

4.1.1 Natural Remediation

Natural remediation is a method of groundwater remediation where contaminant concentrations will decrease to applicable groundwater quality standards via degradation, retardation, or dispersion under present site conditions.

The following NJDEP requirements were factors that indicate that natural remediation is a viable course of action for this site:

- Groundwater contamination does not appear to be resulting from a specific soil source;
- Groundwater contamination at the site has been delineated;
- As mentioned in Section 1.5.2, a decrease in PCE concentrations was noticed in all monitoring wells, except M5MW-15, M5MW-16, and M8MW-12. Two other monitoring wells – MW-19 and MW-20 – have shown periodic increases in measured PCE concentrations, but the overall trend of these fluctuations is downward;
- Based upon the CEA calculation, the PCE contaminant plume will not migrate more than approximately 54 feet over a period of approximately five years:
- Mill Creek, a potential receptor, is contaminated with PCE from an off-site source; however, the on-site PCE groundwater contamination is not expected to contribute to the creek's contamination.

A groundwater monitoring/sampling program has been implemented by the DPW at the Landfill M-5 site. Three sentinel wells (M5MW-12, M5MW-13, and M5 MW-14) located along Mill Creek, and all groundwater monitoring wells at Landfill M-5 site will be sampled quarterly and the data generated will be evaluated to determine the effectiveness of natural remediation.

4.1.2 Anaerobic Bioremediation

Although PCE is expected to naturally attenuate, the DPW proposes to implement an anaerobic bioremediation system program to actively address the PCE groundwater contamination at the Landfill M-5 area.

The anaerobic bioremediation that the DPW proposes involves treatment of seven areas of concentrated chlorinated hydrocarbon contamination with Hydrogen Release Compound (HRC). HRC is a proprietary, food quality, polylactate ester that, upon being deposited into the subsurface, creates anaerobic aquifer conditions and causes the release of hydrogen. Under anaerobic conditions, naturally occurring microorganisms use the hydrogen to progressively remove chlorine atoms from chlorinated hydrocarbons via reductive dechlorination. HRC is a slow-release compound that will provide a steady hydrogen source for between six months and one year.

Design

With input from REGENESIS Bioremediation Products, the company that manufactures and markets HRC, seven areas were selected for HRC treatment. These sites are depicted on Figure 15. Placement of the treatment areas is intended to provide direct treatment of the areas of highest groundwater impact, as well as limit downgradient migration of affected groundwater.

The following assumptions were made for design purposes:

- A ten-foot thick zone of contamination will be treated with HRC.
- The HRC injection points will be located by imposing a 12 foot by 12 foot grid over each treatment area, and placing an injection point at the center of each grid square.
- HRC will be applied at a rate of 4 pounds/vertical foot.

Implementation

The HRC will be applied using direct push technology via 1.25-inch (outer diameter) Geoprobe rods. Injection points will be terminated at approximately 15 feet below surface grade. After completion of each injection point, a high-pressure pump will be used to inject the HRC compounds from bottom to top. It is assumed that between 10 to 15 HRC injection points and treatments will be performed per day.

Monitoring Program

Two weeks after the first HRC treatment is performed, a groundwater sampling event will be performed to evaluate the effectiveness of the treatment. All on site monitoring wells will be sampled and analyzed for VOC+10. After two more quarterly groundwater sampling and testing for VOCs, if a decrease in PCE concentration is reported, a second HRC treatment will be performed using the same methodology as during the first treatment. Based on the analytical results, the number of injection points in each treatment area may be modified. The effectiveness of the HRC treatment, methodologies, field activities, and analytical data will be reported to the NJDEP in quarterly progress reports.

The DPW reserves the right to revert to the natural remediation program in the event the anaerobic bioremediation program is deemed unsuccessful.

5.0 QUALITY ASSURANCE PROJECT PLAN

In order to maintain quality assurance, the DPW's SOP for Sample Handling will be followed during all sampling activities. This SOP is presented as Appendix A.

6.0 REQUIRED PERMITS

The Department of Public Works (DPW) will be responsible for obtaining the permit by rule from the NJDEP case manager prior to performing Hydrogen Release Compound (HRC) injection, using Geoprobe injection points, at Landfill M-5.

7.0 EROSION, DUST, AND ODOR CONTROL

Erosion, dust, and odor control measures are not deemed necessary due to the limited extent and duration of soil disturbance.

8.0 HEALTH AND SAFETY PLAN

The Department of Public Works (DPW) will be responsible for preparation of a site-specific Health and Safety Plan (HASP) encompassing installation of Geoprobe injection points, injection of hydrogen release compound (HRC), and groundwater sampling after bioremediation treatment.

9.0 SITE RESTORATION

All injection points drilled in order to perform chemical injection will be properly sealed by a New Jersey-licensed well sealer. The aboveground equipment (e.g. pumps. temporary structures, etc.) will be dismantled and removed from the site.

10.0 POST-REMEDIAL ACTION SAMPLING

The DPW proposes to continue monitoring Landfill M-5 with quarterly groundwater sampling events during the anaerobic bioremediation process. Once the NJDEP GWQC has been achieved for the contaminant of concern (i.e., PCE) in all related monitoring wells for three consecutive monitoring rounds, or if a decrease in PCE concentration is reported in all related monitoring wells for three consecutive monitoring rounds, the DPW proposes to discontinue the anaerobic bioremediation and conduct passive quarterly groundwater monitoring for a period of two years. The monitoring wells MW-10, MW-11, M5MW-15, M5MW-16, M5MW-18, M5MW-19, M5MW-20, M5MW-23, M5MW-25, M8MW-12, M8MW-23, and M8MW-24 and sentinel wells MW-12, MW-13, MW-14, will be sampled and analyzed for VOC+15. If the contaminant of concern remains below its GWQC for eight consecutive rounds of sampling, the DPW will apply to the NJDEP for No Further Action (NFA) status. Upon issuance of NFA status, the DPW will seal these monitoring wells.

11.0 ESTIMATED COST OF REMEDIAL ACTION WORKPLAN IMPLEMENTATION

The anticipated costs for implementing the proposed remedial action are summarized below:

REMEDIATION COSTS

- Costs for Geoprobe injection points (phase I) =$33,120
- Costs for HRC treatment (phase I) =$41,040
- Costs for Geoprobe injection points (phase II) =$33,120
- Costs for HRC treatment (phase II) =$41,040
- Cost of engineering oversight (phase I and phase II) =$28,800
- Costs for groundwater sampling two weeks after injection =$23,000
- Costs for groundwater sampling quarterly for five years =$92,000
- Costs for quarterly progress reports (20 reports) =$23,000

POST-REMEDIATION COSTS

- Costs for removal, restoration =$ 5,000
- Costs for groundwater sampling and laboratory (five years) =$92,000
- Costs for well abandonment =$20,000
- Costs for quarterly progress reports (20 reports) =$23,000

TOTAL REMEDIAL ACTION COSTS =$455,120

Notes:
Costs do not include permitting fees, NJDEP review fees, or disposal costs.
Costs assume that two bioremediation treatments will be performed.
Costs assume that remediation and post-remediation groundwater sampling will continue on a quarterly basis for two years.

12.0 PROPOSED SCHEDULE

Identification of Project Tasks:

- RAWP submittal and NJDEP approval
- Permitting for anaerobic remediation
- Anaerobic remediation
- Quarterly groundwater sampling events
- Preparation and submittal of quarterly progress reports (five years)
- Quarterly post-remedial sampling
- NJDEP approval of No Further Action

A schedule for the proposed remedial programs shown in Figure 16. If it becomes necessary to modify the schedule, the Department of Public Works (DPW) will submit a revised schedule to the New Jersey Department of Environmental Protection.

Table 1
Geoprobe Soil Sampling Analytical Results
Fort Monmouth Main Post, Fort Monmouth, New Jersey
NJDEP IGWSCC = 1 mg/kg

Boring Number	Depth (inches)	Tetrachloroethene	QA/QC
1	36	<0.270	U
2	36	<0.260	U
3	36	<0.280	U
4	40	<0.270	U
5	40	<0.270	U
6	40	<0.270	U
7	40	<0.290	U
8	36	<0.340	U
9	40	<0.290	U
10	46	<0.270	U
11	40	<0.280	U
12	40	<0.280	U
13	40	<0.280	U
14	40	<0.270	U
15	40	<0.290	U
16	40	0.780	
17	40	<0.320	U
18	40	<0.350	U
19	32	<0.280	U
20	40	<0.270	U
21	40	<0.270	U
22	40	<0.280	U
23	39	<0.270	U
24	39	0.440	
25	46	<0.300	U
26	40	<0.330	U
27	40	<0.320	U
28	40	<0.570	U
29	40	<0.270	U
30	40	0.320	
31	30	<0.270	U
32	40	<0.360	U
33	40	<0.320	U
34	40	<0.370	U
35	40	<0.320	U
36	40	<0.260	U
37	40	<0.280	U

All concentrations are given in milligrams per kilogram (mg/kg), equivalent to parts per million (ppm).
NR: Sample depth not reported.
QA/QC: Quality Assurance/Quality Control.
U: Analyte undetected in this sample.
NJDEP: New Jersey Department of Environmental Protection.
IGWSCC: Impact to Ground Water Soil Cleanup Criteria.

Table 1
Geoprobe Soil Sampling Analytical Results
Fort Monmouth Main Post, Fort Monmouth, New Jersey
NJDEP IGWSCC = 1 mg/kg

Boring Number	Depth (inches)	Tetrachloroethene	QA/QC
38	40	<0.250	U
39	30	**1.100**	
40	36	**1.000**	
41	36	<0.370	U
42	36	<0.370	U
43	36	<0.360	U
44	36	<0.320	U
45	36	<0.430	U
46	36	<0.280	U
48	38	<0.260	U
49	36	<0.280	U
50	36	<0.270	U
51	36	<0.300	U
52	36	<0.270	U
53	36	<0.290	U
54	36	<0.280	U
55	36	<0.330	U
56	40	<0.360	U
57	38	<0.330	U
58	36	<0.270	U
59	36	<0.260	U
60	40	<0.310	U
61	36	<0.280	U
62	30	<0.270	U
63	30	<0.260	U
64	30	<0.270	U
65	30	<0.280	U
66	30	<0.280	U
67	24	<0.270	U
68	30	<0.290	U
69	30	**3.300**	
70	30	**1.400**	
71	30	**1.500**	
72	30	<0.290	U
73	24	<0.280	U
74	24	<0.270	U
75	24	<0.270	U
76	24	0.770	

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Table 1
Geoprobe Soil Sampling Analytical Results
Fort Monmouth Main Post, Fort Monmouth, New Jersey
NJDEP IGWSCC = 1 mg/kg

Boring Number	Depth (inches)	Tetrachloroethene	QA/QC
77	30	<0.370	U
78	36	<0.330	U
79	36	<0.290	U
80	36	<0.300	U
81	36	<0.290	U
82	36	<0.270	U
83	36	<0.270	U
84	30	<0.300	U
85	36	<0.270	U
86	36	<0.280	U
87	36	<0.270	U
88	24	<0.310	U
89	30	<0.290	U
90	30	<0.290	U
91	30	<0.280	U
92	30	<0.270	U
93	30	<0.280	U
94	30	<0.290	U
95	36	<0.300	U
96	36	<0.290	U
97	30	<0.340	U
98	36	<0.310	U
99	24	<0.300	U
100	35	<0.280	U
101	35	<0.260	U
102	35	<0.280	U
103	35	<0.280	U
104	76	<0.270	U
105	80	<0.260	U
106	70	<0.280	U
107	70	<0.270	U
108	46	<0.270	U
109	35	<0.270	U
110	45	<0.270	U
111	45	<0.270	U
112	94	<0.280	U
113	94	<0.250	U
114	94	<0.290	U

All concentrations are given in milligrams per kilogram (mg/kg), equivalent to parts per million (ppm).
NR: Sample depth not reported.
QA/QC: Quality Assurance/Quality Control.
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Table 1
Geoprobe Soil Sampling Analytical Results
Fort Monmouth Main Post, Fort Monmouth, New Jersey
NJDEP IGWSCC = 1 mg/kg

Boring Number	Depth (inches)	Tetrachloroethene	QA/QC
115	94	<0.260	U
116	94	<0.260	U
117	76	<0.270	U
118	79	<0.260	U
119	94	<0.260	U
120	94	<0.250	U
121	94	<0.260	U
122	94	<0.280	U
123	80	<0.240	U
124	80	<0.270	U
125	80	<0.270	U
126	118	<0.260	U
127	94	<0.270	U
128	94	<0.300	U
129	82	<0.260	U
130	82	<0.260	U
131	82	<0.260	U
132	82	<0.260	U
133	94	<0.300	U
134	82	<0.270	U
135	70	<0.270	U
136	94	<0.260	U
137	118	<0.260	U
138	118	<0.270	U
139	82	<0.280	U
140	80	<0.260	U
141	80	<0.270	U
142	80	<0.270	U
143	94	<0.270	U
144	94	<0.260	U
145	82	<0.270	U
146	84	<0.270	U
147	82	<0.260	U
148	82	<0.250	U
149	94	<0.260	U
150	76	<0.290	U
151	83	<0.260	U
152	83	<0.270	U

All concentrations are given in milligrams per kilogram (mg/kg), equivalent to parts per million (ppm).
NR: Sample depth not reported.
QA/QC: Quality Assurance/Quality Control.
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Table 1
Geoprobe Soil Sampling Analytical Results
Fort Monmouth Main Post, Fort Monmouth, New Jersey
NJDEP IGWSCC = 1 mg/kg

Boring Number	Depth (inches)	Tetrachloroethene	QA/QC
153	94	<0.260	U
154	94	<0.270	U
155	82	<0.270	U
156	82	<0.290	U
157	74	<0.270	U
158	30	<0.270	U
159	24	<0.290	U
160	24	<0.280	U
161	24	<0.280	U
162	17	<0.310	U
163	19	<0.330	U
164	36	<0.270	U
165	36	<0.270	U
166	24	<0.280	U
167	24	<0.280	U
168	24	<0.330	U
169	24	<0.340	U
170	47	<0.290	U
171	58	<0.270	U
172	58	<0.260	U
173	58	<0.260	U
174	45	<0.310	U
175	47	<0.260	U
176	83	<0.270	U
177	83	<0.260	U
178	24	<0.260	U
179	24	<0.270	U
180	24	<0.260	U
181	24	<0.280	U
182	73	<0.270	U
183	73	<0.260	U
184	78	<0.270	U
185	73	<0.270	U
186	73	<0.260	U
187	80	<0.280	U
188	18	<0.300	U
189	78	<0.270	U
190	78	<0.260	U

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Table 1
Geoprobe Soil Sampling Analytical Results
Fort Monmouth Main Post, Fort Monmouth, New Jersey
NJDEP IGWSCC = 1 mg/kg

Boring Number	Depth (inches)	Tetrachloroethene	QA/QC
191	78	<0.250	U
192	78	<0.250	U
193	36	<0.260	U
194	72	<0.250	U
195	82	**1.800**	
196	82	<0.300	U
255	70	<0.260	U
256	70	<0.260	U
257	70	<0.260	U
258	70	<0.260	U
259	70	<0.250	U
260	70	<0.260	U
261	70	<0.280	U
262	70	<0.270	U
263	94	<0.270	U
264	94	<0.260	U
265	94	<0.260	U
266	48	<0.310	U
267	48	<0.260	U
268	48	<0.270	U
269	76	<0.290	U
270	76	<0.300	U
271	94	<0.280	U
272	88	<0.290	U
273	88	<0.270	U
274	112	<0.250	U
275	130	<0.330	U
276	130	<0.300	U
277	142	<0.280	U
278	142	<0.290	U
279	142	<0.340	U
280	142	<0.340	U
281	142	<0.320	U
282	142	<0.300	U
283	48	<0.300	U
284	48	<0.270	U
285	48	<0.280	U
286	48	<0.280	U

All concentrations are given in milligrams per kilogram (mg/kg), equivalent to parts per million (ppm).
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Geoprobe Soil Sampling Analytical Results
Fort Monmouth Main Post, Fort Monmouth, New Jersey
NJDEP IGWSCC = 1 mg/kg

Boring Number	Depth (inches)	Tetrachloroethene	QA/QC
287	87	<0.280	U
288	87	<0.260	U
289	46	<0.260	U
290	46	<0.310	U
291	46	<0.270	U
292	46	<0.320	U
293	46	<0.290	U
294	46	<0.290	U
295	70	<0.280	U
296	70	<0.250	U
297	70	<0.280	U
298	70	<0.310	U
299	70	<0.260	U
300	70	<0.270	U
301	84	<0.310	U
302	84	<0.290	U
303	84	<0.270	U
304	84	<0.270	U
305	84	<0.280	U
306	84	<0.270	U
307	102	<0.280	U
308	102	<0.270	U
310	102	<0.290	U
311	102	<0.270	U
312	102	<0.270	U
313	90	<0.290	U
314	90	<0.300	U
315	114	<0.270	U
316	114	<0.290	U
317	114	<0.290	U
318	114	<0.290	U

All concentrations are given in milligrams per kilogram (mg/kg), equivalent to parts per million (ppm).
NR: Sample depth not reported.
QA/QC: Quality Assurance/Quality Control.
U: Analyte undetected in this sample.
NJDEP: New Jersey Department of Environmental Protection.
IGWSCC: Impact to Ground Water Soil Cleanup Criteria.

Table 2
Geoprobe Groundwater Sampling Analytical Results
Fort Monmouth Main Post, Fort Monmouth, New Jersey

	PCE	TCE	cis-1,2-DCE	Chlorobenzene	Benzene	Toluene	Ethylbenzene	Total Xylenes
M-5-B-1	**10.17**	nd	nd	nd	nd	nd	nd	nd
M-5-B-2	**1.03**	nd	nd	nd	nd	nd	nd	nd
M-5-B-3	**1.85**	nd	nd	nd	nd	nd	nd	nd
M-5-B-4	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-5	**1.90**	nd	nd	nd	nd	nd	nd	nd
M-5-B-6	**6.18**	nd	nd	nd	nd	nd	nd	nd
M-5-B-7	**26.36**	nd	nd	nd	nd	nd	nd	nd
M-5-B-8	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-9	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-10	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-11	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-12	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-13	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-14	**6.52**	nd	nd	nd	nd	nd	nd	nd
M-5-B-15	**20.60**	nd	nd	nd	nd	nd	nd	nd
M-5-B-16	**8.14**	nd	nd	nd	nd	nd	nd	nd
M-5-B-17	nd	nd	6.06	nd	nd	nd	nd	nd
M-5-B-18	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-19	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-20	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-21	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-22	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-23	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-24	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-25	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-26	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-27	nd	nd	nd	nd	**1.32**	5.22	nd	9.67
M-5-B-28	**2.85**	nd	nd	nd	**2.60**	10.48	2.00	16.82
M-5-B-29	**2.81**	nd	nd	nd	nd	4.20	nd	8.79
M-5-B-30	**6.34**	nd	nd	nd	**1.13**	5.29	nd	10.81
M-5-B-31	**22.28**	nd	nd	nd	nd	nd	nd	nd
M-5-B-32	**4.85**	nd	nd	nd	nd	nd	nd	nd
M-5-B-33	**2.60**	**2.65**	7.62	nd	nd	nd	nd	nd
M-5-B-34	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-35	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-36	**5.04**	nd	nd	nd	nd	nd	nd	nd
M-5-B-37	**7.31**	nd	nd	nd	nd	nd	nd	nd
M-5-B-38	**4.76**	nd	nd	nd	nd	nd	nd	nd
M-5-B-39	**9.58**	nd	nd	nd	nd	nd	nd	nd
M-5-B-40	**2.92**	nd	nd	nd	nd	nd	nd	nd
M-5-B-41	**10.50**	nd	nd	nd	nd	nd	nd	nd
M-5-B-42	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-43	**1.04**	nd	nd	nd	nd	nd	nd	nd
M-5-B-44	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-45	**1.89**	**1.68**	1.34	nd	nd	nd	nd	nd
M-5-B-46	**9.74**	**1.52**	nd	nd	nd	nd	nd	nd
M-5-B-47	**4.11**	nd	nd	nd	nd	nd	nd	nd
M-5-B-48	**5.55**	nd	nd	nd	nd	nd	nd	nd
M-5-B-49	nd	nd	nd	nd	nd	nd	nd	nd

Table 2
Geoprobe Groundwater Sampling Analytical Results
Fort Monmouth Main Post, Fort Monmouth, New Jersey

	PCE	TCE	cis-1,2-DCE	Chlorobenzene	Benzene	Toluene	Ethylbenzene	Total Xylenes
M-5-B-50	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-52	**167.22**	nd	nd	nd	nd	nd	nd	nd
M-5-B-53	**1.71**	nd	nd	nd	nd	nd	nd	nd
M-5-B-54	**2.22**	nd	nd	nd	nd	nd	nd	nd
M-5-B-55	**1.27**	nd	nd	nd	nd	nd	nd	nd
M-5-B-56	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-57	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-58	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-59	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-60	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-61	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-62	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-63	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-64	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-65	**50.17**	nd	nd	nd	nd	nd	nd	nd
M-5-B-66	**3.69**	nd	nd	nd	nd	nd	nd	nd
M-5-B-67	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-68	**20.61**	nd	nd	nd	nd	nd	nd	nd
M-5-B-69	**8.21**	nd	nd	nd	nd	nd	nd	nd
M-5-B-70	**6.67**	nd	1.54	nd	nd	nd	nd	nd
M-5-B-71	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-72	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-73	**6.10**	nd	nd	nd	nd	nd	nd	nd
M-5-B-74	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-75	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-76	**7.02**	nd	nd	nd	nd	nd	nd	nd
M-5-B-77	nd	nd	1.99	nd	nd	nd	nd	nd
M-5-B-78	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-79	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-80	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-81	**72.02**	nd	nd	nd	nd	nd	nd	nd
M-5-B-82	**40.51**	nd	nd	nd	nd	nd	nd	nd
M-5-B-83	**1.73**	nd	nd	nd	nd	nd	nd	nd
M-5-B-84	**9.92**	nd	nd	nd	nd	nd	nd	nd
M-5-B-85	**1.67**	nd	1.59	nd	nd	nd	nd	nd
M-5-B-86	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-87	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-88	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-89	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-90	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-91	**5.03**	nd	nd	nd	nd	nd	nd	nd
M-5-B-92	**1.93**	nd	nd	nd	nd	nd	nd	nd
M-5-B-93	**1.23**	nd	nd	nd	nd	nd	nd	nd
M-5-B-94	**1.08**	nd	nd	nd	nd	nd	nd	nd
M-5-B-95	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-96	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-97	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-98	nd	nd	nd	nd	nd	nd	nd	nd

Table 2
Geoprobe Groundwater Sampling Analytical Results
Fort Monmouth Main Post, Fort Monmouth, New Jersey

	PCE	TCE	cis-1,2-DCE	Chlorobenzene	Benzene	Toluene	Ethylbenzene	Total Xylenes
M-5-B-99	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-100	**2.48**	nd	nd	nd	nd	nd	nd	nd
M-5-B-101	**2.66**	nd	nd	nd	nd	nd	nd	nd
M-5-B-102	**1.46**	nd	nd	nd	nd	nd	nd	nd
M-5-B-103	**1.37**	nd	nd	nd	nd	nd	nd	nd
M-5-B-104	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-105	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-106	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-107	**1.33**	nd	nd	nd	nd	nd	nd	nd
M-5-B-108	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-109	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-110	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-111	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-112	**1.22**	nd	nd	nd	nd	nd	nd	nd
M-5-B-113	**6.44**	nd	nd	nd	nd	nd	nd	nd
M-5-B-114	**3.21**	nd	nd	nd	nd	nd	nd	nd
M-5-B-115	**6.28**	nd	nd	nd	nd	nd	nd	nd
M-5-B-116	**2.68**	nd	nd	nd	nd	nd	nd	nd
M-5-B-117	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-118	**1.63**	nd	nd	nd	nd	nd	nd	nd
M-5-B-119	**3.74**	nd	nd	nd	nd	nd	nd	nd
M-5-B-120	**18.38**	nd	nd	nd	nd	nd	nd	nd
M-5-B-121	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-122	**1.00**	nd	nd	nd	nd	nd	nd	nd
M-5-B-123	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-124	**6.70**	nd	nd	nd	nd	nd	nd	nd
M-5-B-125	**6.21**	nd	nd	nd	nd	nd	nd	nd
M-5-B-126	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-127	**1.68**	nd	nd	nd	nd	nd	nd	nd
M-5-B-128	**5.30**	nd	nd	nd	nd	nd	nd	nd
M-5-B-129	**1.02**	nd	nd	nd	nd	nd	nd	nd
M-5-B-130	**23.65**	nd	nd	nd	nd	nd	nd	nd
M-5-B-131	**1.23**	nd	nd	nd	nd	nd	nd	nd
M-5-B-132	**1.20**	nd	nd	nd	nd	nd	nd	nd
M-5-B-133	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-134	**6.66**	nd	nd	nd	nd	nd	nd	nd
M-5-B-135	**7.20**	nd	nd	nd	nd	nd	nd	nd
M-5-B-136	**2.41**	nd	nd	nd	nd	nd	nd	nd
M-5-B-137	**3.73**	nd	nd	nd	nd	nd	nd	nd
M-5-B-138	**2.16**	nd	nd	nd	nd	nd	nd	nd
M-5-B-139	**1.78**	nd	nd	nd	nd	nd	nd	nd
M-5-B-140	**3.58**	nd	nd	nd	nd	nd	nd	nd
M-5-B-141	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-142	**3.89**	nd	nd	nd	nd	nd	nd	nd
M-5-B-143	**1.95**	nd	nd	nd	nd	nd	nd	nd
M-5-B-144	**2.12**	nd	nd	nd	nd	nd	nd	nd
M-5-B-145	**2.25**	nd	nd	nd	nd	nd	nd	nd
M-5-B-146	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-147	**2.90**	nd	nd	nd	nd	nd	nd	nd
M-5-B-148	nd	nd	nd	nd	nd	1.26	nd	nd

Table 2
Geoprobe Groundwater Sampling Analytical Results
Fort Monmouth Main Post, Fort Monmouth, New Jersey

	PCE	TCE	cis-1,2-DCE	Chlorobenzene	Benzene	Toluene	Ethylbenzene	Total Xylenes
M-5-B-149	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-150	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-151	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-152	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-153	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-154	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-155	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-156	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-157	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-158	**4.22**	nd	nd	nd	nd	nd	nd	nd
M-5-B-159	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-160	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-161	nd	nd	9.07	nd	nd	nd	nd	nd
M-5-B-162	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-163	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-164	**2.11**	nd	nd	nd	nd	nd	nd	nd
M-5-B-165	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-166	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-167	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-168	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-169	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-170	**50.03**	nd	nd	nd	**2.67**	nd	nd	nd
M-5-B-171	**2.67**	nd	nd	nd	nd	nd	nd	nd
M-5-B-172	**1.95**	nd	nd	nd	nd	nd	nd	nd
M-5-B-173	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-174	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-175	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-176	**4.03**	nd	nd	nd	nd	nd	nd	nd
M-5-B-177	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-178	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-179	nd	nd	nd	nd	nd	3.29	nd	nd
M-5-B-180	nd	nd	nd	nd	nd	1.61	nd	nd
M-5-B-181	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-182	**13.54**	nd	nd	nd	nd	nd	nd	nd
M-5-B-183	**8.32**	nd	nd	nd	nd	nd	nd	nd
M-5-B-184	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-185	**2.07**	nd	nd	nd	nd	nd	nd	nd
M-5-B-186	**13.60**	nd	nd	nd	nd	nd	nd	nd
M-5-B-187	**12.65**	nd	nd	nd	nd	nd	nd	nd
M-5-B-188	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-189	**1.69**	nd	nd	nd	nd	nd	nd	nd
M-5-B-190	**1.02**	nd	nd	nd	nd	nd	nd	nd
M-5-B-191	**2.97**	nd	nd	nd	nd	nd	nd	nd
M-5-B-192	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-193	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-194	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-195	**3.17**	**1.98**	1.96	nd	nd	nd	nd	nd
M-5-B-196	nd	nd	0.48	nd	nd	nd	nd	nd
M-5-B-255	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-256	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-257	**1.15**	nd	nd	nd	nd	nd	nd	nd

Table 2
Geoprobe Groundwater Sampling Analytical Results
Fort Monmouth Main Post, Fort Monmouth, New Jersey

	PCE	TCE	cis-1,2-DCE	Chlorobenzene	Benzene	Toluene	Ethylbenzene	Total Xylenes
M-5-B-258	**6.26**	nd	nd	nd	nd	nd	nd	nd
M-5-B-259	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-260	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-261	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-262	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-264	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-265	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-266	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-267	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-268	nd	nd	1.74	nd	nd	nd	nd	nd
M-5-B-269	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-270	**4.59**	nd	nd	nd	nd	nd	nd	nd
M-5-B-271	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-272	**5.14**	**4.40**	**16.47**	nd	nd	nd	nd	nd
M-5-B-273	nd	nd	4.53	nd	nd	nd	nd	nd
M-5-B-274	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-275	nd	nd	nd	**73.23**	**2.60**	nd	1.83	15.18
M-5-B-276	nd	nd	nd	**13.34**	**1.87**	2.05	1.76	8.13
M-5-B-277	nd	nd	nd	nd	**1.89**	nd	nd	nd
M-5-B-278	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-279	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-280	nd	nd	nd	nd	**1.98**	nd	nd	nd
M-5-B-281	nd	nd	nd	**30.34**	**8.52**	nd	1.13	1.52
M-5-B-282	nd	nd	nd	**52.25**	**15.89**	nd	5.70	7.09
M-5-B-283	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-284	nd	nd	nd	2.01	nd	2.06	3.15	11.84
M-5-B-285	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-286	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-287	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-288	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-289	nd	**1.99**	**12.18**	nd	nd	nd	nd	nd
M-5-B-290	nd	nd	**11.16**	nd	nd	nd	nd	nd
M-5-B-291	nd	nd	2.28	nd	nd	nd	nd	nd
M-5-B-292	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-293	nd	nd	1.81	nd	nd	nd	nd	nd
M-5-B-294	nd	nd	4.61	nd	nd	nd	nd	nd
M-5-B-295	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-296	**5.22**	nd	nd	nd	nd	nd	nd	nd
M-5-B-297	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-298	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-299	**2.52**	nd	nd	nd	nd	nd	nd	nd
M-5-B-300	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-301	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-302	**321.24**	nd	nd	nd	nd	nd	nd	nd
M-5-B-303	**1459.64**	nd	nd	nd	nd	nd	nd	nd
M-5-B-304	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-305	**3.36**	nd	nd	nd	nd	nd	nd	nd
M-5-B-306	**1.26**	nd	nd	nd	nd	18.11	1.69	9.43
M-5-B-307	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-308	nd	nd	nd	nd	nd	nd	nd	nd

Table 2
Geoprobe Groundwater Sampling Analytical Results
Fort Monmouth Main Post, Fort Monmouth, New Jersey

	PCE	TCE	cis-1,2-DCE	Chlorobenzene	Benzene	Toluene	Ethylbenzene	Total Xylenes
M-5-B-309	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-310	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-311	**2.85**	nd	nd	nd	nd	nd	nd	nd
M-5-B-312	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-313	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-314	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-315	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-316	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-317	nd	nd	nd	nd	nd	nd	nd	nd
M-5-B-318	nd	nd	nd	nd	nd	nd	nd	nd

All concentrations are given in micrograms per liter (ug/L), equivalent to parts per billion (ppb).
Concentrations exceeding the NJDEP Ground Water Quality Criteria (GWQC) are listed in bold print.
PCE: tetrachloroethene.
TCE: trichloroethene.
cis-1,2-DCE: cis-1,2-dichloroethene.

Table 3
Quarterly Groundwater Sampling Results
Fort Monmouth Main Post, Fort Monmouth, New Jersey
Monitoring Well M5MW-10, Landfill M-5
May 1997 - September 1999

Lab Sample ID Sample Date	2516.02 8-May-97	2885.04 8-Aug-97	3116.04 29-Oct-97	3348.01 18-Feb-98	3552.01 6-May-98	3784.03 4-Aug-98	4010.04 27-Oct-98	4237.03 2-Feb-99	4416.03 13-Apr-99	4444.03 27-Apr-99	4786.08 13-Sep-99	NJDEP GWQC (ug/L)
Volatiles												
Acetone	ND	ND	ND	ND	ND	5.08	9.43	ND	ND	ND	ND	700
2 - Butanone (MEK)	ND	ND	ND	ND	ND	ND	4.10	ND	ND	ND	ND	300
Semi-Volatiles												
Di-n-butylphthalate	2.51	30.78	2.13	6.20	ND	ND	ND	ND	ND	ND	ND	900
Bis (2 - ethylhexyl) phth	ND	ND	ND	ND	ND	ND	ND	5.57	ND	ND	ND	30
Pesticides/PCBs												
none detected												
Metals												
Aluminum	61.7	33.8	105.0	96	60.1	103	106	ND	43.9	44.5	ND	200
Antimony	ND	ND	ND	ND	ND	3.01	5.96	ND	ND	ND	ND	20
Arsenic	3.0	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	8
Barium	67.49	ND	78.0	108	99	26.5	34.4	114	93.2	89.5	40.4	2,000
Beryllium	0.19	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	20
Cadmium	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.28	0.560	4
Calcium	10650.0	8050.0	31340.0	17870	8165	10300	12900	15200	13100	14600	14400	NLE
Chromium	0.7	76.0	2.6	ND	ND	3.33	3.98	3.17	4.09	3.51	5.11	100
Cobalt	ND	ND	ND	ND	ND	ND	0.695	ND	ND	ND	ND	NLE
Copper	9.0	7.0	11.0	10	10.0	ND	6.27	5.29	22.1	8.55	10.1	1,000
Iron	**4083.0**	**1680.0**	**7386.0**	**4899**	**6027**	**2850**	**3690**	**8760**	**6110**	**4320**	**4330**	300
Lead	1.8	1.0	8.0	ND	ND	ND	2.45	ND	3.79	ND	ND	10
Magnesium	10,040.00	11160.0	16140.0	14860	5989	12500	13400	6920	8050	7990	14600	NLE
Manganese	**87.0**	**59.0**	**200.0**	**138**	**75**	35.4	47.8	**175**	**135**	**152**	**66.7**	50
Mercury	ND	ND	ND	ND	ND	0.19	ND	0.17	ND	ND	ND	2
Nickel	ND	ND	1.3	2.3	2.2	ND	1.53	1.81	0.584	1.16	ND	100
Potassium	9610.0	14410.0	13450.0	11160	6453	22700	20700	3300	6350	4990	15100	NLE
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	3.91	ND	ND	50
Silver	**40.0***	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20
Sodium	35250.0	29150.0	**82150.0**	**114800**	39780	23400	29100	42400	35200	39000	47100	50,000
Vanadium	ND	ND	ND	ND	2.9	1.51	2.67	1.54	1.49	1.44	1.58	NLE
Zinc	20.0	4.0	71.0	16	15.5	20.1	85.9	46.7	21.0	18.7	8.68	5,000

All concentrations are given in micrograms per liter (ug/L), equivalent to parts per billion (ppb).
ND: Analyte not detected in sample.
NJDEP GWQC: New Jersey Department of Environmental Protection Groundwater Quality Criteria.
NLE: No GWQC exists for this analyte.
* : Laboratory contamination

Table 4
Quarterly Groundwater Sampling Results
Fort Monmouth Main Post, Fort Monmouth, New Jersey
Monitoring Well M5MW-11, Landfill M-5
May 1997 - September 1999

Lab Sample ID Sample Date	2516.01 8-May-97	2885.03 8-Aug-97	3116.03 29-Oct-97	3348.02 18-Feb-98	3552.02 6-May-98	3784.04 4-Aug-98	4010.03 27-Oct-98	4237.04 2-Feb-99	4416.04 13-Apr-99	4444.04 27-Apr-99	4786.07 13-Sep-99	NJDEP GWQC (ug/L)
Volatiles												
Acetone	ND	ND	ND	ND	ND	9.43	2.91	ND	ND	ND	ND	700
2 - Butanone (MEK)	ND	ND	ND	ND	ND	2.92	ND	ND	ND	ND	ND	300
Tetrachloroethene	**62.85**	**57.74**	**64.96**	**39.33**	**24.39**	**18.37**	**52.64**	**5.16**	**33.38**	**12.84**	**49.25**	1
Semi-Volatiles												
Di-n-butylphthalate	3.25	13.68	4.75	10.05	ND	ND	ND	ND	ND	ND	ND	900
Bis (2 - ethylhexyl) phtl	ND	ND	ND	ND	ND	ND	5.28	ND	ND	ND	ND	30
Pesticides/PCBs												
none detected												
Metals												
Aluminum	76.7	55.1	**669.0**	**222**	ND	**4570**	78.8	**267**	92.9	92.0	ND	200
Arsenic	3.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8
Barium	12.23	ND	13.4	12	10.4	18.7	9.02	19.1	9.95	8.41	11.0	2,000
Beryllium	0.16	0.14	ND	ND	ND	ND	ND	ND	ND	ND	ND	20
Cadmium	ND	ND	ND	ND	1.0	1.35	ND	ND	ND	1.74	0.556	4
Calcium	11750.0	8730.0	10060.0	10710	8788	19500	9090	14800	11700	11000	14100	NLE
Chromium	0.5	73.0	5.4	ND	ND	16.5	ND	3.34	1.72	1.39	2.11	100
Cobalt	20.0	ND	1.1	ND	ND	1.44	ND	ND	ND	0.870	0.648	NLE
Copper	4.0	4.0	16.0	17	6.8	3.37	7.86	ND	8.28	5.55	4.28	1,000
Iron	ND	110.0	**1551.0**	**305**	58	**1500**	184	**1670**	227	198	**680**	300
Lead	ND	ND	8.0	ND	ND	2.38	ND	ND	ND	ND	ND	10
Magnesium	4580.0	3630.0	3380.0	2990	2781	6090	2960	3930	3300	3660	7840	NLE
Manganese	45.0	**66.0**	12.7	32	6.4	16.9	7.74	44.4	9.71	18.0	16.5	50
Mercury	ND	ND	ND	ND	ND	ND	ND	0.18	ND	ND	ND	2
Nickel	ND	ND	3.9	4.9	4.3	3.19	3.87	2.94	2.62	2.28	2.62	100
Potassium	2250.0	2320.0	6120.0	5260	4573	33000	3480	8340	4340	2670	5420	NLE
Selenium	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	50
Silver	**39.0***	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20
Sodium	19470.0	20630.0	19220.0	14550	14570	20800	10200	22300	12400	15100	45900	50,000
Vanadium	ND	ND	1.0	ND	1.2	1.62	ND	1.75	ND	4.05	ND	NLE
Zinc	237.0	165.0	168.0	172	170	149	96.1	118	126	142	163	5,000

All concentrations are given in micrograms per liter (ug/L), equivalent to parts per billion (ppb).
ND: Analyte not detected in sample.
NJDEP GWQC: New Jersey Department of Environmental Protection Groundwater Quality Criteria.
NLE: No GWQC exists for this analyte.
*: Laboratory contamination

Table 5
Quarterly Groundwater Sampling Results
Fort Monmouth Main Post, Fort Monmouth, New Jersey
Monitoring Well M5MW-12, Landfill M-5
October 1998 - September 1999

Lab Sample ID Sample Date	3967.03 7-Oct-98	3994.06* 21-Oct-98	4237.05 2-Feb-99	4416.05 13-Apr-99	4444.05 27-Apr-99	4786.06 13-Sep-99	NJDEP GWQC (ug/L)
Volatiles							
Acetone	9.00	ND	ND	ND	ND	ND	700
2 - Butanone (MEK)	13.66	ND	ND	ND	ND	ND	300
Semi-Volatiles							
none detected		*					
Pesticides/PCBs							
none detected							
Metals							
Aluminum	**3310**	**359**	**1910**	**1880**	**6720**	119	200
Arsenic	**10**	3.22	ND	ND	3.54	ND	8
Barium	224	157.0	112	103	67.8	243	2,000
Cadmium	ND	ND	1.37	0.954	3.97	0.788	4
Calcium	111000	98000	28200	17400	14300	152000	NLE
Chromium	28.5	5.87	13.2	14.8	31.6	13.3	100
Cobalt	1.5	ND	0.638	1.25	2.88	ND	NLE
Copper	40	ND	ND	11.1	11.0	ND	1,000
Iron	**51400**	**28400**	**26600**	**29500**	**24600**	**36500**	300
Lead	7	ND	5.45	7.66	**16.2**	ND	10
Magnesium	168000	145000	26300	20500	20200	284000	NLE
Manganese	**1340**	**853**	**1030**	**263**	**84.0**	**566**	50
Mercury	0.3	ND	0.16	ND	ND	ND	2
Nickel	5.7	ND	8.54	3.79	4.43	ND	100
Potassium	65300	42100	15900	18300	22600	89200	NLE
Sodium	**1860000**	**1240000**	**235000**	**75300**	**65000**	**2040000**	50,000
Vanadium	14	2.69	4.17	7.14	17.2	2.12	NLE
Zinc	116	ND	169	178	119	ND	5,000

* MW-12 was resampled on 10/26/98 (Sample #4006.01), because the original semi-volatile sample was broken.

All concentrations are given in micrograms per liter (ug/L), equivalent to parts per billion (ppb).

ND: Analyte not detected in sample.

NJDEP GWQC: New Jersey Department of Environmental Protection Groundwater Quality Criteria.

NLE: No GWQC exists for this analyte.

Table 6
Quarterly Groundwater Sampling Results
Fort Monmouth Main Post, Fort Monmouth, New Jersey
Monitoring Well M5MW-13, Landfill M-5
October 1998 - September 1999

Lab Sample ID Sample Date	3967.04 7-Oct-98	4001.03 23-Oct-98	4237.06 2-Feb-99	4416.06 13-Apr-99	4444.06 27-Apr-99	4786.05 13-Sep-99	NJDEP GWQC (ug/L)
Volatiles							
Acetone	6.34	ND	ND	ND	ND	ND	700
2 - Butanone (ME	9.08	ND	ND	ND	ND	ND	300
Semi-Volatiles							
none detected							
Pesticides/PCBs							
none detected							
Metals							
Aluminum	**1450**	**287**	**244**	64.8	**1150**	**225**	200
Antimony	ND	ND	ND	ND	ND	2.61	20
Arsenic	4.0	ND	ND	ND	ND	ND	8
Barium	160	196	108	24.2	48.3	193	2,000
Cadmium	0.7	ND	0.886	ND	2.06	0.716	4
Calcium	64100	67000	13700	35100	15600	130000	NLE
Chromium	12.1	5.25	5.80	3.40	10.6	14.1	100
Cobalt	5.9	ND	ND	ND	1.27	0.576	NLE
Copper	5	ND	5.72	5.00	4.27	7.59	1,000
Iron	**21800**	**11700**	**9810**	**1170**	**8350**	**9520**	300
Lead	ND	ND	**17.6**	2.37	3.60	ND	10
Magnesium	113000	112000	9990	17700	12200	324000	NLE
Manganese	**211**	**203**	**137**	18.4	**131**	**203**	50
Mercury	ND	ND	0.17	ND	ND	ND	2
Nickel	11.8	ND	3.35	0.743	1.05	2.75	100
Potassium	55800	46400	5090	13100	8650	114000	NLE
Sodium	**1160000**	**1030000**	**80100**	7630	**62700**	**2690000**	50,000
Vanadium	8	2.48	3.05	ND	5.05	2.51	NLE
Zinc	106	ND	126	14.6	43.9	12.2	5,000

All concentrations are given in micrograms per liter (ug/L), equivalent to parts per billion (ppb).
ND: Analyte not detected in sample.
NJDEP GWQC: New Jersey Department of Environmental Protection Groundwater Quality Criteria.
NLE: No GWQC exists for this analyte.

Table 7
Quarterly Groundwater Sampling Results
Fort Monmouth Main Post, Fort Monmouth, New Jersey
Monitoring Well M5MW-14, Landfill M-5
October 1998 - September 1999

Lab Sample ID Sample Date	3967.05 7-Oct-98	4001.04 23-Oct-98	4237.07* 2-Feb-99	4416.07 13-Apr-99	4444.07 27-Apr-99	4786.04 13-Sep-99	NJDEP GWQC (ug/L)
Volatiles							
Acetone	3.54	4.87	ND	ND	ND	ND	700
2 - Butanone (MEK)	2.97	3.18	ND	ND	ND	ND	300
Semi-Volatiles							
none detected							
Pesticides/PCBs							
none detected			*				
Metals							
Aluminum	**1210**	120	172	**658**	**303**	ND	200
Barium	33.4	23.5	31.2	81.8	33.9	22.4	2,000
Cadmium	0.7	ND	ND	0.670	1.15	0.655	4
Calcium	38000	34600	36100	16400	39600	41300	NLE
Chromium	10.8	1.16	5.25	9.65	3.37	3.31	100
Cobalt	2.3	ND	ND	0.662	ND	ND	NLE
Copper	ND	ND	8.60	7.48	ND	10.5	1,000
Iron	**4740**	**911**	**1910**	**14000**	**2450**	**571**	300
Lead	ND	ND	ND	6.77	ND	ND	10
Magnesium	23900	19300	17900	11600	18800	17600	NLE
Manganese	22.1	15.0	20.7	**191**	19.0	16.4	50
Mercury	0.2	ND	0.22	ND	ND	ND	2
Nickel	2.2	ND	1.96	2.70	ND	ND	100
Potassium	27000	16200	12900	7220	15100	13300	NLE
Sodium	45400	8970	9450	**63400**	9170	7290	50,000
Thallium	5	ND	ND	ND	3.44	ND	10
Vanadium	5	ND	ND	4.73	ND	ND	NLE
Zinc	26	ND	68.1	53.7	15.1	18.3	5,000

* MW-14 was resampled on 2/4/99 (Sample #4246.01), because the original pesticide/PCB sample was broken.

All concentrations are given in micrograms per liter (ug/L), equivalent to parts per billion (ppb).

ND: Analyte not detected in sample.

NJDEP GWQC: New Jersey Department of Environmental Protection Groundwater Quality Criteria.

NLE: No GWQC exists for this analyte.

Table 8
Quarterly Groundwater Sampling Results
Fort Monmouth Main Post, Fort Monmouth, New Jersey
Monitoring Well M5MW-15, Landfill M-5
April 1999 - September 1999

Lab Sample ID Sample Date	4419.04 14-Apr-99	4447.06 28-Apr-99	4788.05 14-Sep-99	NJDEP GWQC (ug/L)
Volatiles				
Tetrachloroethene (PC	ND	ND	**2.15**	1
Semi-Volatiles				
none detected				
Pesticides/PCBs				
none detected				
Metals				
Aluminum	**606**	**564**	**702**	200
Barium	184	180	153	2000
Beryllium	0.734	0.788	1.37	20
Cadmium	ND	1.98	1.13	4
Calcium	11100	7240	4890	NLE
Chromium	2.98	1.97	5.30	100
Cobalt	8.02	8.28	7.50	NLE
Copper	ND	ND	5.18	1000
Iron	**654**	108	**1050**	300
Magnesium	9370	10600	9050	NLE
Manganese	30.2	20.7	15.7	50
Mercury	ND	0.27	ND	2
Nickel	15.2	15.2	13.4	100
Potassium	4240	4540	4920	NLE
Sodium	11800	14000	10100	50000
Thallium	ND	5.17	ND	10
Vanadium	ND	ND	1.25	NLE
Zinc	91.4	91.0	122	5000

All concentrations are given in micrograms per liter (ug/L), equivalent to parts per billion (ppb).
ND: Analyte not detected in sample.
NJDEP GWQC: New Jersey Department of Environmental Protection Groundwater Quality Criteria.
NLE: No GWQC exists for this analyte.

Table 9
Quarterly Groundwater Sampling Results
Fort Monmouth Main Post, Fort Monmouth, New Jersey
Monitoring Well M5MW-16, Landfill M-5
April 1999 - September 1999

Lab Sample ID Sample Date	4419.05 14-Apr-09	4447.07 28-Apr-99	4788.04 14-Sep-99	NJDEP GWQC (ug/L)
Volatiles				
Tetrachloroethene (PCE)	**96.57**	**8.35**	**639.74**	1
Semi-Volatiles				
none detected				
Pesticides/PCBs				
none detected				
Metals				
Aluminum	**1030**	**1240**	**3510**	200
Arsenic	ND	4.11	ND	8
Barium	101	156	149	2000
Beryllium	ND	ND	0.597	20
Cadmium	ND	2.62	**7.58**	4
Calcium	11200	12500	10800	NLE
Chromium	8.33	8.43	37.4	100
Cobalt	3.30	2.78	4.08	NLE
Copper	ND	ND	12.5	1000
Iron	**4770**	**11800**	**11100**	300
Magnesium	4020	3580	4990	NLE
Manganese	29.2	31.9	32.1	50
Nickel	6.65	5.88	10.8	100
Potassium	6230	8260	9670	NLE
Sodium	11700	15100	10000	50000
Thallium	ND	5.17	ND	10
Vanadium	3.42	3.47	16.1	NLE
Zinc	36.5	36.3	46.2	5000

All concentrations are given in micrograms per liter (ug/L), equivalent to parts per billion (ppb).
ND: Analyte not detected in sample.
NJDEP GWQC: New Jersey Department of Environmental Protection Groundwater Quality Criteria.
NLE: No GWQC exists for this analyte.

Table 10
Quarterly Groundwater Sampling Results
Fort Monmouth Main Post, Fort Monmouth, New Jersey
Monitoring Well M5MW-18, Landfill M-5
April 1999 - September 1999

Lab Sample ID Sample Date	4416.10 13-Apr-99	4444.10 27-Apr-99	4788.06 14-Sep-99	NJDEP GWQC (ug/L)
Volatiles				
none detected				
Semi-Volatiles				
none detected				
Pesticides/PCBs				
none detected				
Metals				
Aluminum	**327**	61.1	**541**	200
Barium	41.8	47.0	104	2000
Cadmium	0.621	1.99	1.30	4
Calcium	18700	22200	22600	NLE
Chromium	1.97	1.02	4.06	100
Cobalt	0.996	0.916	3.11	NLE
Copper	5.04	ND	4.58	1000
Iron	**6550**	**8140**	**9640**	300
Lead	**11.8**	ND	ND	10
Magnesium	3380	3920	5800	NLE
Manganese	40.9	42.1	**65.8**	50
Mercury	0.12	ND	ND	2
Nickel	2.63	1.86	7.64	100
Potassium	6660	8150	7540	NLE
Sodium	8680	10200	15100	50000
Thallium	ND	4.32	ND	10
Zinc	34.2	19.6	52.9	5000

All concentrations are given in micrograms per liter (ug/L), equivalent to parts per billion (ppb).
ND: Analyte not detected in sample.
NJDEP GWQC: New Jersey Department of Environmental Protection Groundwater Quality Criteria.
NLE: No GWQC exists for this analyte.

Table 11
Quarterly Groundwater Sampling Results
Fort Monmouth Main Post, Fort Monmouth, New Jersey
Monitoring Well M5MW-19, Landfill M-5
April 1999 - September 1999

Lab Sample ID Sample Date	4416.09 13-Apr-99	4444.09 27-Apr-99	4788.07 14-Sep-99	NJDEP GWQC (ug/L)
Volatiles				
Tetrachloroethene (PC	**11.53**	**3.72**	**10.24**	1
Semi-Volatiles				
none detected				
Pesticides/PCBs				
none detected				
Metals				
Aluminum	**1110**	**1710**	**2320**	200
Antimony	ND	ND	3.01	20
Barium	39.7	67.2	61.3	2000
Cadmium	ND	3.22	2.74	4
Calcium	18400	20000	14400	NLE
Chromium	10.6	12.1	32.8	100
Cobalt	0.888	1.36	4.79	NLE
Copper	6.31	ND	5.35	1000
Iron	**7900**	**12300**	**9230**	300
Lead	4.92	ND	ND	10
Magnesium	3800	4220	6380	NLE
Manganese	**50.1**	49.1	33.8	50
Mercury	0.11	ND	ND	2
Nickel	3.22	1.80	14.0	100
Potassium	8060	9650	8200	NLE
Sodium	9830	11300	24900	50000
Thallium	ND	4.93	ND	10
Vanadium	4.13	5.20	11.1	NLE
Zinc	34.5	21.3	56.2	5000

All concentrations are given in micrograms per liter (ug/L), equivalent to parts per billion (ppb).
ND: Analyte not detected in sample.
NJDEP GWQC: New Jersey Department of Environmental Protection Groundwater Quality Criteria.
NLE: No GWQC exists for this analyte.

Table 12
Quarterly Groundwater Sampling Results
Fort Monmouth Main Post, Fort Monmouth, New Jersey
Monitoring Well M5MW-20, Landfill M-5
April 1999 - September 1999

Lab Sample ID Sample Date	4416.08 13-Apr-99	4444.08 27-Apr-99	4447.09 13-Sep-99	NJDEP GWQC (ug/L)
Volatiles				
Tetrachloroethene (PC	**142.59**	**169.54**	**156.58**	1
Semi-Volatiles				
none detected				
Pesticides/PCBs				
none detected				
Metals				
Aluminum	**3150**	**2980**	64.6	200
Barium	45.2	36.3	38.7	2000
Cadmium	ND	3.16	2.45	4
Calcium	17000	21600	14400	NLE
Chromium	30.7	24.9	2.80	100
Cobalt	1.84	2.11	2.15	NLE
Copper	4.46	6.08	6.05	1000
Iron	**9380**	**7520**	**376**	300
Lead	9.54	2.50	ND	10
Magnesium	6060	7270	5790	NLE
Manganese	36.6	29.2	28.0	50
Mercury	0.12	ND	ND	2
Nickel	6.43	5.41	6.13	100
Potassium	5860	6670	4330	NLE
Sodium	29200	35000	22000	50000
Vanadium	12.9	9.93	ND	NLE
Zinc	40.5	32.7	20.3	5000

All concentrations are given in micrograms per liter (ug/L), equivalent to parts per billion (ppb).
ND: Analyte not detected in sample.
NJDEP GWQC: New Jersey Department of Environmental Protection Groundwater Quality Criteria.
NLE: No GWQC exists for this analyte.

Table 13
Quarterly Groundwater Sampling Results
Fort Monmouth Main Post, Fort Monmouth, New Jersey
Monitoring Well M5MW-23, Landfill M-5
April 1999 - September 1999

Lab Sample ID Sample Date	4419.08 13-Apr-99	4447.08 27-Apr-99	4447.03 13-Sep-99	NJDEP GWQC (ug/L)
Volatiles				
Tetrachloroethene (PCE)	**84.93**	**44.43**	**29.53**	1
Semi-Volatiles				
none detected				
Pesticides/PCBs				
none detected				
Metals				
Aluminum	148	195	**1410**	200
Barium	12.7	28.0	21.5	2000
Cadmium	1.17	2.89	0.786	4
Calcium	11700	24400	7180	NLE
Chromium	13.4	8.97	22.6	100
Cobalt	1.07	1.53	1.09	NLE
Copper	ND	ND	6.92	1000
Iron	**848**	**1590**	**10700**	300
Magnesium	2990	6840	2580	NLE
Manganese	9.64	19.8	10.4	50
Nickel	3.94	6.27	2.59	100
Potassium	3720	5640	3670	NLE
Sodium	16500	28300	12700	50000
Thallium	ND	6.70	ND	10
Vanadium	ND	ND	9.78	NLE
Zinc	30.8	31.2	17.8	5000

All concentrations are given in micrograms per liter (ug/L), equivalent to parts per billion (ppb).
ND: Analyte not detected in sample.
NJDEP GWQC: New Jersey Department of Environmental Protection Groundwater Quality Criteria.
NLE: No GWQC exists for this analyte.

Table 14
Quarterly Groundwater Sampling Results
Fort Monmouth Main Post, Fort Monmouth, New Jersey
Monitoring Well M5MW-25, Landfill M-5
April 1999 - September 1999

Lab Sample ID Sample Date	4419.06 14-Apr-99	4447.04 28-Apr-99	4788.08 14-Sep-99	NJDEP GWQC (ug/L)
Volatiles				
Chloroform	1.47	ND	ND	6
Semi-Volatiles				
none detected				
Pesticides/PCBs				
none detected				
Metals				
Aluminum	**5640**	**4630**	151	200
Antimony	ND	ND	2.66	20
Barium	47.5	37.2	50.1	2000
Cadmium	1.05	3.63	0.895	4
Calcium	12100	15500	17700	NLE
Chromium	56.3	40.5	2.32	100
Cobalt	3.67	2.81	0.970	NLE
Copper	ND	14.3	ND	1000
Iron	**18000**	**12300**	**8930**	300
Lead	4.75	6.35	ND	10
Magnesium	6120	4960	3440	NLE
Manganese	41.9	48.3	43.9	50
Mercury	ND	0.16	ND	2
Nickel	8.13	7.43	ND	100
Potassium	9700	8700	8110	NLE
Sodium	18900	25200	8680	50000
Thallium	ND	3.58	ND	10
Vanadium	22.4	15.6	ND	NLE
Zinc	78.4	94.1	22.1	5000

All concentrations are given in micrograms per liter (ug/L), equivalent to parts per billion (ppb).
ND: Analyte not detected in sample.
NJDEP GWQC: New Jersey Department of Environmental Protection Groundwater Quality Criteria.
NLE: No GWQC exists for this analyte.

Table 15
Quarterly Groundwater Sampling Results
Fort Monmouth Main Post, Fort Monmouth, New Jersey
Monitoring Well M8MW-12, Landfill M-8
June 1997 - June 1999

Lab Sample ID Sample Date	2731.03 24-Jun-97	2930.06 25-Aug-97	3125.06 31-Oct-97	3366.03 25-Feb-98	3619.03 4-Jun-98	3843.07 28-Aug-98	4029.03 4-Nov-98	4227.03 27-Jan-99	4419.07 14-Apr-99	4447.05 28-Apr-99	4566.03 22-Jun-99	4811.04 23-Sep-99	NJDEP GWQC (ug/L)
Volatiles													
Methylene Chloride	ND	ND	**3.75**	ND	ND	ND	ND	ND	ND	ND	ND	ND	2
2 - Butanone (MEK)	ND	ND	ND	ND	ND	2.50	ND	ND	ND	ND	2.89	ND	300
Toluene	ND	ND	1.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	1000
Tetrachloroethene	**5.04**	**4.96**	**7.64**	**2.25**	**5.49**	**5.56**	**21.68**	**4.27**	ND	ND	**46.06**	**11.77**	1
Semi-Volatiles													
4 - Methylphenol	ND	ND	ND	ND	1.03	ND	ND	ND	ND	ND	ND	ND	NLE
Di - n - butylphthalate	ND	ND	23.36	5.49 B	ND	ND	ND	ND	ND	ND	ND	ND	900
bis (2-Ethylhexyl)phthalate	1.51	ND	ND	2.48	ND	ND	2.23	ND	ND	ND	ND	ND	30
Pesticides/PCBs													
none detected													
Metals													
Aluminum	56.4	170.4	182.0	**7205**	**1210**	**6580**	**1110**	**5040**	**373**	**265**	197	**1930**	200
Antimony	ND	ND	ND	ND	ND	4.83	ND	ND	ND	ND	ND	ND	20
Arsenic	ND	ND	ND	7.0	2.6	6.10	ND	ND	ND	ND	ND	ND	8
Barium	6.4	ND	5.8	28.6	9.3	25.9	7.16	14.8	7.85	7.26	8.49	9.31	2000
Beryllium	ND	ND	ND	ND	ND	0.797	ND	ND	ND	ND	ND	ND	20
Cadmium	ND	ND	ND	ND	ND	ND	ND	1.81	ND	0.579	0.841	ND	4
Calcium	10240.0	8750.0	7750.0	4190	5161	9480	10300	4950	6210	6660	18200	7650	NLE
Chromium	ND	83.0	2.3	53.3	1.4	56.0	8.23	42.5	2.91	1.52	1.53	14.40	100
Cobalt	ND	ND	ND	1.2	ND	1.06	0.778	1.54	0.959	0.703	0.947	0.636	NLE
Copper	5.0	9.0	9.0	16	3.6	ND	ND	36.8	ND	ND	ND	11.0	1000
Iron	**370.0**	**760.0**	**378.0**	**18860**	**6520**	**18800**	**3360**	**16700**	**3750**	**2040**	**1380**	**5190**	300
Lead	ND	1.0	**19.0**	**10**	ND	**12.6**	ND	3.00	ND	ND	ND	ND	10
Magnesium	3330.0	43.0	1990.0	2690	1337	3890	3120	2390	1390	1350	4410	2330	NLE
Manganese	22.0	**4000.0**	7.7	34.8	14.1	**55.5**	13.0	27.3	8.98	6.31	13.6	12.9	50
Mercury	ND	ND	ND	0.5	ND	0.11	ND	ND	ND	0.14	ND	ND	2
Nickel	ND	ND	1.9	6.0	3.9	5.18	12.7	6.04	ND	ND	4.40	3.26	100
Potassium	2510.0	2550.0	2310.0	5710	2692	12000	3400	4430	1750	1560	3120	3130	NLE
Selenium	2.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	50
Silver	**28.0***	**25.0***	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	20
Sodium	38400.0	32350.0	18610.0	15640	16820	30700	ND	20800	14300	13700	38000	25000	50000
Thallium	ND	ND	ND	ND	ND	ND	ND	ND	4.10	6.04	ND	ND	10
Vanadium	ND	ND	ND	29	7.8	28.3	4.96	20.7	2.27	1.55	1.21	8.26	NLE
Zinc	18.0	2.0	51.0	55	7.7	ND	43.4	39.8	11.9	9.70	ND	16.2	5000

All concentrations are given in micrograms per liter (ug/L), equivalent to parts per billion (ppb).
ND: Analyte not detected in sample.
NJDEP GWQC: New Jersey Department of Environmental Protection Groundwater Quality Criteria.
NLE: No GWQC exists for this analyte.
*: Laboratory contamination

Table 16
Quarterly Groundwater Sampling Results
Fort Monmouth Main Post, Fort Monmouth, New Jersey
Monitoring Well M8MW23, Landfill M-8
April 1999

Lab Sample ID Sample Date	4419.09 13-Apr-99	4447.09 27-Apr-99	4811.16 23-Sep-99	NJDEP GWQC (mg/L)
Volatiles				
cis-1,2-Dichloroethene	ND	2.74	6.44	10
Vinyl Chloride	ND	ND	1.18	5
Trichloroethene	ND	ND	**1.94**	1
Tetrachloroethene (PCE)	**6.56**	ND	**1.62**	1
Semi-Volatiles				
none detected				
Pesticides/PCBs				
none detected				
Metals				
Aluminum	**8440**	150	27.6	200
Arsenic	**26.4**	**15.8**	3.47	8
Barium	142	65.9	89.9	2000
Beryllium	0.723	ND	ND	20
Cadmium	**6.11**	1.13	0.607	4
Calcium	24900	30700	28000	NLE
Chromium	58.9	4.30	5.63	100
Cobalt	18.2	13.2	1.55	NLE
Copper	371	ND	21.4	1000
Iron	**27700**	**1940**	**5290**	300
Lead	**464**	8.10	5.92	10
Magnesium	10800	7640	10700	NLE
Manganese	**1720**	**787**	**1280**	50
Mercury	**2.74**	0.18	ND	2
Nickel	47.4	31.8	6.15	100
Potassium	10100	5780	5260	NLE
Sodium	19200	28200	46900	50000
Vanadium	31.5	ND	ND	NLE
Zinc	**5440**	3690	237	5000

All concentrations are given in micrograms per liter (ug/L), equivalent to parts per billion (ppb).
ND: Analyte not detected in sample.
NJDEP GWQC: New Jersey Department of Environmental Protection Groundwater Quality Criteria.
NLE: No GWQC exists for this analyte.

Table 17
Quarterly Groundwater Sampling Results
Fort Monmouth Main Post, Fort Monmouth, New Jersey
Monitoring Well M8MW24, Landfill M-8
April 1999

Lab Sample ID Sample Date	4419.03 14-Apr-99	4447.03 28-Apr-99	4811.17 23-Sep-99	NJDEP GWQC (ug/L)
Volatiles				
Chlorobenzene	ND	ND	1.01	4
Ethylbenzene	1.78	ND	4.05	700
Total Xylenes	6.04	1.16	10.76	1000
Semi-Volatiles				
2,4-Dimethylphenol	ND	3.14	ND	100
Naphthalene	1.24	ND	3.24	NLE
Bis(2-Ethylhexyl)phthalate	ND	ND	1.74	30
Pesticides/PCBs				
none detected				
Metals				
Aluminum	**531**	**5960**	**327**	200
Antimony	ND	3.50	ND	20
Arsenic	ND	7.16	3.77	8
Barium	96.1	262	276	2000
Cadmium	ND	2.89	1.83	4
Calcium	384000	409000	470000	NLE
Chromium	8.01	39.3	8.75	100
Cobalt	1.17	2.07	ND	NLE
Copper	22.4	196	29.3	1000
Iron	**13100**	**13500**	**36600**	300
Lead	**50.5**	**385**	**27.1**	10
Magnesium	21100	25500	29200	NLE
Manganese	**885**	**1260**	**1500**	50
Mercury	ND	1.03	0.2	2
Nickel	1.51	7.97	3.59	100
Potassium	10000	15100	16700	NLE
Selenium	7.13	10.6	ND	50
Silver	ND	18.6	ND	20
Sodium	15400	29600	59600	50000
Vanadium	2.64	21.3	3.74	NLE
Zinc	85.3	779	69.1	5000

All concentrations are given in micrograms per liter (ug/L), equivalent to parts per billion (ppb).
ND: Analyte not detected in sample.
NJDEP GWQC: New Jersey Department of Environmental Protection Groundwater Quality Criteria.
NLE: No GWQC exists for this analyte.

Table 18
Periodic Stream Sampling Analytical Results
Fort Monmouth Main Post, Fort Monmouth, New Jersey

Stream Sampling Location SS-4
October 1996 - June 1999

Lab Sample ID Sample Date	8-Oct-96	25-Nov-96	12-Dec-96	29-Jan-97	26-Feb-97	10-Mar-97	8-Apr-97	17-Jul-97	30-Oct-97	10-Feb-98	21-Apr-98	19-Aug-98	17-Nov-98	25-Feb-99	4579.14 29-Jun-99	NJDEP SWQS (ug/L)
Acetone	NA	NA	NA	30.91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NLE
cis - 1,2 - Dichloroethene	NA	NA	NA	1.16	1.14	ND	2.18	1.63	ND	ND	ND	1.92	1.19	ND	2.41	NLE
Methylene chloride	3.75	3.03	3.62	2.50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1600
Trichloroethene (TCE)	0.64	1.60	0.75	ND	ND	ND	ND	ND	ND	ND	ND	1.10	ND	ND	1.56	81
Tetrachloroethene (PCE)	2.35	**6.26**	2.28	**4.42**	**6.37**	2.33	ND	1.61	1.24	**6.61**	**4.42**	**2.85**	1.62	**5.61**	**5.27**	4.29

Stream Sampling Location SS-5
October 1996 - June 1999

Lab Sample ID Sample Date	8-Oct-96	25-Nov-96	12-Dec-96	29-Jan-97	26-Feb-97	10-Mar-97	8-Apr-97	17-Jul-97	30-Oct-97	10-Feb-98	21-Apr-98	19-Aug-98	17-Nov-98	25-Feb-99	4579.15 29-Jun-99	NJDEP SWQS (ug/L)
Acetone	NA	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NLE
cis - 1,2 - Dichloroethene	NA	NA	NA	1.19	ND	ND	1.80	3.66	1.83	ND	ND	2.28	1.67	ND	2.74	NLE
Methylene chloride	3.52	3.08	3.47	3.41	ND	ND	1.96	ND	ND	ND	ND	ND	ND	ND	ND	1600
Trichloroethene (TCE)	0.81	1.86	0.71	1.04	ND	ND	ND	ND	ND	ND	ND	1.27	ND	ND	1.74	81
Tetrachloroethene (PCE)	2.76	**7.53**	2.98	**4.76**	**5.32**	2.42	2.28	3.54	1.70	**6.34**	**4.48**	3.39	2.17	**5.45**	**6.04**	4.29

Only detected compounds are listed.
All concentrations are given in micrograms per liter (ug/L), equivalent to parts per billion (ppb).
NA: Sample not analyzed for this parameter.
ND: Parameter not detected in this sample.
NLE: No regulatory limit has been established for this parameter.
SWQS: New Jersey Department of Environmental Protection Surface Water Quality Standards.
Exceedances of the NJDEP SWQS are highlighted and printed in bold-faced type.

Table 18, continued
Periodic Stream Sampling Analytical Results
Fort Monmouth Main Post, Fort Monmouth, New Jersey

Stream Sampling Location SS-15
October 1996 - June 1999

Lab Sample ID Date	8-Oct-96	25-Nov-96	12-Dec-96	29-Jan-97	26-Feb-97	10-Mar-97	8-Apr-97	17-Jul-97	30-Oct-97	10-Feb-98	21-Apr-98	19-Aug-98	17-Nov-98	25-Feb-99	4579.11 29-Jun-99	NJDEP SWQS (ug/L)
Acetone	NA	NA	NA	4.22	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NLE
cis - 1,2 - Dichloroethene	NA	NA	NA	1.57	1.46	ND	2.69	5.53	2.57	ND	1.22	3.89	ND	ND	4.17	NLE
Methylene chloride	3.85	2.98	5.51	2.68	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1600
Trichloroethene (TCE)	2.58	2.54	1.31	1.33	ND	ND	1.60	2.50	ND	1.03	1.21	3.06	ND	ND	2.40	81
Tetrachloroethene (PCE)	**8.41**	**10.38**	**5.63**	**5.68**	**7.84**	3.39	**6.00**	**7.12**	2.72	**6.90**	**5.72**	**5.39**	ND	**7.33**	**7.86**	4.29

Stream Sampling Location SS-16
November 1996 - June 1999

Lab Sample ID Date	25-Nov-96	12-Dec-96	29-Jan-97	26-Feb-97	10-Mar-97	8-Apr-97	17-Jul-97	30-Oct-97	10-Feb-98	21-Apr-98	19-Aug-98	17-Nov-98	25-Feb-99	4579.12 29-Jun-99	NJDEP SWQS (ug/L)
Acetone	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NLE
cis - 1,2 - Dichloroethene	NA	NA	1.30	1.27	ND	2.05	2.55	1.76	ND	ND	2.94	ND	ND	3.56	NLE
Methylene chloride	3.08	4.65	3.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1600
Trichloroethene (TCE)	1.86	1.00	1.14	1.20	ND	1.26	ND	ND	ND	ND	1.63	ND	ND	2.25	81
Tetrachloroethene (PCE)	**7.53**	3.82	**5.19**	**6.75**	2.31	**4.47**	**4.72**	1.86	**6.23**	**4.58**	**4.33**	1.48	**6.06**	**7.70**	4.29

Only detected compounds are listed.
All concentrations are given in micrograms per liter (ug/L), equivalent to parts per billion (ppb).
NA: Sample not analyzed for this parameter.
ND: Parameter not detected in this sample.
NLE: No regulatory limit has been established for this parameter.
SWQS: New Jersey Department of Environmental Protection Surface Water Quality Standards.
Exceedances of the NJDEP SWQS are highlighted and printed in bold-faced type.

Table 19
Well Search Summary
Fort Monmouth Main Post
Fort Monmouth, New Jersey

Well ID Number	Well Owner	Well Address	Total Depth (feet bgs)	Casing Length (feet)	Static Water Elevation (feet bgs)	Use Code	NJDEP Permit Number
5	Eatontown Senior Housing	55 Wyckoff Rd., Eatontown	192	177	25	G	29-15006
14	Shell Oil Company	Block 100, Lot 25, Oceanport	12	2	4	M	29-24953
15	Shell Oil Company	Block 100, Lot 25, Oceanport	12	2	3	M	29-24953
16	Shell Oil Company	Block 100, Lot 25, Oceanport	12	2	3	M	29-24953
17	Shell Oil Company	Block 100, Lot 25, Oceanport	11	2	3	M	29-24953
34	Boro of Eatontown	Block 14, Lot 17, Eatontown	20	10	12.1	M	29-28236
35	Redacted - Privacy Act	Orchard St. Block 73, Lot 36,	67	52	16	D	29-23690
36	Redacted - Privacy Act	92 Sunnybrook Dr., Shrewsbury Boro	50	50	5	G	29-22571
37	V. J. Russo Realty	170 Ave. of Commons, Shrewsbury Boro	250	245	4	G	29-27756
38	Price Communications Corp.	1 Register Plaza, Shrewsbury Boro	28	15	8	M	29-26185
39	Redacted - Privacy Act	Trafalger Pl., Block 69.04, Lot 4, Shrewsbury Boro	50	50	5	G	29-22571
40	Redacted - Privacy Act	83 Sunnybrook Dr., Shrewsbury Bro	250	210	8	D	29-26704
41	Boro of Eatontown	Block 14, Lot 17, Eatontown	20	10	11.7	M	29-29158
42	Boro of Eatontown	Block 14, Lot 17, Eatontown	18	8	10.1	M	29-29159
43	Redacted - Privacy Act	Relwof Ave., Block 98, Lot 1 and 2, Oceanport	45	35	2	G	29-21780
44	Redacted - Privacy Act	Allenhurst and Myrtle Aves.,	50	40	5	D	29-6499
64	Redacted - Privacy Act	112 Orchid St., Oceanport	323	317	16	D, G	29-14244
65	N. J. Transit	Silverside and Fairview Ave.,	*	*	*	M	29-13825
97	Shell Oil Company	1 Main St., Oceanport	10	2	2.5	M/S	29-12553
98	Shell Oil Company	1 Main St., Oceanport	9	1	2	M/S	29-12554
99	Shell Oil Company	1 Main St., Oceanport	9	1	2	M/S	29-12555
100	Redacted - Privacy Act	121 Horseneck Point Rd., Oceanport	15	12	5	D	29-5084
101	Bridgewater Townhouse	57 Bridgewater Dr., Oceanport	180	155	12	G	29-22549
113	Shell Oil Company	Rte. 35 and South St., Eatontown	12	2	4.38	M	29-14180
114	Shell Oil Company	Rte. 35 and South St., Eatontown	12	2	5.1	M	29-14181

Table 19
Well Search Summary
Fort Monmouth Main Post
Fort Monmouth, New Jersey

Well ID Number	Well Owner	Well Address	Total Depth (feet bgs)	Casing Length (feet)	Static Water Elevation (feet bgs)	Use Code	NJDEP Permit Number
115	Shell Oil Company	Rte. 35 and South St., Eatontown	12	2	4.47	M	29-14182
116	Shell Oil Company	Rte. 35 and South St., Eatontown	12	2	4.39	M	29-14183
117	Shell Oil Company	Rte. 35 and South St., Eatontown	12	2	4.75	M	29-14184
118	Shell Oil Company	Rte. 35 and South St., Eatontown	12	2	4.10	M	29-14185
119	Shell Oil Company	Rte. 35 and South St., Eatontown	12	2	4.82	M	29-14186
120	Shell Oil Company	Rte. 35 and South St., Eatontown	12	2	4.30	M	29-14187
121	Shell Oil Company	Rte. 35 and South St., Eatontown	12	2	4.54	M	29-14188
122	Shell Oil Company	Rte. 35 and South St., Eatontown	12	2	4.34	M	29-14189
123	Shell Oil Company	Rte. 35 and South St., Eatontown	12	2	4.22	M	29-14190
124	Shell Oil Company	Rte. 35 and South St., Eatontown	12	2	3.9	M	29-14191
125	Shell Oil Company	Rte. 35 and South St., Eatontown	14.83	4	4	E	29-14192
127	Vincent J. Russo, builder	Block 70.1, Lot 90, Shrewsbury	184	165	5	G	29-14168
128	Redacted - Privacy Act	30 Alwin Terrace, Little Silver	173	158	6	G	29-22526
129	Exxon Company, USA	Branch & Sycamore Ave., Little Silver	15	5	*	M	29-23732
130	Exxon Company, USA	Branch & Sycamore Ave., Little Silver	15	5	*	M	29-23733
131	Exxon Company, USA	Branch & Sycamore Ave., Little Silver	15	5	*	M	29-23734
132	Exxon Company, USA	Branch & Sycamore Ave., Little Silver	15	5	*	M	29-23735
133	Exxon Company, USA	Branch & Sycamore Ave., Little Silver	15	5	*	M	29-23738
134	Exxon Company, USA	Branch & Sycamore Ave., Little Silver	15	4	*	M	29-23739
135	Exxon Company, USA	Branch & Sycamore Ave., Little Silver	15	5	*	M	29-23740
136	Exxon Company, USA	Branch & Sycamore Ave., Little Silver	15	5	*	M	29-23741
137	Exxon Company, USA	Branch & Sycamore Ave., Little Silver	20	5	7	M	29-27072

Table 19
Well Search Summary
Fort Monmouth Main Post
Fort Monmouth, New Jersey

Well ID Number	Well Owner	Well Address	Total Depth (feet bgs)	Casing Length (feet)	Static Water Elevation (feet bgs)	Use Code	NJDEP Permit Number
138	Exxon Company, USA	Branch & Sycamore Ave., Little Silver	16	3	6	M	29-29208
139	Hunter's Superior Service	333 Willow Dr., Little Silver	10	1	6.36	M	29-12793
140	Hunter's Superior Service	333 Willow Dr., Little Silver	10	1	7.08	M	29-12794
141	Hunter's Superior Service	333 Willow Dr., Little Silver	10	1	6.34	M	29-12795
142	Hunter's Superior Service	333 Willow Dr., Little Silver	10	1	7.59	M	29-12796
143	Hunter's Superior Service	333 Willow Dr., Little Silver	10	1	6.63	M	29-12797
144	Hunter's Superior Service	333 Willow Dr., Little Silver	10	1	6.07	M	29-12798
145	Citgo Oil Co.	700 Branch Ave., Little Silver	9	1	*	M	29-12785
146	Citgo Oil Co.	700 Branch Ave., Little Silver	9	1	*	M	29-12786
147	Citgo Oil Co.	700 Branch Ave., Little Silver	9	1	*	M	29-12787
148	Citgo Oil Co.	700 Branch Ave., Little Silver	10	1	*	M	29-12788
149	Citgo Oil Co.	700 Branch Ave., Little Silver	9	1	*	M	29-12789
150	Citgo Oil Co.	700 Branch Ave., Little Silver	9	1	*	M	29-12790
151	Citgo Oil Co.	700 Branch Ave., Little Silver	9	1	*	M	29-12792
152	Citgo Oil Co.	700 Branch Ave., Little Silver	10	1	*	M	29-12793
153	Mobil Oil Corporation	700 Branch Ave., Little Silver	11	1	*	M	29-12794
154	Mobil Oil Corporation	700 Branch Ave., Little Silver	11	1	*	M	29-12795
155	Mobil Oil Corporation	700 Branch Ave., Little Silver	15	5	7	M	29-25317
156	Mobil Oil Corporation	Hwy. 35 and Tinton Ave., Eatontown	15	2	7	M	29-25316
157	Mobil Oil Corporation	Hwy. 35 and Tinton Ave., Eatontown	15	5	7	M	29-25318
158	Mobil Oil Corporation	Hwy. 35 and Tinton Ave., Eatontown	15	5	7	M	29-25319
159	Mobil Oil Corporation	Hwy. 35 and Tinton Ave., Eatontown	15	5	7	M	29-25320

Table 19
Well Search Summary
Fort Monmouth Main Post
Fort Monmouth, New Jersey

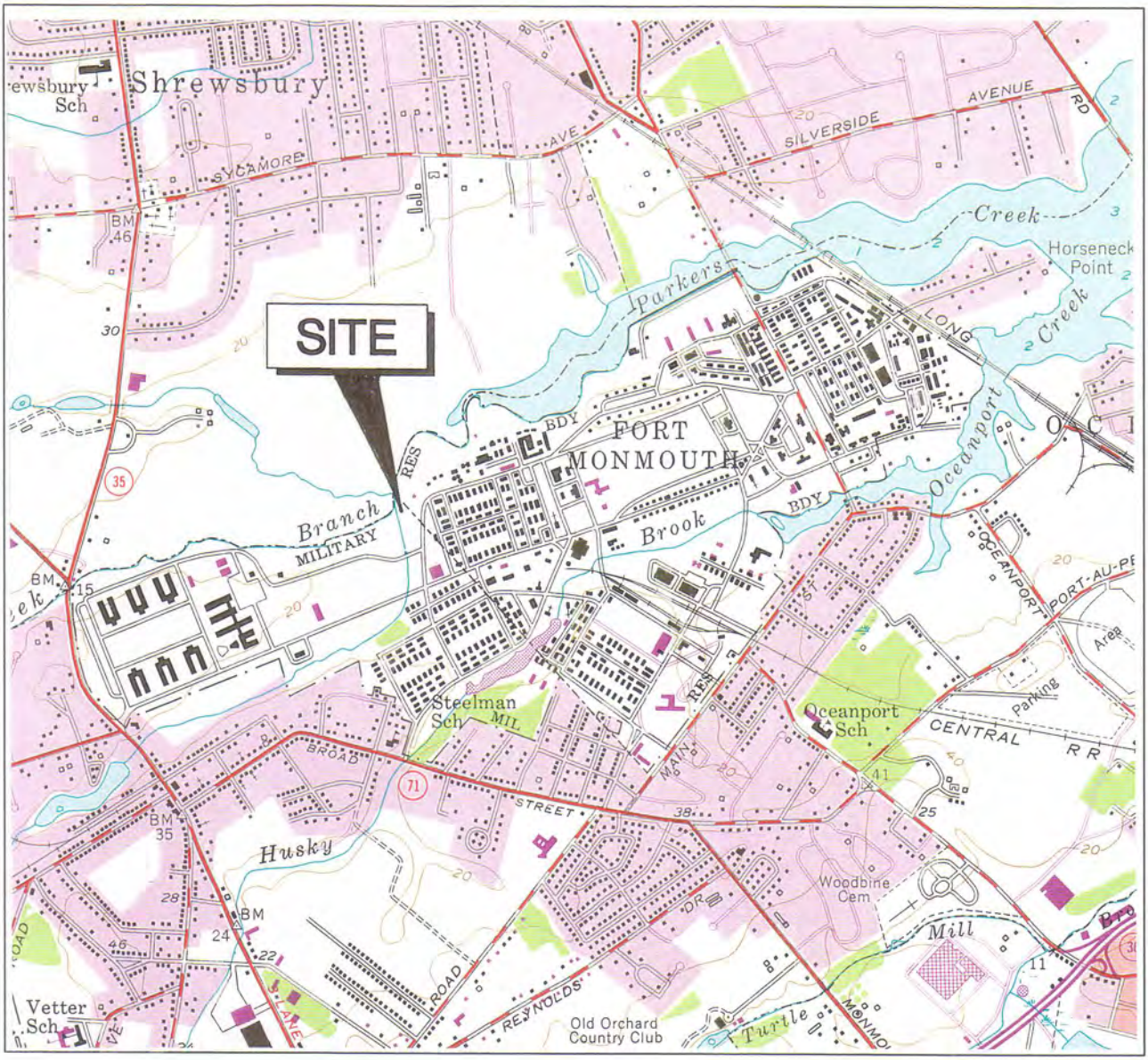
Well ID Number	Well Owner	Well Address	Total Depth (feet bgs)	Casing Length (feet)	Static Water Elevation (feet bgs)	Use Code	NJDEP Permit Number
160	Exxon Oil Company	Hwy. 35 and Tinton Ave., Eatontown	16	3	4.7	M	29-26806
161	Exxon Oil Company	Hwy. 35 and Tinton Ave., Eatontown	17	2	6	M	29-26807
162	Exxon Oil Company	Hwy. 35 and Tinton Ave., Eatontown	15	3	8.2	M	29-26808
163	Exxon Oil Company	Hwy. 35 and Tinton Ave., Eatontown	15	3	5.8	M	29-26809
164	Exxon Oil Company	Hwy. 35 and Tinton Ave., Eatontown	12	2	2.35	M	29-28143
165	Allied Signal, Inc.	118 Rte. 35, Eatontown	*	*	*	M	*
814/1	U.S Army, Ft. Monmouth	Main Post, Bldg. 814, Ft. Monmouth	14	4	4	M	29-26939
750/1	U.S Army, Ft. Monmouth	Main Post, Bldg. 750, Ft. Monmouth	15	5	7.5	M	29-28992
750/2	U.S Army, Ft. Monmouth	Main Post, Bldg. 750, Ft. Monmouth	15	5	7.5	M	29-28993
751/3	U.S Army, Ft. Monmouth	Main Post, Bldg. 750, Ft. Monmouth	15	5	7.5	M	29-28994
751/4	U.S Army, Ft. Monmouth	Main Post, Bldg. 750, Ft. Monmouth	15	5	7.5	M	29-28995
699/1	U.S Army, Ft. Monmouth	Main Post, Bldg. 699, Ft. Monmouth	15	2	4	M	29-23677-1
699/2	U.S Army, Ft. Monmouth	Main Post, Bldg. 699, Ft. Monmouth	17	1.5	5	M	29-23678-9
699/3	U.S Army, Ft. Monmouth	Main Post, Bldg. 699, Ft. Monmouth	15	2	4	M	29-23679-1
699/4	U.S Army, Ft. Monmouth	Main Post, Bldg. 699, Ft. Monmouth	20	2	3	M	29-23680-7
699/5	U.S Army, Ft. Monmouth	Main Post, Bldg. 699, Ft. Monmouth	15	3	5	M	29-23808-1
699/6	U.S Army, Ft. Monmouth	Main Post, Bldg. 699, Ft. Monmouth	15	1	4.5	M	29-23809-9
699/7	U.S Army, Ft. Monmouth	Main Post, Bldg. 699, Ft. Monmouth	15	3	3	M	29-23810-2
699/8	U.S Army, Ft. Monmouth	Main Post, Bldg. 699, Ft. Monmouth	15	2	4	M	29-23811-1
699/9	U.S Army, Ft. Monmouth	Main Post, Bldg. 699, Ft. Monmouth	15	2	3	M	29-24639
699/10	U.S Army, Ft. Monmouth	Main Post, Bldg. 699, Ft. Monmouth	14	1	3	M	29-24640
699/11	U.S Army, Ft. Monmouth	Main Post, Bldg. 699, Ft. Monmouth	15	*	*	R	29-28031
699/12	U.S Army, Ft. Monmouth	Main Post, Bldg. 699, Ft. Monmouth	15	5	7.1	M	29-28907

Table 19
Well Search Summary
Fort Monmouth Main Post
Fort Monmouth, New Jersey

Well ID Number	Well Owner	Well Address	Total Depth (feet bgs)	Casing Length (feet)	Static Water Elevation (feet bgs)	Use Code	NJDEP Permit Number
699/13	U.S Army, Ft. Monmouth	Main Post, Bldg. 699, Ft. Monmouth	5	*	*	M	**
699/14	U.S Army, Ft. Monmouth	Main Post, Bldg. 699, Ft. Monmouth	5.7	*	*	M	**
1076/1	U.S Army, Ft. Monmouth	Main Post, Bldg. 1076, Ft. Monmouth	15	3	5.5	M	29-26940
1076/2	U.S Army, Ft. Monmouth	Main Post, Bldg. 1076, Ft. Monmouth	14	4	5	M	29-26941
1076/3	U.S Army, Ft. Monmouth	Main Post, Bldg. 1076, Ft. Monmouth	15	5	6	M	29-26942
65A/1	U.S Army, Ft. Monmouth	Main Post, Bldg. 65A, Ft. Monmouth	12	2	4	M	29-26938
L/1	U.S Army, Ft. Monmouth	Main Post, Landfill, Ft. Monmouth	9.85	3.05	5.08	M	49-000551
L/2	U.S Army, Ft. Monmouth	Main Post, Landfill, Ft. Monmouth	16.99	1.30	*	M	49-000552
L/3	U.S Army, Ft. Monmouth	Main Post, Landfill, Ft. Monmouth	16.43	1.62	10.83	M	49-000553
L/4	U.S Army, Ft. Monmouth	Main Post, Landfill, Ft. Monmouth	10.25	1.90	*	M	49-000554
108/1	U.S Army, Ft. Monmouth	Main Post, Bldg. 108, Ft. Monmouth	13	3	4	M	29-29739
108/2	U.S Army, Ft. Monmouth	Main Post, Bldg. 108, Ft. Monmouth	13	3	4	M	29-29740
108/3	U.S Army, Ft. Monmouth	Main Post, Bldg. 108, Ft. Monmouth	13	3	4	M	29-29741
M2MW1	U.S Army, Ft. Monmouth	Main Post, Landfill M2, Ft. Monmouth	18	17	*	M	29-32584
M2MW2	U.S Army, Ft. Monmouth	Main Post, Landfill M2, Ft. Monmouth	18	17	*	M	29-32585
M2MW3	U.S Army, Ft. Monmouth	Main Post, Landfill M2, Ft. Monmouth	16	15.14	*	M	29-32586
M3MW4	U.S Army, Ft. Monmouth	Main Post, Landfill M3, Ft. Monmouth	23.72	23.26	*	M	29-32568
M3MW5	U.S Army, Ft.	Main Post, Landfill M3, Ft.	16.43	15.97	*	M	29-23569
M3MW6	U.S Army, Ft. Monmouth	Main Post, Landfill M3, Ft. Monmouth	15.33	14.87	*	M	29-32570
M4MW7	U.S Army, Ft. Monmouth	Main Post, Landfill M4, Ft. Monmouth	16.01	15.55	*	M	29-32571
M4MW8	U.S Army, Ft. Monmouth	Main Post, Landfill M4, Ft. Monmouth	18.64	18.18	*	M	29-32572
M4MW9	U.S Army, Ft. Monmouth	Main Post, Landfill M4, Ft. Monmouth	22.23	22.69	*	M	29-32573
M5MW1	U.S Army, Ft.	Main Post, Landfill M5, Ft.	15.00	14.54	*	M	29-32574
M5MW1	U.S Army, Ft.	Main Post, Landfill M5, Ft.	15.00	14.85	*	M	29-32575

Table 19
Well Search Summary
Fort Monmouth Main Post
Fort Monmouth, New Jersey

Well ID Number	Well Owner	Well Address	Total Depth (feet bgs)	Casing Length (feet)	Static Water Elevation (feet bgs)	Use Code	NJDEP Permit Number
M8MW1	U.S Army, Ft.	Main Post, Landfill M8, Ft.	15.00	14.54	*	M	29-32560
M8MW1	U.S Army, Ft.	Main Post, Landfill M8, Ft.	15.00	14.54	*	M	29-32561
M8MW1	U.S Army, Ft.	Main Post, Landfill M8, Ft.	15.00	14.54	*	M	29-32562
M8MW1	U.S Army, Ft.	Main Post, Landfill M8, Ft.	15.00	14.54	*	M	29-32563
M12MW	U.S Army, Ft.	Main Post, Landfill M12, Ft.	14.50	14.01	*	M	29-32576
M12MW	U.S Army, Ft.	Main Post, Landfill M12, Ft.	14.50	14.35	*	M	29-32577
M12MW	U.S Army, Ft.	Main Post, Landfill M12, Ft.	14.50	14.04	*	M	29-32578
M14MW	U.S Army, Ft.	Main Post, Landfill M14, Ft.	15.00	14.54	*	M	29-32579
M14MW	U.S Army, Ft.	Main Post, Landfill M14, Ft.	14.50	14.05	*	M	29-32580
M14MW	U.S Army, Ft.	Main Post, Landfill M14, Ft.	16.00	15.54	*	M	29-32581
M16MW	U.S Army, Ft.	Main Post, Landfill M16, Ft.	14.50	14.04	*	M	29-32582
M18MW	U.S Army, Ft.	Main Post, Landfill M18, Ft.	15.00	14.54	*	M	29-32565
M18MW	U.S Army, Ft.	Main Post, Landfill M18, Ft.	15.00	14.54	*	M	29-32566
B1-	U.S Army, Ft.	Main Post, Ft. Monmouth	14.00	13.54	*	M	29-32587
B2-	U.S Army, Ft.	Main Post, Ft. Monmouth	20.00	19.54	*	M	29-32588
B3-MW3B	U.S Army, Ft. Monmouth	Main Post, Ft. Monmouth	26.00	25.54	*	M	29-32589
B4-MW4B	U.S Army, Ft. Monmouth	Main Post, Ft. Monmouth	15.00	14.54	*	M	29-32567
B5-MW5B	U.S Army, Ft. Monmouth	Main Post, Ft. Monmouth	14.50	14.04	*	M	29-32583



N

500 1000 0 2000

Scale in Feet

NEW JERSEY
QUADRANGLE LOCATION

ATC ASSOCIATES INC.
Three Terri Lane
Burlington, NJ 08016

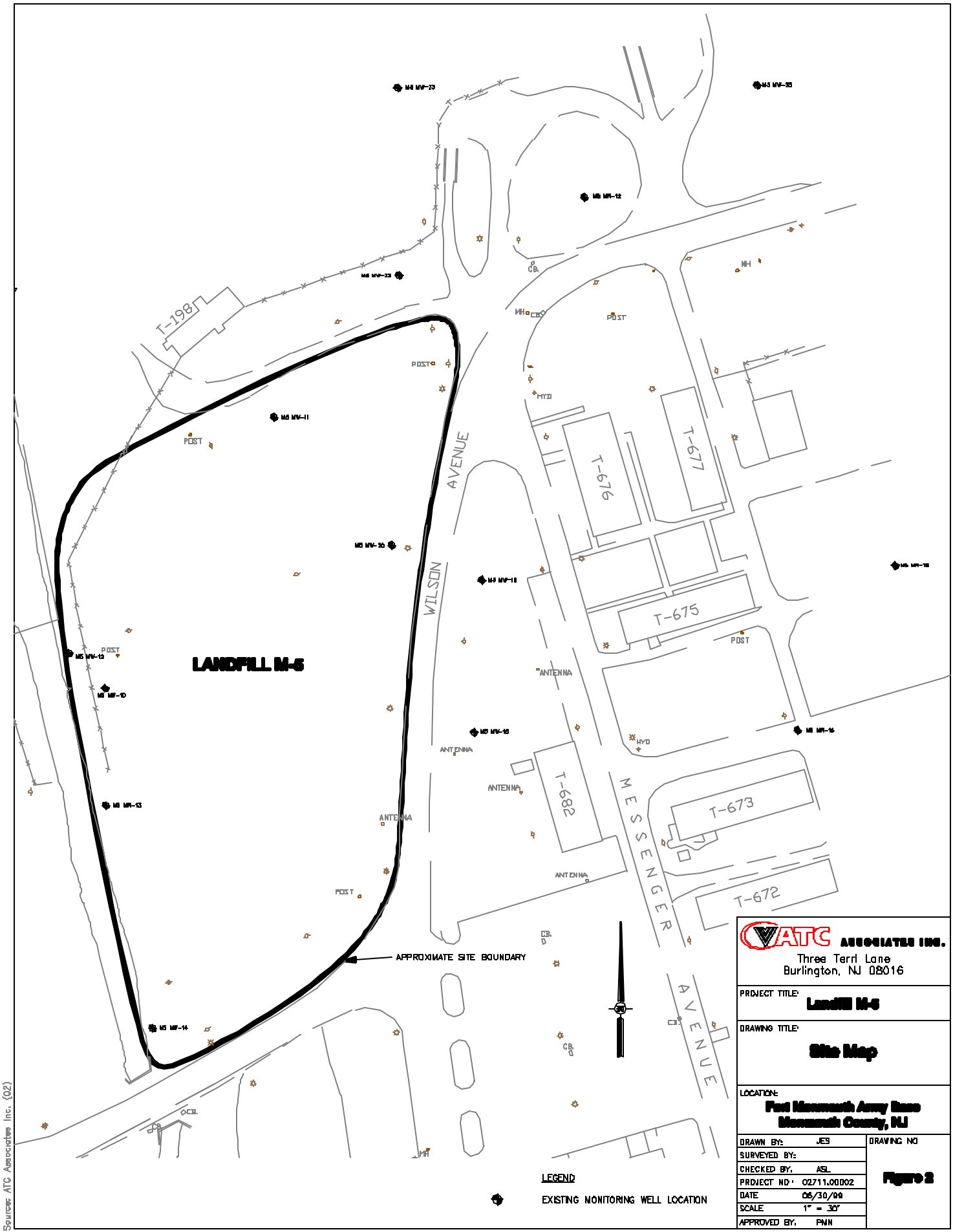
PROJECT TITLE: Landfill M-5

DRAWING TITLE: **Site Location Map**

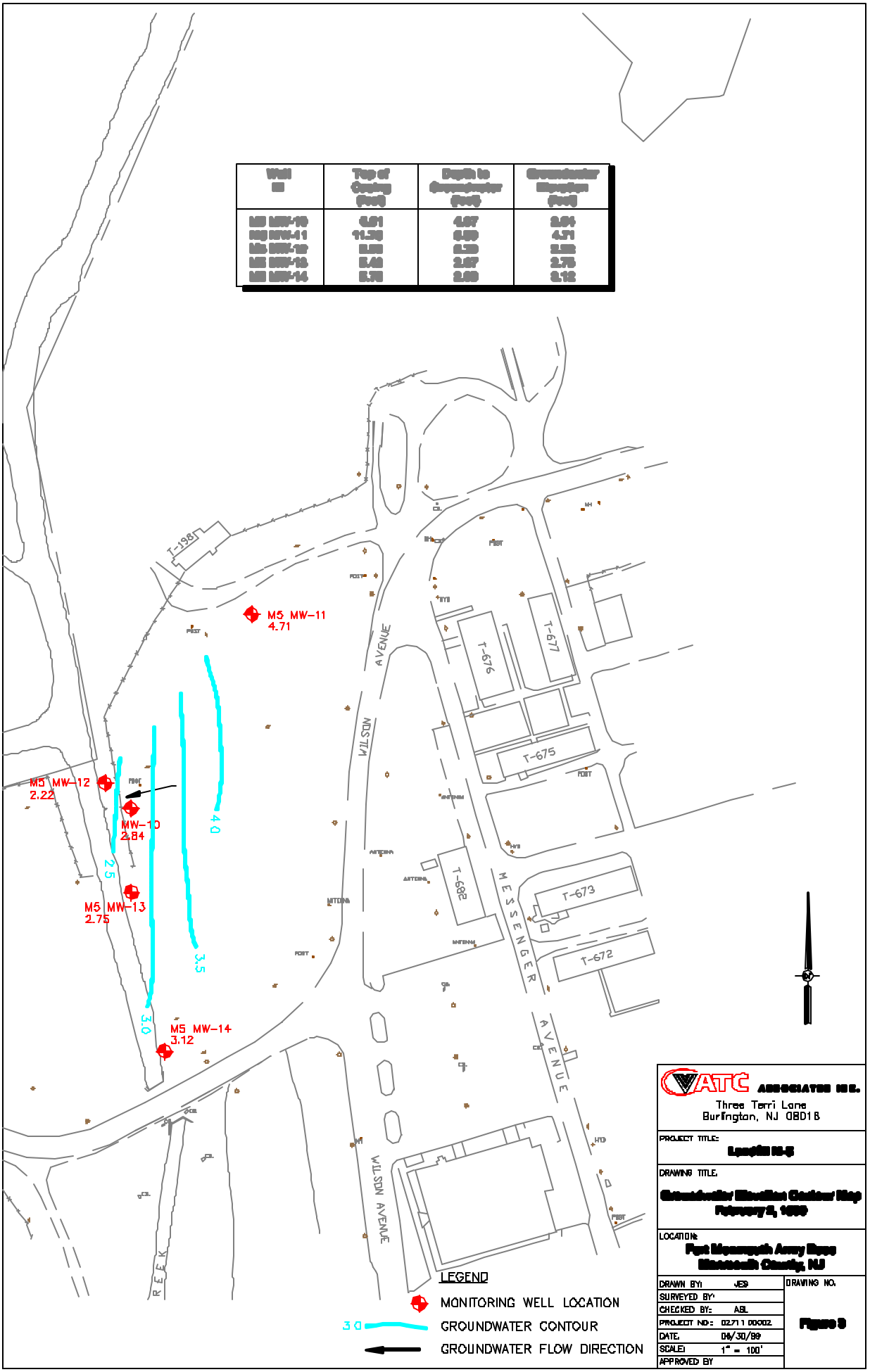
LOCATION:
Fort Monmouth Army Base
Monmouth County, NJ

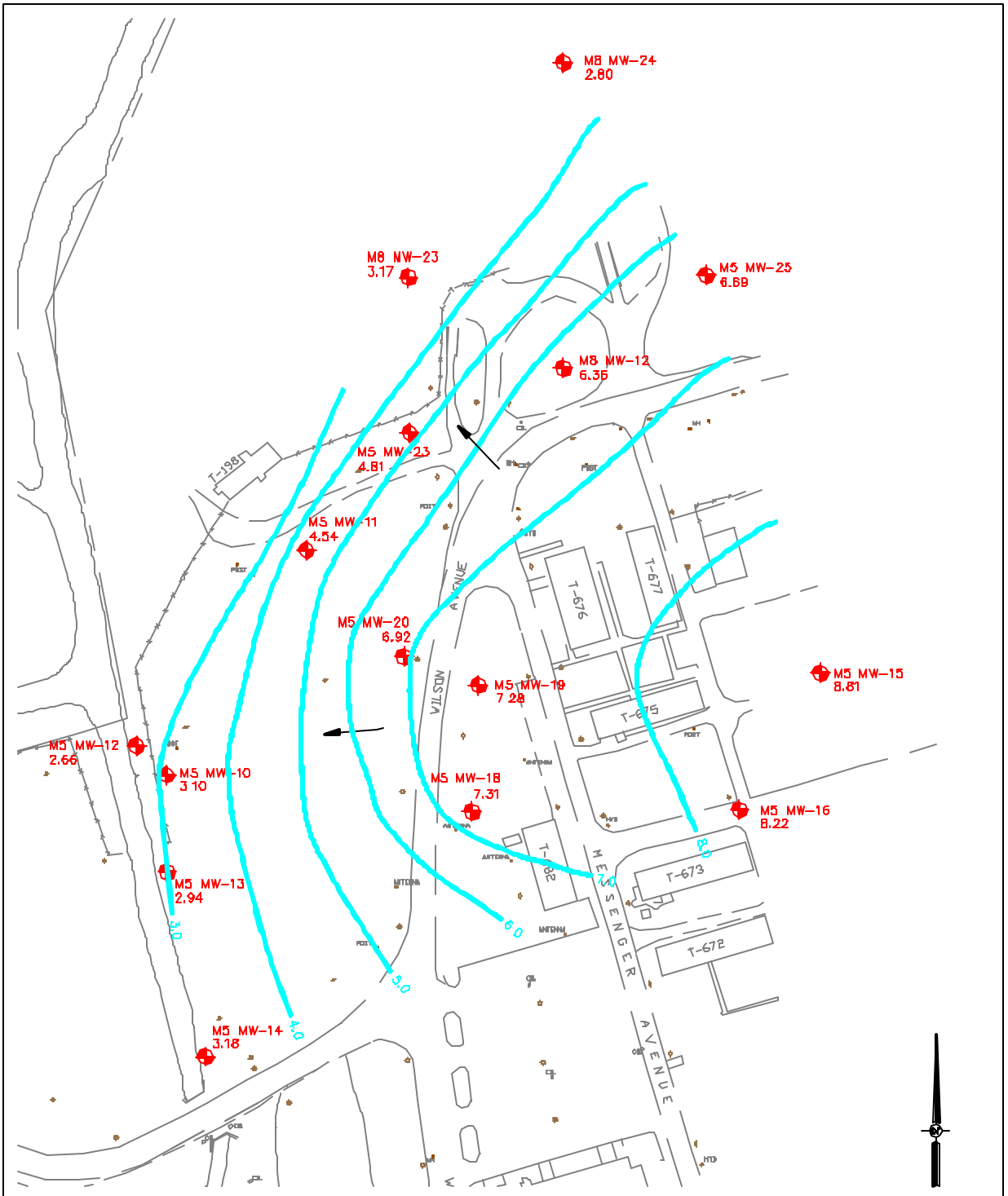
DRAWN BY:	JES	DRAWING NO.
SURVEYED BY:		
CHECKED BY:	ASL	
PROJECT NO.:	02711.00002	Figure 1
DATE:	07/28/99	
SCALE:	AS NOTED	
APPROVED BY:	PMN	

Source: USGS Topographic Map, Long Branch, New Jersey Quadrangle



Source: ATC Associates Inc. (02)


M5 MW-11
4.71
M5 MW-12
2.22
MW-10
2.84
M5 MW-13
2.75
M5 MW-14
3.12
2.5
3.0
3.5
4.0
I-195
WILSON AVENUE
T-676
T-677
T-675
T-682
T-673
T-672
MESSENGER
AVENUE
WILSON AVENUE
REEK
LEGEND
MONITORING WELL LOCATION
GROUNDWATER CONTOUR
GROUNDWATER FLOW DIRECTION
ATC ASSOCIATES INC.
Three Terri Lane
Burlington, NJ 08016
PROJECT TITLE:
DRAWING TITLE:
LOCATION:
DRAWN BY: JES
SURVEYED BY:
CHECKED BY: ASL
PROJECT NO.: 02711 00002
DATE: 06/30/89
SCALE: 1" = 100'
APPROVED BY
DRAWING NO.
Figure 3



Well ID	Top of Casing (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)
[illegible]	[illegible]	[illegible]	[illegible]

LEGEND

- MONITORING WELL LOCATION
- 3.0 GROUNDWATER CONTOUR
- GROUNDWATER FLOW DIRECTION

ATC ASSOCIATES INC.
Three Terri Lane
Burlington, NJ 08016

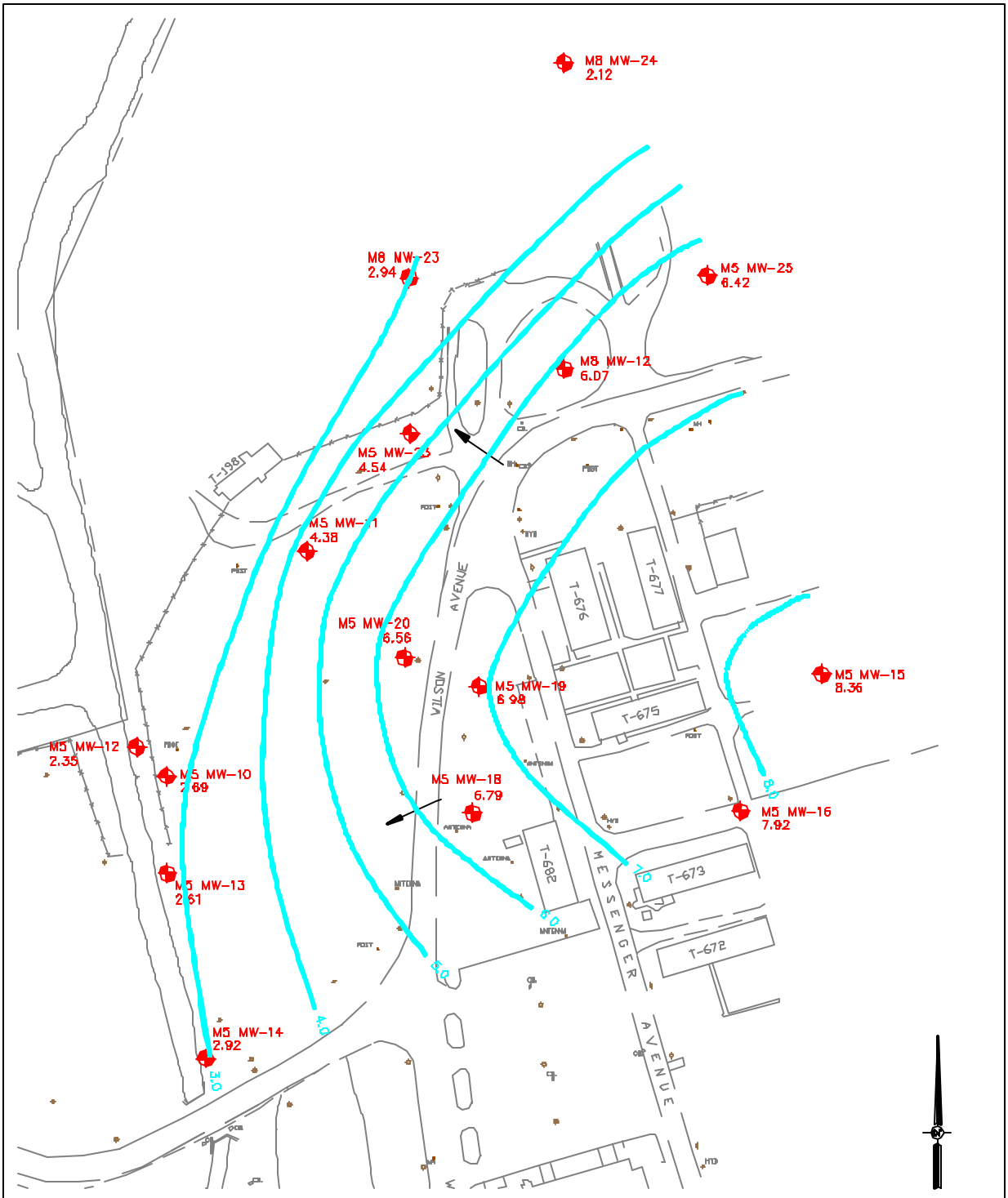
PROJECT TITLE: [illegible]

DRAWING TITLE: Groundwater Elevation Contour Map
April 18, 1989

LOCATION: Fort Monmouth Army Base
Monmouth County, NJ

DRAWN BY:	JES
SURVEYED BY:	
CHECKED BY:	ASL
PROJECT NO.:	02711 00002
DATE:	06/30/89
SCALE:	1" = 100'
APPROVED BY	

DRAWING NO.
Figure 4



Well ID	Top of Casing (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)
[illegible]	[illegible]	[illegible]	[illegible]

LEGEND

- MONITORING WELL LOCATION
- 3.0 GROUNDWATER CONTOUR
- GROUNDWATER FLOW DIRECTION

ATC ASSOCIATES INC.
Three Terri Lane
Burlington, NJ 08016

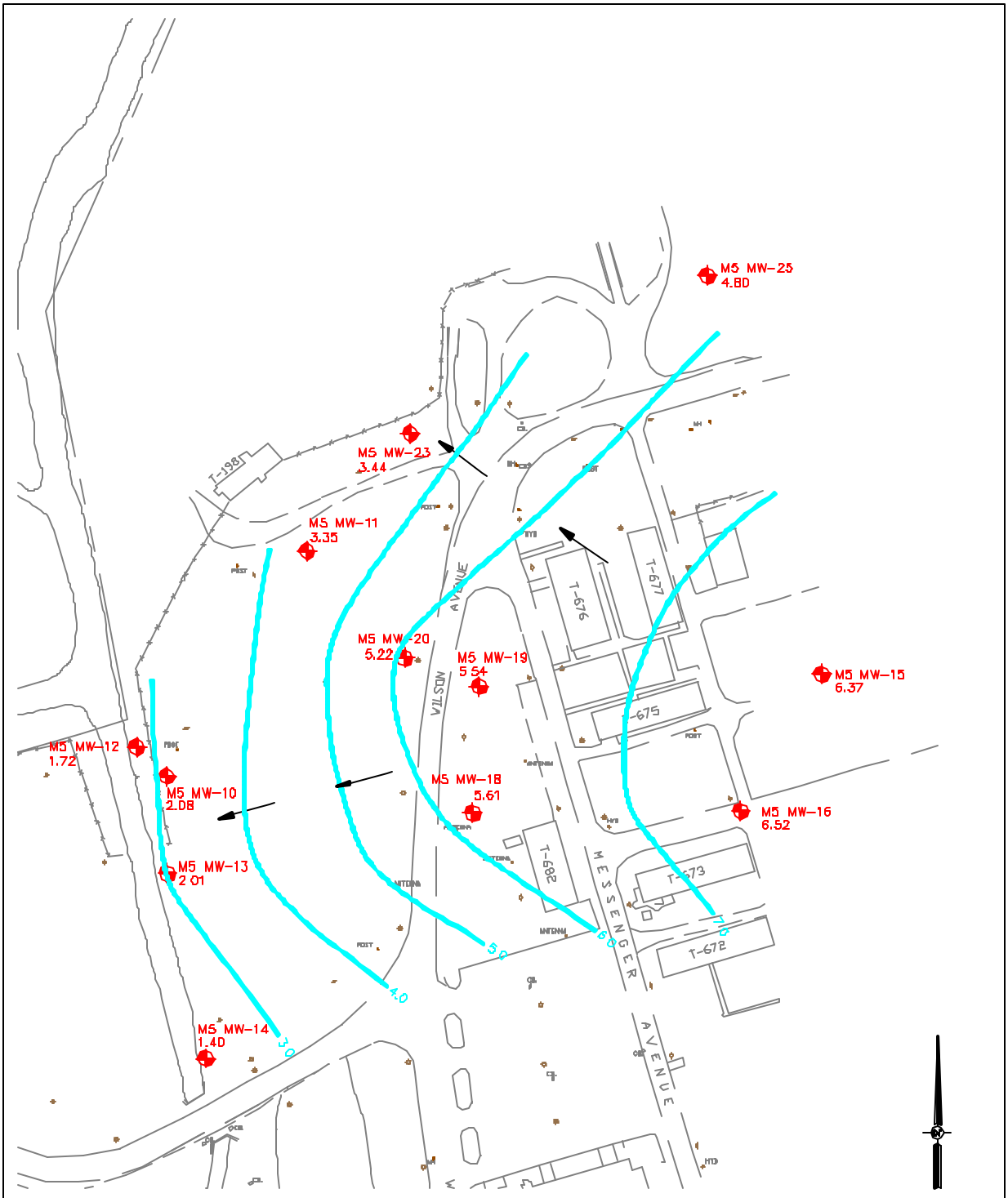
PROJECT TITLE: [illegible]

DRAWING TITLE: Groundwater Elevation Contour Map
April 27, 1999

LOCATION: Fort Monmouth Army Base
Monmouth County, NJ

DRAWN BY:	JES
SURVEYED BY:	
CHECKED BY:	ASL
PROJECT NO.:	02711 00002
DATE:	04/30/99
SCALE:	1" = 100'
APPROVED BY	

DRAWING NO.
Figure 6



Well ID	Top of Casing (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet)
MS MW-10	6.01	4.08	2.00
MS MW-11	11.79	8.44	3.35
MS MW-12	8.22	6.50	1.72
MS MW-13	8.48	6.47	2.01
MS MW-14	5.76	4.36	1.4
MS MW-15	17.43	11.06	6.37
MS MW-16	12.19	5.67	6.52
MS MW-18	14.47	8.86	5.61
MS MW-19	14.02	8.48	5.54
MS MW-20	12.04	7.48	5.22
MS MW-23	12.50	9.06	3.44
MS MW-25	13.01	12.21	4.8

LEGEND

MONITORING WELL LOCATION

3.0 GROUNDWATER CONTOUR

GROUNDWATER FLOW DIRECTION

ATC ASSOCIATES INC.
Three Terri Lane
Burlington, NJ 08016

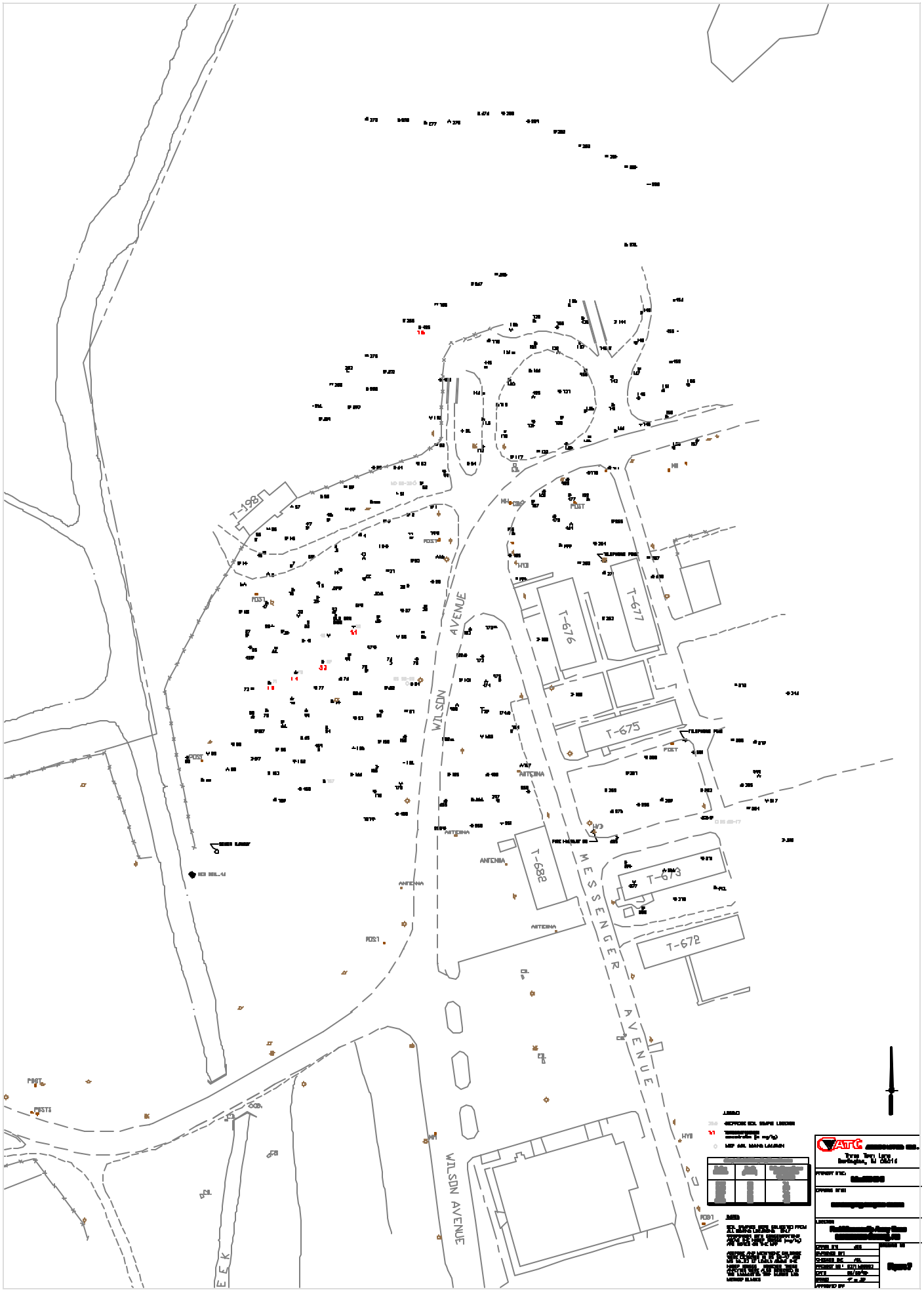
PROJECT TITLE:
Longfellow

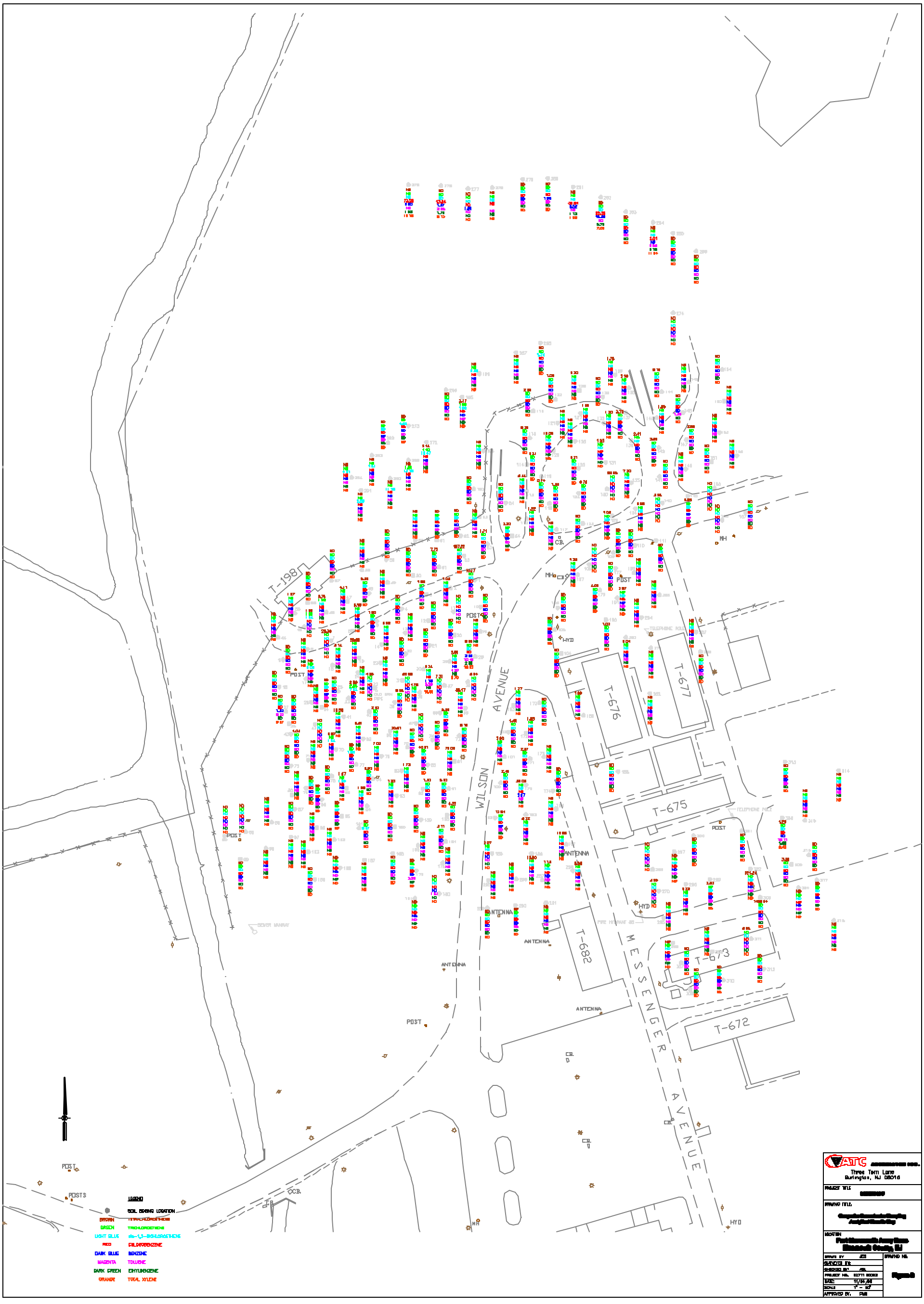
DRAWING TITLE:
Groundwater Elevation Contour Map
September 15, 1999

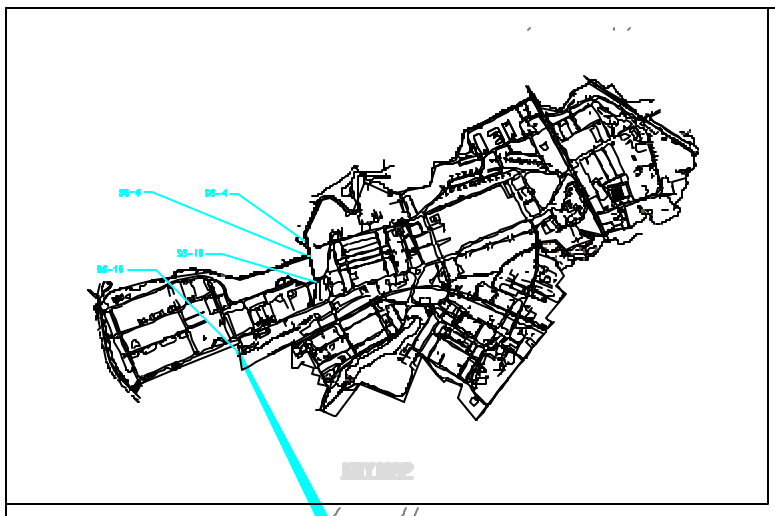
LOCATION:
Fort Monmouth Army Base
Monmouth County, NJ

DRAWN BY:	JES
SURVEYED BY:	
CHECKED BY:	ASL
PROJECT NO.:	02711 00002
DATE:	11/10/99
SCALE:	1" = 100'
APPROVED BY:	

DRAWING NO.
Figure 6


T-198
T-676
T-677
T-675
T-682
T-673
T-672
WILSON AVENUE
MESSENGER AVENUE
WILSON AVENUE
ANTENNA
ANTENNA
ANTENNA
ANTENNA
POST
POST
POST


T-198
AVENUE
WILSON
T-676
T-677
T-675
T-682
T-673
T-672
MESSENGER AVENUE
POST
CB
MH
HYD
ANTENNA
TELEPHONE POLE
FIRE HYDRANT
SEWER MANWAY
LEGEND
SOIL BORING LOCATION
BROWN TETRACHLOROETHENE
GREEN TRICHLOROETHENE
LIGHT BLUE cis-1,2-DICHLOROETHENE
RED CHLOROBENZENE
DARK BLUE BENZENE
MAGENTA TOLUENE
DARK GREEN ETHYLBENZENE
ORANGE TOTAL XYLENE
Three Terri Lane
Burlington, NJ 08016
PROJECT TITLE:
DRAWING TITLE:
LOCATION
DRAWN BY: JCS
SURVEYED BY:
CHECKED BY: ASL
PROJECT NO.: 82771.00083
DATE: 11/04/08
SCALE: 1" = 60'
APPROVED BY: PMR
DRAWING NO.
Figure 3



Sample Date	08-Oct-96	11-Nov-96	12-Dec-96	29-Jan-97	26-Feb-97	10-Mar-97	08-Apr-97	17-Jul-97	30-Oct-97	10-Feb-98	21-Apr-98	19-Aug-98	17-Nov-98	25-Feb-99	29-Jun-99
Tetrachloroethene	6.41	10.26	5.65	5.56	7.64	3.26	5.60	7.11	3.73	4.60	5.73	5.26	ND	7.33	7.86

Sample Date	13-Apr-99	27-Apr-99
Tetrachloroethene	6.56	ND

MW-23

Sample Date	24-Jun-97	29-Aug-97	31-Oct-97	25-Feb-98	4-Jun-98	28-Aug-98	4-Nov-98	27-Jan-99	13-Apr-99	27-Apr-99	22-Jun-99
Tetrachloroethene	5.04	4.81	7.84	5.75	5.42	5.35	27.88	4.97	ND	ND	46.84

MW-12

Sample Date	08-Oct-96	11-Nov-96	12-Dec-96	29-Jan-97	26-Feb-97	10-Mar-97	08-Apr-97	17-Jul-97	30-Oct-97	10-Feb-98	21-Apr-98	19-Aug-98	17-Nov-98	25-Feb-99	29-Jun-99
TCE/Dichloroethene	2.26	5.26	2.26	4.43	5.27	2.23	ND	1.51	1.24	6.51	4.42	2.66	1.62	5.51	5.27

SS-4

Sample Date	13-Apr-99	27-Apr-99	13-Sep-99
Tetrachloroethene	41.53	44.45	29.69

MW-33

PARKERS CREEK

T-198

POST

MW-11

Sample Date	08-May-97	08-Aug-97	29-Oct-97	18-Feb-98	04-May-98	04-Aug-98	27-Oct-98	02-Feb-99	13-Apr-99	27-Apr-99	13-Sep-99
Tetrachloroethene	62.83	57.74	84.96	39.23	24.39	18.37	53.84	5.16	33.38	13.84	46.25

Sample Date	13-Apr-99	27-Apr-99	13-Sep-99
Tetrachloroethene	142.89	189.84	156.54

MW-29

MW-19

Sample Date	13-Apr-99	27-Apr-99	14-Sep-99
Tetrachloroethene	11.89	3.72	19.24

MW-10

MW-18

MW-13

MW-14

Sample Date	08-Oct-96	14-Nov-96	12-Dec-96	29-Jan-97	26-Feb-97	10-Mar-97	08-Apr-97	17-Jul-97	30-Oct-97	10-Feb-98	21-Apr-98	19-Aug-98	17-Nov-98	25-Feb-99	29-Jun-99
Tetrachloroethene	5.75	7.53	5.84	4.76	5.32	2.45	2.53	3.54	1.70	4.34	4.48	3.80	2.17	5.48	4.04

Sample Date	11-Nov-96	12-Dec-96	29-Jan-97	26-Feb-97	10-Mar-97	08-Apr-97	17-Jul-97	30-Oct-97	10-Feb-98	21-Apr-98	19-Aug-98	17-Nov-98	25-Feb-99	29-Jun-99
Tetrachloroethene	7.53	3.82	5.19	5.75	3.31	4.97	4.72	1.88	5.33	4.58	4.38	1.48	5.06	7.70

Sample Date	13-Apr-99	27-Apr-99	14-Sep-99
Tetrachloroethene	ND	ND	3.15

MW-15

Sample Date	13-Apr-99	27-Apr-99	14-Sep-99
Tetrachloroethene	198.37	8.39	536.74

MW-16

SS-3

SS-W

SS-2

LAFETRA CREEK

POST

POSTS

CB

MH

HYD

ANTENNA

T-682

T-676

T-677

T-675

T-673

T-672

WILSON AVENUE

MESSENGER AVENUE

NOTES

1. NJDEP GWQS FOR TETRACHLOROETHENE = 1 UG/L
NJDEP GWQS FOR TRICHLOROETHENE = 1 UG/L.
2. ALL MAPPED SAMPLING POINTS WERE SAMPLED, ONLY DATA FROM SAMPLING POINTS WITH EXCEEDENCES OF THE NJDEP GWQC OR RSDS ARE SHOWN
3. ONLY MONITORING WELLS THAT WERE PART OF THE MS INVESTIGATION ARE MAPPED
4. SEVERAL OTHER CONTAMINANTS WERE DETECTED AT THESE SAMPLING POINTS, AND SOME OF THE DETECTED CONTAMINANTS WERE IN EXCEEDENCE OF THE APPLICABLE NJDEP STANDARDS. HOWEVER, THESE OTHER CONTAMINANTS ARE NOT CONSIDERED TO BE OF CONCERN FOR THIS SITE. FOR A DISCUSSION OF THE OTHER CONTAMINANTS DETECTED AT THIS SITE, PLEASE SEE SECTION 1.3 OF THE BODY OF THIS REPORT

LEGEND

EXISTING MONITORING WELL LOCATION

SURFACE WATER SAMPLING LOCATION

ATC Associates Corp.
Three Terri Lane
Burlington, NJ 08016

PROJECT TITLE:

DRAWING TITLE:

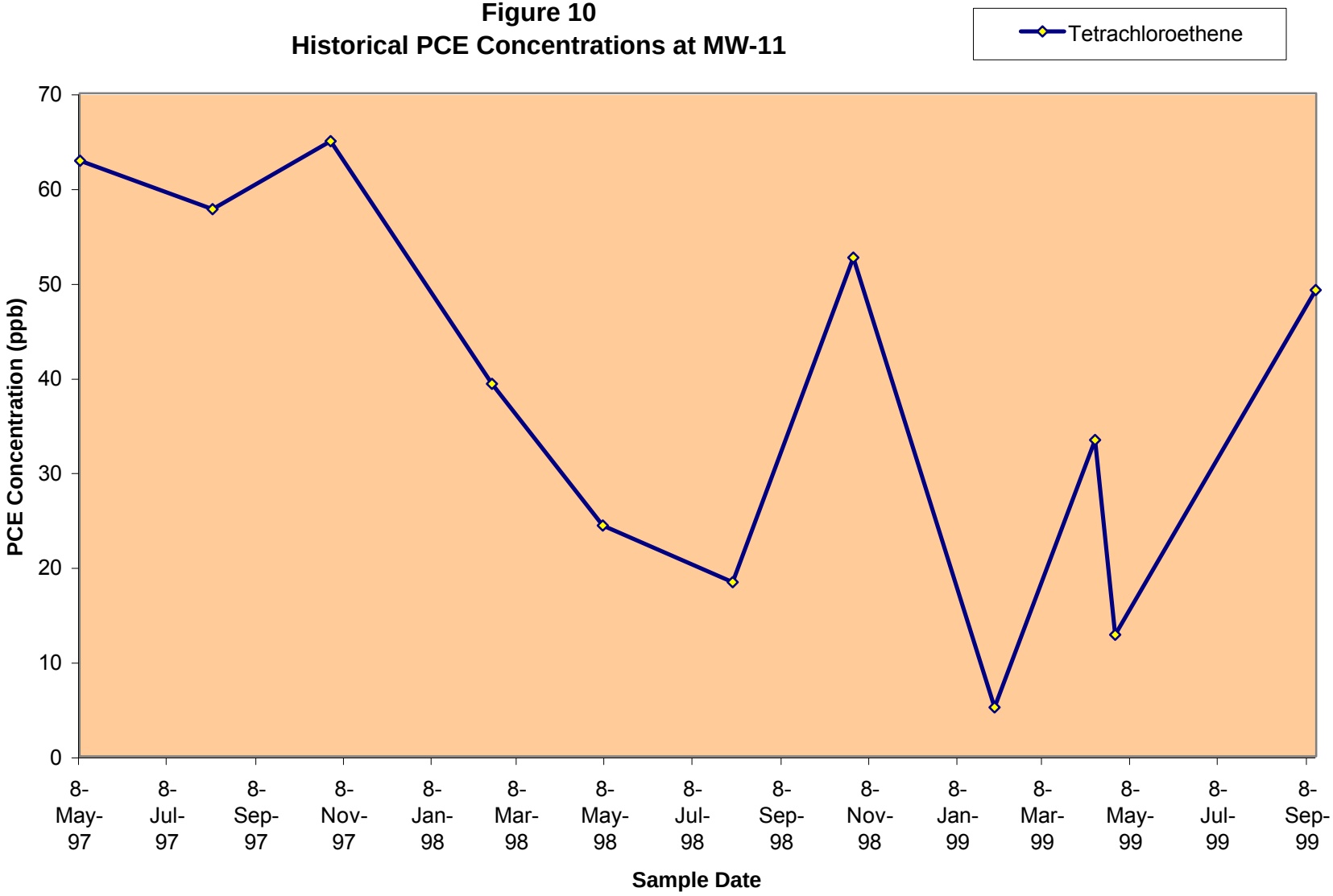
LOCATION:

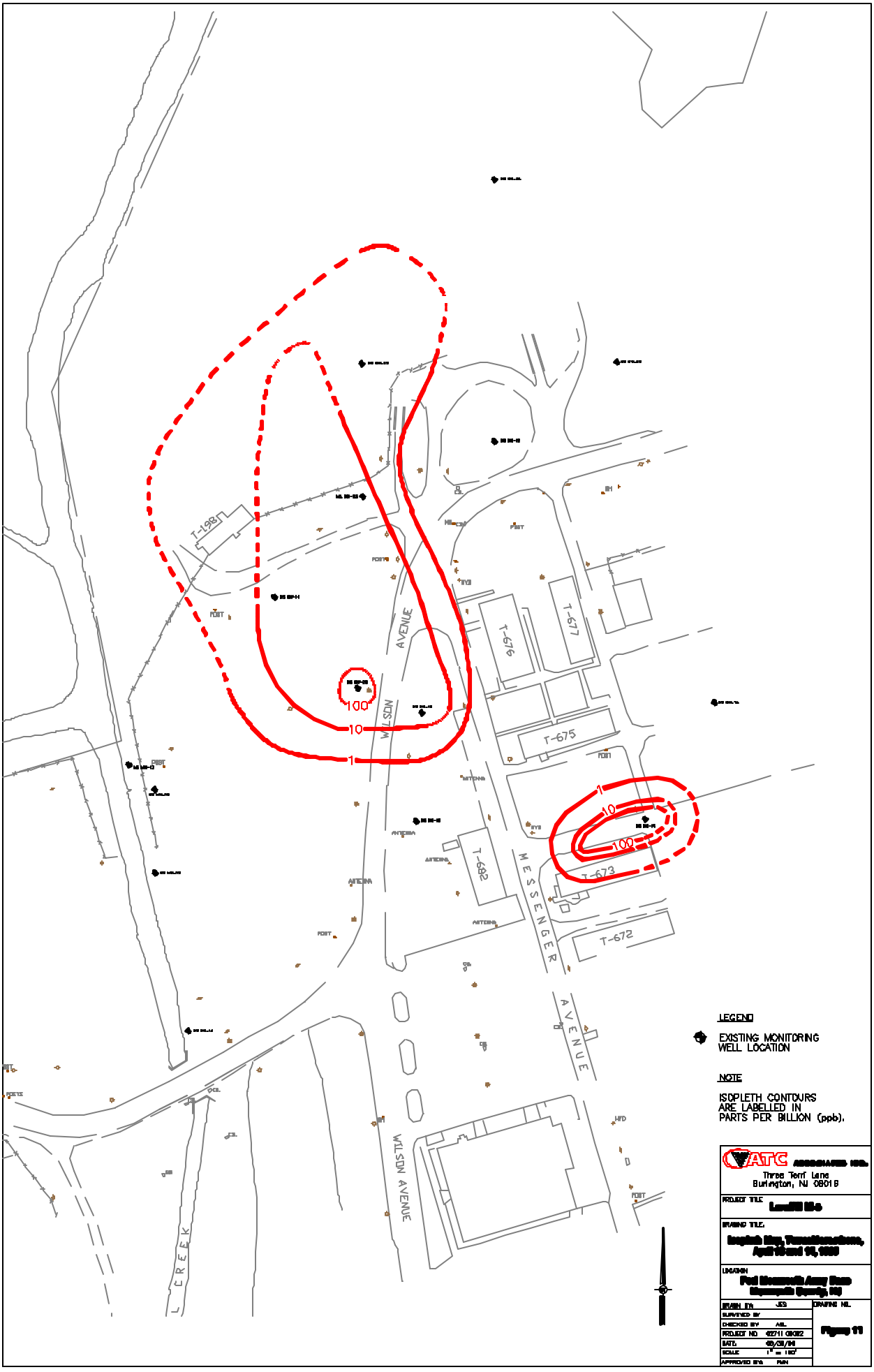
DRAWN BY	JCS
SURVEYOR ID:	
CHECKED BY	ASL
PROJECT NO.	83711.0003
DATE:	11/10/99
SCALE	1" = 30'
APPROVED BY:	PWH

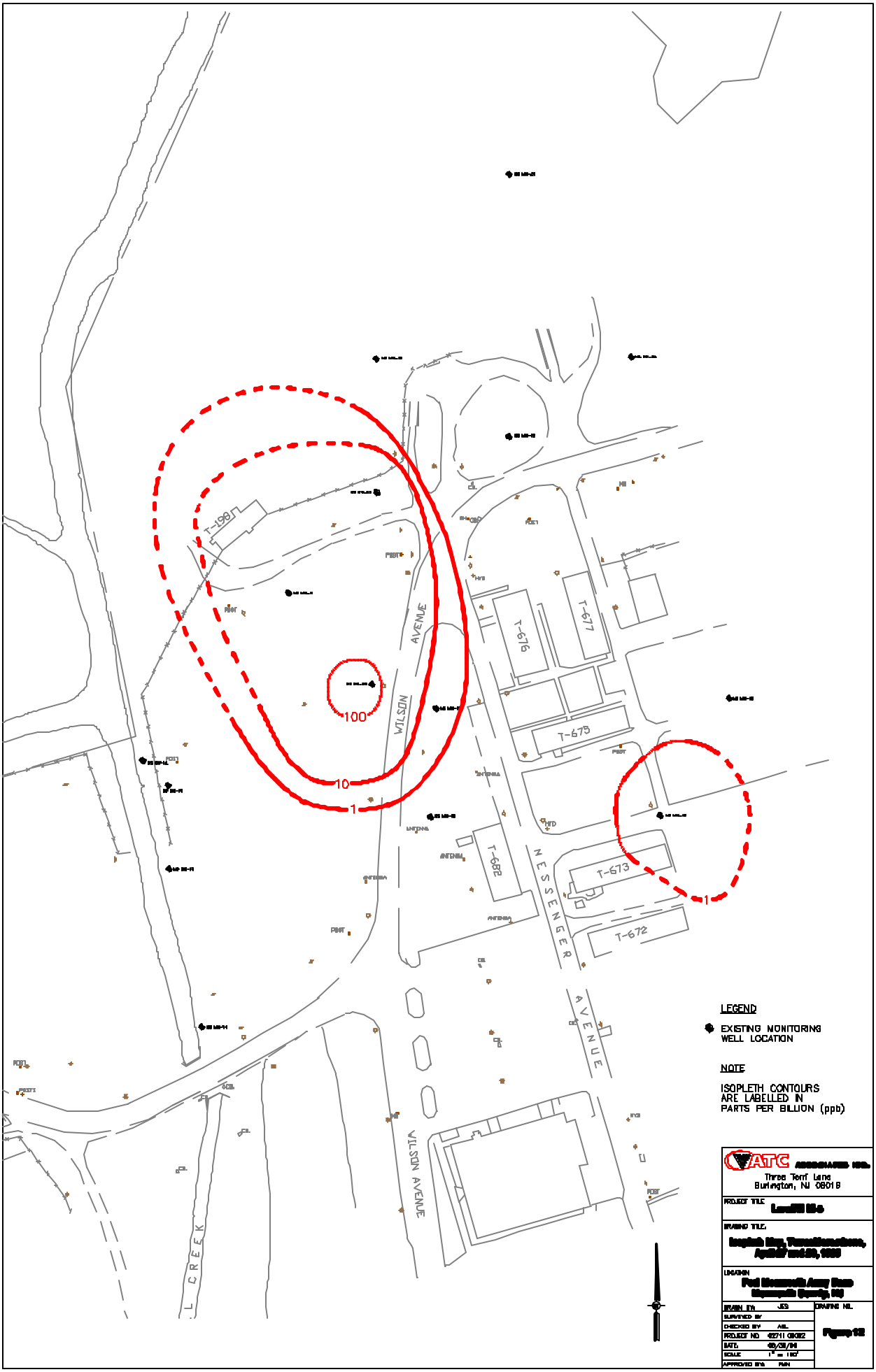
DRAWING NO.

Figure 3

Figure 10
Historical PCE Concentrations at MW-11




T-198
WILSON AVENUE
T-676
T-677
T-675
100
10
1
T-682
MESSENGER
T-673
T-672
AVENUE
WILSON AVENUE
L CREEK
LEGEND
EXISTING MONITORING WELL LOCATION
NOTE
ISOPLETH CONTOURS ARE LABELLED IN PARTS PER BILLION (ppb).
ATC ASSOCIATES INC.
Three Terri Lane
Burlington, NJ 08016
PROJECT TITLE
DRAWING TITLE
LOCATION
DRAWN BY: JES
SURVEYED BY:
CHECKED BY: ASL
PROJECT NO: 42711.08082
DATE: 05/31/94
SCALE: 1" = 150'
APPROVED BY: RWN
DRAWING NO.
Figure 11


T-198
T-676
T-677
T-679
T-682
T-673
T-672
WILSON AVENUE
NESSENGER AVENUE
WILSON AVENUE
L CREEK
100
10
1
1
LEGEND
EXISTING MONITORING WELL LOCATION
NOTE
ISOPLETH CONTOURS ARE LABELLED IN PARTS PER BILLION (ppb)
ATC ASSOCIATES INC.
Three Terri Lane
Burlington, NJ 08016
PROJECT TITLE
Landfill Site
DRAWING TITLE
Isopleth Map, Trichloroethene, April 27 and 28, 1999
LOCATION
Fort Monmouth Army Base
Monmouth County, NJ
DRAWN BY: JES
SURVEYED BY:
CHECKED BY: ASL
PROJECT NO: 42711.0002
DATE: 05/28/99
SCALE: 1" = 150'
APPROVED BY: RWH
DRAWING NO.
Figure 12

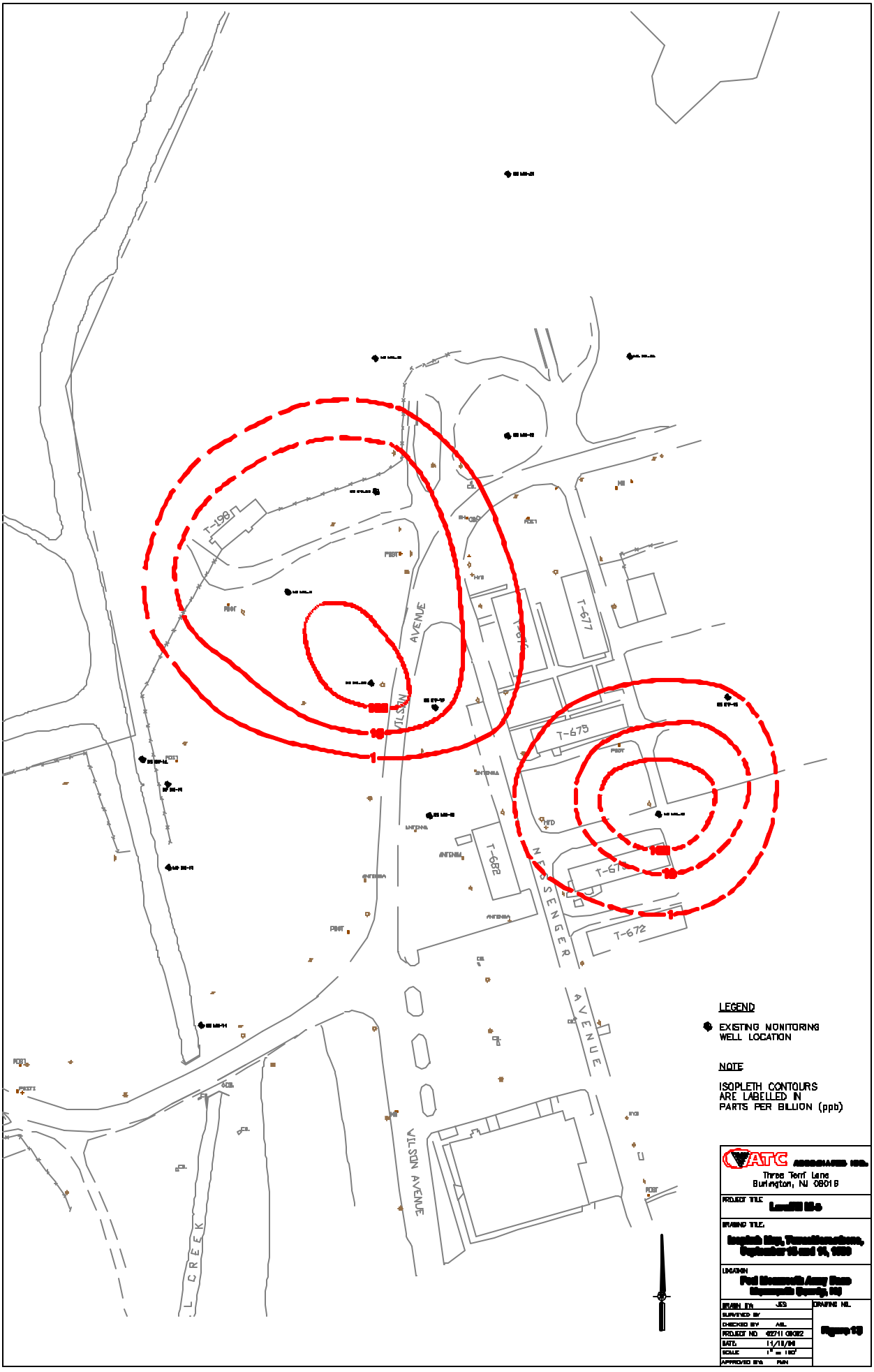

T-198
T-677
T-679
T-682
T-672
WILSON AVENUE
PASSENGER
AVENUE
L CREEK
LEGEND
EXISTING MONITORING WELL LOCATION
NOTE
ISOPLETH CONTOURS ARE LABELLED IN PARTS PER BILLION (ppb)
ATC ASSOCIATES INC.
Three Terri Lane
Burlington, NJ 08016
PROJECT TITLE
DRAWING TITLE
LOCATION
DRAWN BY: JES
SURVEYED BY:
CHECKED BY: ASL
PROJECT NO: 42711.08082
DATE: 11/11/98
SCALE: 1" = 150'
APPROVED BY: RWH
DRAWING NO.
Figure 13

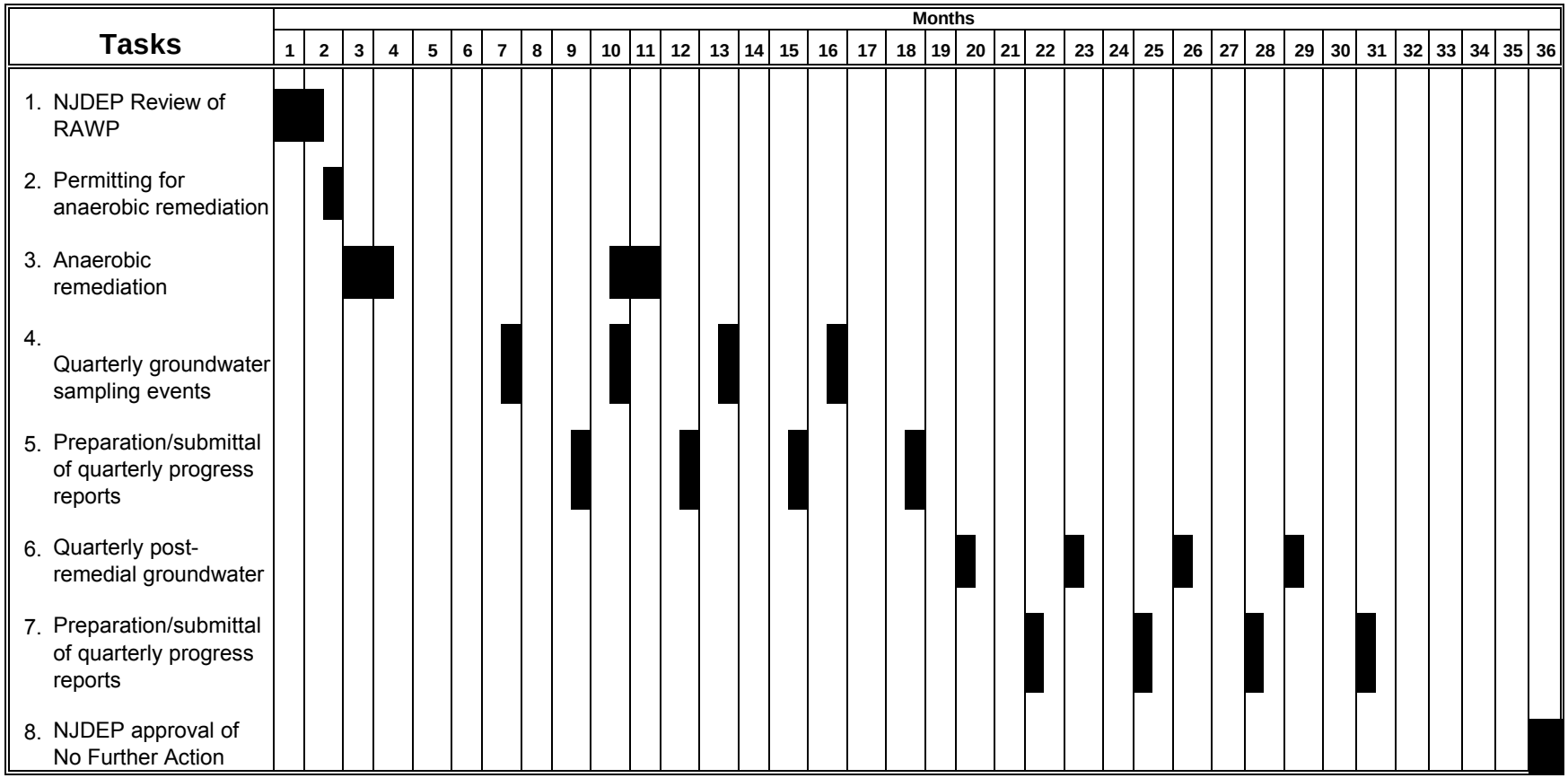
Figure 14 – Well Search Map

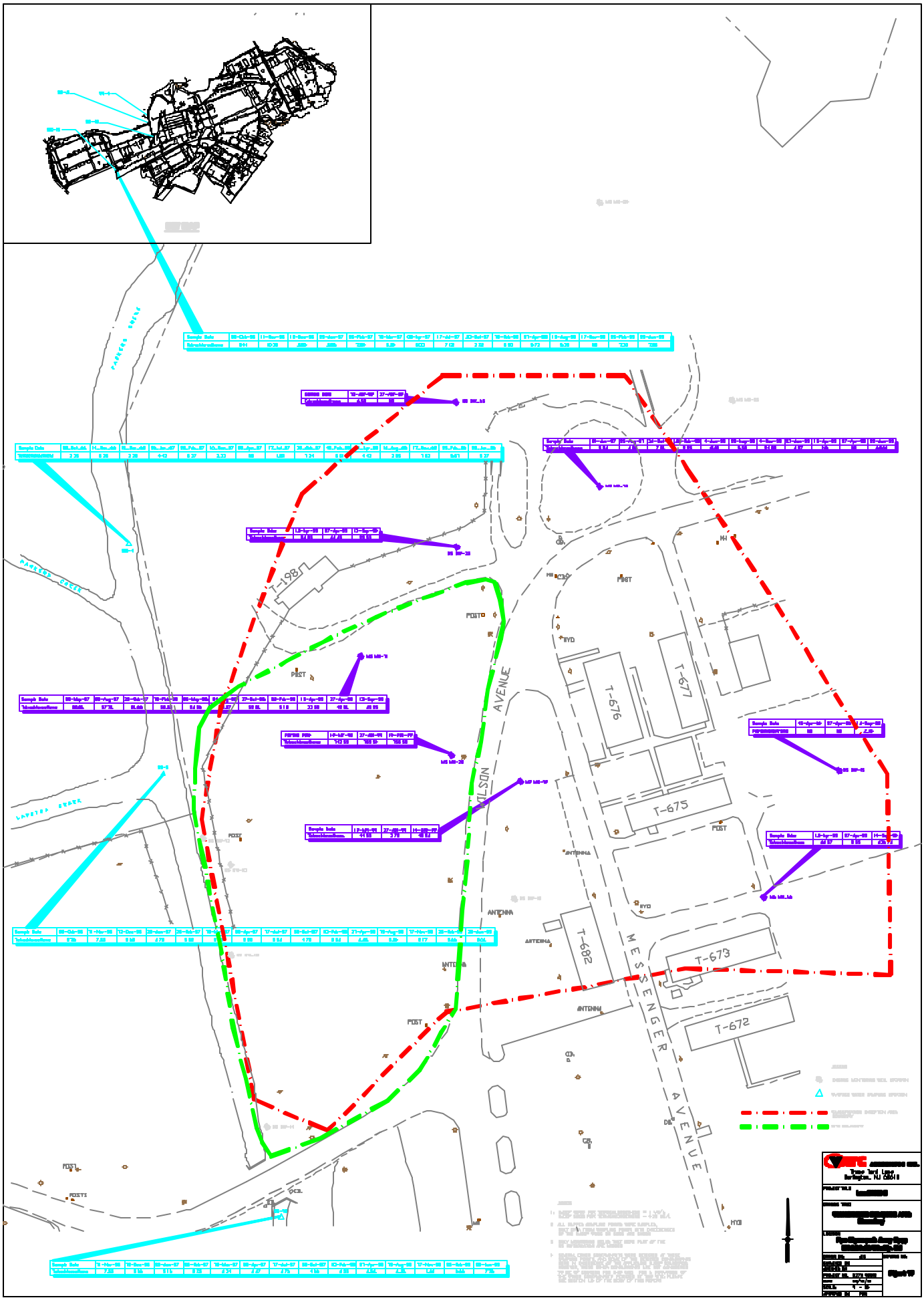
Client: U. S. Army Fort Monmouth	ATC ASSOCIATES INC.
Site Address: Fort Monmouth Main Post, Landfill M5 Fort Monmouth, New Jersey	Three Terri Lane, Burlington, New Jersey 08016
Project Number: 02711.00002	**Scale:** 1: 24,000

Copied From: United States Geological Survey Topographic Map 7.5 Minute Series, Long Branch, New Jersey Quadrangle (1954, photorevised 1970).

T-198
T-677
T-676
T-675
T-682
T-673
T-672
WILSON AVENUE
MESSENGER AVENUE
ANTENNA
POST

Figure 16
Project Schedule
Fort Monmouth Main Post, Fort Monmouth, New Jersey




T-198
T-677
T-676
T-675
T-682
T-673
T-672
WILSON AVENUE
MESSENGER AVENUE
PARKERS CREEK
LAMPETER CREEK
ANTENNA
POST
HYD

Appendix B

Material Safety Data Sheet for Hydrogen Release Compound®

MATERIAL SAFETY DATA SHEET

Last Revised: March 1, 2001

****

Section 1 - Material Identification

****

Supplier: Regenesis Bioremediation Products
1011 Calle Sombra
San Clemente, CA 92673
Telephone: (949) 366-8000
Facsimile: (949) 366-8090

Chemical Name: Propanoic acid, 2-[2-[2-(2-hydroxy-1-oxopropoxy)-1-oxopropoxy]

-1-oxopropoxy]-1,2,3-propanetriyl ester

Chemical Family: Organic Chemical

Trade Name: Glycerol tripolylactate

Product Name: Hydrogen Release Compound® (HRC®)

****

Section 2 - Hazardous Ingredients

****

CAS #: 201167-72-8

One should anticipate the potential for eye irritation and skin irritation with large scale exposure or in sensitive individuals.

****

Section 3 - Physical Data

****

Melting Point: NA

Boiling Point: ND

Flash Point: ND

Density: 1.347

Solubility: Acetone and DMSO

Appearance: Amber semi-solid

Odor: Not detectable

Vapor Pressure: None

****

Section 4 - Fire and Explosion Hazard Data

****

Extinguishing Media: Carbon Dioxide, Dry Chemical Powder or Appropriate Foam.

Water may be used to keep exposed containers cool.

For large quantities involved in a fire, one should wear full protective clothing and a NIOSH approved self contained breathing apparatus with full face piece operated in the pressure demand or positive pressure mode as for a situation where lack of oxygen and excess heat are present.

****

Section 5 - Toxicological Information

****

Acute Effects: May be harmful by inhalation, ingestion, or skin absorption.

May cause irritation. To the best of our knowledge, the chemical, physical, and toxicological properties of the glycerol tripolylactate have not been investigated. Listed below are the toxicological information for glycerol and lactic acid.

RTECS#: MA8050000

Glycerol

Irritation data: SKN-RBT 500 MG/24H MLD 85JCAE-,207,1986

EYE-RBT 126 MG MLD BIOFX* 9-4/1970

EYE-RBT 500 MG/24H MLD 85JCAE-,207,1986

Toxicity data: ORL-MUS LD50:4090 MG/KG FRZKAP (6),56,1977

SCU-RBT LD50:100 MG/KG NIIRDN 6,215,1982

ORL-RAT LD50:12600 MG/KG FEPRA7 4,142,1945

IHL-RAT LC50: >570 MG/M3/1H BIOFX* 9-4/1970

IPR-RAT LD50: 4420 MG/KG RCOCB8 56,125,1987

IVN-RAT LD50:5566 MG/KG ARZNAD 26,1581,1976

IPR-MUS LD50: 8700 MG/KG ARZNAD 26,1579,1978

SCU-MUS LD50:91 MG/KG NIIRDN 6,215,1982

IVN-MUS LD50: 4250 MG/KG JAPMA8 39,583,1950

ORL-RBT LD50: 27 GM/KG DMDJAP 31,276,1959

SKN-RBT LD50:>10GM/KG BIOFX* 9-4/1970

IVN-RBT LD50: 53 GM/KG NIIRDN 6,215,1982

ORL-GPG LD50: 7750 MG/KG JIHTAB 23,259,1941

Target Organ data: Behavioral (headache), gastrointestinal (nausea or vomiting), Paternal effects (spermatogenesis, testes, epididymis, sperm duct), effects of fertility (male fertility index, post-implantation mortality).

RTECS#: OD2800000

Lactic acid

Irritation data: SKN-RBT 5MG/24H SEV 85JCAE -,656,86

EYE-RBT 750 UG SEV AJOPAA 29,1363,46

Toxicity data: ORL-RAT LD50:3543 MG/KG FMCHA2-,C252,91

SKN-RBT LD50:>2 GM/KG FMCHA2-,C252,91

ORL-MUS LD50: 4875 MG/KG FAONAU 40,144,67

ORL-GPG LD50: 1810 MG/KG JIHTAB 23,259,41

ORL-QAL LD50: >2250 MG/KG FMCHA2-,C252,91

Only selected registry of toxic effects of chemical substances (RTECS) data is presented here. See actual entry in RTECS for complete information on lactic acid and glycerol.

****

Section 6 - Health Hazard Data

****

Handling: Avoid continued contact with skin.

Avoid contact with eyes.

In any case of any exposure which elicits a response, a physician should be consulted immediately.

First Aid Procedures:

Inhalation: Remove to fresh air. If not breathing give artificial respiration. In case of labored breathing give oxygen. Call a physician.

Ingestion: No effects expected. Do not give anything to an unconscious person. Call a physician immediately.

Skin Contact: Flush with plenty of water. Contaminated clothing may be washed or dry cleaned normally.

Eye contact: Wash eyes with plenty of water for at least 15 minutes lifting both upper and lower lids. Call a physician.

****

Section 7 - Reactivity Data

****

Conditions to Avoid: Strong oxidizing agents, bases and acids

Hazardous Polymerization: None known

Further Information: Hydrolyses in water to form Lactic Acid and Glycerol.

****

Section 8 - Spill, Leak or Accident Procedures

****

After Spillage or Leakage: Neutralization is not required. This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber.

Disposal: Laws and regulations for disposal vary widely by locality. Observe all applicable regulations and laws. This material, may be disposed of in solid waste. Material is readily degradable and hydrolyses in several hours.

No requirement for a reportable quantity (CERCLA) of a spill is known.

****

Section 9 - Special Protection or Handling

****

Should be stored in plastic lined steel, plastic, glass, aluminum, stainless steel, or reinforced fiberglass containers.

Protective Gloves: Vinyl or Rubber

Eyes: Splash Goggles or Full Face Shield

Area should have approved means of washing

eyes.

Ventilation: General exhaust.

Storage: Store in cool, dry, ventilated area.

Protect from imcompatible materials.

****

Section 10 - Other Information

****

This material will degrade in the environment by hydrolysis to lactic acid and glycerol.

Materials containing reactive chemicals should be used only by personnel with appropriate chemical training.

The information contained in this document is the best available to the supplier as of the time of writing. Some possible hazards have been determined by analogy to similar classes of material. No separate tests have been performed on the toxicity of this material. The items in this document are subject to change and clarification as more information becomes available.

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Appendix C

Groundwater Monitoring Well Laboratory Analytical Data, 4th Quarter 2002 through 3rd Quarter 2003

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS
PHONE: (732)532-4359 FAX: (732)532-6263
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING

ANALYTICAL DATA REPORT
FOR
Directorate of Public Works
Fort Monmouth, NJ 07703

PROJECT : DERA/ Long Term Monitoring

SAMPLE LOCATION AND IDENTIFICATION

SITE: M-5

LABORATORY ID #	MONITOR WELL#	NJDEP WELL ID#	SAMPLE DATE
2076004	00M5MW10	29-32574	10/28/02
2076005	00M5MW11	29-32575	10/28/02
2076006	00M5MW12	29-39179	10/28/02
2076007	00M5MW13	29-39178	10/28/02
2076008	00M5MW14	29-39177	10/28/02
2076009	00M5MW15	29-40120	10/28/02
2076010	00M5MW16	29-40121	10/28/02
2076011	00M5MW18	29-40123	10/28/02
2076012	00M5MW19	29-40124	10/28/02
2076013	00M5MW20	29-40122	10/28/02
2076014	00M5MW23	29-40125	10/28/02
2076015	00M5MW25	29-40126	10/28/02

NJDEP Laboratory Certification # 13461

2-12-03
Daniel Wright/Date
Laboratory Director

METHODOLOGY SUMMARY

PARAMETER	REFERENCE
TARGET ANALYTE LIST METALS	Standard Methods, 18th ed.
Aluminum	3120B
Antimony	3120B
Arsenic	3120B
Barium	3120B
Beryllium	3120B
Cadmium	3120B
Calcium	3120B
Chromium	3120B
Cobalt	3120B
Copper	3120B
Iron	3120B
Lead	3120B
Magnesium	3120B
Manganese	3120B
Mercury	3112B
Nickel	3120B
Potassium	3120B
Selenium	3120B
Silver	3120B
Sodium	3120B
Thallium	3120B
Vanadium	3120B
Zinc	3120B

PARAMETER	REFERENCE
TARGET COMPOUND LIST ORGANICS	Federal Register 40 CFR Part 136 Appendix A
Base/Neutral and Acid Extractables by GC/MS	625
Purgeable Organics by GC/MS	624
Pesticide and PCB by GC	608

Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:wrightd@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: J. FALLON
Phone #: 532-1223
( )DERA ( )OMA ( )Other:_____

Project No:
Location: MS wells
4th Qtr '02

Samplers Name / Company: Corey McCormack, TVS

LIMS/Work Order #	Sample Location	Date	Time	Sample Type	# bottles	Analysis Parameters: VO +15	TAL Mtls	Pest / PCB	BNA +25				Hnu Read	Comments: HCL/HNO3/4°C — Remarks / Preservation Method
20700 01	Trip	10/28/02	0725	AQ	2	✓							—	
02	Field Blank		0852		5	✓	✓	✓	✓				—	
03	Dupe		—		5	✓	✓	✓	✓				—	
04	MS mw10		1316		5	✓	✓	✓	✓				0.0	29-32574
05	MS mw11		1241			✓	✓	✓	✓				0.0	29-32575
06	MS mw12		1348			✓	✓	✓	✓				0.0	29-39179
07	MS mw13		1432			✓	✓	✓	✓				0.0	29-39178
08	MS mw14		1450			✓	✓	✓	✓				0.0	29-39177
09	MS mw15		1003			✓	✓	✓	✓				0.0	29-40120
10	MS mw16		1011			✓	✓	✓	✓				0.0	29-40121
11	MS mw18		1028			✓	✓	✓	✓				0.0	29-40123
12	MS mw19 *		1035		9	✓	✓	✓	✓				0.0	29-40124
13	MS mw20		1017		5	✓	✓	✓	✓				0.0	29-40122
14	MS mw23		1251		1	✓	✓	✓	✓				0.0	29-40125

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Corey McCormack	10/28/02 1545				
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: (_)Full, (_)Reduced, (X)Standard, (_)Screen / non-certified, (_)EDD
Turnaround time: (X)Standard 3 wks, (_)Rush ____ Days, (_)ASAP Verbal ____Hrs.

Remarks: MS/MSD 5x vol.
Tide:

print legibly

Coc9/17/02

Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:wrightd@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: J. Fallon
Phone #: X24223
( )DERA ( )OMA ( )Other:_____
Project No:
Location: MS wells 4th Qtr '02
Samplers Name / Company: Corey McCormack, TUS

LIMS/Work Order #	Sample Location	Date	Time	Sample Type	# bottles	VOA+15	TAL MHs	Pest/PCB	BNA+25				Haw Read	Comments: HCL/HNO3/4°C Remarks / Preservation Method
20760 15	MSmw25	10/28/02	0934	AQ	5	✓	✓	✓	✓				00	29-40126

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Corey McCormack	10/28/02 1545	J. Wright			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: (_)Full, (_)Reduced, (X)Standard, (_)Screen / non-certified, (_)EDD
Turnaround time: (X)Standard 3 wks, (_)Rush ____ Days, (_)ASAP Verbal ____Hrs.

Remarks: Tidel

print legibly

Coc9/17/02

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW10
NJDEP ID #: 29-32574
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 10/28/02
WEATHER: Overcast and cold.
TIDE: Low-Incoming..

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 4" INCH
DEPTH TO WATER: 4.14 ft
DEPTH OF WELL: 17.25 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 13.11 ft
(13.11) X .65 X 3 =25.56
GALLONS OF H_2O TO BE PURGED: 26 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 11:22
pH 6.20 su — TEMP 16.25 °C
DISSOLVED O_2 0.13 mg/L — SPECIFIC CONDUCTIVITY 455.3 ms/cm

PURGE END TIME: 13:15
pH 5.82 su — TEMP 17.50 °C
DISSOLVED O_2 0.75 mg/L — SPECIFIC CONDUCTIVITY 384.1 ms/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 4.68 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 26 gal

SAMPLE START TIME: 13:16
pH 5.89 su — TEMP 17.52 °C
DISSOLVED O_2 0.35 mg/L — SPECIFIC CONDUCTIVITY 389.9 ms/cm

SAMPLE END TIME: 13:21

COMMENTS:

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW11
NJDEP ID #: 29-32575
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 10/28/02
WEATHER: Overcast and cold.
TIDE: Low-Incoming.

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 4" INCH
DEPTH TO WATER: 6.81 ft
DEPTH OF WELL: 16.80 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 9.99 ft
(9.99) X .65 X 3 =19.48
GALLONS OF H_2O TO BE PURGED: 19 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 11:18
pH 5.99 su — TEMP 17.36 °C
DISSOLVED O_2 0.61 mg/L — SPECIFIC CONDUCTIVITY 354.4 ms/cm

PURGE END TIME: 12:40
pH 5.37 su — TEMP 17.71 °C
DISSOLVED O_2 4.26 mg/L — SPECIFIC CONDUCTIVITY 181.0 ms/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 7.29 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 19 gal

SAMPLE START TIME: 12:41
pH 5.33 su — TEMP 18.14 °C
DISSOLVED O_2 4.65 mg/L — SPECIFIC CONDUCTIVITY 181.0 ms/cm

SAMPLE END TIME: 12:47

COMMENTS:

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW12
NJDEP ID #: 29-39179
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 10/28/02
WEATHER: Overcast and cold.
TIDE: Low-Incoming.

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 2" INCH
DEPTH TO WATER: 5.60 ft
DEPTH OF WELL: 16.10 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 10.50 ft
(10.50) X .163 X 3 =5.13
GALLONS OF H_2O TO BE PURGED: 5 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 13:25
pH 6.24 su — TEMP 16.15 °C
DISSOLVED O_2 0.05 mg/L — SPECIFIC CONDUCTIVITY 530.0 ms/cm

PURGE END TIME: 13:47
pH 6.37 su — TEMP 16.95 °C
DISSOLVED O_2 0.03 mg/L — SPECIFIC CONDUCTIVITY 555.6 ms/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 8.56 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 5 gal

SAMPLE START TIME: 13:48
pH 6.30 su — TEMP 16.98 °C
DISSOLVED O_2 0.03 mg/L — SPECIFIC CONDUCTIVITY 562.5 ms/cm

SAMPLE END TIME: 13:53

COMMENTS:

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW13
NJDEP ID #: 29-39178
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 10/28/02
WEATHER: Overcast and cold.
TIDE: Low-Incoming.

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 2" INCH
DEPTH TO WATER: 2.08 ft
DEPTH OF WELL: 18.82 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 16.74 ft
(16.74) X .163 X 3 =8.19
GALLONS OF H_2O TO BE PURGED: 8 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 13:56
pH 6.12 su — TEMP 15.80 °C
DISSOLVED O_2 999.99 mg/L — SPECIFIC CONDUCTIVITY 1770 ms/cm

PURGE END TIME: 14:31
pH 5.86 su — TEMP 17.27 °C
DISSOLVED O_2 0.00 mg/L — SPECIFIC CONDUCTIVITY 711.5 ms/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 2.41 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 8 gal

SAMPLE START TIME: 14:32
pH 5.89 su — TEMP 17.34 °C
DISSOLVED O_2 0.00 mg/L — SPECIFIC CONDUCTIVITY 709.4 ms/cm

SAMPLE END TIME: 14:39

COMMENTS: Slightly cloudy.

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW14
NJDEP ID #: 29-39177
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 10/28/02
WEATHER: Overcast and cold..
TIDE: Low-Incoming.

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 2" INCH
DEPTH TO WATER: 2.29 ft
DEPTH OF WELL: 20.15 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 17.86 ft
(17.86) X .163 X 3 =8.73
GALLONS OF H2O TO BE PURGED: 8 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 14:10
pH 6.49 su — TEMP 15.21 °C
DISSOLVED O_2 0.55 mg/L — SPECIFIC CONDUCTIVITY 400.2 ms/cm

PURGE END TIME: 14:49
pH 6.40 su — TEMP 15.26 °C
DISSOLVED O_2 0.28 mg/L — SPECIFIC CONDUCTIVITY 377.4 ms/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 3.20 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 8 gal

SAMPLE START TIME: 14:50
pH 6.42 su — TEMP 15.28 °C
DISSOLVED O_2 0.21 mg/L — SPECIFIC CONDUCTIVITY 378.5 ms/cm

SAMPLE END TIME: 14:56

COMMENTS:

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW15
NJDEP ID #: 29-40120
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 10/28/02
WEATHER: Sunny and cold.
TIDE: Low.

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 4" INCH
DEPTH TO WATER: 7.87 ft
DEPTH OF WELL: 19.71 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 11.84 ft
(11.84) X .65 X 3 =23.08
GALLONS OF H_2O TO BE PURGED: 23 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 08:22
pH 3.95 su — TEMP 17.99 °C
DISSOLVED O_2 8.60 mg/L — SPECIFIC CONDUCTIVITY 188.2 ms/cm

PURGE END TIME: 10:02
pH 3.87 su — TEMP 18.98 °C
DISSOLVED O_2 13.25 mg/L — SPECIFIC CONDUCTIVITY 182.6 ms/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 8.15 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 23 gal

SAMPLE START TIME: 10:03
pH 3.89 su — TEMP 18.97 °C
DISSOLVED O_2 12.31 mg/L — SPECIFIC CONDUCTIVITY 182.7 ms/cm

SAMPLE END TIME: 10:09

COMMENTS:

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW16
NJDEP ID #: 29-40121
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 10/28/02
WEATHER: Sunny and cold.
TIDE: Low.

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 4" INCH
DEPTH TO WATER: 6.84 ft
DEPTH OF WELL: 17.93 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 11.09 ft
(11.09) X .65 X 3 = 21.62
GALLONS OF H_2O TO BE PURGED: 22 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 08:28
pH 5.35 su — TEMP 17.22 °C
DISSOLVED O_2 0.00 mg/L — SPECIFIC CONDUCTIVITY 703.8 ms/cm

PURGE END TIME: 10:03
pH 5.02 su — TEMP 18.76 °C
DISSOLVED O_2 0.65 mg/L — SPECIFIC CONDUCTIVITY 455.4 ms/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 7.05 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 22 gal

SAMPLE START TIME: 10:11
pH 5.04 su — TEMP 18.81 °C
DISSOLVED O_2 0.08 mg/L — SPECIFIC CONDUCTIVITY 457.6 ms/cm

SAMPLE END TIME: 10:16

COMMENTS: Methane odor.

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW18
NJDEP ID #: 29-40123
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 10/28/02
WEATHER: Sunny and cold.
TIDE: Low.

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 4" INCH
DEPTH TO WATER: 6.76 ft
DEPTH OF WELL: 20.17 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 13.41 ft
(13.41) X .65 X 3 =26.14
GALLONS OF H2O TO BE PURGED: 26 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 08:34
pH 5.83 su — TEMP 15.09 °C
DISSOLVED O_2 1.05 mg/L — SPECIFIC CONDUCTIVITY 329.4 ms/cm

PURGE END TIME: 10:27
pH 5.49 su — TEMP 15.84 °C
DISSOLVED O_2 1.76 mg/L — SPECIFIC CONDUCTIVITY 238.5 ms/cm

DEPTH TO H2O AFTER PURGE AND BEFORE SAMPLING: 7.12 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 26 gal

SAMPLE START TIME: 10:28
pH 5.44 su — TEMP 15.86 °C
DISSOLVED O_2 1.04 mg/L — SPECIFIC CONDUCTIVITY 238.4 ms/cm

SAMPLE END TIME: 10:32

COMMENTS: Slightly cloudy.

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW19
NJDEP ID #: 29-40124
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 10/28/02
WEATHER: Sunny and cold.
TIDE: Low.

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 4" INCH
DEPTH TO WATER: 6.47 ft
DEPTH OF WELL: 19.98 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 13.51 ft
(13.51) X .65 X 3 =26.34
GALLONS OF H_2O TO BE PURGED: 26 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 08:40
pH 5.23 su — TEMP 16.66 °C
DISSOLVED O_2 1.87 mg/L — SPECIFIC CONDUCTIVITY 261.1 ms/cm

PURGE END TIME: 10:33
pH 5.42 su — TEMP 17.55 °C
DISSOLVED O_2 0.54 mg/L — SPECIFIC CONDUCTIVITY 271.9 ms/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 6.61 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 26 gal

SAMPLE START TIME: 10:35
pH 5.48 su — TEMP 17.66 °C
DISSOLVED O_2 0.39 mg/L — SPECIFIC CONDUCTIVITY 272.2 ms/cm

SAMPLE END TIME: 10:40

COMMENTS: DUP. and MS/MSD here.

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW20
NJDEP ID #: 29-40122
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 10/28/02
WEATHER: Sunny and cold.
TIDE: Low.

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 4" INCH
DEPTH TO WATER: 5.45 ft
DEPTH OF WELL: 16.07 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 10.62 ft
(10.62) X .65 X 3 =20.70
GALLONS OF H_2O TO BE PURGED: 21 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 08:45
pH 5.47 su — TEMP 17.73 °C
DISSOLVED O_2 7.01 mg/L — SPECIFIC CONDUCTIVITY 221.0 ms/cm

PURGE END TIME: 10:16
pH 5.37 su — TEMP 17.86 °C
DISSOLVED O_2 5.14 mg/L — SPECIFIC CONDUCTIVITY 259.5 ms/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 5.71 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 21 gal

SAMPLE START TIME: 10:17
pH 5.34 su — TEMP 17.91 °C
DISSOLVED O_2 4.41 mg/L — SPECIFIC CONDUCTIVITY 258.4 ms/cm

SAMPLE END TIME: 10:24

COMMENTS: Low drain down. Cloudy and yellow during purge/bail.

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW23
NJDEP ID #: 29-40125
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 10/28/02
WEATHER: Overcast and cold.
TIDE: Low.

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 4" INCH
DEPTH TO WATER: 7.72 ft
DEPTH OF WELL: 19.75 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 12.03 ft
(12.03) X .65 X 3 =23.45
GALLONS OF H_2O TO BE PURGED: 23 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 11:10
pH 5.99 su — TEMP 17.79 °C
DISSOLVED O_2 1.98 mg/L — SPECIFIC CONDUCTIVITY 202.5 ms/cm

PURGE END TIME: 12:50
pH 5.82 su — TEMP 18.38 °C
DISSOLVED O_2 4.99 mg/L — SPECIFIC CONDUCTIVITY 203.4 ms/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 8.00 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 23 gal

SAMPLE START TIME: 12:51
pH 5.81 su — TEMP 18.40 °C
DISSOLVED O_2 3.74 mg/L — SPECIFIC CONDUCTIVITY 203.7 ms/cm

SAMPLE END TIME: 12:56

COMMENTS: Black particles.

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW25
NJDEP ID #: 29-40126
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 10/28/02
WEATHER: Sunny and cold.
TIDE: Low.

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 4" INCH
DEPTH TO WATER: 10.93 ft
DEPTH OF WELL: 19.94 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 9.01 ft
(9.01) X .65 X 3 =17.56
GALLONS OF H_2O TO BE PURGED: 18 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 08:18
pH 4.94 su
TEMP 14.69 °C
DISSOLVED O_2 0.32 mg/L
SPECIFIC CONDUCTIVITY 470.1 ms/cm

PURGE END TIME: 09:33
pH 5.08 su
TEMP 15.65 °C
DISSOLVED O_2 0.61 mg/L
SPECIFIC CONDUCTIVITY 379.4 ms/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 11.05 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 18 gal

SAMPLE START TIME: 09:34
pH 5.05 su
TEMP 15.67 °C
DISSOLVED O_2 0.65 mg/L
SPECIFIC CONDUCTIVITY 379.3 ms/cm

SAMPLE END TIME: 09:38

COMMENTS:

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEP CERTIFICATION # 13461

Definition of Qualifiers

MDL	**:**	**Method Detection Limit**
J	**:**	**Compound identified below detection limit**
B	**:**	**Compound found in blank**
D	**:**	**Results are from a dilution of the sample**
U	**:**	**Compound searched for but not detected**
E	**:**	**Compound exceeds calibration limit**
PQL	**:**	**Practical Quantitation Limit**
NLE	**:**	**No limit established**
RT	**:**	**Retention time**

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008752.D**	Sample Name	**MB 06Nov02**
Operator	**Skelton**	Field ID	**MB 06Nov02**
Date Aquired	**6-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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1A

FIELD ID:

VOLATILE ORGANICS ANALYSIS DATA SHEET

MB 06Nov02

Lab Name: FMETL NJDEP#: 13461

Project: LTM Case No.: 20760 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: MB 06Nov02

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008752.D

Level: (low/med) LOW Date Received: 10/28/02

% Moisture: not dec. Date Analyzed: 11/6/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008757.D**	Sample Name	**2076001**
Operator	**Skelton**	Field ID	**Trip Blank**
Date Aquired	**6-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform	16.88	86811	2.21 ug/L	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Trip Blank**

Lab Name: FMETL NJDEP#: 13461

Project: LTM Case No.: 20760 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 2076001

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008757.D

Level: (low/med) LOW Date Received: 10/28/02

% Moisture: not dec. Date Analyzed: 11/6/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008758.D**	Sample Name	**2076002**
Operator	**Skelton**	Field ID	**Field Blank**
Date Aquired	**6-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform	16.88	83311	2.25 ug/L	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitatión Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Field Blank**

Lab Name: FMETL NJDEP#: 13461

Project: LTM Case No.: 20760 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 2076002

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008758.D

Level: (low/med) LOW Date Received: 10/28/02

% Moisture: not dec. Date Analyzed: 11/6/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008759.D**	Sample Name	**2076003**
Operator	**Skelton**	Field ID	**Dupe**
Date Aquired	**6-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone	16.03	34703	4.06 ug/L	300	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene	15.87	63596	2.37 ug/L	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene	20.09	17501	1.06 ug/L	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene	24.71	75790	4.89 ug/L	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Dupe**

Lab Name: FMETL NJDEP#: 13461

Project: LTM Case No.: 20760 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 2076003

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008759.D

Level: (low/med) LOW Date Received: 10/28/02

% Moisture: not dec. _____ Date Analyzed: 11/6/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008760.D**	Sample Name	**2076004**
Operator	**Skelton**	Field ID	**M5MW10**
Date Aquired	**6-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **M5MW10**

Lab Name: FMETL NJDEP#: 13461

Project: LTM Case No.: 20760 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 2076004

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008760.D

Level: (low/med) LOW Date Received: 10/28/02

% Moisture: not dec. Date Analyzed: 11/6/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008761.D**	Sample Name	**2076005**
Operator	**Skelton**	Field ID	**M5MW11**
Date Aquired	**6-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene	24.70	121477	8.14 ug/L	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **M5MW11**

Lab Name: FMETL NJDEP#: 13461

Project: LTM Case No.: 20760 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 2076005

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008761.D

Level: (low/med) LOW Date Received: 10/28/02

% Moisture: not dec. Date Analyzed: 11/6/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008762.D**	Sample Name	**2076006**
Operator	**Skelton**	Field ID	**M5MW12**
Date Aquired	**6-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **M5MW12**

Lab Name: FMETL NJDEP#: 13461

Project: LTM Case No.: 20760 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 2076006

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008762.D

Level: (low/med) LOW Date Received: 10/28/02

% Moisture: not dec. Date Analyzed: 11/6/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008763.D**	Sample Name	**2076007**
Operator	**Skelton**	Field ID	**M5MW13**
Date Aquired	**6-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **M5MW13**

Lab Name: FMETL NJDEP#: 13461

Project: LTM Case No.: 20760 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 2076007

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008763.D

Level: (low/med) LOW Date Received: 10/28/02

% Moisture: not dec. _____ Date Analyzed: 11/6/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008764.D**	Sample Name	**2076008**
Operator	**Skelton**	Field ID	**M5MW14**
Date Aquired	**6-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **M5MW14**

Lab Name: FMETL NJDEP#: 13461

Project: LTM Case No.: 20760 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 2076008

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008764.D

Level: (low/med) LOW Date Received: 10/28/02

% Moisture: not dec. Date Analyzed: 11/6/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008765.D**	Sample Name	**2076009**
Operator	**Skelton**	Field ID	**M5MW15**
Date Aquired	**6-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **M5MW15**

Lab Name: FMETL NJDEP#: 13461

Project: LTM Case No.: 20760 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 2076009

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008765.D

Level: (low/med) LOW Date Received: 10/28/02

% Moisture: not dec. _____ Date Analyzed: 11/6/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008766.D**	Sample Name	**2076010**
Operator	**Skelton**	Field ID	**M5MW16**
Date Aquired	**6-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone	16.03	21421	2.59 ug/L	300	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene	15.86	4025766	154.38 ug/L	10	0.17 ug/L	E
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene	20.10	34254	2.23 ug/L	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene	24.71	628690	42.41 ug/L	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008782.D**	Sample Name	**2076010**
Operator	**Skelton**	Field ID	**M5MW16**
Date Aquired	**7-Nov-02**	Multiplier	**5**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	50	9.25 ug/L	
107131	Acrylonitrile			not detected	50	13.90 ug/L	
75650	tert-Butyl alcohol			not detected	nle	42.60 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.80 ug/L	
108203	Di-isopropyl ether			not detected	nle	1.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	8.40 ug/L	
74-87-3	Chloromethane			not detected	30	5.80 ug/L	
75-01-4	Vinyl Chloride			not detected	5	5.30 ug/L	
74-83-9	Bromomethane			not detected	10	5.50 ug/L	
75-00-3	Chloroethane			not detected	nle	5.05 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	2.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	1.20 ug/L	
67-64-1	Acetone			not detected	700	6.80 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	2.30 ug/L	
75-09-2	Methylene Chloride			not detected	2	1.20 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.80 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.60 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	3.90 ug/L	
78-93-3	2-Butanone			not detected	300	3.10 ug/L	
156-59-2	cis-1,2-Dichloroethene	15.87	538285	103.82 ug/L	10	0.85 ug/L	D
67-66-3	Chloroform			not detected	6	1.50 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	1.15 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	2.35 ug/L	
71-43-2	Benzene			not detected	1	1.15 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.90 ug/L	
79-01-6	Trichloroethene			not detected	1	1.15 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	1	2.75 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	3.25 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	3.45 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	2.95 ug/L	
108-88-3	Toluene			not detected	1000	1.85 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	4.35 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	2.40 ug/L	
127-18-4	Tetrachloroethene	24.70	98355	33.87 ug/L	1	1.60 ug/L	D
591-78-6	2-Hexanone			not detected	nle	3.55 ug/L	
126-48-1	Dibromochloromethane			not detected	10	4.30 ug/L	
108-90-7	Chlorobenzene			not detected	4	1.95 ug/L	
100-41-4	Ethylbenzene			not detected	700	3.25 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	5.70 ug/L	
1330-20-7	o-Xylene			not detected	nle	3.10 ug/L	
100-42-5	Styrene			not detected	100	2.80 ug/L	
75-25-2	Bromoform			not detected	4	3.50 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	2.35 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	2.75 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	2.85 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	3.20 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **M5MW16**

Lab Name: FMETL NJDEP#: 13461

Project: LTM Case No.: 20760 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 2076010

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008766.D

Level: (low/med) LOW Date Received: 10/28/02

% Moisture: not dec. Date Analyzed: 11/6/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008767.D**	Sample Name	**2076011**
Operator	**Skelton**	Field ID	**M5MW18**
Date Aquired	**6-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **M5MW18**

Lab Name: FMETL NJDEP#: 13461

Project: LTM Case No.: 20760 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 2076011

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008767.D

Level: (low/med) LOW Date Received: 10/28/02

% Moisture: not dec. Date Analyzed: 11/6/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008768.D**	Sample Name	**2076012**
Operator	**Skelton**	Field ID	**M5MW19**
Date Aquired	**7-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone	16.03	31542	3.93 ug/L	300	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene	15.87	57584	2.28 ug/L	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene	20.09	15452	1.00 ug/L	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene	24.70	73562	5.10 ug/L	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **M5MW19**

Lab Name: FMETL NJDEP#: 13461

Project: LTM Case No.: 20760 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 2076012

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008768.D

Level: (low/med) LOW Date Received: 10/28/02

% Moisture: not dec. Date Analyzed: 11/7/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008769.D**	Sample Name	**2076013**
Operator	**Skelton**	Field ID	**M5MW20**
Date Aquired	**7-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene	24.70	189216	12.99 ug/L	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **M5MW20**

Lab Name: FMETL NJDEP#: 13461

Project: LTM Case No.: 20760 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 2076013

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008769.D

Level: (low/med) LOW Date Received: 10/28/02

% Moisture: not dec. Date Analyzed: 11/7/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008770.D**	Sample Name	**2076014**
Operator	**Skelton**	Field ID	**M5MW23**
Date Aquired	**7-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **M5MW23**

Lab Name: FMETL NJDEP#: 13461

Project: LTM Case No.: 20760 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 2076014

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008770.D

Level: (low/med) LOW Date Received: 10/28/02

% Moisture: not dec. Date Analyzed: 11/7/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008771.D**	Sample Name	**2076015**
Operator	**Skelton**	Field ID	**M5MW25**
Date Aquired	**7-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	50	1.85 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	1	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **M5MW25**

Lab Name: FMETL NJDEP#: 13461

Project: LTM Case No.: 20760 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 2076015

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008771.D

Level: (low/med) LOW Date Received: 10/28/02

% Moisture: not dec. _____ Date Analyzed: 11/7/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA07247.D**	Sample Name	**MB-102902**
Operator	**BPatel**	Misc Info	**MB-102902**
Date Acquired	**30-Oct-02**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	1.27	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.78	ug/L	
62-53-3	Aniline			not detected	NLE	1.11	ug/L	
108-95-2	Phenol			not detected	4000	0.45	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.10	ug/L	
95-57-8	2-Chlorophenol			not detected	40	0.97	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.90	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.80	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.93	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.99	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	0.78	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.96	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	0.78	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	1.01	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.88	ug/L	
98-95-3	Nitrobenzene			not detected	10	1.15	ug/L	
78-59-1	Isophorone			not detected	100	0.92	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	0.82	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.83	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	0.74	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.77	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.66	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.68	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.24	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.84	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	0.69	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.62	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.53	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	0.84	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	0.99	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.81	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.86	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.79	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.84	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.95	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.66	ug/L	
83-32-9	Acenaphthene			not detected	400	0.86	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.37	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.85	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.58	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA07247.D**	Sample Name	**MB-102902**
Operator	**BPatel**	Misc Info	**MB-102902**
Date Acquired	**30-Oct-02**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
121-14-2	2,4-Dinitrotoluene			not detected	10	0.86	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.71	ug/L	
86-73-7	Fluorene			not detected	300	0.86	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.67	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.19	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	0.76	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.83	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.75	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.66	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.61	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.36	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.84	ug/L	
120-12-7	Anthracene			not detected	2000	0.72	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.61	ug/L	
206-44-0	Fluoranthene			not detected	300	0.60	ug/L	
92-87-5	Benzidine			not detected	50	2.71	ug/L	
129-00-0	Pyrene			not detected	200	0.89	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.67	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.69	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	0.79	ug/L	
218-01-9	Chrysene			not detected	20	0.91	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.06	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	0.59	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.88	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.96	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.72	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.56	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.91	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.66	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
PQL= Practical Quantitation Limit

MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **MB-102902**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 20760 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: MB-102902

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA07247.D

Level: (low/med) LOW Date Received: 10/28/02

% Moisture: decanted: (Y/N) N Date Extracted: 10/29/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/30/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.42	11	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA07249.D**	Sample Name	**2076002**
Operator	**BPatel**	Misc Info	**Field Blank**
Date Acquired	**30-Oct-02**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	1.27	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.78	ug/L	
62-53-3	Aniline			not detected	NLE	1.11	ug/L	
108-95-2	Phenol			not detected	4000	0.45	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.10	ug/L	
95-57-8	2-Chlorophenol			not detected	40	0.97	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.90	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.80	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.93	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.99	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	0.78	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.96	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	0.78	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	1.01	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.88	ug/L	
98-95-3	Nitrobenzene			not detected	10	1.15	ug/L	
78-59-1	Isophorone			not detected	100	0.92	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	0.82	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.83	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	0.74	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.77	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.66	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.68	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.24	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.84	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	0.69	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.62	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.53	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	0.84	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	0.99	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.81	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.86	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.79	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.84	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.95	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.66	ug/L	
83-32-9	Acenaphthene			not detected	400	0.86	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.37	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.85	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.58	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA07249.D**	Sample Name	**2076002**
Operator	**BPatel**	Misc Info	**Field Blank**
Date Acquired	**30-Oct-02**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
121-14-2	2,4-Dinitrotoluene			not detected	10	0.86	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.71	ug/L	
86-73-7	Fluorene			not detected	300	0.86	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.67	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.19	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	0.76	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.83	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.75	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.66	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.61	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.36	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.84	ug/L	
120-12-7	Anthracene			not detected	2000	0.72	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.61	ug/L	
206-44-0	Fluoranthene			not detected	300	0.60	ug/L	
92-87-5	Benzidine			not detected	50	2.71	ug/L	
129-00-0	Pyrene			not detected	200	0.89	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.67	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.69	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	0.79	ug/L	
218-01-9	Chrysene			not detected	20	0.91	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.06	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	0.59	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.88	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.96	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.72	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.56	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.91	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.66	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
PQL= Practical Quantitation Limit

MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **Field Blank**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 20760 Location: M5 SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 2076002

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA07249.D

Level: (low/med) LOW Date Received: 10/28/02

% Moisture: _____ decanted: (Y/N) N Date Extracted: 10/29/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/30/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:

Number TICs found: 1 (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.42	10	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA07250.D**	Sample Name	**2076003**
Operator	**BPatel**	Misc Info	**Dupe**
Date Acquired	**30-Oct-02**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	1.27	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.78	ug/L	
62-53-3	Aniline			not detected	NLE	1.11	ug/L	
108-95-2	Phenol			not detected	4000	0.45	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.10	ug/L	
95-57-8	2-Chlorophenol			not detected	40	0.97	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.90	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.80	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.93	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.99	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	0.78	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.96	ug/L	
106-44-5	4-Methylphenol	11.87	39761	2.08 ug/L	NLE	0.78	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	1.01	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.88	ug/L	
98-95-3	Nitrobenzene			not detected	10	1.15	ug/L	
78-59-1	Isophorone			not detected	100	0.92	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	0.82	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.83	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	0.74	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.77	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.66	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.68	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.24	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.84	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	0.69	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.62	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.53	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	0.84	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	0.99	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.81	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.86	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.79	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.84	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.95	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.66	ug/L	
83-32-9	Acenaphthene			not detected	400	0.86	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.37	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.85	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.58	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA07250.D**	Sample Name	**2076003**
Operator	**BPatel**	Misc Info	**Dupe**
Date Acquired	**30-Oct-02**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
121-14-2	2,4-Dinitrotoluene			not detected	10	0.86	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.71	ug/L	
86-73-7	Fluorene			not detected	300	0.86	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.67	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.19	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	0.76	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.83	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.75	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.66	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.61	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.36	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.84	ug/L	
120-12-7	Anthracene			not detected	2000	0.72	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.61	ug/L	
206-44-0	Fluoranthene			not detected	300	0.60	ug/L	
92-87-5	Benzidine			not detected	50	2.71	ug/L	
129-00-0	Pyrene			not detected	200	0.89	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.67	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.69	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	0.79	ug/L	
218-01-9	Chrysene			not detected	20	0.91	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.06	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	0.59	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.88	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.96	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.72	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.56	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.91	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.66	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
PQL= Practical Quantitation Limit

MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **Dupe**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 20760 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 2076003

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA07250.D

Level: (low/med) LOW Date Received: 10/28/02

% Moisture: decanted: (Y/N) N Date Extracted: 10/29/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/30/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 8 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.81	8	J
2. 000107-92-6	Butanoic acid	6.57	39	JN
3.	unknown	7.44	11	J
4. 000503-74-2	Butanoic acid, 3-methyl-	7.67	6	JN
5.	unknown	7.90	17	J
6. 000109-52-4	Pentanoic acid	8.65	92	JN
7.	unknown	9.49	5	J
8.	unknown	18.83	4	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA07251.D**	Sample Name	**2076004**
Operator	**BPatel**	Misc Info	**M5MW10**
Date Acquired	**30-Oct-02**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	1.27	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.78	ug/L	
62-53-3	Aniline			not detected	NLE	1.11	ug/L	
108-95-2	Phenol			not detected	4000	0.45	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.10	ug/L	
95-57-8	2-Chlorophenol			not detected	40	0.97	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.90	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.80	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.93	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.99	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	0.78	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.96	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	0.78	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	1.01	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.88	ug/L	
98-95-3	Nitrobenzene			not detected	10	1.15	ug/L	
78-59-1	Isophorone			not detected	100	0.92	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	0.82	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.83	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	0.74	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.77	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.66	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.68	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.24	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.84	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	0.69	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.62	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.53	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	0.84	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	0.99	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.81	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.86	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.79	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.84	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.95	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.66	ug/L	
83-32-9	Acenaphthene			not detected	400	0.86	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.37	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.85	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.58	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA07251.D**	Sample Name	**2076004**
Operator	**BPatel**	Misc Info	**M5MW10**
Date Acquired	**30-Oct-02**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
121-14-2	2,4-Dinitrotoluene			not detected	10	0.86	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.71	ug/L	
86-73-7	Fluorene			not detected	300	0.86	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.67	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.19	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	0.76	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.83	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.75	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.66	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.61	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.36	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.84	ug/L	
120-12-7	Anthracene			not detected	2000	0.72	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.61	ug/L	
206-44-0	Fluoranthene			not detected	300	0.60	ug/L	
92-87-5	Benzidine			not detected	50	2.71	ug/L	
129-00-0	Pyrene			not detected	200	0.89	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.67	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.69	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	0.79	ug/L	
218-01-9	Chrysene			not detected	20	0.91	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.06	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	0.59	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.88	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.96	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.72	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.56	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.91	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.66	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
PQL= Practical Quantitation Limit

MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **M5MW10**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 20760 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 2076004

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA07251.D

Level: (low/med) LOW Date Received: 10/28/02

% Moisture: decanted: (Y/N) N Date Extracted: 10/29/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/30/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.42	10	J
2.	unknown	25.25	4	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA07252.D**	Sample Name	**2076005**
Operator	**BPatel**	Misc Info	**M5MW11**
Date Acquired	**30-Oct-02**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	1.27	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.78	ug/L	
62-53-3	Aniline			not detected	NLE	1.11	ug/L	
108-95-2	Phenol			not detected	4000	0.45	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.10	ug/L	
95-57-8	2-Chlorophenol			not detected	40	0.97	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.90	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.80	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.93	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.99	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	0.78	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.96	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	0.78	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	1.01	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.88	ug/L	
98-95-3	Nitrobenzene			not detected	10	1.15	ug/L	
78-59-1	Isophorone			not detected	100	0.92	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	0.82	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.83	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	0.74	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.77	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.66	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.68	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.24	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.84	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	0.69	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.62	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.53	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	0.84	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	0.99	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.81	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.86	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.79	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.84	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.95	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.66	ug/L	
83-32-9	Acenaphthene			not detected	400	0.86	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.37	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.85	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.58	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA07252.D**	Sample Name	**2076005**
Operator	**BPatel**	Misc Info	**M5MW11**
Date Acquired	**30-Oct-02**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
121-14-2	2,4-Dinitrotoluene			not detected	10	0.86	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.71	ug/L	
86-73-7	Fluorene			not detected	300	0.86	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.67	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.19	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	0.76	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.83	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.75	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.66	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.61	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.36	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.84	ug/L	
120-12-7	Anthracene			not detected	2000	0.72	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.61	ug/L	
206-44-0	Fluoranthene			not detected	300	0.60	ug/L	
92-87-5	Benzidine			not detected	50	2.71	ug/L	
129-00-0	Pyrene			not detected	200	0.89	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.67	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.69	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	0.79	ug/L	
218-01-9	Chrysene			not detected	20	0.91	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.06	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	0.59	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.88	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.96	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.72	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.56	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.91	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.66	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
PQL= Practical Quantitation Limit

MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **M5MW11**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 20760 Location: M5 SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 2076005

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA07252.D

Level: (low/med) LOW Date Received: 10/28/02

% Moisture: _____ decanted: (Y/N) N Date Extracted: 10/29/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/30/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:

Number TICs found: 2 (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.42	10	J
2.	unknown	25.25	5	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA07253.D**	Sample Name	**2076006**
Operator	**BPatel**	Misc Info	**M5MW12**
Date Acquired	**30-Oct-02**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	1.27	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.78	ug/L	
62-53-3	Aniline			not detected	NLE	1.11	ug/L	
108-95-2	Phenol			not detected	4000	0.45	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.10	ug/L	
95-57-8	2-Chlorophenol			not detected	40	0.97	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.90	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.80	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.93	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.99	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	0.78	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.96	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	0.78	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	1.01	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.88	ug/L	
98-95-3	Nitrobenzene			not detected	10	1.15	ug/L	
78-59-1	Isophorone			not detected	100	0.92	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	0.82	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.83	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	0.74	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.77	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.66	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.68	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.24	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.84	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	0.69	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.62	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.53	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	0.84	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	0.99	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.81	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.86	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.79	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.84	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.95	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.66	ug/L	
83-32-9	Acenaphthene			not detected	400	0.86	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.37	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.85	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.58	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA07253.D**	Sample Name	**2076006**
Operator	**BPatel**	Misc Info	**M5MW12**
Date Acquired	**30-Oct-02**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
121-14-2	2,4-Dinitrotoluene			not detected	10	0.86	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.71	ug/L	
86-73-7	Fluorene			not detected	300	0.86	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.67	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.19	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	0.76	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.83	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.75	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.66	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.61	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.36	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.84	ug/L	
120-12-7	Anthracene			not detected	2000	0.72	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.61	ug/L	
206-44-0	Fluoranthene			not detected	300	0.60	ug/L	
92-87-5	Benzidine			not detected	50	2.71	ug/L	
129-00-0	Pyrene			not detected	200	0.89	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.67	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.69	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	0.79	ug/L	
218-01-9	Chrysene			not detected	20	0.91	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate	28.28	57759	1.30 ug/L	30	1.06	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	0.59	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.88	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.96	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.72	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.56	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.91	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.66	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
PQL= Practical Quantitation Limit

MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **M5MW12**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 20760 Location: M5 SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 2076006

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA07253.D

Level: (low/med) LOW Date Received: 10/28/02

% Moisture: _____ decanted: (Y/N) N Date Extracted: 10/29/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/30/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.42	9	J
2.	unknown	25.24	6	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA07254.D**	Sample Name	**2076007**
Operator	**BPatel**	Misc Info	**M5MW13**
Date Acquired	**30-Oct-02**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	1.27	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.78	ug/L	
62-53-3	Aniline			not detected	NLE	1.11	ug/L	
108-95-2	Phenol			not detected	4000	0.45	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.10	ug/L	
95-57-8	2-Chlorophenol			not detected	40	0.97	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.90	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.80	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.93	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.99	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	0.78	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.96	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	0.78	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	1.01	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.88	ug/L	
98-95-3	Nitrobenzene			not detected	10	1.15	ug/L	
78-59-1	Isophorone			not detected	100	0.92	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	0.82	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.83	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	0.74	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.77	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.66	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.68	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.24	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.84	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	0.69	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.62	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.53	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	0.84	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	0.99	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.81	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.86	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.79	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.84	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.95	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.66	ug/L	
83-32-9	Acenaphthene			not detected	400	0.86	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.37	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.85	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.58	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA07254.D**	Sample Name	**2076007**
Operator	**BPatel**	Misc Info	**M5MW13**
Date Acquired	**30-Oct-02**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
121-14-2	2,4-Dinitrotoluene			not detected	10	0.86	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.71	ug/L	
86-73-7	Fluorene			not detected	300	0.86	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.67	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.19	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	0.76	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.83	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.75	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.66	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.61	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.36	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.84	ug/L	
120-12-7	Anthracene			not detected	2000	0.72	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.61	ug/L	
206-44-0	Fluoranthene			not detected	300	0.60	ug/L	
92-87-5	Benzidine			not detected	50	2.71	ug/L	
129-00-0	Pyrene			not detected	200	0.89	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.67	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.69	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	0.79	ug/L	
218-01-9	Chrysene			not detected	20	0.91	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate	28.28	60911	1.45 ug/L	30	1.06	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	0.59	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.88	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.96	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.72	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.56	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.91	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.66	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
PQL= Practical Quantitation Limit
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **M5MW13**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 20760 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 2076007

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA07254.D

Level: (low/med) LOW Date Received: 10/28/02

% Moisture: decanted: (Y/N) N Date Extracted: 10/29/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/30/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.42	9	J
2.	unknown	25.24	6	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA07255.D**	Sample Name	**2076008**
Operator	**BPatel**	Misc Info	**M5MW14**
Date Acquired	**30-Oct-02**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	1.27	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.78	ug/L	
62-53-3	Aniline			not detected	NLE	1.11	ug/L	
108-95-2	Phenol			not detected	4000	0.45	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.10	ug/L	
95-57-8	2-Chlorophenol			not detected	40	0.97	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.90	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.80	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.93	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.99	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	0.78	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.96	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	0.78	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	1.01	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.88	ug/L	
98-95-3	Nitrobenzene			not detected	10	1.15	ug/L	
78-59-1	Isophorone			not detected	100	0.92	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	0.82	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.83	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	0.74	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.77	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.66	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.68	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.24	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.84	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	0.69	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.62	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.53	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	0.84	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	0.99	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.81	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.86	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.79	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.84	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.95	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.66	ug/L	
83-32-9	Acenaphthene			not detected	400	0.86	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.37	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.85	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.58	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA07255.D**	Sample Name	**2076008**
Operator	**BPatel**	Misc Info	**M5MW14**
Date Acquired	**30-Oct-02**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
121-14-2	2,4-Dinitrotoluene			not detected	10	0.86	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.71	ug/L	
86-73-7	Fluorene			not detected	300	0.86	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.67	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.19	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	0.76	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.83	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.75	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.66	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.61	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.36	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.84	ug/L	
120-12-7	Anthracene			not detected	2000	0.72	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.61	ug/L	
206-44-0	Fluoranthene			not detected	300	0.60	ug/L	
92-87-5	Benzidine			not detected	50	2.71	ug/L	
129-00-0	Pyrene			not detected	200	0.89	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.67	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.69	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	0.79	ug/L	
218-01-9	Chrysene			not detected	20	0.91	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.06	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	0.59	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.88	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.96	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.72	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.56	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.91	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.66	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
PQL= Practical Quantitation Limit

MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **M5MW14**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 20760 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 2076008

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA07255.D

Level: (low/med) LOW Date Received: 10/28/02

% Moisture: decanted: (Y/N) N Date Extracted: 10/29/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/30/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 3 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.41	11	J
2. 000629-62-9	Pentadecane	17.94	4	JN
3.	unknown	25.25	4	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA07256.D**	Sample Name	**2076009**
Operator	**BPatel**	Misc Info	**M5MW15**
Date Acquired	**30-Oct-02**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	1.27	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.78	ug/L	
62-53-3	Aniline			not detected	NLE	1.11	ug/L	
108-95-2	Phenol			not detected	4000	0.45	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.10	ug/L	
95-57-8	2-Chlorophenol			not detected	40	0.97	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.90	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.80	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.93	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.99	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	0.78	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.96	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	0.78	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	1.01	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.88	ug/L	
98-95-3	Nitrobenzene			not detected	10	1.15	ug/L	
78-59-1	Isophorone			not detected	100	0.92	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	0.82	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.83	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	0.74	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.77	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.66	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.68	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.24	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.84	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	0.69	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.62	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.53	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	0.84	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	0.99	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.81	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.86	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.79	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.84	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.95	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.66	ug/L	
83-32-9	Acenaphthene			not detected	400	0.86	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.37	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.85	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.58	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA07256.D**	Sample Name	**2076009**
Operator	**BPatel**	Misc Info	**M5MW15**
Date Acquired	**30-Oct-02**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
121-14-2	2,4-Dinitrotoluene			not detected	10	0.86	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.71	ug/L	
86-73-7	Fluorene			not detected	300	0.86	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.67	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.19	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	0.76	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.83	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.75	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.66	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.61	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.36	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.84	ug/L	
120-12-7	Anthracene			not detected	2000	0.72	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.61	ug/L	
206-44-0	Fluoranthene			not detected	300	0.60	ug/L	
92-87-5	Benzidine			not detected	50	2.71	ug/L	
129-00-0	Pyrene			not detected	200	0.89	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.67	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.69	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	0.79	ug/L	
218-01-9	Chrysene			not detected	20	0.91	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.06	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	0.59	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.88	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.96	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.72	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.56	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.91	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.66	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
PQL= Practical Quantitation Limit

MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **M5MW15**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 20760 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 2076009

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA07256.D

Level: (low/med) LOW Date Received: 10/28/02

% Moisture: decanted: (Y/N) N Date Extracted: 10/29/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/30/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.41	12	J
2.	unknown	25.25	4	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA07257.D**	Sample Name	**2076010**
Operator	**BPatel**	Misc Info	**M5MW16**
Date Acquired	**30-Oct-02**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	1.27	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.78	ug/L	
62-53-3	Aniline			not detected	NLE	1.11	ug/L	
108-95-2	Phenol			not detected	4000	0.45	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.10	ug/L	
95-57-8	2-Chlorophenol			not detected	40	0.97	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.90	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.80	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.93	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.99	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	0.78	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.96	ug/L	
106-44-5	4-Methylphenol	11.86	143763	7.99 ug/L	NLE	0.78	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	1.01	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.88	ug/L	
98-95-3	Nitrobenzene			not detected	10	1.15	ug/L	
78-59-1	Isophorone			not detected	100	0.92	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	0.82	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.83	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	0.74	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.77	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.66	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.68	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.24	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.84	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	0.69	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.62	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.53	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	0.84	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	0.99	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.81	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.86	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.79	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.84	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.95	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.66	ug/L	
83-32-9	Acenaphthene			not detected	400	0.86	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.37	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.85	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.58	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA07257.D**	Sample Name	**2076010**
Operator	**BPatel**	Misc Info	**M5MW16**
Date Acquired	**30-Oct-02**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
121-14-2	2,4-Dinitrotoluene			not detected	10	0.86	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.71	ug/L	
86-73-7	Fluorene			not detected	300	0.86	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.67	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.19	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	0.76	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.83	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.75	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.66	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.61	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.36	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.84	ug/L	
120-12-7	Anthracene			not detected	2000	0.72	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.61	ug/L	
206-44-0	Fluoranthene			not detected	300	0.60	ug/L	
92-87-5	Benzidine			not detected	50	2.71	ug/L	
129-00-0	Pyrene			not detected	200	0.89	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.67	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.69	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	0.79	ug/L	
218-01-9	Chrysene			not detected	20	0.91	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.06	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	0.59	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.88	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.96	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.72	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.56	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.91	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.66	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
PQL= Practical Quantitation Limit

MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **M5MW16**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 20760 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 2076010

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA07257.D

Level: (low/med) LOW Date Received: 10/28/02

% Moisture: decanted: (Y/N) N Date Extracted: 10/29/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/30/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.42	12	J
2. 000116-53-0	Butanoic acid, 2-methyl-	7.64	8	JN

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA07258.D**	Sample Name	**2076011**
Operator	**BPatel**	Misc Info	**M5MW18**
Date Acquired	**30-Oct-02**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	1.27	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.78	ug/L	
62-53-3	Aniline			not detected	NLE	1.11	ug/L	
108-95-2	Phenol			not detected	4000	0.45	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.10	ug/L	
95-57-8	2-Chlorophenol			not detected	40	0.97	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.90	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.80	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.93	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.99	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	0.78	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.96	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	0.78	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	1.01	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.88	ug/L	
98-95-3	Nitrobenzene			not detected	10	1.15	ug/L	
78-59-1	Isophorone			not detected	100	0.92	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	0.82	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.83	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	0.74	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.77	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.66	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.68	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.24	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.84	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	0.69	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.62	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.53	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	0.84	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	0.99	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.81	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.86	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.79	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.84	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.95	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.66	ug/L	
83-32-9	Acenaphthene			not detected	400	0.86	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.37	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.85	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.58	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA07258.D**	Sample Name	**2076011**
Operator	**BPatel**	Misc Info	**M5MW18**
Date Acquired	**30-Oct-02**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
121-14-2	2,4-Dinitrotoluene			not detected	10	0.86	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.71	ug/L	
86-73-7	Fluorene			not detected	300	0.86	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.67	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.19	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	0.76	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.83	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.75	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.66	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.61	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.36	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.84	ug/L	
120-12-7	Anthracene			not detected	2000	0.72	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.61	ug/L	
206-44-0	Fluoranthene			not detected	300	0.60	ug/L	
92-87-5	Benzidine			not detected	50	2.71	ug/L	
129-00-0	Pyrene			not detected	200	0.89	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.67	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.69	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	0.79	ug/L	
218-01-9	Chrysene			not detected	20	0.91	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.06	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	0.59	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.88	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.96	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.72	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.56	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.91	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.66	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
PQL= Practical Quantitation Limit

MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **M5MW18**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 20760 Location: M5 SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 2076011

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA07258.D

Level: (low/med) LOW Date Received: 10/28/02

% Moisture: _____ decanted: (Y/N) N Date Extracted: 10/29/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/30/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.42	15	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA07259.D**	Sample Name	**2076012**
Operator	**BPatel**	Misc Info	**M5MW19**
Date Acquired	**30-Oct-02**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	1.27	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.78	ug/L	
62-53-3	Aniline			not detected	NLE	1.11	ug/L	
108-95-2	Phenol			not detected	4000	0.45	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.10	ug/L	
95-57-8	2-Chlorophenol			not detected	40	0.97	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.90	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.80	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.93	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.99	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	0.78	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.96	ug/L	
106-44-5	4-Methylphenol	11.86	57172	3.13 ug/L	NLE	0.78	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	1.01	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.88	ug/L	
98-95-3	Nitrobenzene			not detected	10	1.15	ug/L	
78-59-1	Isophorone			not detected	100	0.92	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	0.82	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.83	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	0.74	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.77	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.66	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.68	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.24	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.84	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	0.69	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.62	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.53	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	0.84	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	0.99	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.81	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.86	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.79	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.84	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.95	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.66	ug/L	
83-32-9	Acenaphthene			not detected	400	0.86	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.37	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.85	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.58	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA07259.D**	Sample Name	**2076012**
Operator	**BPatel**	Misc Info	**M5MW19**
Date Acquired	**30-Oct-02**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
121-14-2	2,4-Dinitrotoluene			not detected	10	0.86	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.71	ug/L	
86-73-7	Fluorene			not detected	300	0.86	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.67	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.19	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	0.76	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.83	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.75	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.66	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.61	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.36	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.84	ug/L	
120-12-7	Anthracene			not detected	2000	0.72	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.61	ug/L	
206-44-0	Fluoranthene			not detected	300	0.60	ug/L	
92-87-5	Benzidine			not detected	50	2.71	ug/L	
129-00-0	Pyrene			not detected	200	0.89	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.67	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.69	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	0.79	ug/L	
218-01-9	Chrysene			not detected	20	0.91	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.06	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	0.59	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.88	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.96	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.72	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.56	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.91	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.66	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
PQL= Practical Quantitation Limit

MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **M5MW19**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 20760 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 2076012

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA07259.D

Level: (low/med) LOW Date Received: 10/28/02

% Moisture: decanted: (Y/N) N Date Extracted: 10/29/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/30/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 7 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.80	10	J
2.	unknown	7.44	12	J
3.	unknown	7.74	8	J
4.	unknown	7.97	23	J
5. 000109-52-4	Pentanoic acid	8.55	46	JN
6. 000097-61-0	Pentanoic acid, 2-methyl-	9.54	7	JN
7.	unknown	11.09	5	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA07262.D**	Sample Name	**2076013**
Operator	**BPatel**	Misc Info	**M5MW20**
Date Acquired	**30-Oct-02**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	1.27	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.78	ug/L	
62-53-3	Aniline			not detected	NLE	1.11	ug/L	
108-95-2	Phenol			not detected	4000	0.45	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.10	ug/L	
95-57-8	2-Chlorophenol			not detected	40	0.97	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.90	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.80	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.93	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.99	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	0.78	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.96	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	0.78	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	1.01	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.88	ug/L	
98-95-3	Nitrobenzene			not detected	10	1.15	ug/L	
78-59-1	Isophorone			not detected	100	0.92	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	0.82	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.83	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	0.74	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.77	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.66	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.68	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.24	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.84	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	0.69	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.62	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.53	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	0.84	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	0.99	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.81	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.86	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.79	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.84	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.95	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.66	ug/L	
83-32-9	Acenaphthene			not detected	400	0.86	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.37	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.85	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.58	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA07262.D**	Sample Name	**2076013**
Operator	**BPatel**	Misc Info	**M5MW20**
Date Acquired	**30-Oct-02**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
121-14-2	2,4-Dinitrotoluene			not detected	10	0.86	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.71	ug/L	
86-73-7	Fluorene			not detected	300	0.86	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.67	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.19	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	0.76	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.83	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.75	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.66	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.61	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.36	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.84	ug/L	
120-12-7	Anthracene			not detected	2000	0.72	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.61	ug/L	
206-44-0	Fluoranthene			not detected	300	0.60	ug/L	
92-87-5	Benzidine			not detected	50	2.71	ug/L	
129-00-0	Pyrene			not detected	200	0.89	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.67	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.69	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	0.79	ug/L	
218-01-9	Chrysene			not detected	20	0.91	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.06	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	0.59	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.88	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.96	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.72	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.56	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.91	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.66	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
PQL= Practical Quantitation Limit

MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **M5MW20**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 20760 Location: M5 SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 2076013

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA07262.D

Level: (low/med) LOW Date Received: 10/28/02

% Moisture: _____ decanted: (Y/N) N Date Extracted: 10/29/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/30/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.42	13	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA07263.D**	Sample Name	**2076014**
Operator	**BPatel**	Misc Info	**M5MW23**
Date Acquired	**30-Oct-02**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	1.27	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.78	ug/L	
62-53-3	Aniline			not detected	NLE	1.11	ug/L	
108-95-2	Phenol			not detected	4000	0.45	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.10	ug/L	
95-57-8	2-Chlorophenol			not detected	40	0.97	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.90	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.80	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.93	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.99	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	0.78	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.96	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	0.78	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	1.01	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.88	ug/L	
98-95-3	Nitrobenzene			not detected	10	1.15	ug/L	
78-59-1	Isophorone			not detected	100	0.92	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	0.82	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.83	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	0.74	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.77	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.66	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.68	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.24	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.84	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	0.69	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.62	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.53	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	0.84	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	0.99	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.81	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.86	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.79	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.84	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.95	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.66	ug/L	
83-32-9	Acenaphthene			not detected	400	0.86	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.37	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.85	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.58	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA07263.D**	Sample Name	**2076014**
Operator	**BPatel**	Misc Info	**M5MW23**
Date Acquired	**30-Oct-02**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
121-14-2	2,4-Dinitrotoluene			not detected	10	0.86	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.71	ug/L	
86-73-7	Fluorene			not detected	300	0.86	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.67	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.19	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	0.76	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.83	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.75	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.66	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.61	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.36	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.84	ug/L	
120-12-7	Anthracene			not detected	2000	0.72	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.61	ug/L	
206-44-0	Fluoranthene			not detected	300	0.60	ug/L	
92-87-5	Benzidine			not detected	50	2.71	ug/L	
129-00-0	Pyrene			not detected	200	0.89	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.67	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.69	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	0.79	ug/L	
218-01-9	Chrysene			not detected	20	0.91	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.06	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	0.59	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.88	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.96	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.72	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.56	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.91	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.66	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
PQL= Practical Quantitation Limit

MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **M5MW23**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 20760 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 2076014

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA07263.D

Level: (low/med) LOW Date Received: 10/28/02

% Moisture: decanted: (Y/N) N Date Extracted: 10/29/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/30/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.42	12	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA07264.D**	Sample Name	**2076015**
Operator	**BPatel**	Misc Info	**M5MW25**
Date Acquired	**30-Oct-02**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
110-86-1	Pyridine			not detected	NLE	1.27	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.78	ug/L	
62-53-3	Aniline			not detected	NLE	1.11	ug/L	
108-95-2	Phenol			not detected	4000	0.45	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.10	ug/L	
95-57-8	2-Chlorophenol			not detected	40	0.97	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.90	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.80	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.93	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.99	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	0.78	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.96	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	0.78	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	1.01	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.88	ug/L	
98-95-3	Nitrobenzene			not detected	10	1.15	ug/L	
78-59-1	Isophorone			not detected	100	0.92	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	0.82	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.83	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	0.74	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.77	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.66	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.68	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.24	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.84	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	0.69	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.62	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.53	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	0.84	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	0.99	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.81	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.86	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.79	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.84	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.95	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.66	ug/L	
83-32-9	Acenaphthene			not detected	400	0.86	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.37	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.85	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.58	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA07264.D**	Sample Name	**2076015**
Operator	**BPatel**	Misc Info	**M5MW25**
Date Acquired	**30-Oct-02**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL		Qualifiers
121-14-2	2,4-Dinitrotoluene			not detected	10	0.86	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.71	ug/L	
86-73-7	Fluorene			not detected	300	0.86	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.67	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.19	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	0.76	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.83	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.75	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.66	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.61	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.36	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.84	ug/L	
120-12-7	Anthracene			not detected	2000	0.72	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.61	ug/L	
206-44-0	Fluoranthene			not detected	300	0.60	ug/L	
92-87-5	Benzidine			not detected	50	2.71	ug/L	
129-00-0	Pyrene			not detected	200	0.89	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.67	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.69	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	0.79	ug/L	
218-01-9	Chrysene			not detected	20	0.91	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.06	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	0.59	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.88	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.96	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.72	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.56	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.91	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.66	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
PQL= Practical Quantitation Limit

MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **M5MW25**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 20760 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 2076015

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA07264.D

Level: (low/med) LOW Date Received: 10/28/02

% Moisture: decanted: (Y/N) N Date Extracted: 10/29/02

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 10/30/02

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.42	10	J

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	MB 30Oct02
	DPW, SELFM-PW-EV	**Date Rec'd:**	
	Bldg. 173	**Extraction Date:**	28-Oct-02
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5-Dec-02
Analysis:	EPA Method 608	**Location :**	M5
Matrix:	Aqueous		
Analyst:	Skelton	**Field ID:**	MB 30Oct02
Ext. Meth:	Sep. Funnel		

Pesticide/PCB	Dilution Factor	Retention Time	Regulatory Level * (ug/L)	MDL (ug/L)	Result (ug/L)
alpha-BHC	1		0.02	0.0011	**ND**
beta-BHC	1		0.20	0.0050	**ND**
gamma-BHC	1		0.20	0.0013	**ND**
delta-BHC	1		NLE	0.0016	**ND**
Heptachlor	1		0.40	0.0035	**ND**
Aldrin	1		0.04	0.0026	**ND**
Heptachlor Epoxide	1		0.20	0.0020	**ND**
Endosulfan I	1		0.40	0.0016	**ND**
4,4'-DDE	1		0.10	0.0021	**ND**
Dieldrin	1		0.03	0.0020	**ND**
Endrin	1		2.00	0.0032	**ND**
Endrin Ketone	1		NLE	0.0026	**ND**
Endosulfan II	1		0.40	0.0022	**ND**
4,4'-DDD	1		0.10	0.0020	**ND**
4,4'-DDT	1		0.10	0.0052	**ND**
Endosulfan-Sulfate	1		0.40	0.0026	**ND**
Alpha-chlordane	1		0.50	0.0036	**ND**
Gamma-chlordane	1		0.50	0.0007	**ND**
Toxaphene	1		3.00	0.1517	**ND**
Arochlor 1016	1		0.50	0.0683	**ND**
Arochlor 1221	1		0.50	0.0666	**ND**
Arochlor 1232	1		0.50	0.0648	**ND**
Arochlor 1242	1		0.50	0.0485	**ND**
Arochlor 1248	1		0.50	0.0544	**ND**
Arochlor 1254	1		0.50	0.0608	**ND**
Arochlor 1260	1		0.50	0.0732	**ND**

* Higher of PQL's and ground water criteria as per NJAC 7:9-6

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: Rtx-CLPesticides 30m/.32mm ID/.25um
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.25um
PQL = Practical Quantitation Limit

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	MB 31Oct02
	DPW, SELFM-PW-EV	**Date Rec'd:**	
	Bldg. 173	**Extraction Date:**	28-Oct-02
	Ft. Monmouth, NJ 07703	**Analysis Date:**	15-Nov-02
Analysis:	EPA Method 608	**Location :**	M5
Matrix:	Aqueous		
Analyst:	Skelton	**Field ID:**	MB 31Oct02
Ext. Meth:	Sep. Funnel		

Pesticide/PCB	Dilution Factor	Retention Time	Regulatory Level * (ug/L)	MDL (ug/L)	Result (ug/L)
alpha-BHC	1		0.02	0.0011	**ND**
beta-BHC	1		0.20	0.0050	**ND**
gamma-BHC	1		0.20	0.0013	**ND**
delta-BHC	1		NLE	0.0016	**ND**
Heptachlor	1		0.40	0.0035	**ND**
Aldrin	1		0.04	0.0026	**ND**
Heptachlor Epoxide	1		0.20	0.0020	**ND**
Endosulfan I	1		0.40	0.0016	**ND**
4,4'-DDE	1		0.10	0.0021	**ND**
Dieldrin	1		0.03	0.0020	**ND**
Endrin	1		2.00	0.0032	**ND**
Endrin Ketone	1		NLE	0.0026	**ND**
Endosulfan II	1		0.40	0.0022	**ND**
4,4'-DDD	1		0.10	0.0020	**ND**
4,4'-DDT	1		0.10	0.0052	**ND**
Endosulfan-Sulfate	1		0.40	0.0026	**ND**
Alpha-chlordane	1		0.50	0.0036	**ND**
Gamma-chlordane	1		0.50	0.0007	**ND**
Toxaphene	1		3.00	0.1517	**ND**
Arochlor 1016	1		0.50	0.0683	**ND**
Arochlor 1221	1		0.50	0.0666	**ND**
Arochlor 1232	1		0.50	0.0648	**ND**
Arochlor 1242	1		0.50	0.0485	**ND**
Arochlor 1248	1		0.50	0.0544	**ND**
Arochlor 1254	1		0.50	0.0608	**ND**
Arochlor 1260	1		0.50	0.0732	**ND**

* Higher of PQL's and ground water criteria as per NJAC 7:9-6

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: Rtx-CLPesticides 30m/.32mm ID/.25um
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.25um
PQL = Practical Quantitation Limit

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	2076002
	DPW, SELFM-PW-EV	**Date Rec'd:**	28-Oct-02
	Bldg. 173	**Extraction Date:**	30-Oct-02
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5-Dec-02
Analysis:	EPA Method 608	**Location :**	M5
Matrix:	Aqueous		
Analyst:	Skelton	**Field ID:**	Field Blank
Ext. Meth:	Sep. Funnel		

Pesticide/PCB	Dilution Factor	Retention Time	Regulatory Level * (ug/L)	MDL (ug/L)	Result (ug/L)
alpha-BHC	1		0.02	0.0011	**ND**
beta-BHC	1		0.20	0.0050	**ND**
gamma-BHC	1		0.20	0.0013	**ND**
delta-BHC	1		NLE	0.0016	**ND**
Heptachlor	1		0.40	0.0035	**ND**
Aldrin	1		0.04	0.0026	**ND**
Heptachlor Epoxide	1		0.20	0.0020	**ND**
Endosulfan I	1		0.40	0.0016	**ND**
4,4'-DDE	1		0.10	0.0021	**ND**
Dieldrin	1		0.03	0.0020	**ND**
Endrin	1		2.00	0.0032	**ND**
Endrin Ketone	1		NLE	0.0026	**ND**
Endosulfan II	1		0.40	0.0022	**ND**
4,4'-DDD	1		0.10	0.0020	**ND**
4,4'-DDT	1		0.10	0.0052	**ND**
Endosulfan-Sulfate	1		0.40	0.0026	**ND**
Alpha-chlordane	1		0.50	0.0036	**ND**
Gamma-chlordane	1		0.50	0.0007	**ND**
Toxaphene	1		3.00	0.1517	**ND**
Arochlor 1016	1		0.50	0.0683	**ND**
Arochlor 1221	1		0.50	0.0666	**ND**
Arochlor 1232	1		0.50	0.0648	**ND**
Arochlor 1242	1		0.50	0.0485	**ND**
Arochlor 1248	1		0.50	0.0544	**ND**
Arochlor 1254	1		0.50	0.0608	**ND**
Arochlor 1260	1		0.50	0.0732	**ND**

* Higher of PQL's and ground water criteria as per NJAC 7:9-6

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: Rtx-CLPesticides 30m/.32mm ID/.25um
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.25um
PQL = Practical Quantitation Limit

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	2076003
	DPW, SELFM-PW-EV	**Date Rec'd:**	28-Oct-02
	Bldg. 173	**Extraction Date:**	30-Oct-02
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5-Dec-02
Analysis:	EPA Method 608	**Location :**	M5
Matrix:	Aqueous		
Analyst:	Skelton	**Field ID:**	Dupe
Ext. Meth:	Sep. Funnel		

Pesticide/PCB	Dilution Factor	Retention Time	Regulatory Level * (ug/L)	MDL (ug/L)	Result (ug/L)
alpha-BHC	1		0.02	0.0011	**ND**
beta-BHC	1		0.20	0.0050	**ND**
gamma-BHC	1		0.20	0.0013	**ND**
delta-BHC	1		NLE	0.0016	**ND**
Heptachlor	1		0.40	0.0035	**ND**
Aldrin	1		0.04	0.0026	**ND**
Heptachlor Epoxide	1		0.20	0.0020	**ND**
Endosulfan I	1		0.40	0.0016	**ND**
4,4'-DDE	1		0.10	0.0021	**ND**
Dieldrin	1		0.03	0.0020	**ND**
Endrin	1		2.00	0.0032	**ND**
Endrin Ketone	1		NLE	0.0026	**ND**
Endosulfan II	1		0.40	0.0022	**ND**
4,4'-DDD	1		0.10	0.0020	**ND**
4,4'-DDT	1		0.10	0.0052	**ND**
Endosulfan-Sulfate	1		0.40	0.0026	**ND**
Alpha-chlordane	1		0.50	0.0036	**ND**
Gamma-chlordane	1		0.50	0.0007	**ND**
Toxaphene	1		3.00	0.1517	**ND**
Arochlor 1016	1		0.50	0.0683	**ND**
Arochlor 1221	1		0.50	0.0666	**ND**
Arochlor 1232	1		0.50	0.0648	**ND**
Arochlor 1242	1		0.50	0.0485	**ND**
Arochlor 1248	1		0.50	0.0544	**ND**
Arochlor 1254	1		0.50	0.0608	**ND**
Arochlor 1260	1		0.50	0.0732	**ND**

* Higher of PQL's and ground water criteria as per NJAC 7:9-6

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: Rtx-CLPesticides 30m/.32mm ID/.25um
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.25um
PQL = Practical Quantitation Limit

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	2076004
	DPW, SELFM-PW-EV	**Date Rec'd:**	28-Oct-02
	Bldg. 173	**Extraction Date:**	30-Oct-02
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5-Dec-02
Analysis:	EPA Method 608	**Location :**	M5
Matrix:	Aqueous		
Analyst:	Skelton	**Field ID:**	M5MW10
Ext. Meth:	Sep. Funnel		

Pesticide/PCB	Dilution Factor	Retention Time	Regulatory Level * (ug/L)	MDL (ug/L)	Result (ug/L)
alpha-BHC	1		0.02	0.0011	**ND**
beta-BHC	1		0.20	0.0050	**ND**
gamma-BHC	1		0.20	0.0013	**ND**
delta-BHC	1		NLE	0.0016	**ND**
Heptachlor	1		0.40	0.0035	**ND**
Aldrin	1		0.04	0.0026	**ND**
Heptachlor Epoxide	1		0.20	0.0020	**ND**
Endosulfan I	1		0.40	0.0016	**ND**
4,4'-DDE	1		0.10	0.0021	**ND**
Dieldrin	1		0.03	0.0020	**ND**
Endrin	1		2.00	0.0032	**ND**
Endrin Ketone	1		NLE	0.0026	**ND**
Endosulfan II	1		0.40	0.0022	**ND**
4,4'-DDD	1		0.10	0.0020	**ND**
4,4'-DDT	1		0.10	0.0052	**ND**
Endosulfan-Sulfate	1		0.40	0.0026	**ND**
Alpha-chlordane	1		0.50	0.0036	**ND**
Gamma-chlordane	1		0.50	0.0007	**ND**
Toxaphene	1		3.00	0.1517	**ND**
Arochlor 1016	1		0.50	0.0683	**ND**
Arochlor 1221	1		0.50	0.0666	**ND**
Arochlor 1232	1		0.50	0.0648	**ND**
Arochlor 1242	1		0.50	0.0485	**ND**
Arochlor 1248	1		0.50	0.0544	**ND**
Arochlor 1254	1		0.50	0.0608	**ND**
Arochlor 1260	1		0.50	0.0732	**ND**

* Higher of PQL's and ground water criteria as per NJAC 7:9-6

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: Rtx-CLPesticides 30m/.32mm ID/.25um
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.25um
PQL = Practical Quantitation Limit

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	2076005
	DPW, SELFM-PW-EV	**Date Rec'd:**	28-Oct-02
	Bldg. 173	**Extraction Date:**	30-Oct-02
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5-Dec-02
Analysis:	EPA Method 608	**Location :**	M5
Matrix:	Aqueous		
Analyst:	Skelton	**Field ID:**	M5MW11
Ext. Meth:	Sep. Funnel		

Pesticide/PCB	Dilution Factor	Retention Time	Regulatory Level * (ug/L)	MDL (ug/L)	Result (ug/L)
alpha-BHC	1		0.02	0.0011	**ND**
beta-BHC	1		0.20	0.0050	**ND**
gamma-BHC	1		0.20	0.0013	**ND**
delta-BHC	1		NLE	0.0016	**ND**
Heptachlor	1		0.40	0.0035	**ND**
Aldrin	1		0.04	0.0026	**ND**
Heptachlor Epoxide	1		0.20	0.0020	**ND**
Endosulfan I	1		0.40	0.0016	**ND**
4,4'-DDE	1		0.10	0.0021	**ND**
Dieldrin	1		0.03	0.0020	**ND**
Endrin	1		2.00	0.0032	**ND**
Endrin Ketone	1		NLE	0.0026	**ND**
Endosulfan II	1		0.40	0.0022	**ND**
4,4'-DDD	1		0.10	0.0020	**ND**
4,4'-DDT	1		0.10	0.0052	**ND**
Endosulfan-Sulfate	1		0.40	0.0026	**ND**
Alpha-chlordane	1		0.50	0.0036	**ND**
Gamma-chlordane	1		0.50	0.0007	**ND**
Toxaphene	1		3.00	0.1517	**ND**
Arochlor 1016	1		0.50	0.0683	**ND**
Arochlor 1221	1		0.50	0.0666	**ND**
Arochlor 1232	1		0.50	0.0648	**ND**
Arochlor 1242	1		0.50	0.0485	**ND**
Arochlor 1248	1		0.50	0.0544	**ND**
Arochlor 1254	1		0.50	0.0608	**ND**
Arochlor 1260	1		0.50	0.0732	**ND**

* Higher of PQL's and ground water criteria as per NJAC 7:9-6

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: Rtx-CLPesticides 30m/.32mm ID/.25um
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.25um
PQL = Practical Quantitation Limit

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	2076006
	DPW, SELFM-PW-EV	**Date Rec'd:**	28-Oct-02
	Bldg. 173	**Extraction Date:**	30-Oct-02
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5-Dec-02
Analysis:	EPA Method 608	**Location :**	M5
Matrix:	Aqueous		
Analyst:	Skelton	**Field ID:**	M5MW12
Ext. Meth:	Sep. Funnel		

Pesticide/PCB	Dilution Factor	Retention Time	Regulatory Level * (ug/L)	MDL (ug/L)	Result (ug/L)
alpha-BHC	1		0.02	0.0011	**ND**
beta-BHC	1		0.20	0.0050	**ND**
gamma-BHC	1		0.20	0.0013	**ND**
delta-BHC	1		NLE	0.0016	**ND**
Heptachlor	1		0.40	0.0035	**ND**
Aldrin	1		0.04	0.0026	**ND**
Heptachlor Epoxide	1		0.20	0.0020	**ND**
Endosulfan I	1		0.40	0.0016	**ND**
4,4'-DDE	1		0.10	0.0021	**ND**
Dieldrin	1		0.03	0.0020	**ND**
Endrin	1		2.00	0.0032	**ND**
Endrin Ketone	1		NLE	0.0026	**ND**
Endosulfan II	1		0.40	0.0022	**ND**
4,4'-DDD	1		0.10	0.0020	**ND**
4,4'-DDT	1		0.10	0.0052	**ND**
Endosulfan-Sulfate	1		0.40	0.0026	**ND**
Alpha-chlordane	1		0.50	0.0036	**ND**
Gamma-chlordane	1		0.50	0.0007	**ND**
Toxaphene	1		3.00	0.1517	**ND**
Arochlor 1016	1		0.50	0.0683	**ND**
Arochlor 1221	1		0.50	0.0666	**ND**
Arochlor 1232	1		0.50	0.0648	**ND**
Arochlor 1242	1		0.50	0.0485	**ND**
Arochlor 1248	1		0.50	0.0544	**ND**
Arochlor 1254	1		0.50	0.0608	**ND**
Arochlor 1260	1		0.50	0.0732	**ND**

* Higher of PQL's and ground water criteria as per NJAC 7:9-6

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: Rtx-CLPesticides 30m/.32mm ID/.25um
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.25um
PQL = Practical Quantitation Limit

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	2076007
	DPW, SELFM-PW-EV	**Date Rec'd:**	28-Oct-02
	Bldg. 173	**Extraction Date:**	30-Oct-02
	Ft. Monmouth, NJ 07703	**Analysis Date:**	5-Dec-02
Analysis:	EPA Method 608	**Location :**	M5
Matrix:	Aqueous		
Analyst:	Skelton	**Field ID:**	M5MW13
Ext. Meth:	Sep. Funnel		

Pesticide/PCB	Dilution Factor	Retention Time	Regulatory Level * (ug/L)	MDL (ug/L)	Result (ug/L)
alpha-BHC	1		0.02	0.0011	**ND**
beta-BHC	1		0.20	0.0050	**ND**
gamma-BHC	1		0.20	0.0013	**ND**
delta-BHC	1		NLE	0.0016	**ND**
Heptachlor	1		0.40	0.0035	**ND**
Aldrin	1		0.04	0.0026	**ND**
Heptachlor Epoxide	1		0.20	0.0020	**ND**
Endosulfan I	1		0.40	0.0016	**ND**
4,4'-DDE	1		0.10	0.0021	**ND**
Dieldrin	1		0.03	0.0020	**ND**
Endrin	1		2.00	0.0032	**ND**
Endrin Ketone	1		NLE	0.0026	**ND**
Endosulfan II	1		0.40	0.0022	**ND**
4,4'-DDD	1		0.10	0.0020	**ND**
4,4'-DDT	1		0.10	0.0052	**ND**
Endosulfan-Sulfate	1		0.40	0.0026	**ND**
Alpha-chlordane	1		0.50	0.0036	**ND**
Gamma-chlordane	1		0.50	0.0007	**ND**
Toxaphene	1		3.00	0.1517	**ND**
Arochlor 1016	1		0.50	0.0683	**ND**
Arochlor 1221	1		0.50	0.0666	**ND**
Arochlor 1232	1		0.50	0.0648	**ND**
Arochlor 1242	1		0.50	0.0485	**ND**
Arochlor 1248	1		0.50	0.0544	**ND**
Arochlor 1254	1		0.50	0.0608	**ND**
Arochlor 1260	1		0.50	0.0732	**ND**

* Higher of PQL's and ground water criteria as per NJAC 7:9-6

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: Rtx-CLPesticides 30m/.32mm ID/.25um
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.25um
PQL = Practical Quantitation Limit

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	2076008
	DPW, SELFM-PW-EV	**Date Rec'd:**	28-Oct-02
	Bldg. 173	**Extraction Date:**	30-Oct-02
	Ft. Monmouth, NJ 07703	**Analysis Date:**	6-Dec-02
Analysis:	EPA Method 608	**Location :**	M5
Matrix:	Aqueous		
Analyst:	Skelton	**Field ID:**	M5MW14
Ext. Meth:	Sep. Funnel		

Pesticide/PCB	Dilution Factor	Retention Time	Regulatory Level * (ug/L)	MDL (ug/L)	Result (ug/L)
alpha-BHC	1		0.02	0.0011	**ND**
beta-BHC	1		0.20	0.0050	**ND**
gamma-BHC	1		0.20	0.0013	**ND**
delta-BHC	1		NLE	0.0016	**ND**
Heptachlor	1		0.40	0.0035	**ND**
Aldrin	1		0.04	0.0026	**ND**
Heptachlor Epoxide	1		0.20	0.0020	**ND**
Endosulfan I	1		0.40	0.0016	**ND**
4,4'-DDE	1		0.10	0.0021	**ND**
Dieldrin	1		0.03	0.0020	**ND**
Endrin	1		2.00	0.0032	**ND**
Endrin Ketone	1		NLE	0.0026	**ND**
Endosulfan II	1		0.40	0.0022	**ND**
4,4'-DDD	1		0.10	0.0020	**ND**
4,4'-DDT	1		0.10	0.0052	**ND**
Endosulfan-Sulfate	1		0.40	0.0026	**ND**
Alpha-chlordane	1		0.50	0.0036	**ND**
Gamma-chlordane	1		0.50	0.0007	**ND**
Toxaphene	1		3.00	0.1517	**ND**
Arochlor 1016	1		0.50	0.0683	**ND**
Arochlor 1221	1		0.50	0.0666	**ND**
Arochlor 1232	1		0.50	0.0648	**ND**
Arochlor 1242	1		0.50	0.0485	**ND**
Arochlor 1248	1		0.50	0.0544	**ND**
Arochlor 1254	1		0.50	0.0608	**ND**
Arochlor 1260	1		0.50	0.0732	**ND**

* Higher of PQL's and ground water criteria as per NJAC 7:9-6

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: Rtx-CLPesticides 30m/.32mm ID/.25um
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.25um
PQL = Practical Quantitation Limit

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	2076009
	DPW, SELFM-PW-EV	**Date Rec'd:**	28-Oct-02
	Bldg. 173	**Extraction Date:**	30-Oct-02
	Ft. Monmouth, NJ 07703	**Analysis Date:**	6-Dec-02
Analysis:	EPA Method 608	**Location :**	M5
Matrix:	Aqueous		
Analyst:	Skelton	**Field ID:**	M5MW15
Ext. Meth:	Sep. Funnel		

Pesticide/PCB	Dilution Factor	Retention Time	Regulatory Level * (ug/L)	MDL (ug/L)	Result (ug/L)
alpha-BHC	1		0.02	0.0011	**ND**
beta-BHC	1		0.20	0.0050	**ND**
gamma-BHC	1		0.20	0.0013	**ND**
delta-BHC	1		NLE	0.0016	**ND**
Heptachlor	1		0.40	0.0035	**ND**
Aldrin	1		0.04	0.0026	**ND**
Heptachlor Epoxide	1		0.20	0.0020	**ND**
Endosulfan I	1		0.40	0.0016	**ND**
4,4'-DDE	1		0.10	0.0021	**ND**
Dieldrin	1		0.03	0.0020	**ND**
Endrin	1		2.00	0.0032	**ND**
Endrin Ketone	1		NLE	0.0026	**ND**
Endosulfan II	1		0.40	0.0022	**ND**
4,4'-DDD	1		0.10	0.0020	**ND**
4,4'-DDT	1		0.10	0.0052	**ND**
Endosulfan-Sulfate	1		0.40	0.0026	**ND**
Alpha-chlordane	1		0.50	0.0036	**ND**
Gamma-chlordane	1		0.50	0.0007	**ND**
Toxaphene	1		3.00	0.1517	**ND**
Arochlor 1016	1		0.50	0.0683	**ND**
Arochlor 1221	1		0.50	0.0666	**ND**
Arochlor 1232	1		0.50	0.0648	**ND**
Arochlor 1242	1		0.50	0.0485	**ND**
Arochlor 1248	1		0.50	0.0544	**ND**
Arochlor 1254	1		0.50	0.0608	**ND**
Arochlor 1260	1		0.50	0.0732	**ND**

* Higher of PQL's and ground water criteria as per NJAC 7:9-6

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: Rtx-CLPesticides 30m/.32mm ID/.25um
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.25um
PQL = Practical Quantitation Limit

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	2076010
	DPW, SELFM-PW-EV	**Date Rec'd:**	28-Oct-02
	Bldg. 173	**Extraction Date:**	31-Oct-02
	Ft. Monmouth, NJ 07703	**Analysis Date:**	6-Dec-02
Analysis:	EPA Method 608	**Location :**	M5
Matrix:	Aqueous		
Analyst:	Skelton	**Field ID:**	M5MW16
Ext. Meth:	Sep. Funnel		

Pesticide/PCB	Dilution Factor	Retention Time	Regulatory Level * (ug/L)	MDL (ug/L)	Result (ug/L)
alpha-BHC	1		0.02	0.0011	**ND**
beta-BHC	1		0.20	0.0050	**ND**
gamma-BHC	1		0.20	0.0013	**ND**
delta-BHC	1		NLE	0.0016	**ND**
Heptachlor	1		0.40	0.0035	**ND**
Aldrin	1		0.04	0.0026	**ND**
Heptachlor Epoxide	1		0.20	0.0020	**ND**
Endosulfan I	1		0.40	0.0016	**ND**
4,4'-DDE	1		0.10	0.0021	**ND**
Dieldrin	1		0.03	0.0020	**ND**
Endrin	1		2.00	0.0032	**ND**
Endrin Ketone	1		NLE	0.0026	**ND**
Endosulfan II	1		0.40	0.0022	**ND**
4,4'-DDD	1		0.10	0.0020	**ND**
4,4'-DDT	1		0.10	0.0052	**ND**
Endosulfan-Sulfate	1		0.40	0.0026	**ND**
Alpha-chlordane	1		0.50	0.0036	**ND**
Gamma-chlordane	1		0.50	0.0007	**ND**
Toxaphene	1		3.00	0.1517	**ND**
Arochlor 1016	1		0.50	0.0683	**ND**
Arochlor 1221	1		0.50	0.0666	**ND**
Arochlor 1232	1		0.50	0.0648	**ND**
Arochlor 1242	1		0.50	0.0485	**ND**
Arochlor 1248	1		0.50	0.0544	**ND**
Arochlor 1254	1		0.50	0.0608	**ND**
Arochlor 1260	1		0.50	0.0732	**ND**

* Higher of PQL's and ground water criteria as per NJAC 7:9-6

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: Rtx-CLPesticides 30m/.32mm ID/.25um
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.25um
PQL = Practical Quantitation Limit

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	2076011
	DPW, SELFM-PW-EV	**Date Rec'd:**	28-Oct-02
	Bldg. 173	**Extraction Date:**	31-Oct-02
	Ft. Monmouth, NJ 07703	**Analysis Date:**	6-Dec-02
Analysis:	EPA Method 608	**Location :**	M5
Matrix:	Aqueous		
Analyst:	Skelton	**Field ID:**	M5MW18
Ext. Meth:	Sep. Funnel		

Pesticide/PCB	Dilution Factor	Retention Time	Regulatory Level * (ug/L)	MDL (ug/L)	Result (ug/L)
alpha-BHC	1		0.02	0.0011	**ND**
beta-BHC	1		0.20	0.0050	**ND**
gamma-BHC	1		0.20	0.0013	**ND**
delta-BHC	1		NLE	0.0016	**ND**
Heptachlor	1		0.40	0.0035	**ND**
Aldrin	1		0.04	0.0026	**ND**
Heptachlor Epoxide	1		0.20	0.0020	**ND**
Endosulfan I	1		0.40	0.0016	**ND**
4,4'-DDE	1		0.10	0.0021	**ND**
Dieldrin	1		0.03	0.0020	**ND**
Endrin	1		2.00	0.0032	**ND**
Endrin Ketone	1		NLE	0.0026	**ND**
Endosulfan II	1		0.40	0.0022	**ND**
4,4'-DDD	1		0.10	0.0020	**ND**
4,4'-DDT	1		0.10	0.0052	**ND**
Endosulfan-Sulfate	1		0.40	0.0026	**ND**
Alpha-chlordane	1		0.50	0.0036	**ND**
Gamma-chlordane	1		0.50	0.0007	**ND**
Toxaphene	1		3.00	0.1517	**ND**
Arochlor 1016	1		0.50	0.0683	**ND**
Arochlor 1221	1		0.50	0.0666	**ND**
Arochlor 1232	1		0.50	0.0648	**ND**
Arochlor 1242	1		0.50	0.0485	**ND**
Arochlor 1248	1		0.50	0.0544	**ND**
Arochlor 1254	1		0.50	0.0608	**ND**
Arochlor 1260	1		0.50	0.0732	**ND**

* Higher of PQL's and ground water criteria as per NJAC 7:9-6

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: Rtx-CLPesticides 30m/.32mm ID/.25um
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.25um
PQL = Practical Quantitation Limit

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	2076012
	DPW, SELFM-PW-EV	**Date Rec'd:**	28-Oct-02
	Bldg. 173	**Extraction Date:**	31-Oct-02
	Ft. Monmouth, NJ 07703	**Analysis Date:**	6-Dec-02
Analysis:	EPA Method 608	**Location :**	M5
Matrix:	Aqueous		
Analyst:	Skelton	**Field ID:**	M5MW19
Ext. Meth:	Sep. Funnel		

Pesticide/PCB	Dilution Factor	Retention Time	Regulatory Level * (ug/L)	MDL (ug/L)	Result (ug/L)
alpha-BHC	1		0.02	0.0011	**ND**
beta-BHC	1		0.20	0.0050	**ND**
gamma-BHC	1		0.20	0.0013	**ND**
delta-BHC	1		NLE	0.0016	**ND**
Heptachlor	1		0.40	0.0035	**ND**
Aldrin	1		0.04	0.0026	**ND**
Heptachlor Epoxide	1		0.20	0.0020	**ND**
Endosulfan I	1		0.40	0.0016	**ND**
4,4'-DDE	1		0.10	0.0021	**ND**
Dieldrin	1		0.03	0.0020	**ND**
Endrin	1		2.00	0.0032	**ND**
Endrin Ketone	1		NLE	0.0026	**ND**
Endosulfan II	1		0.40	0.0022	**ND**
4,4'-DDD	1		0.10	0.0020	**ND**
4,4'-DDT	1		0.10	0.0052	**ND**
Endosulfan-Sulfate	1		0.40	0.0026	**ND**
Alpha-chlordane	1		0.50	0.0036	**ND**
Gamma-chlordane	1		0.50	0.0007	**ND**
Toxaphene	1		3.00	0.1517	**ND**
Arochlor 1016	1		0.50	0.0683	**ND**
Arochlor 1221	1		0.50	0.0666	**ND**
Arochlor 1232	1		0.50	0.0648	**ND**
Arochlor 1242	1		0.50	0.0485	**ND**
Arochlor 1248	1		0.50	0.0544	**ND**
Arochlor 1254	1		0.50	0.0608	**ND**
Arochlor 1260	1		0.50	0.0732	**ND**

* Higher of PQL's and ground water criteria as per NJAC 7:9-6

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: Rtx-CLPesticides 30m/.32mm ID/.25um
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.25um
PQL = Practical Quantitation Limit

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	2076013
	DPW, SELFM-PW-EV	**Date Rec'd:**	28-Oct-02
	Bldg. 173	**Extraction Date:**	31-Oct-02
	Ft. Monmouth, NJ 07703	**Analysis Date:**	6-Dec-02
Analysis:	EPA Method 608	**Location :**	M5
Matrix:	Aqueous		
Analyst:	Skelton	**Field ID:**	M5MW20
Ext. Meth:	Sep. Funnel		

Pesticide/PCB	Dilution Factor	Retention Time	Regulatory Level * (ug/L)	MDL (ug/L)	Result (ug/L)
alpha-BHC	1		0.02	0.0011	**ND**
beta-BHC	1		0.20	0.0050	**ND**
gamma-BHC	1		0.20	0.0013	**ND**
delta-BHC	1		NLE	0.0016	**ND**
Heptachlor	1		0.40	0.0035	**ND**
Aldrin	1		0.04	0.0026	**ND**
Heptachlor Epoxide	1		0.20	0.0020	**ND**
Endosulfan I	1		0.40	0.0016	**ND**
4,4'-DDE	1		0.10	0.0021	**ND**
Dieldrin	1		0.03	0.0020	**ND**
Endrin	1		2.00	0.0032	**ND**
Endrin Ketone	1		NLE	0.0026	**ND**
Endosulfan II	1		0.40	0.0022	**ND**
4,4'-DDD	1		0.10	0.0020	**ND**
4,4'-DDT	1		0.10	0.0052	**ND**
Endosulfan-Sulfate	1		0.40	0.0026	**ND**
Alpha-chlordane	1		0.50	0.0036	**ND**
Gamma-chlordane	1		0.50	0.0007	**ND**
Toxaphene	1		3.00	0.1517	**ND**
Arochlor 1016	1		0.50	0.0683	**ND**
Arochlor 1221	1		0.50	0.0666	**ND**
Arochlor 1232	1		0.50	0.0648	**ND**
Arochlor 1242	1		0.50	0.0485	**ND**
Arochlor 1248	1		0.50	0.0544	**ND**
Arochlor 1254	1		0.50	0.0608	**ND**
Arochlor 1260	1		0.50	0.0732	**ND**

* Higher of PQL's and ground water criteria as per NJAC 7:9-6

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: Rtx-CLPesticides 30m/.32mm ID/.25um
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.25um
PQL = Practical Quantitation Limit

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	2076014
	DPW, SELFM-PW-EV	**Date Rec'd:**	28-Oct-02
	Bldg. 173	**Extraction Date:**	31-Oct-02
	Ft. Monmouth, NJ 07703	**Analysis Date:**	6-Dec-02
Analysis:	EPA Method 608	**Location :**	M5
Matrix:	Aqueous		
Analyst:	Skelton	**Field ID:**	M5MW23
Ext. Meth:	Sep. Funnel		

Pesticide/PCB	Dilution Factor	Retention Time	Regulatory Level * (ug/L)	MDL (ug/L)	Result (ug/L)
alpha-BHC	1		0.02	0.0011	**ND**
beta-BHC	1		0.20	0.0050	**ND**
gamma-BHC	1		0.20	0.0013	**ND**
delta-BHC	1		NLE	0.0016	**ND**
Heptachlor	1		0.40	0.0035	**ND**
Aldrin	1		0.04	0.0026	**ND**
Heptachlor Epoxide	1		0.20	0.0020	**ND**
Endosulfan I	1		0.40	0.0016	**ND**
4,4'-DDE	1		0.10	0.0021	**ND**
Dieldrin	1		0.03	0.0020	**ND**
Endrin	1		2.00	0.0032	**ND**
Endrin Ketone	1		NLE	0.0026	**ND**
Endosulfan II	1		0.40	0.0022	**ND**
4,4'-DDD	1		0.10	0.0020	**ND**
4,4'-DDT	1		0.10	0.0052	**ND**
Endosulfan-Sulfate	1		0.40	0.0026	**ND**
Alpha-chlordane	1		0.50	0.0036	**ND**
Gamma-chlordane	1		0.50	0.0007	**ND**
Toxaphene	1		3.00	0.1517	**ND**
Arochlor 1016	1		0.50	0.0683	**ND**
Arochlor 1221	1		0.50	0.0666	**ND**
Arochlor 1232	1		0.50	0.0648	**ND**
Arochlor 1242	1		0.50	0.0485	**ND**
Arochlor 1248	1		0.50	0.0544	**ND**
Arochlor 1254	1		0.50	0.0608	**ND**
Arochlor 1260	1		0.50	0.0732	**ND**

* Higher of PQL's and ground water criteria as per NJAC 7:9-6

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: Rtx-CLPesticides 30m/.32mm ID/.25um
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.25um
PQL = Practical Quantitation Limit

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client :	U.S. Army	**Lab. ID # :**	2076015
	DPW, SELFM-PW-EV	**Date Rec'd:**	28-Oct-02
	Bldg. 173	**Extraction Date:**	31-Oct-02
	Ft. Monmouth, NJ 07703	**Analysis Date:**	6-Dec-02
Analysis:	EPA Method 608	**Location :**	M5
Matrix:	Aqueous		
Analyst:	Skelton	**Field ID:**	M5MW25
Ext. Meth:	Sep. Funnel		

Pesticide/PCB	Dilution Factor	Retention Time	Regulatory Level * (ug/L)	MDL (ug/L)	Result (ug/L)
alpha-BHC	1		0.02	0.0011	**ND**
beta-BHC	1		0.20	0.0050	**ND**
gamma-BHC	1		0.20	0.0013	**ND**
delta-BHC	1		NLE	0.0016	**ND**
Heptachlor	1		0.40	0.0035	**ND**
Aldrin	1		0.04	0.0026	**ND**
Heptachlor Epoxide	1		0.20	0.0020	**ND**
Endosulfan I	1		0.40	0.0016	**ND**
4,4'-DDE	1		0.10	0.0021	**ND**
Dieldrin	1		0.03	0.0020	**ND**
Endrin	1		2.00	0.0032	**ND**
Endrin Ketone	1		NLE	0.0026	**ND**
Endosulfan II	1		0.40	0.0022	**ND**
4,4'-DDD	1		0.10	0.0020	**ND**
4,4'-DDT	1		0.10	0.0052	**ND**
Endosulfan-Sulfate	1		0.40	0.0026	**ND**
Alpha-chlordane	1		0.50	0.0036	**ND**
Gamma-chlordane	1		0.50	0.0007	**ND**
Toxaphene	1		3.00	0.1517	**ND**
Arochlor 1016	1		0.50	0.0683	**ND**
Arochlor 1221	1		0.50	0.0666	**ND**
Arochlor 1232	1		0.50	0.0648	**ND**
Arochlor 1242	1		0.50	0.0485	**ND**
Arochlor 1248	1		0.50	0.0544	**ND**
Arochlor 1254	1		0.50	0.0608	**ND**
Arochlor 1260	1		0.50	0.0732	**ND**

* Higher of PQL's and ground water criteria as per NJAC 7:9-6

ND = Not Detected
MDL = Method Detection Limit
NLE = No Limit Established

Column-Primary: Rtx-CLPesticides 30m/.32mm ID/.25um
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.25um
PQL = Practical Quantitation Limit

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #:
Sample Prepared: 11/08/02

Site: M5
Ft. Monmouth, New Jersey

Field ID#: Method Blank

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	MDL (ug/L)
Aluminum	11/08/02	20.2	200	10.0
Antimony	11/08/02	2.42	20	2.0
Arsenic	11/08/02	2.65	8	2.0
Barium	11/08/02	ND	2000	0.5
Beryllium	11/08/02	ND	20	0.5
Cadmium	11/08/02	ND	4	0.5
Calcium	11/08/02	ND	NLE	20.0
Chromium	11/08/02	ND	100	0.5
Cobalt	11/08/02	ND	NLE	0.5
Copper	11/08/02	ND	1000	2.0
Iron	11/08/02	ND	300	10.0
Lead	11/08/02	ND	10	1.0
Magnesium	11/08/02	25.6	NLE	10.0
Manganese	11/08/02	ND	50	0.5
Mercury	11/15/02	ND	2	0.1
Nickel	11/08/02	ND	100	1.0
Potassium	11/08/02	72.2	NLE	40.0
Selenium	11/08/02	ND	50	3.0
Silver	11/08/02	ND	20	1.0
Sodium	11/08/02	338	50000	20.0
Thallium	11/08/02	ND	10	2.0
Vanadium	11/08/02	ND	NLE	0.5
Zinc	11/08/02	ND	5000	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 2076002
Sample Received: 10/28/02
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: Field Blank

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	MDL (ug/L)
Aluminum	11/08/02	13.3	200	10.0
Antimony	11/08/02	ND	20	2.0
Arsenic	11/08/02	ND	8	2.0
Barium	11/08/02	12.9	2000	0.5
Beryllium	11/08/02	ND	20	0.5
Cadmium	11/08/02	ND	4	0.5
Calcium	11/08/02	130	NLE	20.0
Chromium	11/08/02	ND	100	0.5
Cobalt	11/08/02	ND	NLE	0.5
Copper	11/08/02	2.68	1000	2.0
Iron	11/08/02	44.9	300	10.0
Lead	11/08/02	ND	10	1.0
Magnesium	11/08/02	30.1	NLE	10.0
Manganese	11/08/02	1.67	50	0.5
Mercury	11/15/02	ND	2	0.1
Nickel	11/08/02	ND	100	1.0
Potassium	11/08/02	48.0	NLE	40.0
Selenium	11/08/02	5.31	50	3.0
Silver	11/08/02	ND	20	1.0
Sodium	11/08/02	724	50000	20.0
Thallium	11/08/02	ND	10	2.0
Vanadium	11/08/02	ND	NLE	0.5
Zinc	11/08/02	ND	5000	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 2076003
Sample Received: 10/28/02
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: Dupe

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	MDL (ug/L)
Aluminum	11/08/02	99.1	200	10.0
Antimony	11/08/02	ND	20	2.0
Arsenic	11/08/02	5.72	8	2.0
Barium	11/08/02	55.9	2000	0.5
Beryllium	11/08/02	ND	20	0.5
Cadmium	11/08/02	ND	4	0.5
Calcium	11/08/02	27200	NLE	20.0
Chromium	11/08/02	0.585	100	0.5
Cobalt	11/08/02	ND	NLE	0.5
Copper	11/08/02	ND	1000	2.0
Iron	11/08/02	21400	300	10.0
Lead	11/08/02	ND	10	1.0
Magnesium	11/08/02	5360	NLE	10.0
Manganese	11/08/02	80.8	50	0.5
Mercury	11/15/02	ND	2	0.1
Nickel	11/08/02	ND	100	1.0
Potassium	11/08/02	7170	NLE	40.0
Selenium	11/08/02	ND	50	3.0
Silver	11/08/02	ND	20	1.0
Sodium	11/08/02	9830	50000	20.0
Thallium	11/08/02	ND	10	2.0
Vanadium	11/08/02	0.692	NLE	0.5
Zinc	11/08/02	ND	5000	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 2076004
Sample Received: 10/28/02
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: 00M5MW10

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	MDL (ug/L)
Aluminum	11/08/02	281	200	10.0
Antimony	11/08/02	ND	20	2.0
Arsenic	11/08/02	4.68	8	2.0
Barium	11/08/02	66.7	2000	0.5
Beryllium	11/08/02	ND	20	0.5
Cadmium	11/08/02	ND	4	0.5
Calcium	11/08/02	15700	NLE	20.0
Chromium	11/08/02	2.45	100	0.5
Cobalt	11/08/02	ND	NLE	0.5
Copper	11/08/02	10.8	1000	2.0
Iron	11/08/02	6260	300	10.0
Lead	11/08/02	4.45	10	1.0
Magnesium	11/08/02	9840	NLE	10.0
Manganese	11/08/02	304	50	0.5
Mercury	11/15/02	ND	2	0.1
Nickel	11/08/02	ND	100	1.0
Potassium	11/08/02	7580	NLE	40.0
Selenium	11/08/02	7.86	50	3.0
Silver	11/08/02	ND	20	1.0
Sodium	11/08/02	57600	50000	20.0
Thallium	11/08/02	ND	10	2.0
Vanadium	11/08/02	1.49	NLE	0.5
Zinc	11/08/02	38.2	5000	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 2076005
Sample Received: 10/28/02
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: 00M5MW11

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	MDL (ug/L)
Aluminum	11/08/02	111	200	10.0
Antimony	11/08/02	2.23	20	2.0
Arsenic	11/08/02	3.04	8	2.0
Barium	11/08/02	15.4	2000	0.5
Beryllium	11/08/02	ND	20	0.5
Cadmium	11/08/02	ND	4	0.5
Calcium	11/08/02	17600	NLE	20.0
Chromium	11/08/02	2.26	100	0.5
Cobalt	11/08/02	ND	NLE	0.5
Copper	11/08/02	ND	1000	2.0
Iron	11/08/02	2240	300	10.0
Lead	11/08/02	1.84	10	1.0
Magnesium	11/08/02	4130	NLE	10.0
Manganese	11/08/02	15.8	50	0.5
Mercury	11/15/02	ND	2	0.1
Nickel	11/08/02	ND	100	1.0
Potassium	11/08/02	3740	NLE	40.0
Selenium	11/08/02	5.26	50	3.0
Silver	11/08/02	ND	20	1.0
Sodium	11/08/02	13000	50000	20.0
Thallium	11/08/02	ND	10	2.0
Vanadium	11/08/02	2.03	NLE	0.5
Zinc	11/08/02	79.8	5000	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 2076006
Sample Received: 10/28/02
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: 00M5MW12

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	MDL (ug/L)
Aluminum	11/08/02	90.9	200	10.0
Antimony	11/08/02	ND	20	2.0
Arsenic	11/08/02	ND	8	2.0
Barium	11/08/02	11.6	2000	0.5
Beryllium	11/08/02	ND	20	0.5
Cadmium	11/08/02	ND	4	0.5
Calcium	11/08/02	18600	NLE	20.0
Chromium	11/08/02	1.95	100	0.5
Cobalt	11/08/02	ND	NLE	0.5
Copper	11/08/02	5.87	1000	2.0
Iron	11/08/02	6090	300	10.0
Lead	11/08/02	2.12	10	1.0
Magnesium	11/08/02	27700	NLE	10.0
Manganese	11/08/02	54.6	50	0.5
Mercury	11/15/02	ND	2	0.1
Nickel	11/08/02	ND	100	1.0
Potassium	11/08/02	20700	NLE	40.0
Selenium	11/08/02	10.6	50	3.0
Silver	11/08/02	ND	20	1.0
Sodium	11/08/02	61100	50000	20.0
Thallium	11/08/02	ND	10	2.0
Vanadium	11/08/02	1.35	NLE	0.5
Zinc	11/08/02	5.69	5000	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 2076007
Sample Received: 10/28/02
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: 00M5MW13

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	MDL (ug/L)
Aluminum	11/08/02	132	200	10.0
Antimony	11/08/02	ND	20	2.0
Arsenic	11/08/02	ND	8	2.0
Barium	11/08/02	105	2000	0.5
Beryllium	11/08/02	ND	20	0.5
Cadmium	11/08/02	ND	4	0.5
Calcium	11/08/02	21700	NLE	20.0
Chromium	11/08/02	1.94	100	0.5
Cobalt	11/08/02	ND	NLE	0.5
Copper	11/08/02	ND	1000	2.0
Iron	11/08/02	10900	300	10.0
Lead	11/08/02	2.02	10	1.0
Magnesium	11/08/02	15500	NLE	10.0
Manganese	11/08/02	364	50	0.5
Mercury	11/15/02	ND	2	0.1
Nickel	11/08/02	ND	100	1.0
Potassium	11/08/02	6960	NLE	40.0
Selenium	11/08/02	7.10	50	3.0
Silver	11/08/02	ND	20	1.0
Sodium	11/08/02	92700	50000	20.0
Thallium	11/08/02	ND	10	2.0
Vanadium	11/08/02	1.53	NLE	0.5
Zinc	11/08/02	104	5000	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
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Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 2076008
Sample Received: 10/28/02
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: 00M5MW14

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	MDL (ug/L)
Aluminum	11/08/02	18.3	200	10.0
Antimony	11/08/02	ND	20	2.0
Arsenic	11/08/02	ND	8	2.0
Barium	11/08/02	50.4	2000	0.5
Beryllium	11/08/02	ND	20	0.5
Cadmium	11/08/02	ND	4	0.5
Calcium	11/08/02	42700	NLE	20.0
Chromium	11/08/02	1.97	100	0.5
Cobalt	11/08/02	8.54	NLE	0.5
Copper	11/08/02	ND	1000	2.0
Iron	11/08/02	1110	300	10.0
Lead	11/08/02	ND	10	1.0
Magnesium	11/08/02	16600	NLE	10.0
Manganese	11/08/02	632	50	0.5
Mercury	11/15/02	ND	2	0.1
Nickel	11/08/02	3.70	100	1.0
Potassium	11/08/02	10500	NLE	40.0
Selenium	11/08/02	8.11	50	3.0
Silver	11/08/02	ND	20	1.0
Sodium	11/08/02	36000	50000	20.0
Thallium	11/08/02	ND	10	2.0
Vanadium	11/08/02	ND	NLE	0.5
Zinc	11/08/02	13.9	5000	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 2076009
Sample Received: 10/28/02
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: 00M5MW15

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	MDL (ug/L)
Aluminum	11/08/02	511	200	10.0
Antimony	11/08/02	ND	20	2.0
Arsenic	11/08/02	ND	8	2.0
Barium	11/08/02	115	2000	0.5
Beryllium	11/08/02	1.40	20	0.5
Cadmium	11/08/02	ND	4	0.5
Calcium	11/08/02	4980	NLE	20.0
Chromium	11/08/02	1.25	100	0.5
Cobalt	11/08/02	7.22	NLE	0.5
Copper	11/08/02	ND	1000	2.0
Iron	11/08/02	797	300	10.0
Lead	11/08/02	1.32	10	1.0
Magnesium	11/08/02	9370	NLE	10.0
Manganese	11/08/02	15.5	50	0.5
Mercury	11/15/02	ND	2	0.1
Nickel	11/08/02	13.2	100	1.0
Potassium	11/08/02	4040	NLE	40.0
Selenium	11/08/02	3.44	50	3.0
Silver	11/08/02	ND	20	1.0
Sodium	11/08/02	10700	50000	20.0
Thallium	11/08/02	ND	10	2.0
Vanadium	11/08/02	ND	NLE	0.5
Zinc	11/08/02	87.7	5000	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 2076010
Sample Received: 10/28/02
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: 00M5MW16

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	MDL (ug/L)
Aluminum	11/08/02	446	200	10.0
Antimony	11/08/02	ND	20	2.0
Arsenic	11/08/02	27.3	8	2.0
Barium	11/08/02	233	2000	0.5
Beryllium	11/08/02	ND	20	0.5
Cadmium	11/08/02	0.986	4	0.5
Calcium	11/08/02	25500	NLE	20.0
Chromium	11/08/02	7.10	100	0.5
Cobalt	11/08/02	6.28	NLE	0.5
Copper	11/08/02	ND	1000	2.0
Iron	11/08/02	32300	300	10.0
Lead	11/08/02	1.60	10	1.0
Magnesium	11/08/02	10100	NLE	10.0
Manganese	11/08/02	85.6	50	0.5
Mercury	11/15/02	ND	2	0.1
Nickel	11/08/02	15.3	100	1.0
Potassium	11/08/02	5000	NLE	40.0
Selenium	11/08/02	4.27	50	3.0
Silver	11/08/02	ND	20	1.0
Sodium	11/08/02	43300	50000	20.0
Thallium	11/08/02	ND	10	2.0
Vanadium	11/08/02	1.78	NLE	0.5
Zinc	11/08/02	32.8	5000	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 2076011
Sample Received: 10/28/02
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: 00M5MW18

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	MDL (ug/L)
Aluminum	11/08/02	27.1	200	10.0
Antimony	11/08/02	ND	20	2.0
Arsenic	11/08/02	6.73	8	2.0
Barium	11/08/02	78.9	2000	0.5
Beryllium	11/08/02	ND	20	0.5
Cadmium	11/08/02	ND	4	0.5
Calcium	11/08/02	22200	NLE	20.0
Chromium	11/08/02	1.27	100	0.5
Cobalt	11/08/02	0.805	NLE	0.5
Copper	11/08/02	ND	1000	2.0
Iron	11/08/02	13500	300	10.0
Lead	11/08/02	ND	10	1.0
Magnesium	11/08/02	4060	NLE	10.0
Manganese	11/08/02	53.7	50	0.5
Mercury	11/15/02	ND	2	0.1
Nickel	11/08/02	ND	100	1.0
Potassium	11/08/02	7280	NLE	40.0
Selenium	11/08/02	3.59	50	3.0
Silver	11/08/02	ND	20	1.0
Sodium	11/08/02	9290	50000	20.0
Thallium	11/08/02	ND	10	2.0
Vanadium	11/08/02	ND	NLE	0.5
Zinc	11/08/02	13.6	5000	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 2076012
Sample Received: 10/28/02
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: 00M5MW19

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	MDL (ug/L)
Aluminum	11/08/02	73.6	200	10.0
Antimony	11/08/02	ND	20	2.0
Arsenic	11/08/02	8.10	8	2.0
Barium	11/08/02	69.1	2000	0.5
Beryllium	11/08/02	ND	20	0.5
Cadmium	11/08/02	ND	4	0.5
Calcium	11/08/02	27500	NLE	20.0
Chromium	11/08/02	2.42	100	0.5
Cobalt	11/08/02	ND	NLE	0.5
Copper	11/08/02	ND	1000	2.0
Iron	11/08/02	21500	300	10.0
Lead	11/08/02	1.39	10	1.0
Magnesium	11/08/02	5410	NLE	10.0
Manganese	11/08/02	81.3	50	0.5
Mercury	11/15/02	ND	2	0.1
Nickel	11/08/02	ND	100	1.0
Potassium	11/08/02	7280	NLE	40.0
Selenium	11/08/02	ND	50	3.0
Silver	11/08/02	ND	20	1.0
Sodium	11/08/02	9950	50000	20.0
Thallium	11/08/02	ND	10	2.0
Vanadium	11/08/02	0.609	NLE	0.5
Zinc	11/08/02	ND	5000	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 2076013
Sample Received: 10/28/02
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: 00M5MW20

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	MDL (ug/L)
Aluminum	11/08/02	6000	200	10.0
Antimony	11/08/02	ND	20	2.0
Arsenic	11/08/02	5.22	8	2.0
Barium	11/08/02	22.1	2000	0.5
Beryllium	11/08/02	ND	20	0.5
Cadmium	11/08/02	ND	4	0.5
Calcium	11/08/02	11700	NLE	20.0
Chromium	11/08/02	40.3	100	0.5
Cobalt	11/08/02	1.43	NLE	0.5
Copper	11/08/02	4.93	1000	2.0
Iron	11/08/02	11500	300	10.0
Lead	11/08/02	4.41	10	1.0
Magnesium	11/08/02	4790	NLE	10.0
Manganese	11/08/02	19.6	50	0.5
Mercury	11/15/02	ND	2	0.1
Nickel	11/08/02	3.36	100	1.0
Potassium	11/08/02	4960	NLE	40.0
Selenium	11/08/02	4.13	50	3.0
Silver	11/08/02	ND	20	1.0
Sodium	11/08/02	38000	50000	20.0
Thallium	11/08/02	ND	10	2.0
Vanadium	11/08/02	21.7	NLE	0.5
Zinc	11/08/02	20.2	5000	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 2076014
Sample Received: 10/28/02
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: 00M5MW23

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	MDL (ug/L)
Aluminum	11/08/02	100	200	10.0
Antimony	11/08/02	ND	20	2.0
Arsenic	11/08/02	16.5	8	2.0
Barium	11/08/02	5.50	2000	0.5
Beryllium	11/08/02	ND	20	0.5
Cadmium	11/08/02	ND	4	0.5
Calcium	11/08/02	8910	NLE	20.0
Chromium	11/08/02	2.40	100	0.5
Cobalt	11/08/02	0.911	NLE	0.5
Copper	11/08/02	ND	1000	2.0
Iron	11/08/02	14000	300	10.0
Lead	11/08/02	1.29	10	1.0
Magnesium	11/08/02	2300	NLE	10.0
Manganese	11/08/02	24.3	50	0.5
Mercury	11/15/02	ND	2	0.1
Nickel	11/08/02	ND	100	1.0
Potassium	11/08/02	1410	NLE	40.0
Selenium	11/08/02	ND	50	3.0
Silver	11/08/02	ND	20	1.0
Sodium	11/08/02	23900	50000	20.0
Thallium	11/08/02	ND	10	2.0
Vanadium	11/08/02	2.17	NLE	0.5
Zinc	11/08/02	ND	5000	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 2076015
Sample Received: 10/28/02
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: 00M5MW25

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	MDL (ug/L)
Aluminum	11/08/02	129	200	10.0
Antimony	11/08/02	ND	20	2.0
Arsenic	11/08/02	7.50	8	2.0
Barium	11/08/02	57.9	2000	0.5
Beryllium	11/08/02	ND	20	0.5
Cadmium	11/08/02	1.25	4	0.5
Calcium	11/08/02	13000	NLE	20.0
Chromium	11/08/02	5.80	100	0.5
Cobalt	11/08/02	3.27	NLE	0.5
Copper	11/08/02	ND	1000	2.0
Iron	11/08/02	6510	300	10.0
Lead	11/08/02	ND	10	1.0
Magnesium	11/08/02	4370	NLE	10.0
Manganese	11/08/02	101	50	0.5
Mercury	11/15/02	ND	2	0.1
Nickel	11/08/02	13.0	100	1.0
Potassium	11/08/02	2890	NLE	40.0
Selenium	11/08/02	3.38	50	3.0
Silver	11/08/02	ND	20	1.0
Sodium	11/08/02	49300	50000	20.0
Thallium	11/08/02	ND	10	2.0
Vanadium	11/08/02	ND	NLE	0.5
Zinc	11/08/02	522	5000	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6

	Lab	Iron	Manganese	Aluminum	Calcium	Lead	Nickel	Potassium	Sodium	Depth to Water	Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet	-
NJDEP Criteria:	-	300	50	200	NLE	10	100	NLE	50000	-	-
05/08/1997	FMETL	4080	87	-	-	-	-	-	-	4.20	V,S,P,M
08/08/1997	FMETL	1680	59	-	-	-	-	-	-	4.40	V,S,P,M
10/29/1997	FMETL	7386	200	105	31340	8	1.3	13450	82150	4.30	V,S,P,M
02/18/1998	FMETL	4899	138	96	17870	ND	2.3	11160	114800	3.00	V,S,P,M
05/06/1998	FMETL	6027	75	60.1	8165	ND	2.2	6453	39780	3.90	V,S,P,M
08/04/1998	FMETL	2850	35.4	103	10300	ND	ND	22700	23400	4.54	V,S,P,M
10/27/1998	FMETL	3690	47.8	106	12900	2.45	1.53	20700	29100	5.03	V,S,P,M
02/02/1999	FMETL	8760	175	ND	15200	ND	1.81	3300	42400	4.07	V,S,P,M
04/13/1999	FMETL	6110	135	43.9	13100	3.79	0.584	6350	35200	3.81	V,S,P,M
09/13/1999	FMETL	4330	66.7	ND	14400	ND	ND	15100	47100	4.83	V,S,P,M
11/18/1999	FMETL	5880	33.6	21.4	9270	ND	1.71	15500	22900	4.65	V,S,P,M
03/03/2000	FMETL	11700	166	404	18200	14.9	2.15	17000	44200	4.53	V,S,P,M
05/31/2000	FMETL	6360	86.8	429	11800	8.36	1.62	18800	30900	4.30	V,S,P,M
08/21/2000	FMETL	5940	218	259	19600	3.56	ND	10700	49800	4.43	V,S,P,M
12/11/2000	FMETL	3250	92.2	86.1	13400	ND	ND	14800	29900	4.57	V,S,P,M
03/19/2001	FMETL	23600	796	80	35400	ND	ND	8.25	175000	4.37	V,S,P,M
06/05/2001	FMETL	14200	237	ND	16200	4.50	4.64	12300	39400	4.32	V,S,P,M
09/05/2001	FMETL	4130	76.8	ND	11300	ND	ND	15400	42300	4.89	V,S,P,M
10/04/2001	FMETL	27400	1180	ND	138000	3.33	9.96	50600	996000	4.29	V,S,P,M
01/14/2002	FMETL	14400	524	25.5	36400	3.42	ND	15900	169000	4.96	V,S,P,M
04/23/2002	FMETL	10000	112	79.8	13900	3.07	ND	13600	49100	4.93	V,S,P,M
08/21/2002	FMETL	1460	62.3	246	14800	ND	2.21	15300	91200	4.94	V,S,P,M
10/28/2002	FMETL	6260	304	281	15700	4.45	ND	7580	57600	4.14	V,S,P,M

SOURCE: 00M5MW10

Sampling Dates:
05/08/1997 - 10/28/2002

NOTES:

FORT MONMOUTH

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Bldg. M-5

Source 3 of 14

Ag in blank > GW Criteria for 5/8/97.

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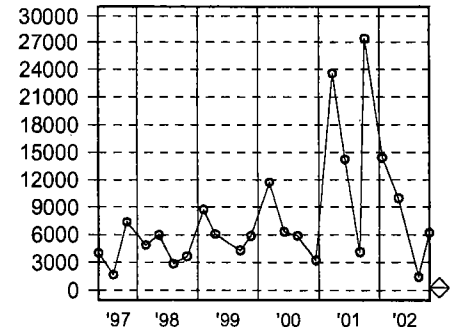

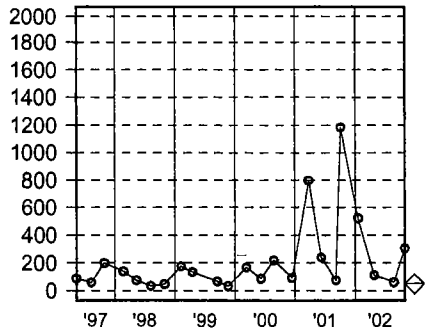

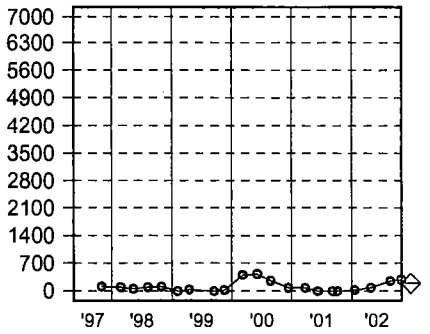

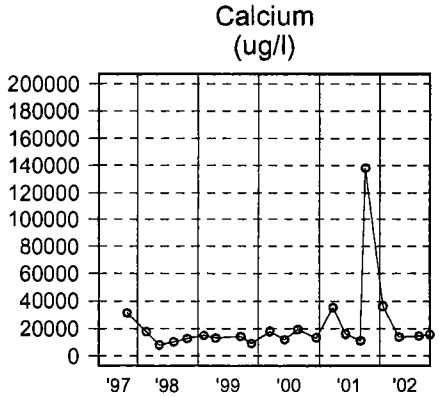

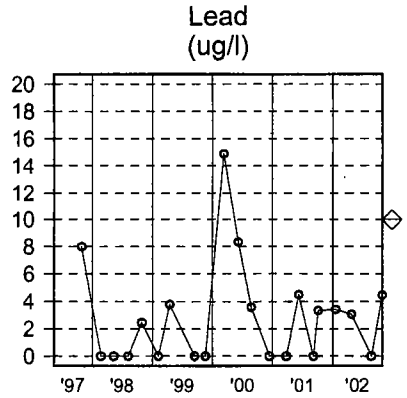

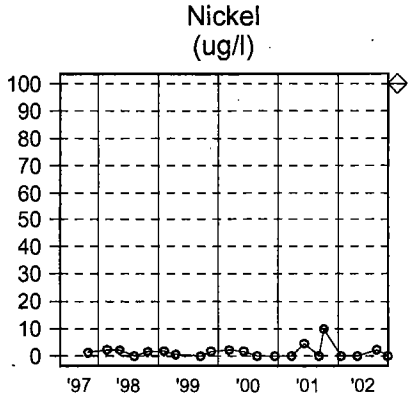

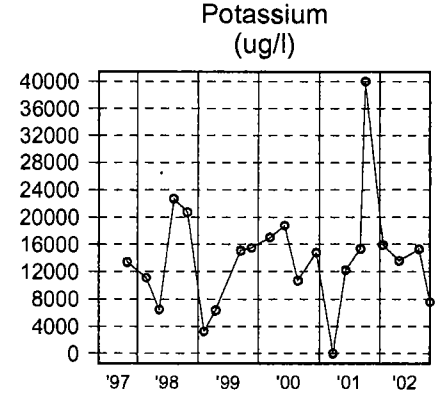

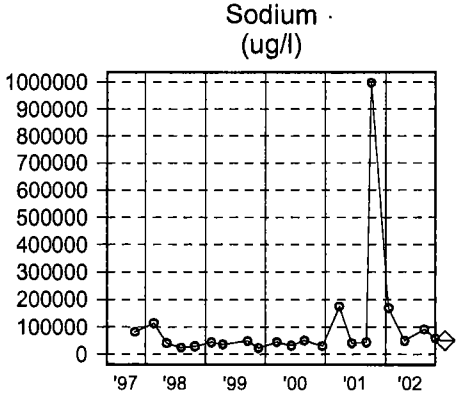

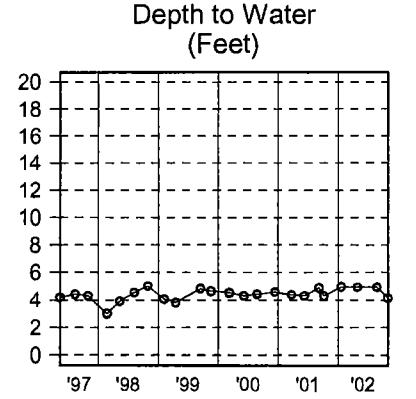

SOURCE: 00M5MW10

Sampling Dates:
05/08/1997 - 10/28/2002

LEGEND:

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o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

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Source 3 of 14, Graph

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02-11-2003 X:\MtechData\M-5\M-5.WSF

	Lab	2-Butanone	cis-1,2-Dichloroethene	Trichloroethene	Tetrachloroethene	Iron	Manganese	Aluminum	Calcium	Lead	Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	-
NJDEP Criteria:	-	300	10	1	1	300	50	200	NLE	10	-
05/08/1997	FMETL	ND	ND	ND	63	4060	85	-	-	-	V,S,P,M
08/08/1997	FMETL	ND	ND	ND	58	110	66		-	-	V,S,P,M
10/29/1997	FMETL	ND	ND	ND	65	1551	12.7	669	10060	8	V,S,P,M
02/18/1998	FMETL	ND	ND	ND	39	305	32	222	10710	ND	V,S,P,M
05/06/1998	FMETL	ND	ND	ND	24.39	58	6.4	ND	8788	ND	V,S,P,M
08/04/1998	FMETL	2.92	ND	ND	18.37	1500	16.9	4570	19500	2.38	V,S,P,M
10/27/1998	FMETL	ND	ND	ND	52.64	184	7.74	78.8	9090	ND	V,S,P,M
02/02/1999	FMETL	ND	ND	ND	5.16	1670	44.4	267	14800	ND	V,S,P,M
04/13/1999	FMETL	ND	ND	ND	33.38	227	9.71	92.9	11700	ND	V,S,P,M
09/13/1999	FMETL	ND	ND	ND	49.25	680	16.5	ND	14100	ND	V,S,P,M
11/18/1999	FMETL	ND	ND	ND	74.12	30.5	ND	ND	ND	ND	V,S,P,M
03/03/2000	FMETL	ND	ND	ND	30.62	330	9.56	189	13900	ND	V,S,P,M
05/31/2000	FMETL	ND	ND	ND	13.38	657	10.1	76.2	31500	ND	V,S,P,M
08/21/2000	FMETL	ND	ND	ND	18.79	438	38.8	350	25400	1.34	V,S,P,M
08/21/2000D	FMETL	ND	ND	ND	19.64	583	38	414	24900	1.24	V,S,P,M
12/11/2000	FMETL	7.89	ND	ND	18.86	5580	24.4	279	23500	ND	V,S,P,M
12/11/2000D	FMETL	9.66	ND	ND	17.98	5610	25.4	260	24100	ND	V,S,P,M
03/19/2001	FMETL	ND	ND	ND	11.01	35200	17.7	240	17600	ND	V,S,P,M
06/05/2001	FMETL	ND	ND	ND	11.27	6590	31.9	ND	26200	ND	V,S,P,M
09/05/2001	FMETL	ND	6.64	1.28	6.11	31100	93.3	ND	38600	6.36	V,S,P,M
10/04/2001	FMETL	ND	ND	1.05	15.13	18500	62.7	75.2	35000	ND	V,S,P,M
01/14/2002	FMETL	ND	ND	1.40	19.04	10400	174	31.1	27700	ND	V,S,P,M
04/23/2002	FMETL	ND	ND	ND	14.43	7850	34.2	48.1	17800	ND	V,S,P,M
08/21/2002	FMETL	370.61	7.39	ND	8.90	18000	61.3	137	24600	ND	V,S,P,M
10/28/2002	FMETL	ND	ND	ND	8.14	2240	15.8	111	17600	1.84	V,S,P,M

SOURCE: 00M5MW11

Sampling Dates:
05/08/1997 - 10/28/2002

NOTES:

Page 1 of 2

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 4 of 14

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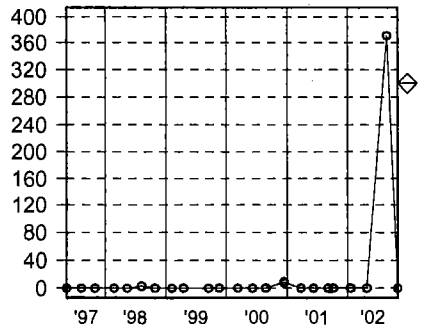
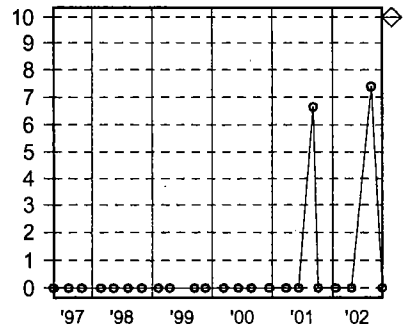
2-Butanone
(ug/l)



cis-1,2-Dichloroethene
(ug/l)



Trichloroethene
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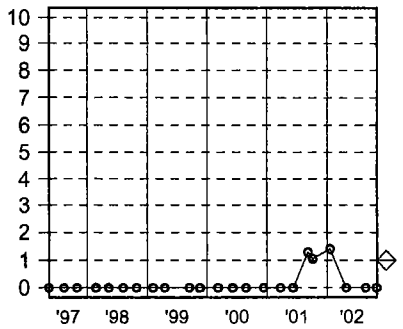
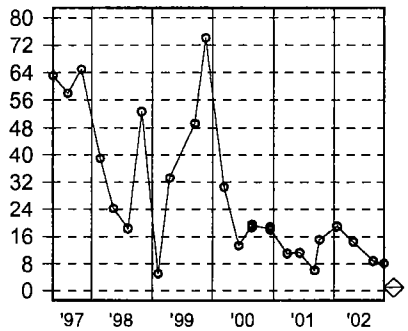
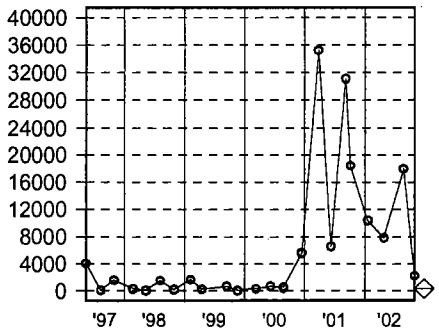


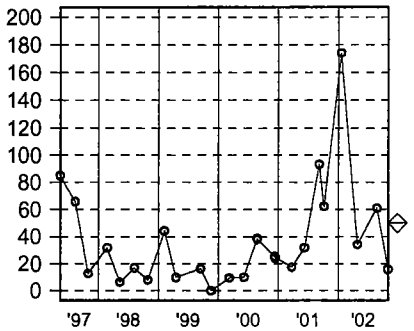
Tetrachlorethene
(ug/l)



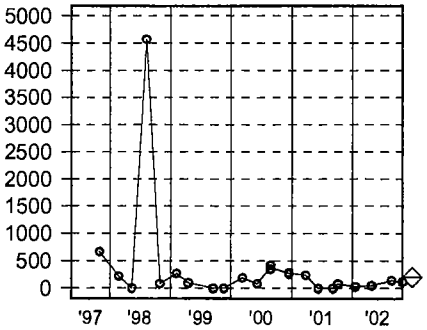
Iron
(ug/l)



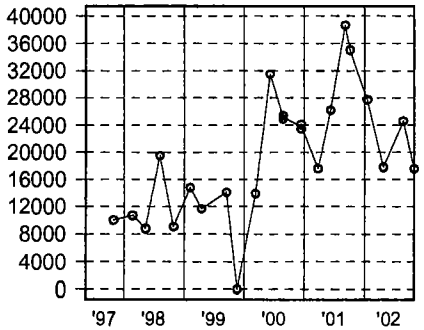
Manganese
(ug/l)



Aluminum
(ug/l)



Calcium
(ug/l)



Lead
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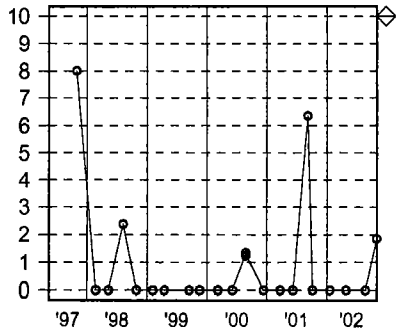

SOURCE: 00M5MW11

Sampling Dates:
05/08/1997 - 10/28/2002

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NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 4 of 14, Graph

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02-11-2003 X:\MtechData\M-5\M-5.WSF

	Lab	Magnesium	Potassium	Sodium	Depth to Water						Notes
Units:	-	ug/l	ug/l	ug/l	Feet						-
NJDEP Criteria:	-	NLE	NLE	50000	-						-
05/08/1997	FMETL	-	-	-	7.10						V,S,P,M
08/08/1997	FMETL	-	-	-	7.70						V,S,P,M
10/29/1997	FMETL	3380	6120	19220	7.75						V,S,P,M
02/18/1998	FMETL	2990	5260	14550	6.65						V,S,P,M
05/06/1998	FMETL	2781	4573	14570	6.80						V,S,P,M
08/04/1998	FMETL	6090	33000	20800	7.91						V,S,P,M
10/27/1998	FMETL	2960	3480	10200	8.51						V,S,P,M
02/02/1999	FMETL	3930	8340	22300	6.99						V,S,P,M
04/13/1999	FMETL	3300	4340	12400	7.16						V,S,P,M
09/13/1999	FMETL	7840	5420	45900	8.35						V,S,P,M
11/18/1999	FMETL	ND	178	2150	7.62						V,S,P,M
03/03/2000	FMETL	4080	3110	8380	7.21						V,S,P,M
05/31/2000	FMETL	5370	9970	14000	7.28						V,S,P,M
08/21/2000	FMETL	7410	6940	18900	6.97						V,S,P,M
08/21/2000D	FMETL	7330	6570	19900	6.97						V,S,P,M
12/11/2000	FMETL	6550	4170	16100	7.43						V,S,P,M
12/11/2000D	FMETL	6600	4190	16200	7.43						V,S,P,M
03/19/2001	FMETL	41600	24900	14300	6.77						V,S,P,M
06/05/2001	FMETL	8010	2920	20000	7.26						V,S,P,M
09/05/2001	FMETL	14600	2070	35300	8.05						V,S,P,M
10/04/2001	FMETL	11900	3840	37100	7.88						V,S,P,M
01/14/2002	FMETL	8130	3200	31700	7.83						V,S,P,M
04/23/2002	FMETL	6420	1710	27500	7.54						V,S,P,M
08/21/2002	FMETL	8930	1840	25000	8.25						V,S,P,M
10/28/2002	FMETL	4130	3740	13000	6.81						V,S,P,M

SOURCE: 00M5MW11

Sampling Dates:
05/08/1997 - 10/28/2002

NOTES:

FORT MONMOUTH

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Bldg. M-5

Source 4 of 14

Ag in blank > GW Criteria for 5/8/97.

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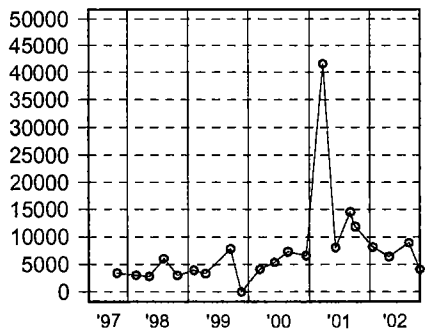

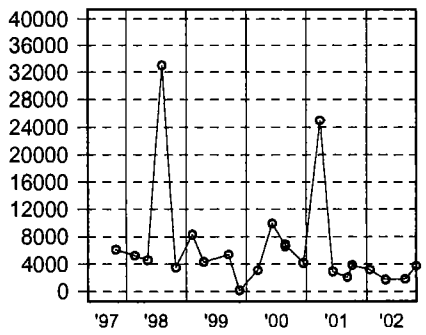

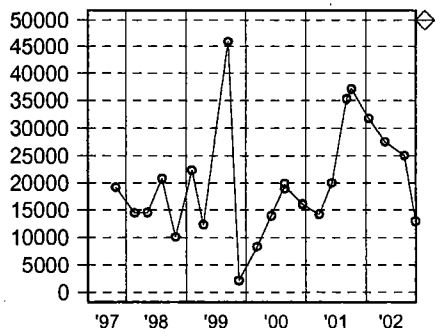

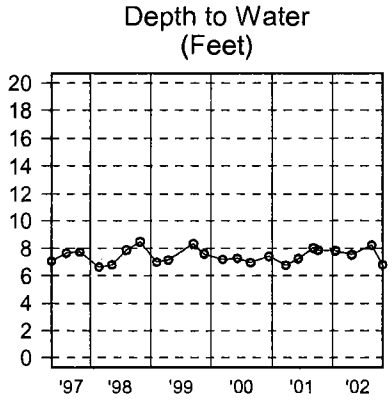

SOURCE: 00M5MW11

Sampling Dates:
05/08/1997 - 10/28/2002

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◇ NJDEP Criteria

FORT MONMOUTH

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Bldg. M-5

Source 4 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

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SELFM-PW-EV

	Lab	Iron	Manganese	Aluminum	Calcium	Lead	Magnesium	Potassium	Sodium	Depth to Water	Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet	-
NJDEP Criteria:	-	300	50	200	NLE	10	NLE	NLE	50000	-	-
10/07/1998	FMETL	51400	1340	3310	111000	7	168000	65300	1860000	6.86	V,S,P,M
10/21/1998	FMETL	28400	853	359	98000	ND	145000	42100	1240000	6.62	V,S,P,M
02/02/1999	FMETL	ND	ND	1910	28200	5.45	26300	15900	235000	6.36	V,S,P,M
04/13/1999	FMETL	29500	263	1880	17400	7.66	20500	18300	75300	5.92	V,S,P,M
09/13/1999	FMETL	36500	566	119	152000	ND	284000	89200	2040000	6.86	V,S,P,M
11/18/1999	FMETL	7020	76.9	80.9	22300	ND	32800	23800	171000	7.96	V,SP,M
03/06/2000	FMETL	13000	109	1060	22200	6.78	31800	20000	77000	5.95	V,S,P,M
05/31/2000	FMETL	11400	67.9	422	16500	19.3	26200	20500	71800	5.93	V,S,P,M
08/21/2000	FMETL	9060	97	503	16600	1.83	26300	20800	72600	5.84	V,S,P,M
12/11/2000	FMETL	6620	43.8	189	13400	4.85	22900	21100	46000	5.89	V,S,P,M
03/19/2001	FMETL	15100	181	170	30300	ND	41100	22600	114000	5.83	V,S,P,M
06/05/2001	FMETL	8030	50.8	ND	17300	ND	28900	21300	57000	5.73	V,S,P,M
09/05/2001	FMETL	19900	155	732	36700	4.43	55000	30400	149000	6.29	V,S,P,M
10/04/2001	FMETL	ND	ND	24.6	66500	1.30	78500	35000	341000	5.64	V,S,P,M
01/14/2002	FMETL	15600	328	192	38200	16.8	52800	29400	169000	5.21	V,S,P,M
04/23/2002	FMETL	16500	72.4	481	20700	2.64	32200	21700	64000	5.98	V,S,P,M
08/21/2002	FMETL	13800	78.1	1140	23700	2.40	36300	26000	82500	6.41	V,S,P,M
10/28/2002	FMETL	6090	54.6	90.9	18600	2.12	27700	20700	61100	5.60	V,S,P,M

SOURCE: 00M5MW12

Sampling Dates:
10/07/1998 - 10/28/2002

NOTES:

Well installed 9/98.

FORT MONMOUTH

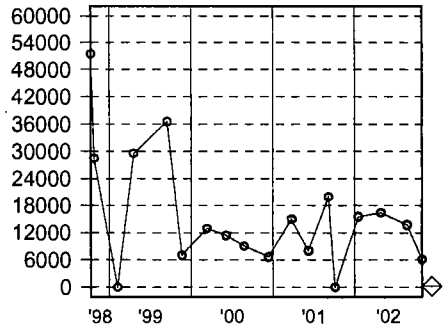
GW MONITORING
Bldg. M-5

Source 5 of 14

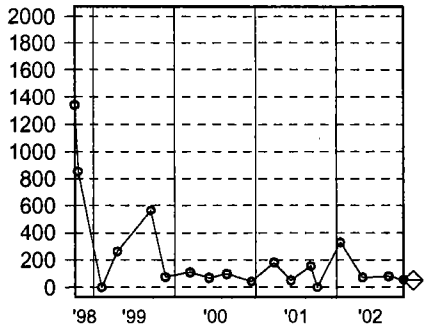
Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

Iron
(ug/l)



Manganese
(ug/l)



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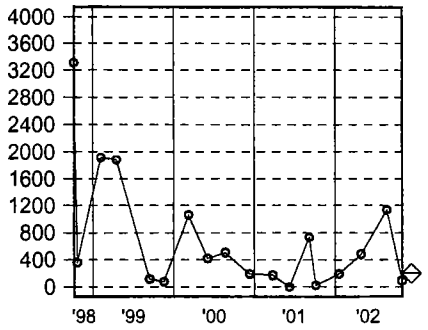
(ug/l)



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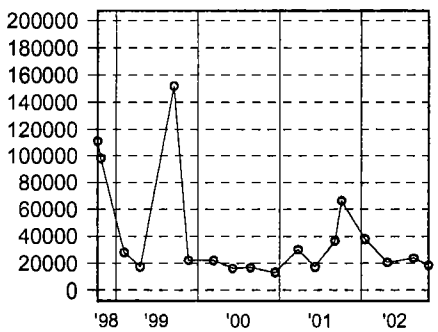
(ug/l)



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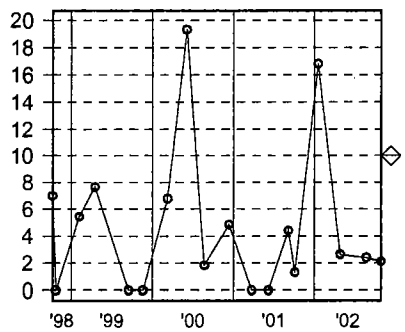
(ug/l)



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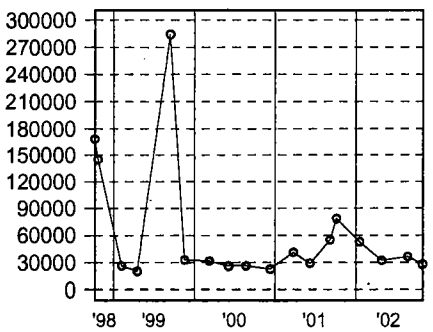
(ug/l)



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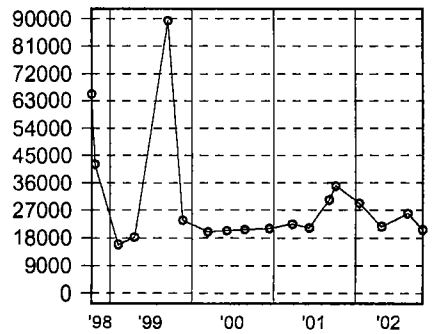
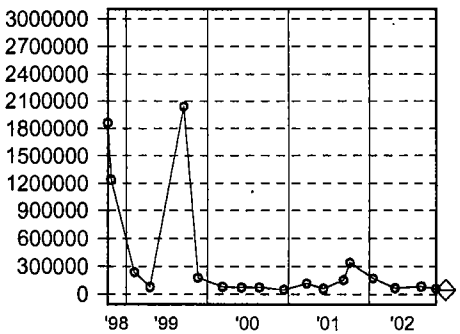
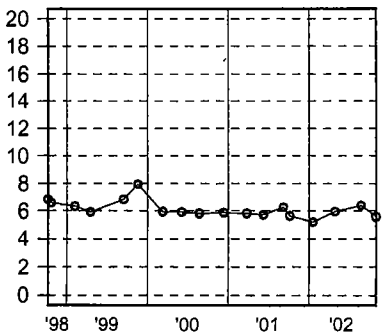
(ug/l)



Sodium
(ug/l)



Depth to Water
(Feet)



SOURCE: 00M5MW12

Sampling Dates:
10/07/1998 - 10/28/2002

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 5 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

02-11-2003 X:\MtechData\M-5\M-5.WSF

	Lab	Iron	Manganese	Aluminum	Calcium	Lead	Magnesium	Potassium	Sodium	Depth to Water	Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet	-
NJDEP Criteria:	-	300	50	200	NLE	10	NLE	NLE	50000	-	-
10/21/1998	FMETL	11700	203	287	67000	ND	112000	46400	1030000	3.75	V,S,P,M
02/02/1999	FMETL	9810	137	244	13700	17.6	9990	5090	80100	2.67	V,S,P,M
04/13/1999	FMETL	1170	18.4	64.8	35100	2.37	17700	13100	7630	2.48	V,S,P,M
09/13/1999	FMETL	9520	203	225	130000	ND	324000	114000	2690000	3.41	V,S,P,M
11/18/1999	FMETL	9860	87.8	901	16200	3.04	17300	15100	103000	3.40	V,S,P,M
03/06/2000	FMETL	26300	366	282	34300	3.62	27100	15000	121000	2.64	V,S,P,M
05/31/2000	FMETL	12900	173	174	20100	ND	17100	11000	88700	2.54	V,S,P,M
08/21/2000	FMETL	7170	261	301	20000	2.49	15400	8380	88900	2.39	V,S,P,M
12/11/2000	FMETL	16500	255	128	20500	11.7	15700	10400	61200	2.68	V,S,P,M
03/19/2001	FMETL	24200	717	510	34400	ND	23300	68800	149000	2.23	V,S,P,M
06/05/2001	FMETL	12100	357	ND	22700	ND	16600	8050	81400	2.44	V,S,P,M
09/05/2001	FMETL	17300	348	711	33900	5.36	24800	14200	96300	3.12	V,S,P,M
10/04/2001	FMETL	27000	880	16.0	59600	284	51900	21300	331000	2.24	V,S,P,M
01/14/2002	FMETL	33300	1030	66.5	53500	1.81	44000	16700	286000	2.53	V,S,P,M
04/23/2002	FMETL	25200	391	606	32000	11.1	25000	12300	152000	2.73	V,S,P,M
08/21/2002	FMETL	11900	237	179	28900	ND	23300	14400	108000	3.32	V,S,P,M
10/28/2002	FMETL	10900	364	132	21700	2.02	15500	6960	92700	2.08	V,S,P,M

SOURCE: 00M5MW13

Sampling Dates:
10/21/1998 - 10/28/2002

NOTES:

Well installed 9/98.

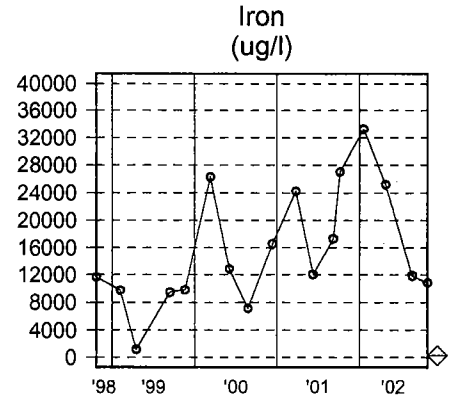
FORT MONMOUTH

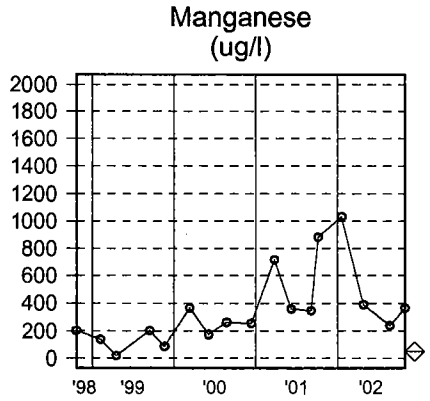
GW MONITORING
Bldg. M-5

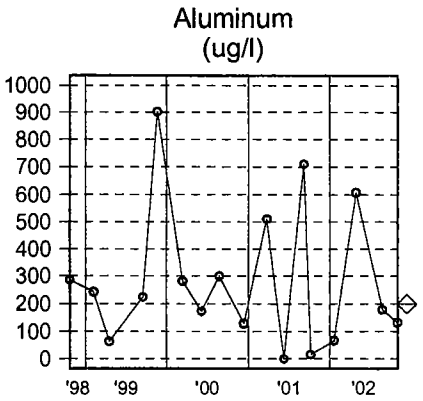
Source 6 of 14

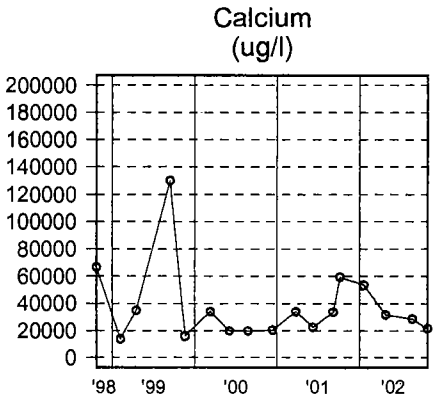
Ag in blank > GW Criteria for 5/8/97.

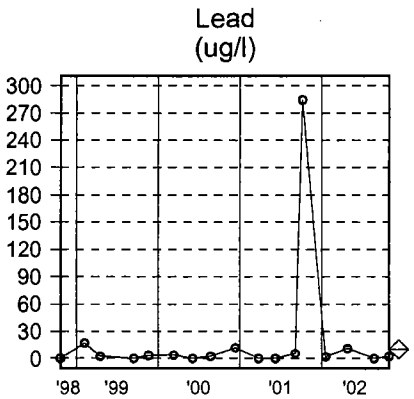
U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

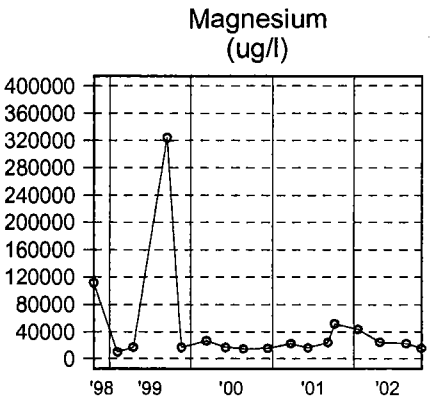


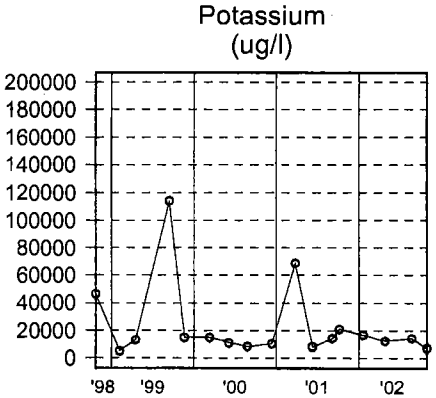


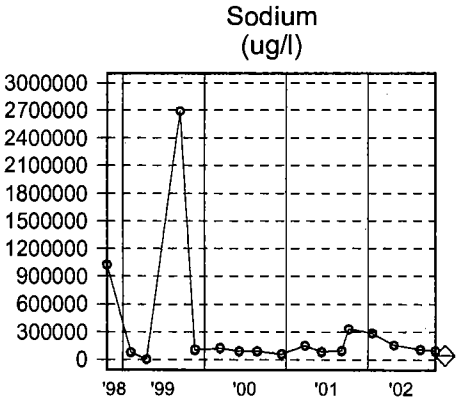


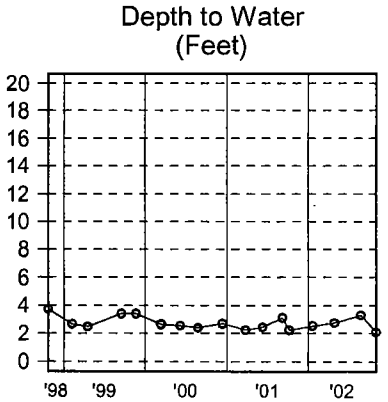












SOURCE: 00M5MW13

Sampling Dates:
10/21/1998 - 10/28/2002

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 6 of 14, Graph

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U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

02-11-2003 X:\MtechData\M-5\M-5.WSF

	Lab	Iron	Manganese	Aluminum	Calcium	Lead	Magnesium	Potassium	Sodium	Depth to Water	Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet	-
NJDEP Criteria:	-	300	50	200	NLE	10	NLE	NLE	50000	-	-
10/07/1998	FMETL	ND	ND	1210	38000	ND	23900	27000	45400	3.54	V,S,P,M
10/21/1998	FMETL	911	15	120	34600	ND	19300	16200	8970	4.24	V,S,P,M
02/02/1999	FMETL	1910	20.7	172	36100	ND	17900	12900	9450	2.63	V,S,P,M
04/13/1999	FMETL	14000	191	658	16400	6.77	11600	7220	63400	2.57	V,S,P,M
09/13/1999	FMETL	571	16.4	ND	41300	ND	17600	13300	7290	4.35	V,S,P,M
11/18/1999	FMETL	639	17.9	ND	39700	ND	16400	12400	8460	3.92	V,S,P,M
03/06/2000	FMETL	6660	29.1	79.2	45200	ND	17300	10700	10300	2.75	V,S,P,M
05/31/2000	FMETL	2480	178	ND	57600	ND	14700	7850	70700	3.55	V,S,P,M
08/21/2000	FMETL	844	96.3	242	46300	12	18000	11800	11200	2.71	V,S,P,M
12/11/2000	FMETL	6920	21.5	234	44000	ND	17000	13400	8240	3.48	V,S,P,M
03/19/2001	FMETL	12400	18.4	20.0	46500	ND	18100	12000	81000	3.66	V,S,P,M
06/05/2001	FMETL	758	14.3	ND	43500	ND	16200	11000	14200	3.57	V,S,P,M
09/05/2001	FMETL	987	30.0	ND	47300	ND	18400	12500	10000	3.30	V,S,P,M
10/04/2001	FMETL	953	14.2	27.2	44800	ND	21700	12700	72000	2.91	V,S,P,M
01/14/2002	FMETL	6010	165	11.7	46700	ND	17800	13300	10500	3.97	V,S,P,M
04/23/2002	FMETL	4850	18.5	69.0	47300	ND	17300	11400	8250	3.23	V,S,P,M
08/21/2002	FMETL	874	21.5	21.2	47600	1.81	17700	12700	7910	3.29	V,S,P,M
10/28/2002	FMETL	1110	632	18.3	42700	ND	16600	10500	36000	2.29	V,S,P,M

SOURCE: 00M5MW14

Sampling Dates:
10/07/1998 - 10/28/2002

NOTES:

Well installed 9/98.

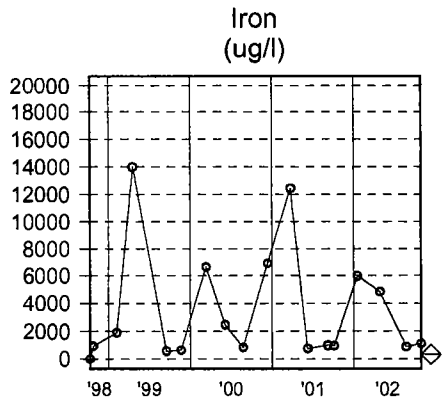
FORT MONMOUTH

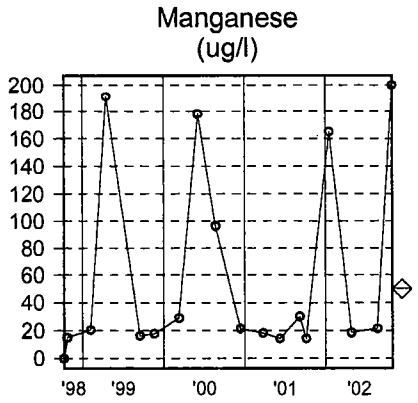
GW MONITORING
Bldg. M-5

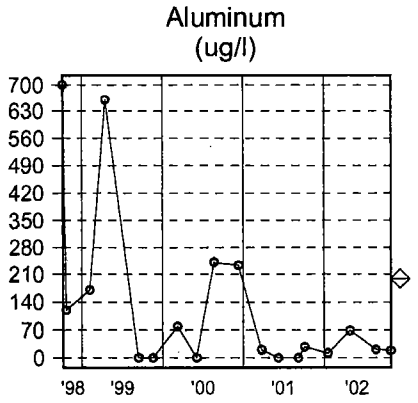
Source 7 of 14

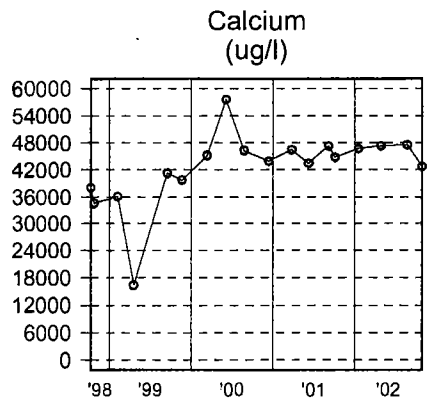
Ag in blank > GW Criteria for 5/8/97.

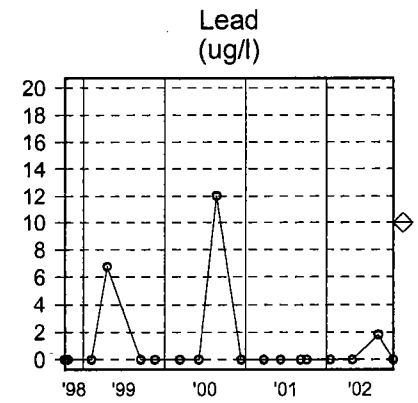
U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

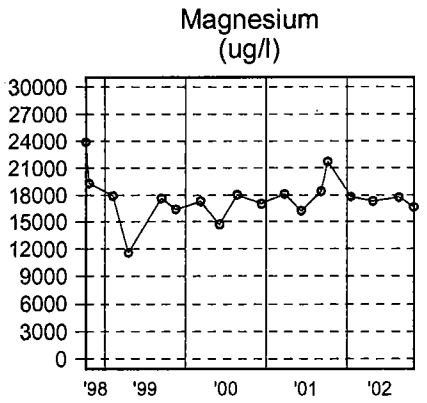


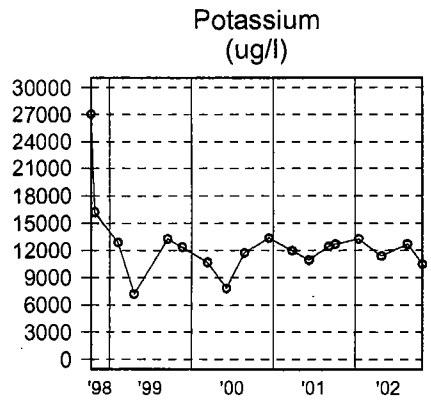


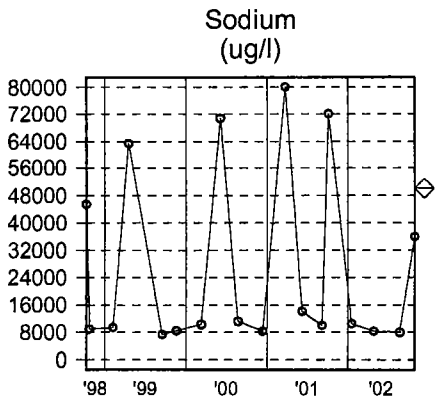


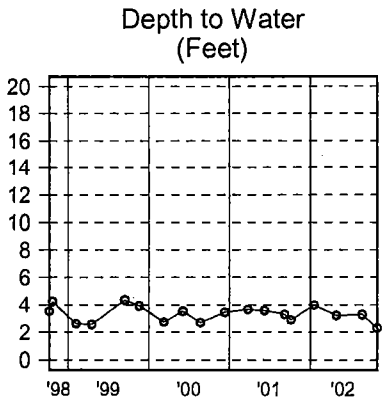












SOURCE: 00M5MW14

Sampling Dates:
10/07/1998 - 10/28/2002

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 7 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

02-11-2003 X:\MtechData\M-5\M-5.WSF

	Lab	Iron	Manganese	Aluminum	Calcium	Lead	Magnesium	Potassium	Sodium	Depth to Water	Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet	-
NJDEP Criteria:	-	300	50	200	NLE	10	NLE	NLE	50000	-	-
04/14/1999	FMETL	654	30.2	606	11100	ND	9370	4240	11800	8.59	V,S,P,M
04/28/1999	FMETL	108	20.7	564	7240	ND	10600	4540	14000	9.04	V,S,P,M
09/14/1999	FMETL	1050	15.7	702	4890	ND	9050	4920	10100	11.03	V,S,P,M
11/18/1999	FMETL	316	13.9	357	4760	ND	8870	3950	8990	9.87	V,S,P,M
03/03/2000	FMETL	477	16.8	508	4970	ND	9190	2950	6200	8.68	V,S,P,M
05/31/2000	FMETL	203	18.2	441	5450	ND	10200	3410	10300	8.88	V,S,P,M
08/21/2000	FMETL	510	27.3	933	6170	ND	11200	4330	13300	8.21	V,S,P,M
12/11/2000	FMETL	319	16.7	556	5040	ND	10100	4120	10600	9.48	V,S,P,M
03/19/2001	FMETL	300	23.9	1100	76300	ND	15700	37300	12800	7.88	V,S,P,M
06/05/2001	FMETL	150	31.1	996	11000	ND	22700	5270	15600	7.93	V,S,P,M
09/05/2001	FMETL	788	27.1	1220	8180	1.64	17700	6310	13900	10.35	V,S,P,M
10/04/2001	FMETL	588	21.0	981	7560	3.22	15300	5570	12800	10.24	V,S,P,M
01/14/2002	FMETL	334	157	629	6610	ND	13100	4310	11500	10.51	V,S,P,M
04/23/2002	FMETL	48.2	19.5	676	6720	ND	13600	4740	11500	9.49	V,S,P,M
08/21/2002	FMETL	93.6	14.9	624	5850	ND	11200	4700	12500	10.70	V,S,P,M
10/28/2002	FMETL	797	15.5	511	4980	1.32	9370	4040	10700	7.87	V,S,P,M

SOURCE: 00M5MW15

Sampling Dates:
04/14/1999 - 10/28/2002

NOTES:

Installed 3/99

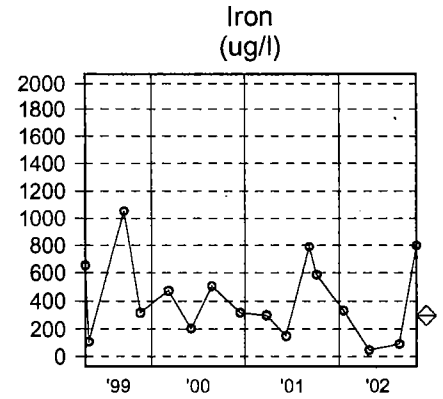
FORT MONMOUTH

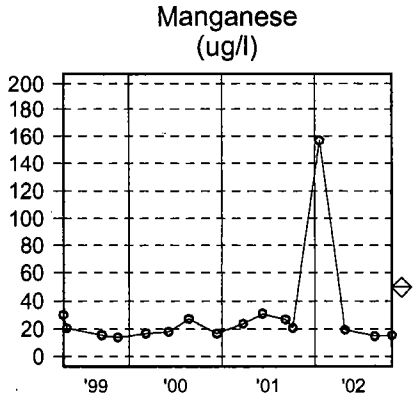
GW MONITORING
Bldg. M-5

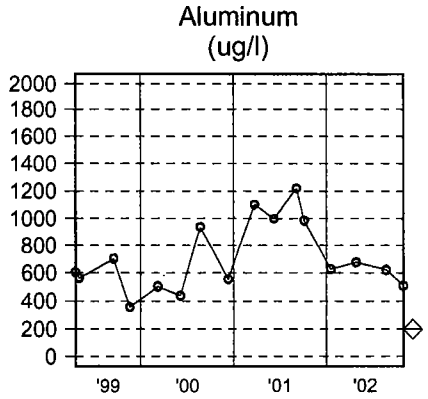
Source 8 of 14

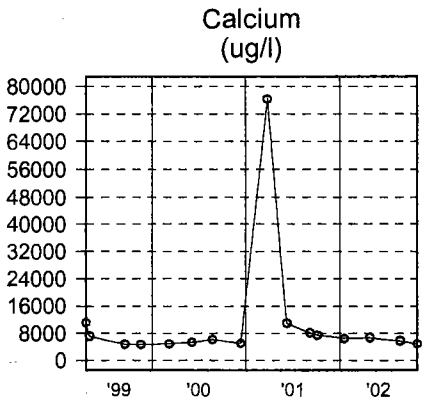
Ag in blank > GW Criteria for 5/8/97.

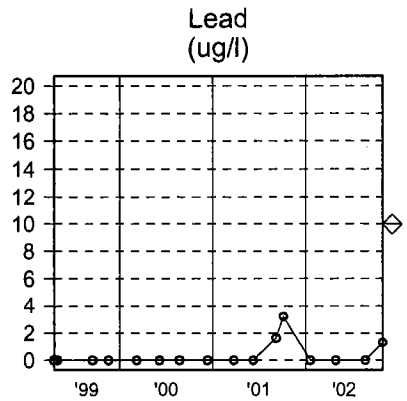
U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

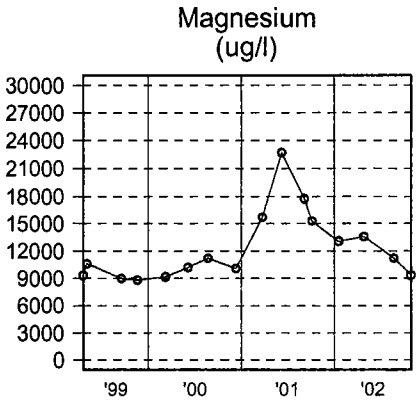


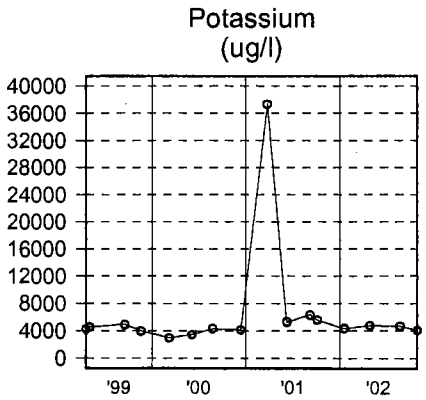


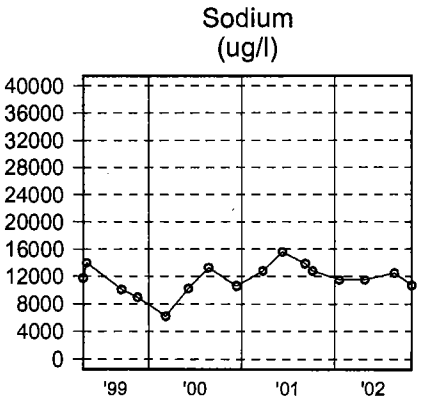


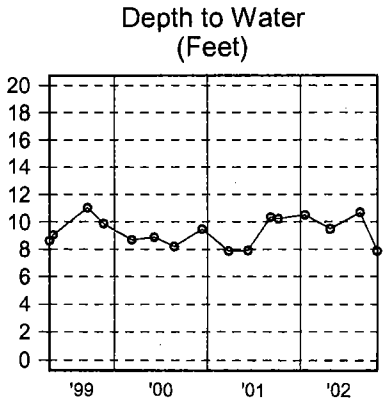












SOURCE: 00M5MW15

Sampling Dates:
04/14/1999 - 10/28/2002

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 8 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

02-11-2003 X:\MtechData\M-5\M-5.WSF

	Lab	2-Butanone	cis-1,2-Dichloroethene	Trichloroethene	Tetrachloroethene	Iron	Manganese	Aluminum	Calcium	Lead	Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	-
NJDEP Criteria:	-	300	10	1	1	300	50	200	NLE	10	-
04/14/1999	FMETL	ND	ND	ND	96.37	4770	29.2	1030	11200	ND	V,S,P,M
04/28/1999	FMETL	ND	ND	ND	8.35	11800	31.9	1240	12500	ND	V,S,P,M
09/14/1999	FMETL	ND	ND	ND	639.7	11100	32.1	3510	10800	ND	V,S,P,M
11/18/1999	FMETL	ND	ND	ND	54.42	9840	24.7	242	10800	ND	V,S,P,M
03/03/2000	FMETL	ND	ND	ND	37.76	37800	119	848	14400	ND	V,S,P,M
05/31/2000	FMETL	ND	ND	ND	27.79	10000	35.8	78.2	16500	ND	V,S,P,M
08/21/2000	FMETL	ND	ND	ND	20.36	8060	49.3	293	16900	ND	V,S,P,M
12/11/2000	FMETL	ND	ND	ND	23.20	11400	33.2	258	15400	ND	V,S,P,M
03/19/2001	FMETL	ND	ND	ND	17.88	13000	73.0	220	18800	4.0	V,S,P,M
06/05/2001	FMETL	13.45	ND	ND	24.47	14500	46.6	ND	18900	ND	V,S,P,M
09/05/2001	FMETL	ND	ND	ND	205.77	14800	83.4	175	31100	1.48	V,S,P,M
10/04/2001	FMETL	ND	ND	ND	620.81	32100	83.0	1710	33000	1.67	V,S,P,M
01/14/2002	FMETL	ND	1.93	1.93	839.5	9910	197	863	24200	ND	V,S,P,M
04/23/2002	FMETL	ND	69.44	35.84	213.53	10000	63.5	1010	20400	1.23	V,S,P,M
08/21/2002	FMETL	ND	3.38	ND	416.79	4560	112	1560	38800	ND	V,S,P,M
10/28/2002	FMETL	2.59	103.82	2.23	42.41	32300	85.6	446	25500	1.60	V,S,P,M

SOURCE: 00M5MW16

Sampling Dates:
04/14/1999 - 10/28/2002

NOTES:

Installed 3/99.
Page 1 of 2.

FORT MONMOUTH

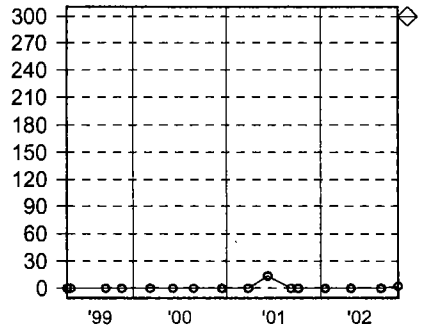
GW MONITORING
Bldg. M-5

Source 9 of 14

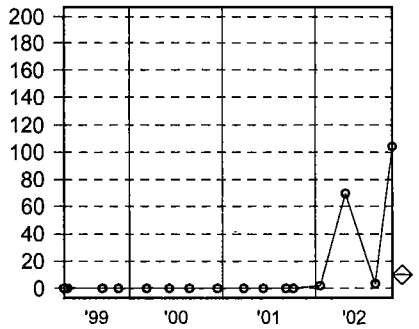
Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

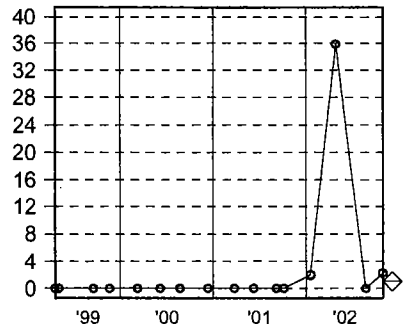
2-Butanone
(ug/l)



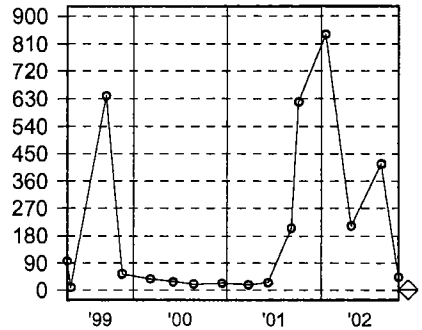
cis-1,2-Dichloroethene
(ug/l)



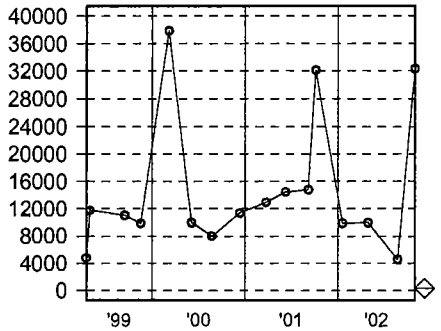
Trichloroethene
(ug/l)



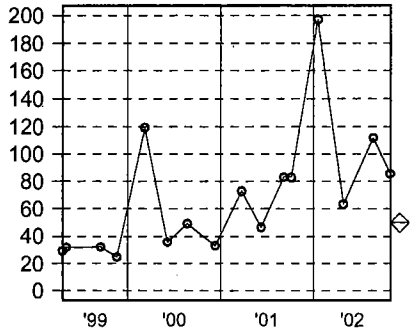
Tetrachlorethene
(ug/l)



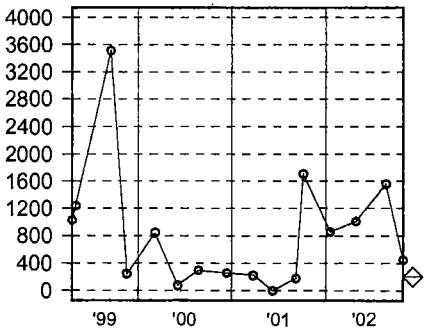
Iron
(ug/l)



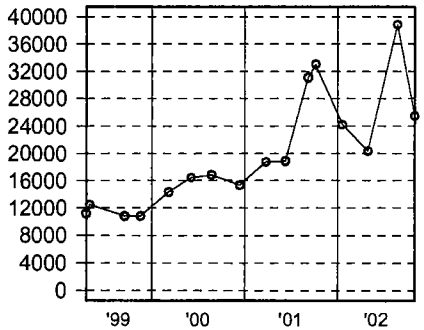
Manganese
(ug/l)



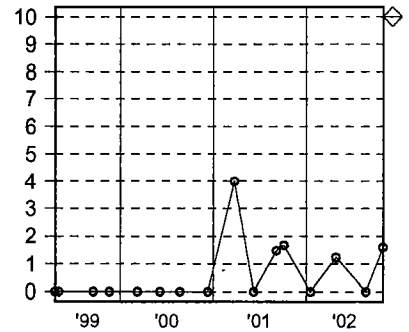
Aluminum
(ug/l)



Calcium
(ug/l)



Lead
(ug/l)



SOURCE: 00M5MW16

Sampling Dates:
04/14/1999 - 10/28/2002

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 9 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

02-11-2003 X:\MtechData\M-5\M-5.WSF

	Lab	Magnesium	Nickel	Potassium	Sodium	Zinc	Depth to Water				Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	Feet				-
NJDEP Criteria:	-	NLE	100	NLE	50000	5000	-				-
04/14/1999	FMETL	4020	6.65	6230	11700	36.5	6.96				V,S,P,M
04/28/1999	FMETL	3580	5.88	8260	15100	36.3	7.26				V,S,P,M
09/14/1999	FMETL	4990	10.8	9670	10000	46.2	8.66				V,S,P,M
11/18/1999	FMETL	3620	6.73	5500	8850	41.2	7.76				V,S,P,M
03/03/2000	FMETL	4410	24700	5500	7070	65.4	7.00				V,S,P,M
05/31/2000	FMETL	4130	8.11	6020	9380	6.87	7.06				V,S,P,M
08/21/2000	FMETL	4410	6.59	6050	11100	29	6.70				V,S,P,M
12/11/2000	FMETL	4070	1.43	6540	9500	42.5	7.40				V,S,P,M
03/19/2001	FMETL	46100	22.0	5990	10700	101	6.37				V,S,P,M
06/05/2001	FMETL	5340	10.5	6320	15900	48.6	7.02				V,S,P,M
09/05/2001	FMETL	9390	14.8	10600	30100	64.5	8.14				V,S,P,M
10/04/2001	FMETL	10500	16.1	11500	38600	161	8.04				V,S,P,M
01/14/2002	FMETL	11600	20.3	7810	47300	119	8.04				V,S,P,M
04/23/2002	FMETL	9500	15.1	6400	39900	94.5	7.52				V,S,P,M
08/21/2002	FMETL	18900	32.6	12700	78600	205	8.53				V,S,P,M
10/28/2002	FMETL	10100	15.3	5000	43300	32.8	6.84				V,S,P,M

SOURCE: 00M5MW16

Sampling Dates:
04/14/1999 - 10/28/2002

NOTES:

Installed 3/99.
Page 2 of 2.

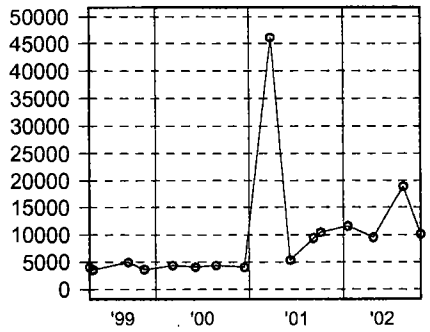
FORT MONMOUTH

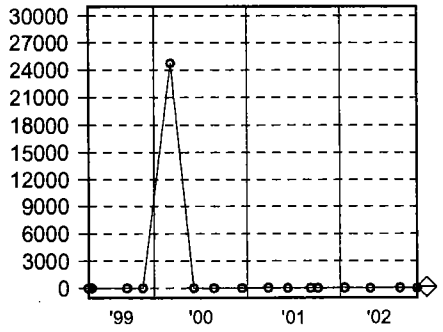
GW MONITORING
Bldg. M-5

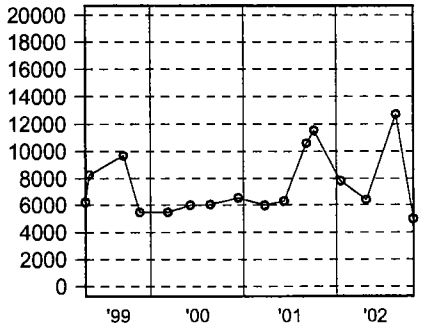
Source 9 of 14

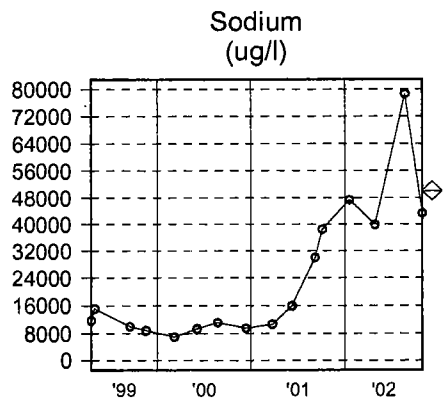
Ag in blank > GW Criteria for 5/8/97.

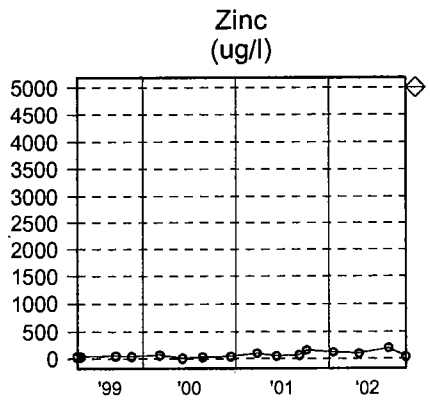
U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

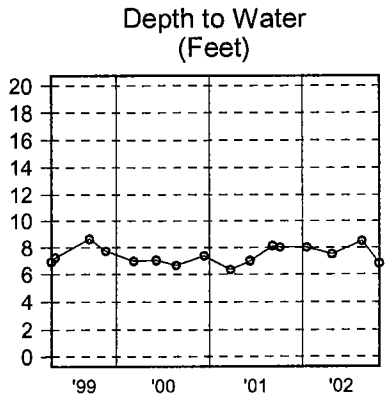












SOURCE: 00M5MW16

Sampling Dates:
04/14/1999 - 10/28/2002

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 9 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	Tetra chloro ethene	Iron	Manganese	Aluminum	Calcium	Lead	Magnesium	Sodium	Depth to Water	Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet	-
NJDEP Criteria:	-	1	300	50	200	NLE	10	NLE	50000	-	-
04/13/1999	FMETL	ND	6550	40.9	327	18700	11.8	3380	8680	7.16	V,S,P,M
04/27/1999	FMETL	ND	8140	42.1	61.1	22200	ND	3920	10200	7.68	V,S,P,M
09/14/1999	FMETL	ND	9640	65.8	541	22600	ND	5800	15100	8.86	V,S,P,M
11/18/1999	FMETL	ND	10300	34.6	27	15900	ND	2990	7320	8.02	V,S,P,M
03/03/2000	FMETL	ND	19800	48.6	131	20000	ND	3840	6360	7.40	V,S,P,M
05/31/2000	FMETL	ND	16200	50.2	28.0	21500	ND	3990	10100	7.48	V,S,P,M
08/21/2000	FMETL	ND	14900	53.7	325	23800	1.89	4390	10300	7.12	V,S,P,M
12/11/2000	FMETL	ND	357000	88.4	942	31300	ND	4560	7400	7.71	V,S,P,M
03/19/2001	FMETL	ND	26200	59.1	60.0	23700	ND	43600	11200	6.90	V,S,P,M
06/05/2001	FMETL	ND	98600	70.5	63.0	28000	3.08	4500	10600	7.39	V,S,P,M
09/05/2001	FMETL	ND	16500	69.7	38.3	24200	1.14	5260	15300	8.39	V,S,P,M
10/04/2001	FMETL	2.95	21000	60.2	111	24700	ND	4980	13300	8.30	V,S,P,M
01/14/2002	FMETL	1.34	18400	240	113	20800	ND	7120	34100	8.33	V,S,P,M
04/23/2002	FMETL	ND	82000	66.8	541	27500	1.35	4630	8880	7.75	V,S,P,M
08/21/2002	FMETL	ND	16500	49.0	162	22500	ND	4080	10000	8.68	V,S,P,M
10/28/2002	FMETL	ND	13500	53.7	27.1	22200	ND	4060	9290	6.76	V,S,P,M

SOURCE: 00M5MW18

Sampling Dates:
04/13/1999 - 10/28/2002

NOTES:

FORT MONMOUTH

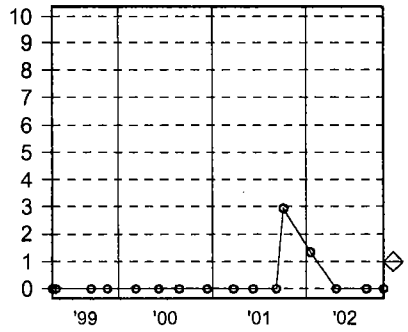
GW MONITORING
Bldg. M-5

Source 10 of 14

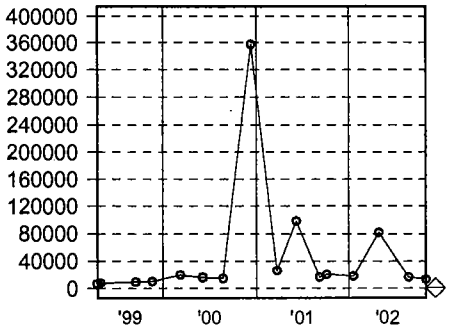
Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

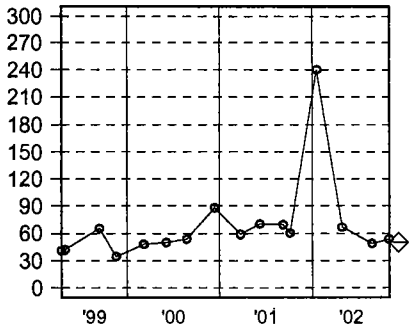
Tetrachlorethene
(ug/l)



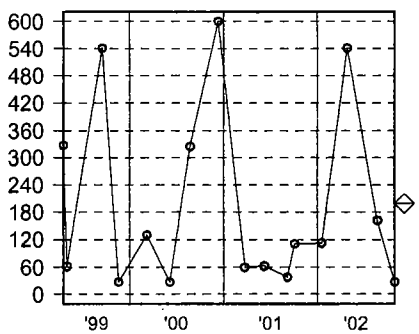
Iron
(ug/l)



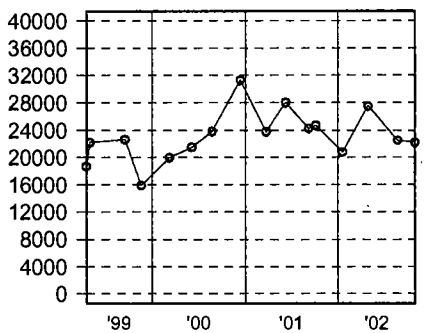
Manganese
(ug/l)



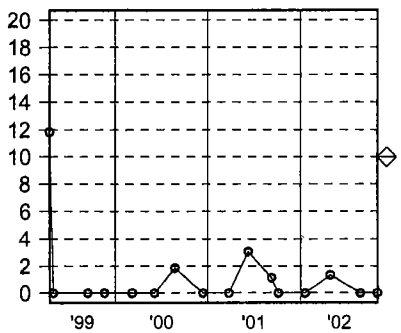
Aluminum
(ug/l)



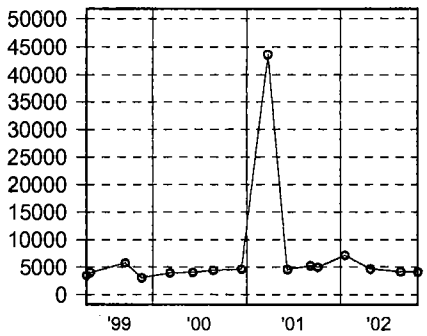
Calcium
(ug/l)



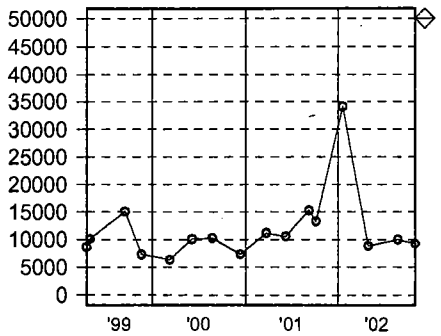
Lead
(ug/l)



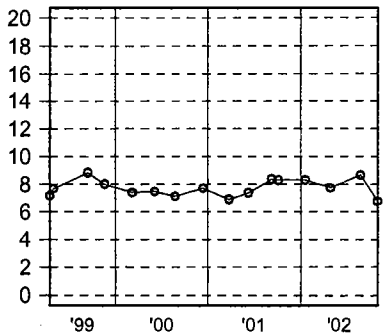
Magnesium
(ug/l)



Sodium
(ug/l)



Depth to Water
(Feet)



SOURCE: 00M5MW18

Sampling Dates:
04/13/1999 - 10/28/2002

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 10 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

02-11-2003 X:\MtechData\M-5\M-5.WSF

	Lab	cis-1,2-Dichloro ethene	Tri chloro ethene	Tetra chloro ethene	Iron	Manganese	Aluminum	Calcium	Lead	Depth to Water	Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet	-
NJDEP Criteria:	-	10	1	1	300	50	200	NLE	10	-	-
04/13/1999	FMETL	ND	ND	11.53	7900	50.1	1110	18400	4.92	6.74	V,S,P,M
04/27/1999	FMETL	ND	ND	3.72	12300	49.1	1710	20000	ND	7.04	V,S,P,M
09/14/1999	FMETL	ND	ND	10.24	9230	33.8	2320	14400	ND	8.48	V,S,P,M
11/18/1999	FMETL	ND	ND	69.22	11700	39	130	15600	ND	7.63	V,S,P,M
03/06/2000	FMETL	ND	ND	5.44	15000	53.9	133	20300	ND	7.01	V,S,P,M
05/31/2000	FMETL	ND	ND	ND	12100	51.6	47.8	21200	ND	7.01	V,S,P,M
08/21/2000	FMETL	ND	ND	4.77	12400	71.7	227	22900	1.14	6.66	V,S,P,M
12/11/2000	FMETL	ND	ND	3.80	39600	56.2	271	21800	ND	7.28	V,S,P,M
03/19/2001	FMETL	ND	ND	2.43	17800	78.5	740	25000	ND	6.97	V,S,P,M
06/05/2001	FMETL	ND	ND	6.89	27300	72.3	ND	26100	ND	6.68	V,S,P,M
09/05/2001	FMETL	3.87	1.66	34.94	22100	75.3	ND	25000	2.10	8.03	V,S,P,M
10/04/2001	FMETL	1.84	ND	13.62	21700	66.3	ND	23400	ND	7.92	V,S,P,M
01/14/2002	FMETL	16.64	17.44	284.64	30100	229	185	11800	ND	8.04	V,S,P,M
04/23/2002	FMETL	5.93	2.80	18.2	28900	83.1	562	19800	ND	7.39	V,S,P,M
08/21/2002	FMETL	51.33	6.44	34.31	20800	74.3	152	13000	ND	8.33	V,S,P,M
10/28/2002	FMETL	2.28	1.00	5.10	21500	81.3	73.6	27500	1.39	6.47	V,S,P,M

SOURCE: 00M5MW19

Sampling Dates:
04/13/1999 - 10/28/2002

NOTES:

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 11 of 14

Ag in blank > GW Criteria for 5/8/97.

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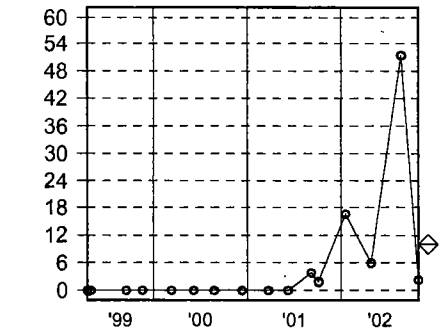

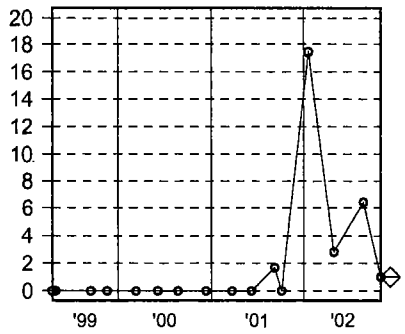

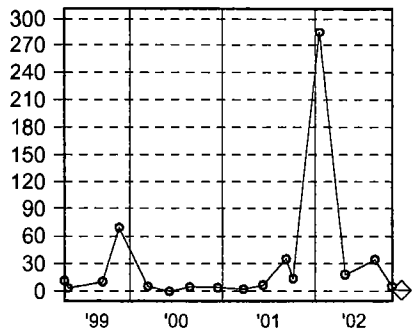

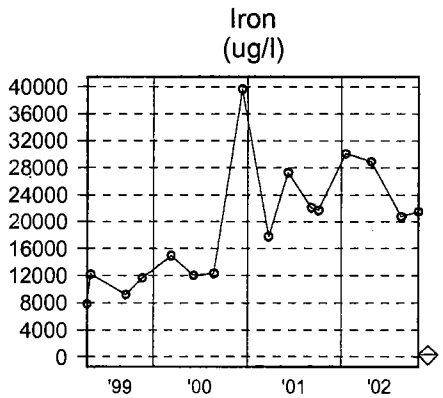

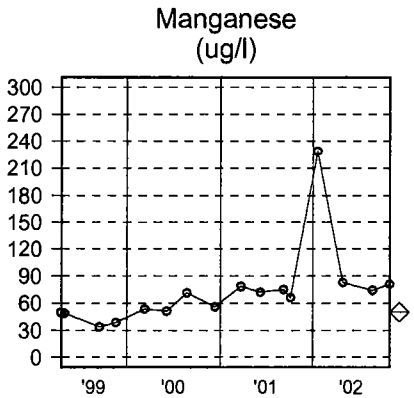

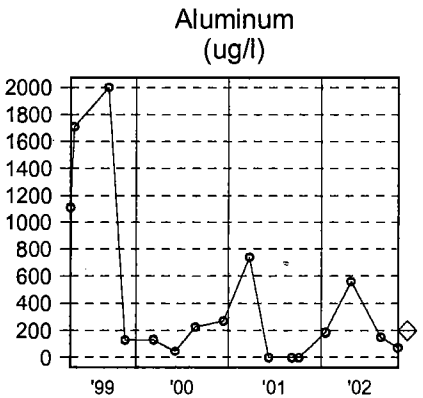

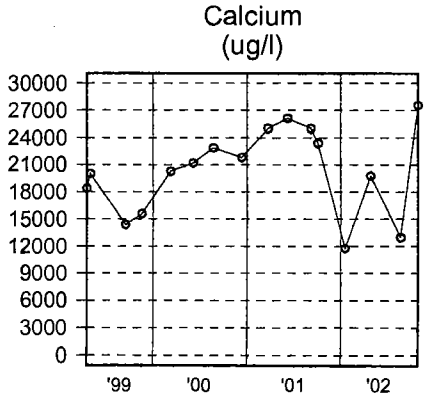

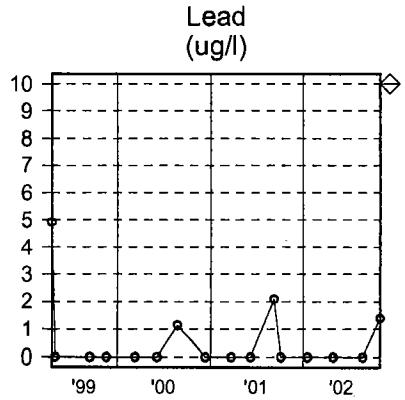

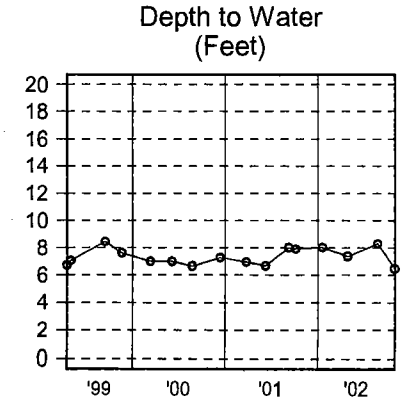

SOURCE: 00M5MW19

Sampling Dates:
04/13/1999 - 10/28/2002

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 11 of 14, Graph

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FORT MONMOUTH
SELFM-PW-EV

02-11-2003 X:\MtechData\M-5\M-5.WSF

	Lab	cis-1,2-Dichloro ethene	Tri chloro ethene	Tetra chloro ethene	Iron	Manganese	Aluminum	Lead	Magnesium	Depth to Water	Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet	-
NJDEP Criteria:	-	10	1	1	300	50	200	10	NLE	-	-
04/13/1999	FMETL	ND	ND	142.59	9380	36.6	3150	9.54	6060	5.72	V,S,P,M
04/27/1999	FMETL	ND	ND	169.54	7520	29.2	2980	2.5	7270	6.08	V,S,P,M
09/13/1999	FMETL	ND	ND	156.58	376	28.0	64.6	ND	5790	7.42	V,S,P,M
11/18/1999	FMETL	ND	ND	143.93	676	21.1	143	ND	4540	6.61	V,S,P,M
03/03/2000	FMETL	ND	ND	90.03	1640	17.8	500	ND	4900	6.05	V,S,P,M
05/31/2000	FMETL	ND	ND	43.44	914	13.2	248	ND	5850	8.13	V,S,P,M
08/21/2000	FMETL	ND	ND	23.85	4060	14.9	1910	1.66	4060	5.78	V,S,P,M
12/11/2000	FMETL	ND	ND	110.95	502	11.9	96.6	ND	3400	6.33	V,S,P,M
03/19/2001	FMETL	ND	ND	65.73	900	40.3	280	ND	13200	5.68	V,S,P,M
03/19/2001D	FMETL	ND	ND	65.5	870	27.7	300	ND	13200	5.68	V,S,P,M
06/05/2001	FMETL	ND	ND	45.30	495	15.4	ND	ND	7980	7.98	V,S,P,M
09/05/2001	FMETL	1.22	1.18	111.58	1320	26.9	204	ND	4180	7.04	V,S,P,M
10/04/2001	FMETL	3.38	3.56	83.81	1640	23.9	198	ND	4740	6.77	V,S,P,M
10/04/2001D	FMETL	3.41	3.66	82.54	1450	24.2	252	1.65	4860	6.77	V,S,P,M
01/14/2002	FMETL	3.09	4.27	85.31	2020	159	452	ND	5720	6.74	V,S,P,M
04/23/2002	FMETL	ND	ND	76.89	1510	27.3	216	1.29	6510	6.36	V,S,P,M
08/21/2002	FMETL	ND	ND	79.41	5320	34.5	1580	ND	9770	7.24	V,S,P,M
10/28/2002	FMETL	ND	ND	12.99	11500	19.6	6000	4.41	4790	5.45	V,S,P,M

SOURCE: 00M5MW20

Sampling Dates:
04/13/1999 - 10/28/2002

NOTES:

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 12 of 14

Ag in blank > GW Criteria for 5/8/97.

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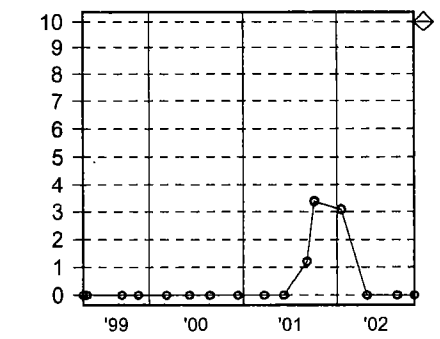
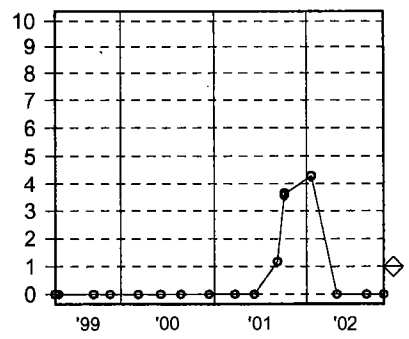
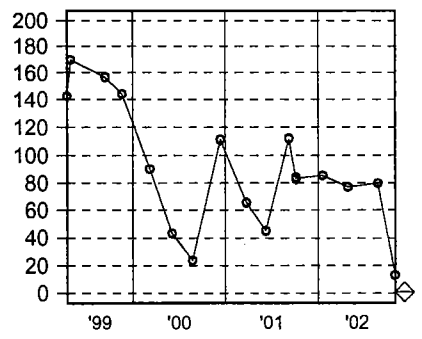
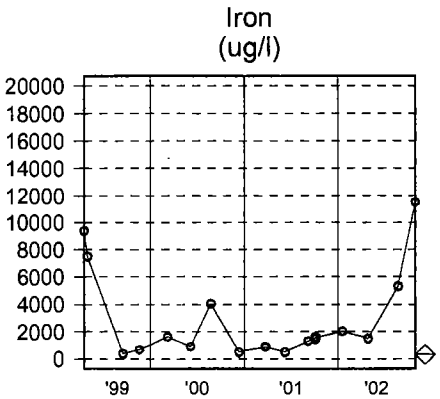
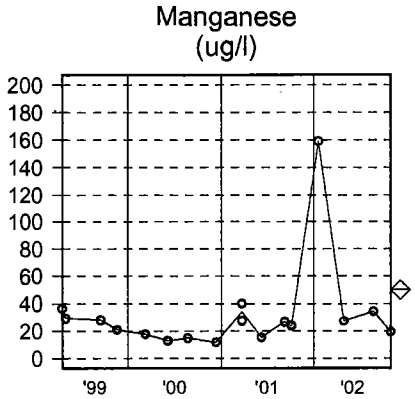
FORT MONMOUTH
SELFM-PW-EV

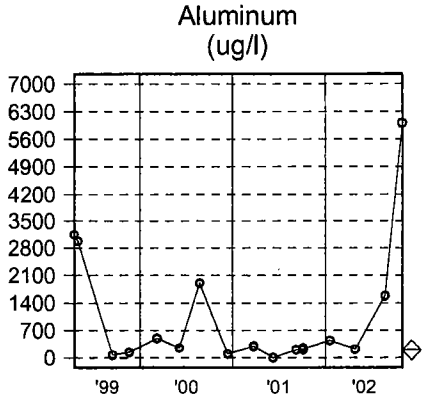


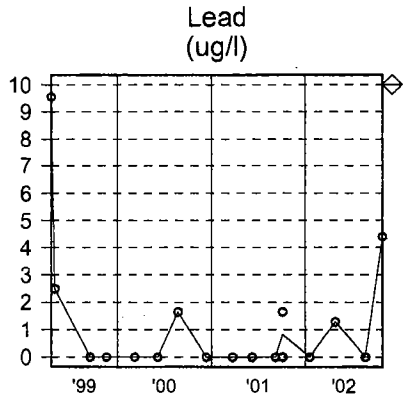


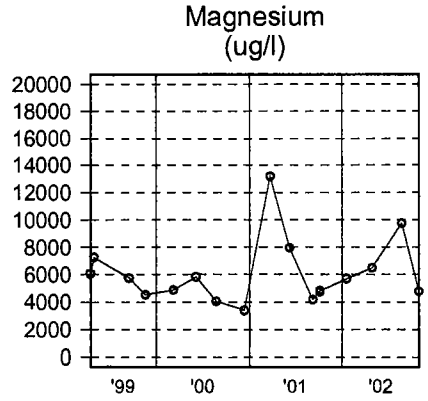


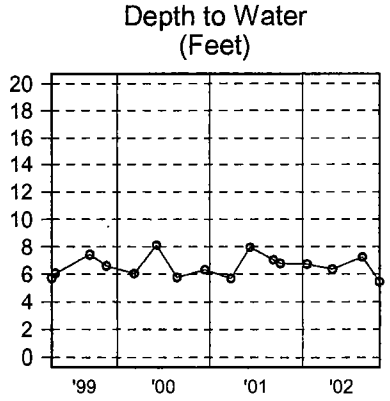












SOURCE: 00M5MW20

Sampling Dates:
04/13/1999 - 10/28/2002

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 12 of 14, Graph

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SELFM-PW-EV

02-11-2003. X:\MtechData\M-5\M-5.WSF

	Lab	2-Butanone	cis-1,2-Dichloroethene	Tetrachloroethene	Iron	Manganese	Aluminum	Calcium	Lead	Depth to Water	Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet	-
NJDEP Criteria:	-	300	10	1	300	50	200	NLE	10	-	-
04/14/1999	FMETL	ND	ND	84.93	848	9.64	148	11700	ND	8.19	V,S,P,M
04/28/1999	FMETL	ND	ND	44.43	1590	19.8	195	24400	ND	8.46	V,S,P,M
09/13/1999	FMETL	ND	ND	29.53	10700	10.4	1410	7180	ND	9.56	V,S,P,M
11/18/1999	FMETL	ND	ND	59.02	1290	10.4	157	10400	ND	8.88	V,S,P,M
03/03/2000	FMETL	ND	ND	11.53	13600	23.1	248	25400	ND	8.38	V,S,P,M
05/31/2000	FMETL	ND	ND	23.13	25100	23.6	ND	18100	ND	7.70	V,S,P,M
08/21/2000	FMETL	ND	ND	4.22	20300	30.9	332	9460	ND	7.93	V,S,P,M
12/11/2000	FMETL	4.92	ND	14.27	19200	27.1	108	10900	ND	8.61	V,S,P,M
03/19/2001	FMETL	ND	ND	6.39	31400	26.6	810	10400	ND	7.85	V,S,P,M
06/05/2001	FMETL	ND	ND	33.84	3280	31.1	ND	20300	ND	8.33	V,S,P,M
06/05/2001D	FMETL	ND	ND	33.54	3650	31.6	ND	20400	1.30	8.33	V,S,P,M
09/05/2001	FMETL	ND	1.48	3.41	21600	21.1	1300	5570	2.41	9.15	V,S,P,M
10/04/2001	FMETL	ND	1.77	3.85	13000	16.5	1270	5440	2.00	8.90	V,S,P,M
01/14/2002	FMETL	ND	1.77	8.26	36400	185	1340	7310	4.02	9.03	V,S,P,M
04/23/2002	FMETL	ND	3.31	8.97	67900	42.8	5120	9280	4.22	8.53	V,S,P,M
08/21/2002	FMETL	14.45	ND	15.68	15400	37.6	426	11600	ND	9.33	V,S,P,M
10/28/2002	FMETL	ND	ND	ND	14000	24.3	100	8910	1.29	7.72	V,S,P,M

SOURCE: 00M5MW23

Sampling Dates:
04/14/1999 - 10/28/2002

NOTES:

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 13 of 14

Ag in blank > GW Criteria for 5/8/97.

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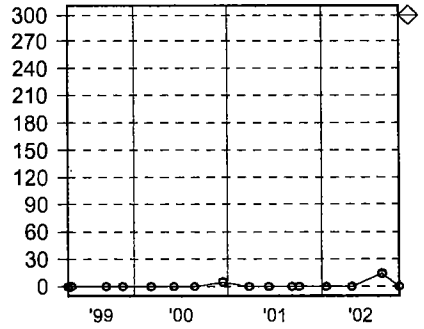
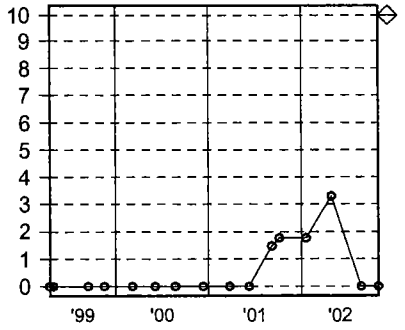
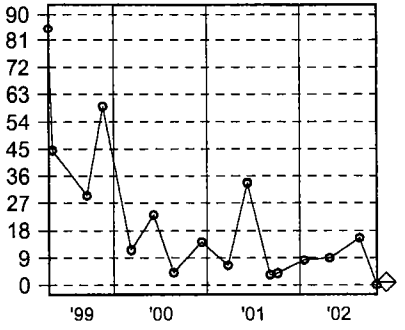
2-Butanone
(ug/l)



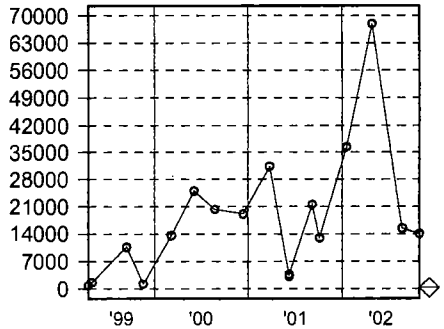
cis-1,2-Dichloroethene
(ug/l)



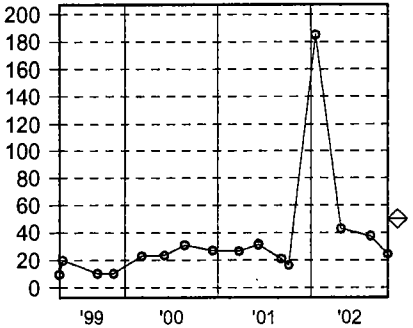
Tetrachlorethene
(ug/l)



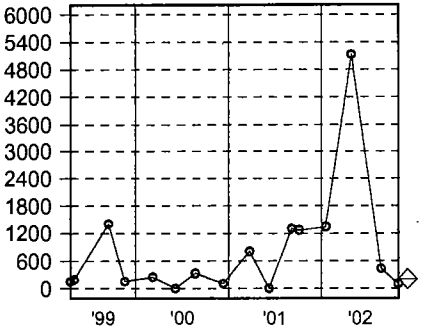
Iron
(ug/l)



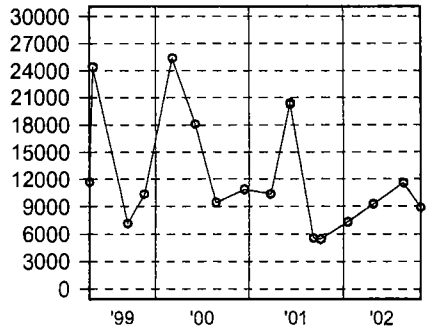
Manganese
(ug/l)



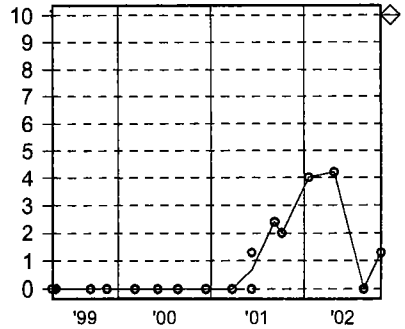
Aluminum
(ug/l)



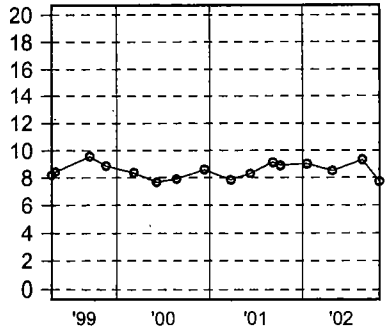
Calcium
(ug/l)



Lead
(ug/l)



Depth to Water
(Feet)



SOURCE: 00M5MW23

Sampling Dates:
04/14/1999 - 10/28/2002

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 13 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

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FORT MONMOUTH
SELFM-PW-EV

02-11-2003 X:\MtechData\M-5\M-5.WSF

	Lab	Iron	Manganese	Aluminum	Calcium	Lead	Magnesium	Potassium	Sodium	Depth to Water	Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet	-
NJDEP Criteria:	-	300	50	200	NLE	10	NLE	NLE	50000	-	-
04/14/1999	FMETL	18000	41.9	5640	12100	4.75	6120	9700	18900	11.32	V,S,P,M
04/28/1999	FMETL	12300	48.3	4630	15500	6.35	4960	8700	25200	11.59	V,S,P,M
09/14/1999	FMETL	8930	43.9	151	17700	ND	3440	8110	8680	13.21	V,S,P,M
11/18/1999	FMETL	15400	35.1	3560	14100	ND	7040	9990	25700	12.26	V,S,P,M
03/03/2000	FMETL	783	25.3	220	11000	ND	4100	2740	22900	11.39	V,S,P,M
05/31/2000	FMETL	191	13.8	ND	8680	ND	3460	2120	49100	11.61	V,S,P,M
05/31/2000D	FMETL	712	15.3	98.7	9230	ND	3460	2220	36500	11.61	V,S,P,M
08/21/2000	FMETL	453	46.7	250	13200	1.91	4620	2990	42900	11.05	V,S,P,M
12/11/2000	FMETL	877	18.7	209	9160	ND	4130	2950	42000	12.00	V,S,P,M
03/19/2001	FMETL	10900	43.1	140	38800	ND	10400	30500	153000	10.98	V,S,P,M
06/05/2001	FMETL	295	27.7	ND	20900	ND	10400	3000	76100	11.84	V,S,P,M
09/05/2001	FMETL	21600	21.1	1300	5570	2.41	1900	2180	29100	12.72	V,S,P,M
09/05/2001D	FMETL	476	63.9	ND	28700	ND	13700	5680	71400	12.72	V,S,P,M
10/04/2001	FMETL	26500	56.4	6880	20300	6.17	13200	13200	56900	11.77	V,S,P,M
01/14/2002	FMETL	1570	182	388	18400	11.0	8590	5490	48300	12.97	V,S,P,M
04/23/2002	FMETL	101	27.8	70.2	16300	1.59	7320	1930	80400	11.90	V,S,P,M
08/21/2002	FMETL	836	40.6	262	17500	ND	8210	4250	64100	12.86	V,S,P,M
10/28/2002	FMETL	6510	101	129	13000	ND	4370	2890	49300	10.93	V,S,P,M

SOURCE: 00M5MW25

Sampling Dates:
04/14/1999 - 10/28/2002

NOTES:

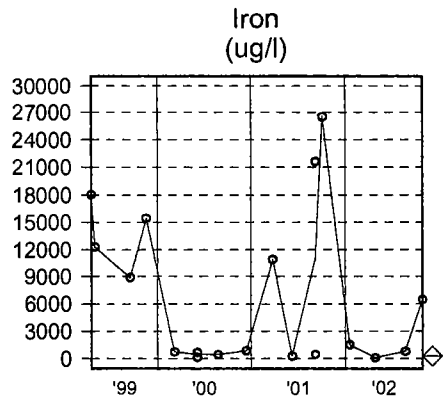
FORT MONMOUTH

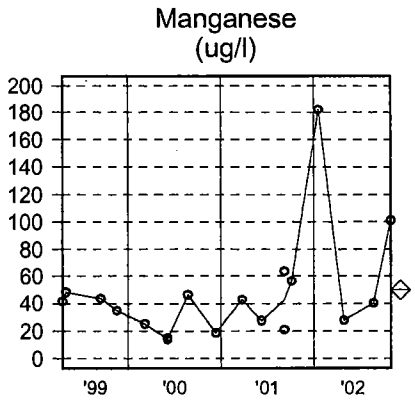
GW MONITORING
Bldg. M-5

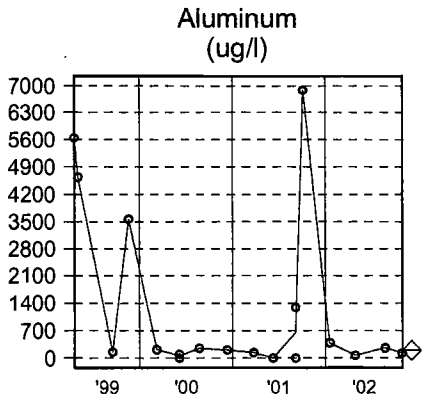
Source 14 of 14

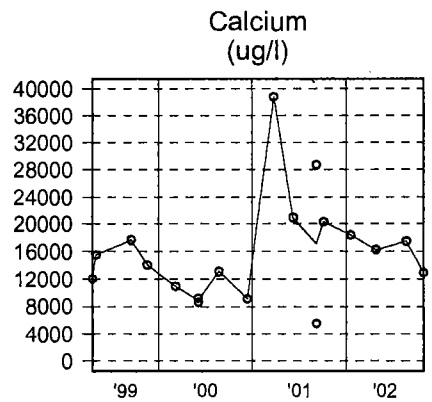
Ag in blank > GW Criteria for 5/8/97.

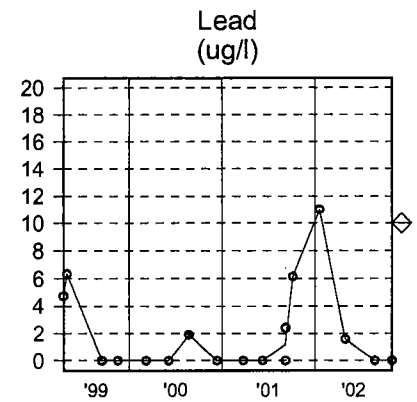
U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

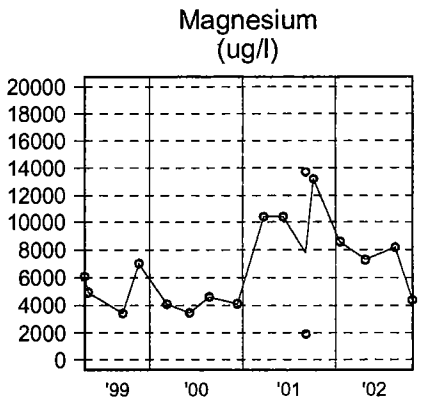


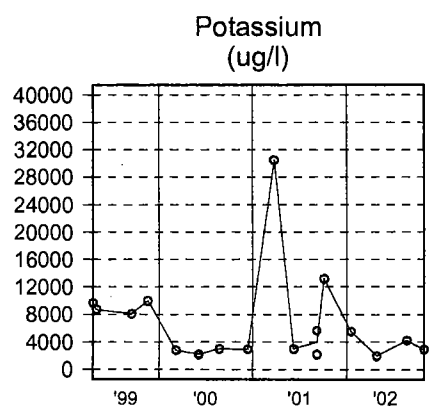


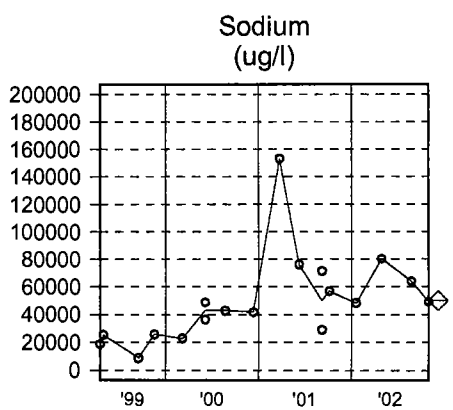


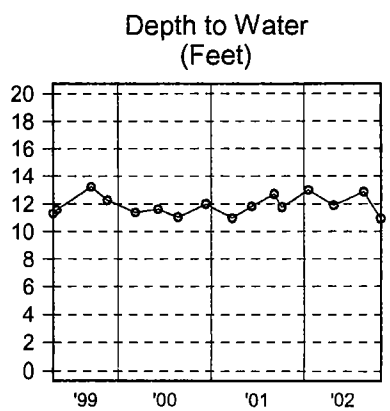












SOURCE: 00M5MW25

Sampling Dates:
04/14/1999 - 10/28/2002

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 14 of 14, Graph

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U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

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FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS
PHONE: (732)532-4359 FAX: (732)532-6263
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING

ANALYTICAL DATA REPORT
FOR
Directorate of Public Works
Fort Monmouth, NJ 07703

PROJECT : DERA/ Long Term Monitoring

SAMPLE LOCATION AND IDENTIFICATION

SITE: M-5

LABORATORY ID #	MONITOR WELL#	NJDEP WELL ID#	SAMPLE DATE
3003204	00M5MW10	29-32574	01/22/03
3003205	00M5MW11	29-32575	01/22/03
3003206	00M5MW12	29-39179	01/22/03
3003207	00M5MW13	29-39178	01/22/03
3003208	00M5MW14	29-39177	01/22/03
3003209	00M5MW15	29-40120	01/22/03
3003210	00M5MW16	29-40121	01/22/03
3003211	00M5MW18	29-40123	01/22/03
3003212	00M5MW19	29-40124	01/22/03
3003213	00M5MW20	29-40122	01/22/03
3003214	00M5MW23	29-40125	01/22/03
3003215	00M5MW25	29-40126	01/22/03

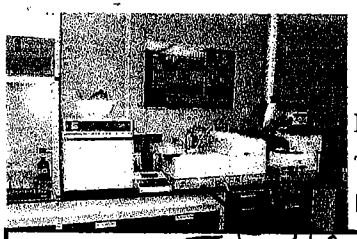
NJDEP Laboratory Certification # 13461

3-18-03
Daniel Wright/Date
Laboratory Director

METHODOLOGY SUMMARY

PARAMETER	REFERENCE
TARGET ANALYTE LIST METALS	Standard Methods, 18th ed.
Aluminum	3120B
Antimony	3120B
Arsenic	3120B
Barium	3120B
Beryllium	3120B
Cadmium	3120B
Calcium	3120B
Chromium	3120B
Cobalt	3120B
Copper	3120B
Iron	3120B
Lead	3120B
Magnesium	3120B
Manganese	3120B
Mercury	3112B
Nickel	3120B
Potassium	3120B
Selenium	3120B
Silver	3120B
Sodium	3120B
Thallium	3120B
Vanadium	3120B
Zinc	3120B

PARAMETER	REFERENCE
TARGET COMPOUND LIST ORGANICS	Federal Register 40 CFR Part 136 Appendix A
Base/Neutral and Acid Extractables by GC/MS	625
Purgeable Organics by GC/MS	624
Pesticide and PCB by GC	608



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:wrightd@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: J Fortin
Phone #: 426229
( )DERA ( )OMA ( )Other:_____
Project No:
Location: MS Wells 1st Qtr '03
Samplers Name / Company: Corey McCormack, TUS

LIMS/Work Order #	Sample Location	Date	Time	Sample Type	# bottles	VOTs	TAL Mtls	Pest PCB	BNA +25				Hex Read	Comments: Remarks / Preservation Method
														HCL/HNO_3/4°C
30032 01	Trip	1/22/03	0750	AQ	2	✓							—	
02	Field Blank		0904		5	✓	✓	✓	✓				—	
03	Dupe		—		5	✓	✓	✓	✓				—	
04	MS mw 10		1357		5	✓	✓	✓	✓				0.0	29-32574
05	MS mw 11		1323		5	✓	✓	✓	✓				0.0	29-32575
06	MS mw 12		1431		5	✓	✓	✓	✓				0.0	29-~~32575~~ 39179
07	MS mw 13		1446		5	✓	✓	✓	✓				0.0	29-39178
08	MS mw 14		1533		5	✓	✓	✓	✓				0.0	29-39177
09	MS mw 15		1019		5	✓	✓	✓	✓				0.0	29-40120
10	MS mw 16		1028		5	✓	✓	✓	✓				0.0	29-40121
11	MS mw 18		1043		5	✓	✓	✓	✓				0.0	29-40123
12	MS mw 19 *		1052		5	✓	✓	✓	✓				0.0	29-40124
13	MS mw 20		1038		5	✓	✓	✓	✓				0.0	29-40122
14	MS mw 23		1336			✓	✓	✓	✓				0.0	29-40125

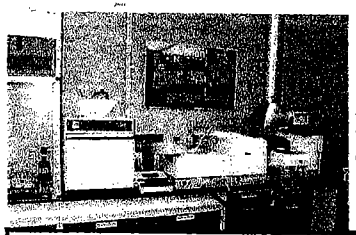
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Corey McCormack	1/22/03 1000				
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: (_)Full, (_)Reduced, (X)Standard, (_)Screen / non-certified, (_)EDD
Turnaround time: (X)Standard 3 wks, (_)Rush ____ Days, (_)ASAP Verbal ____Hrs.

Remarks:
Tide: L → H

print legibly

Coc12/30/02



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:wrightd@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: J. Fallow
Phone #: x26223
( )DERA ( )OMA ( )Other:_____
Project No:
Location: MS wells 1st Qtr '03
Samplers Name / Company: Corey McCormack, TVS

LIMS/Work Order #	Sample Location	Date	Time	Sample Type	# bottles	Analysis Parameters: VO +15	TAL Mtls	Pest / PCB	BNA +25				Hex Read	Comments: HCl/HNO_3/4°C — Remarks / Preservation Method
30032 15	MSmw25	1/22/03	0950	AQ	5	✓	✓	✓	✓				0.0	29-40126

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Corey McCormack	1/22/03 1600				
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: (_)Full, (_)Reduced, (X)Standard, (_)Screen / non-certified, (_)EDD
Turnaround time: (X)Standard 3 wks, (_)Rush ___ Days, (_)ASAP Verbal ___ Hrs.

Remarks:
Tide: L -> H

print legibly

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW10
NJDEP ID #: 29-32574
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 01/22/03
WEATHER: Sunny and cold.
TIDE: Low-Incoming.

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 4" INCH
DEPTH TO WATER: 4.43 ft
DEPTH OF WELL: 17.25 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 12.82 ft
(12.82) X .65 X 3 =24.99
GALLONS OF H_2O TO BE PURGED: 25 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 12:08
pH 6.08 su — TEMP 9.99 °C
DISSOLVED O_2 5.11 mg/L — SPECIFIC CONDUCTIVITY 549.5 ms/cm

PURGE END TIME: 13:56
pH 6.05 su — TEMP 10.02 °C
DISSOLVED O_2 1.01 mg/L — SPECIFIC CONDUCTIVITY 548.7 ms/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 4.81 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 25 gal

SAMPLE START TIME: 13:57
pH 6.04 su — TEMP 10.05 °C
DISSOLVED O_2 1.00 mg/L — SPECIFIC CONDUCTIVITY 548.4 ms/cm

SAMPLE END TIME: 14:00

COMMENTS: Low draw down, slightly cloudy.

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW11
NJDEP ID #: 29-32575
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 01/22/03
WEATHER: Sunny and cold.
TIDE: Low-Incoming.

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 4" INCH
DEPTH TO WATER: 7.00 ft
DEPTH OF WELL: 16.80 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 9.80 ft
(9.80) X .65 X 3 =19.11
GALLONS OF H_2O TO BE PURGED: 19 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 12:00
pH 5.40 su — TEMP 7.80 °C
DISSOLVED O_2 3.33 mg/L — SPECIFIC CONDUCTIVITY 240.3 ms/cm

PURGE END TIME: 13:22
pH 5.41 su — TEMP 7.71 °C
DISSOLVED O_2 1.33 mg/L — SPECIFIC CONDUCTIVITY 240.9 ms/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 7.60 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 19 gal

SAMPLE START TIME: 13:23
pH 5.40 su — TEMP 7.70 °C
DISSOLVED O_2 1.25 mg/L — SPECIFIC CONDUCTIVITY 241.0 ms/cm

SAMPLE END TIME: 13:27

COMMENTS: Slightly cloudy end of bail.

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW12
NJDEP ID #: 29-39179
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 01/22/03
WEATHER: Sunny and cold.
TIDE: Low-Incoming.

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 2" INCH
DEPTH TO WATER: 5.95 ft
DEPTH OF WELL: 16.10 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 10.15 ft
(10.15) X .163 X 3 =4.96
GALLONS OF H_2O TO BE PURGED: 5 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 14:08
pH 6.34 su — TEMP 10.52 °C
DISSOLVED O_2 4.76 mg/L — SPECIFIC CONDUCTIVITY 884.2 ms/cm

PURGE END TIME: 14:30
pH 6.32 su — TEMP 10.49 °C
DISSOLVED O_2 1.91 mg/L — SPECIFIC CONDUCTIVITY 880.8 ms/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 8.65 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 5 gal

SAMPLE START TIME: 14:31
pH 6.31 su — TEMP 10.61 °C
DISSOLVED O_2 1.90 mg/L — SPECIFIC CONDUCTIVITY 879.5 ms/cm

SAMPLE END TIME: 14:35

COMMENTS: Cloudy while bailing.

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW13
NJDEP ID #: 29-39178
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 01/22/03
WEATHER: Sunny and cold.
TIDE: Low-Incoming.

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 2" INCH
DEPTH TO WATER: 2.37 ft
DEPTH OF WELL: 18.82 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 16.45 ft
(16.45) X .163 X 3 =8.04
GALLONS OF H_2O TO BE PURGED: 8 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 14:10
pH 5.89 su — TEMP 9.13 °C
DISSOLVED O_2 4.53 mg/L — SPECIFIC CONDUCTIVITY 760.7 ms/cm

PURGE END TIME: 14:45
pH 5.88 su — TEMP 9.21 °C
DISSOLVED O_2 1.00 mg/L — SPECIFIC CONDUCTIVITY 759.3 ms/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 2.76 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 8 gal

SAMPLE START TIME: 14:46
pH 5.87 su — TEMP 9.22 °C
DISSOLVED O_2 1.00 mg/L — SPECIFIC CONDUCTIVITY 759.0 ms/cm

SAMPLE END TIME: 14:49

COMMENTS: Low draw down, cloudy while bailing.

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW14
NJDEP ID #: 29-39177
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 01/22/03
WEATHER: Sunny and cold.
TIDE: Low-Incoming.

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 2" INCH
DEPTH TO WATER: 3.42 ft
DEPTH OF WELL: 20.15 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 16.73 ft
(16.73) X .163 X 3 =8.18
GALLONS OF H2O TO BE PURGED: 8 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 14:57
pH 6.45 su — TEMP 13.71 °C
DISSOLVED O_2 4.76 mg/L — SPECIFIC CONDUCTIVITY 592.2 ms/cm

PURGE END TIME: 15:32
pH 6.46 su — TEMP 13.74 °C
DISSOLVED O_2 2.11 mg/L — SPECIFIC CONDUCTIVITY 592.3 ms/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 4.16 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 8 gal

SAMPLE START TIME: 15:33
pH 6.46 su — TEMP 13.67 °C
DISSOLVED O_2 2.07 mg/L — SPECIFIC CONDUCTIVITY 592.6 ms/cm

SAMPLE END TIME: 13:59

COMMENTS: Cloudy w/white strands.

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW15
NJDEP ID #: 29-40120
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 01/22/03
WEATHER: Sunny and cold.
TIDE: Low-Incoming.

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 4" INCH
DEPTH TO WATER: 7.91 ft
DEPTH OF WELL: 19.71 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 11.80 ft
(11.80) X .65 X 3 =23.01
GALLONS OF H_2O TO BE PURGED: 23 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 08:38
pH 4.99 su — TEMP 10.22 °C
DISSOLVED O_2 4.13 mg/L — SPECIFIC CONDUCTIVITY 312.8 ms/cm

PURGE END TIME: 10:18
pH 5.97 su — TEMP 10.18 °C
DISSOLVED O_2 0.94 mg/L — SPECIFIC CONDUCTIVITY 313.4 ms/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 8.06 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 23 gal

SAMPLE START TIME: 10:19
pH 5.96 su — TEMP 10.15 °C
DISSOLVED O_2 1.00 mg/L — SPECIFIC CONDUCTIVITY 313.7 ms/cm

SAMPLE END TIME: 10:24

COMMENTS:

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW16
NJDEP ID #: 29-40121
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 01/22/03
WEATHER: Sunny and cold.
TIDE: Low-Incoming.

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 4" INCH
DEPTH TO WATER: 6.45 ft
DEPTH OF WELL: 17.93 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 11.48 ft
(11.48) X .65 X 3 = 22.38
GALLONS OF H_2O TO BE PURGED: 22 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 08:43
pH 5.38 su — TEMP 9.14 °C
DISSOLVED O_2 5.40 mg/L — SPECIFIC CONDUCTIVITY 411.1 ms/cm

PURGE END TIME: 10:18
pH 5.40 su — TEMP 9.13 °C
DISSOLVED O_2 0.10 mg/L — SPECIFIC CONDUCTIVITY 411.0 ms/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 7.23 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 22 gal

SAMPLE START TIME: 10:28
pH 5.39 su — TEMP 9.13 °C
DISSOLVED O_2 0.09 mg/L — SPECIFIC CONDUCTIVITY 411.7 ms/cm

SAMPLE END TIME: 10:34

COMMENTS: Very strong odor w/white strands.

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW18
NJDEP ID #: 29-40123
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 01/22/03
WEATHER: Sunny and cold.
TIDE: Low-Incoming.

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 4" INCH
DEPTH TO WATER: 6.99 ft
DEPTH OF WELL: 20.17 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 13.18 ft
(13.18) X .65 X 3 =25.70
GALLONS OF H2O TO BE PURGED: 26 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 08:49
pH 5.88 su — TEMP 12.91 °C
DISSOLVED O_2 3.11 mg/L — SPECIFIC CONDUCTIVITY 404.8 ms/cm

PURGE END TIME: 10:42
pH 5.64 su — TEMP 12.78 °C
DISSOLVED O_2 2.01 mg/L — SPECIFIC CONDUCTIVITY 404.9 ms/cm

DEPTH TO H2O AFTER PURGE AND BEFORE SAMPLING: 7.15 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 26 gal

SAMPLE START TIME: 10:43
pH 5.62 su — TEMP 12.77 °C
DISSOLVED O_2 1.97 mg/L — SPECIFIC CONDUCTIVITY 404.9 ms/cm

SAMPLE END TIME: 10:49

COMMENTS: Cloudy and yellow.

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW19
NJDEP ID #: 29-40124
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 01/22/03
WEATHER: Sunny and cold.
TIDE: Low-Incoming.

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 4" INCH
DEPTH TO WATER: 6.58 ft
DEPTH OF WELL: 19.98 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 13.40 ft
(13.40) X .65 X 3 =26.13
GALLONS OF H_2O TO BE PURGED: 26 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 08:54
pH 5.87 su — TEMP 8.76 °C
DISSOLVED O_2 5.21 mg/L — SPECIFIC CONDUCTIVITY 366.2 ms/cm

PURGE END TIME: 10:47
pH 5.80 su — TEMP 8.76 °C
DISSOLVED O_2 1.79 mg/L — SPECIFIC CONDUCTIVITY 365.0 ms/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 7.65 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 26 gal

SAMPLE START TIME: 10:52
pH 5.81 su — TEMP 8.76 °C
DISSOLVED O_2 1.77 mg/L — SPECIFIC CONDUCTIVITY 365.2 ms/cm

SAMPLE END TIME: 10:57

COMMENTS: DUP. here. Strong odor.

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW20
NJDEP ID #: 29-40122
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 01/22/03
WEATHER: Sunny and cold.
TIDE: Low-Incoming.

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 4" INCH
DEPTH TO WATER: 5.73 ft
DEPTH OF WELL: 16.07 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 10.34 ft
(10.34) X .65 X 3 =20.16
GALLONS OF H_2O TO BE PURGED: 20 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 08:59
pH 5.30 su — TEMP 7.11 °C
DISSOLVED O_2 5.00 mg/L — SPECIFIC CONDUCTIVITY 567.2 ms/cm

PURGE END TIME: 10:26
pH 5.25 su — TEMP 7.24 °C
DISSOLVED O_2 1.00 mg/L — SPECIFIC CONDUCTIVITY 566.7 ms/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 6.93 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 20 gal

SAMPLE START TIME: 10:38
pH 5.26 su — TEMP 7.26 °C
DISSOLVED O_2 1.00 mg/L — SPECIFIC CONDUCTIVITY 566.9 ms/cm

SAMPLE END TIME: 10:41

COMMENTS:

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW23
NJDEP ID #: 29-40125
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 01/22/03
WEATHER: Sunny and cold.
TIDE: Low-Incoming.

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 4" INCH
DEPTH TO WATER: 7.75 ft
DEPTH OF WELL: 19.75 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 12.00 ft
(12.00) X .65 X 3 =23.40
GALLONS OF H_2O TO BE PURGED: 23 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 11:55
pH 5.74 su — TEMP 7.80 °C
DISSOLVED O_2 5.00 mg/L — SPECIFIC CONDUCTIVITY 1001.2 ms/cm

PURGE END TIME: 13:35
pH 5.72 su — TEMP 7.80 °C
DISSOLVED O_2 1.11 mg/L — SPECIFIC CONDUCTIVITY 999.1 ms/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 7.93 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 23 gal

SAMPLE START TIME: 13:36
pH 5.72 su — TEMP 7.85 °C
DISSOLVED O_2 1.08 mg/L — SPECIFIC CONDUCTIVITY 1001.1 ms/cm

SAMPLE END TIME: 13:39

COMMENTS: Low draw down, very cloudy/orange.

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW25
NJDEP ID #: 29-40126
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 01/22/03
WEATHER: Sunny and cold.
TIDE: Low-Incoming.

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 4" INCH
DEPTH TO WATER: 10.75 ft
DEPTH OF WELL: 19.94 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 9.19 ft
(9.19) X .65 X 3 =17.92
GALLONS OF H_2O TO BE PURGED: 18 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 08:31
pH 4.77 su — TEMP 9.72 °C
DISSOLVED O_2 4.71 mg/L — SPECIFIC CONDUCTIVITY 482.7 ms/cm

PURGE END TIME: 09:49
pH 4.78 su — TEMP 9.77 °C
DISSOLVED O_2 0.67 mg/L — SPECIFIC CONDUCTIVITY 482.5 ms/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 11.86 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 18 gal

SAMPLE START TIME: 09:50
pH 4.76 su — TEMP 9.76 °C
DISSOLVED O_2 0.77 mg/L — SPECIFIC CONDUCTIVITY 482.6 ms/cm

SAMPLE END TIME: 09:55

COMMENTS: Slightly orange/w particles.

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEP CERTIFICATION # 13461

Definition of Qualifiers

MDL	**:**	**Method Detection Limit**
J	**:**	**Compound identified below detection limit**
B	**:**	**Compound found in blank**
D	**:**	**Results are from a dilution of the sample**
U	**:**	**Compound searched for but not detected**
E	**:**	**Compound exceeds calibration limit**
PQL	**:**	**Practical Quantitation Limit**
NLE	**:**	**No limit established**
RT	**:**	**Retention time**

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB012751.D**	Sample Name	**MB 03Feb03**
Operator	**Skelton**	Field ID	**MB 03Feb03**
Date Acquired	**3 Feb 2003 11:36 am**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated value.

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-9

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

MB 03Feb03

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30032 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: MB 03Feb03

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB012751.D

Level: (low/med) LOW Date Received: 1/22/03

% Moisture: not dec. Date Analyzed: 2/3/03

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB012784.D**	Sample Name	**MB 04Feb2003**
Operator	**Skelton**	Field ID	**MB 04Feb2003**
Date Acquired	**4 Feb 2003 1:35 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated value.

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-9

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

MB 04Feb2003

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30032 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: MB 04Feb2003

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB012784.D

Level: (low/med) LOW Date Received: 1/22/03

% Moisture: not dec. Date Analyzed: 2/4/03

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB012752.D**	Sample Name	**3003201**
Operator	**Skelton**	Field ID	**Trip Blank**
Date Acquired	**3 Feb 2003 12:18 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform	17.05	282083	2.28 ug/L	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated value.
*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-9

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

Trip Blank

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30032 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 3003201

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB012752.D

Level: (low/med) LOW Date Received: 1/22/03

% Moisture: not dec. Date Analyzed: 2/3/03

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB012753.D**	Sample Name	**3003202**
Operator	**Skelton**	Field ID	**Field Blank**
Date Acquired	**3 Feb 2003 1:00 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform	17.05	288302	2.40 ug/L	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated value.

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-9

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

Field Blank

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30032 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 3003202

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB012753.D

Level: (low/med) LOW Date Received: 1/22/03

% Moisture: not dec. _____ Date Analyzed: 2/3/03

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB012754.D**	Sample Name	**3003203**
Operator	**Skelton**	Field ID	**Dupe**
Date Acquired	**3 Feb 2003 1:43 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone	16.16	32549	1.59 ug/L	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	24.84	103305	1.35 ug/L	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated value

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-9

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

Dupe

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30032 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 3003203

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB012754.D

Level: (low/med) LOW Date Received: 1/22/03

% Moisture: not dec. Date Analyzed: 2/3/03

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB012755.D**	Sample Name	**3003204**
Operator	**Skelton**	Field ID	**M5MW10**
Date Acquired	**3 Feb 2003 2:25 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated value.

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-9

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **M5MW10**

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30032 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 3003204

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB012755.D

Level: (low/med) LOW Date Received: 1/22/03

% Moisture: not dec. Date Analyzed: 2/3/03

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB012756.D**	Sample Name	**3003205**
Operator	**Skelton**	Field ID	**M5MW11**
Date Acquired	**3 Feb 2003 3:07 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene	20.24	73713	1.06 ug/L	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	24.84	385889	5.20 ug/L	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated value.

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-9

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **M5MW11**

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30032 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 3003205

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB012756.D

Level: (low/med) LOW Date Received: 1/22/03

% Moisture: not dec. Date Analyzed: 2/3/03

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB012757.D**	Sample Name	**3003206**
Operator	**Skelton**	Field ID	**M5MW12**
Date Acquired	**3 Feb 2003 3:49 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated value:

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-9

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **M5MW12**

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30032 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 3003206

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB012757.D

Level: (low/med) LOW Date Received: 1/22/03

% Moisture: not dec. _____ Date Analyzed: 2/3/03

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB012758.D**	Sample Name	**3003207**
Operator	**Skelton**	Field ID	**M5MW13**
Date Acquired	**3 Feb 2003 4:31 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone	9.78	57254	2.30 ug/L	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated value.

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-9

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **M5MW13**

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30032 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 3003207

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB012758.D

Level: (low/med) LOW Date Received: 1/22/03

% Moisture: not dec. Date Analyzed: 2/3/03

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB012759.D**	Sample Name	**3003208**
Operator	**Skelton**	Field ID	**M5MW14**
Date Acquired	**3 Feb 2003 5:13 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated value.

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-9

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **M5MW14**

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30032 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 3003208

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB012759.D

Level: (low/med) LOW Date Received: 1/22/03

% Moisture: not dec. _____ Date Analyzed: 2/3/03

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB012760.D**	Sample Name	**3003209**
Operator	**Skelton**	Field ID	**M5MW15**
Date Acquired	**3 Feb 2003 5:55 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated value.

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-9

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **M5MW15**

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30032 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 3003209

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB012760.D

Level: (low/med) LOW Date Received: 1/22/03

% Moisture: not dec. Date Analyzed: 2/3/03

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB012761.D**	Sample Name	**3003210**
Operator	**Skelton**	Field ID	**M5MW16**
Date Acquired	**3 Feb 2003 6:36 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	16.02	1894995	22.02 ug/L	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene	20.23	92675	1.36 ug/L	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	24.84	2321776	31.09 ug/L	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated value.

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-9

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

M5MW16

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30032 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 3003210

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB012761.D

Level: (low/med) LOW Date Received: 1/22/03

% Moisture: not dec. _____ Date Analyzed: 2/3/03

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB012762.D**	Sample Name	**3003211**
Operator	**Skelton**	Field ID	**M5MW18**
Date Acquired	**3 Feb 2003 7:18 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated value.

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-9

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

M5MW18

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30032 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 3003211

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB012762.D

Level: (low/med) LOW Date Received: 1/22/03

% Moisture: not dec. Date Analyzed: 2/3/03

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB012763.D**	Sample Name	**3003212**
Operator	**Skelton**	Field ID	**M5MW19**
Date Acquired	**3 Feb 2003 7:59 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone	16.15	21376	1.18 ug/L	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	24.83	111874	1.54 ug/L	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated value.
*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-9

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **M5MW19**

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30032 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 3003212

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB012763.D

Level: (low/med) LOW Date Received: 1/22/03

% Moisture: not dec. Date Analyzed: 2/3/03

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB012764.D**	Sample Name	**3003213**
Operator	**Skelton**	Field ID	**M5MW20**
Date Acquired	**3 Feb 2003 8:41 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	24.84	2062088	27.87 ug/L	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated value.

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-9

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

M5MW20

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30032 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 3003213

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB012764.D

Level: (low/med) LOW Date Received: 1/22/03

% Moisture: not dec. Date Analyzed: 2/3/03

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB012765.D**	Sample Name	**3003214**
Operator	**Skelton**	Field ID	**M5MW23**
Date Acquired	**3 Feb 2003 9:22 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene	20.24	267906	3.97 ug/L	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	24.84	3681433	50.11 ug/L	1	0.32 ug/L	2.00 ug/L	E
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated value.

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-9

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB012785.D**	Sample Name	**3003214**
Operator	**Skelton**	Field ID	**M5MW23**
Date Acquired	**4 Feb 2003 2:21 pm**	Sample Multiplier	**5**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	9.25 ug/L	100.00 ug/L	
107131	Acrylonitrile			not detected	50	13.90 ug/L	100.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	42.60 ug/L	100.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.80 ug/L	10.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	1.25 ug/L	10.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	8.40 ug/L	10.00 ug/L	
74-87-3	Chloromethane			not detected	30	5.80 ug/L	10.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	5.30 ug/L	10.00 ug/L	
74-83-9	Bromomethane			not detected	10	5.50 ug/L	10.00 ug/L	
75-00-3	Chloroethane			not detected	nle	5.05 ug/L	10.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	2.50 ug/L	10.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	1.20 ug/L	10.00 ug/L	
67-64-1	Acetone			not detected	700	6.80 ug/L	10.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	2.30 ug/L	10.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	1.20 ug/L	10.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.80 ug/L	10.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.60 ug/L	10.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	3.90 ug/L	10.00 ug/L	
78-93-3	2-Butanone			not detected	300	3.10 ug/L	10.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.85 ug/L	10.00 ug/L	
67-66-3	Chloroform			not detected	6	1.50 ug/L	10.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	1.15 ug/L	10.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	2.35 ug/L	10.00 ug/L	
71-43-2	Benzene			not detected	1	1.15 ug/L	10.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.90 ug/L	10.00 ug/L	
79-01-6	Trichloroethene	20.23	99295	7.45 ug/L	1	1.15 ug/L	10.00 ug/L	D
78-87-5	1,2-Dichloropropane			not detected	1	2.00 ug/L	10.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	2.75 ug/L	10.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	3.25 ug/L	10.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	3.45 ug/L	10.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	2.95 ug/L	10.00 ug/L	
108-88-3	Toluene			not detected	1000	1.85 ug/L	10.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	4.35 ug/L	10.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	2.40 ug/L	10.00 ug/L	
127-18-4	Tetrachloroethene	24.84	1123670	79.46 ug/L	1	1.60 ug/L	10.00 ug/L	D
591-78-6	2-Hexanone			not detected	nle	3.55 ug/L	10.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	4.30 ug/L	10.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	1.95 ug/L	10.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	3.25 ug/L	10.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	5.70 ug/L	20.00 ug/L	
95-47-6	o-Xylene			not detected	nle	3.10 ug/L	10.00 ug/L	
100-42-5	Styrene			not detected	100	2.80 ug/L	10.00 ug/L	
75-25-2	Bromoform			not detected	4	3.50 ug/L	10.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	2.35 ug/L	10.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	2.75 ug/L	10.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	2.85 ug/L	10.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	3.20 ug/L	10.00 ug/L	

*Results between MDL and RL are estimated value.

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-9

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **M5MW23**

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30032 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 3003214

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB012765.D

Level: (low/med) LOW Date Received: 1/22/03

% Moisture: not dec. _____ Date Analyzed: 2/3/03

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB012768.D**	Sample Name	**3003215**
Operator	**Skelton**	Field ID	**M5MW25**
Date Acquired	**3 Feb 2003 11:26 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated value.

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-9

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **M5MW25**

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30032 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 3003215

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB012768.D

Level: (low/med) LOW Date Received: 1/22/03

% Moisture: not dec. _____ Date Analyzed: 2/3/03

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BN06164.D**	Sample Name	**MB-012703**
Operator	**B.Patel**	Misc Info	**MB-012703**
Date Acquired	**30-Jan-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	1.27	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.78	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.11	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.45	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.10	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	0.97	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.90	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.80	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.93	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.99	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	0.78	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.96	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	0.78	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	1.01	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.88	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	1.15	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.92	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.00	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	0.82	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.83	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	0.74	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.77	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.66	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.68	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.24	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.84	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	0.69	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.62	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.53	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	0.84	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	0.99	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.81	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.86	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.79	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.84	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.95	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.66	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.86	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.37	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.85	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.58	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BN06164.D**	Sample Name	**MB-012703**
Operator	**B.Patel**	Misc Info	**MB-012703**
Date Acquired	**30-Jan-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.86	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.71	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.86	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.67	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.19	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	0.76	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.83	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.75	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.66	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.61	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.36	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.84	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	0.72	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.61	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	0.60	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.71	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.89	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.67	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.69	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	0.79	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.91	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.06	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	0.59	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.88	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.96	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.72	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.56	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.91	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.66	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID: **MB-012703**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30032 Location: M5 SDG No:

Matrix: (soil/water) WATER Lab Sample ID: MB-012703

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN06164.D

Level: (low/med) LOW Date Received: 1/22/03

% Moisture: decanted: (Y/N) N Date Extracted: 1/27/03

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/30/03

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.68	8	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BN06166.D**	Sample Name	**3003202**
Operator	**B.Patel**	Misc Info	**Field Blank**
Date Acquired	**30-Jan-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	1.27	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.78	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.11	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.45	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.10	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	0.97	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.90	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.80	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.93	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.99	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	0.78	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.96	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	0.78	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	1.01	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.88	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	1.15	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.92	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.00	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	0.82	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.83	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	0.74	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.77	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.66	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.68	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.24	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.84	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	0.69	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.62	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.53	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	0.84	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	0.99	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.81	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.86	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.79	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.84	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.95	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.66	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.86	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.37	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.85	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.58	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BN06166.D**	Sample Name	**3003202**
Operator	**B.Patel**	Misc Info	**Field Blank**
Date Acquired	**30-Jan-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.86	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.71	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.86	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.67	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.19	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	0.76	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.83	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.75	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.66	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.61	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.36	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.84	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	0.72	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.61	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	0.60	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.71	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.89	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.67	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.69	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	0.79	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.91	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.06	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	0.59	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.88	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.96	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.72	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.56	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.91	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.66	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
RL= Reporting Limit. The values between the MDL and RL are considered estimated.
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID: **Field Blank**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30032 Location: M5 SDG No: _____

Matrix: (soil/water) WATER Lab Sample ID: 3003202

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN06166.D

Level: (low/med) LOW Date Received: 1/22/03

% Moisture: _____ decanted: (Y/N) N Date Extracted: 1/27/03

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/30/03

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.68	6	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BN06167.D**	Sample Name	**3003203**
Operator	**B.Patel**	Misc Info	**Dupe**
Date Acquired	**30-Jan-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	1.27	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.78	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.11	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.45	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.10	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	0.97	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.90	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.80	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.93	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.99	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	0.78	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.96	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	0.78	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	1.01	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.88	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	1.15	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.92	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.00	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	0.82	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.83	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	0.74	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.77	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.66	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.68	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.24	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.84	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	0.69	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.62	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.53	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	0.84	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	0.99	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.81	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.86	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.79	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.84	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.95	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.66	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.86	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.37	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.85	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.58	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BN06167.D**	Sample Name	**3003203**
Operator	**B.Patel**	Misc Info	**Dupe**
Date Acquired	**30-Jan-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.86	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.71	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.86	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.67	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.19	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	0.76	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.83	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.75	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.66	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.61	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.36	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.84	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	0.72	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.61	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	0.60	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.71	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.89	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.67	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.69	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	0.79	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.91	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.06	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	0.59	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.88	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.96	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.72	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.56	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.91	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.66	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID: **Dupe**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30032 Location: M5 SDG No:

Matrix: (soil/water) WATER Lab Sample ID: 3003203

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN06167.D

Level: (low/med) LOW Date Received: 1/22/03

% Moisture: decanted: (Y/N) N Date Extracted: 1/27/03

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/30/03

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.68	7	J
2.	unknown	19.05	11	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BN06168.D**	Sample Name	**3003204**
Operator	**B.Patel**	Misc Info	**M5MW10**
Date Acquired	**31-Jan-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	1.27	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.78	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.11	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.45	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.10	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	0.97	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.90	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.80	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.93	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.99	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	0.78	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.96	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	0.78	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	1.01	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.88	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	1.15	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.92	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.00	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	0.82	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.83	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	0.74	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.77	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.66	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.68	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.24	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.84	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	0.69	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.62	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.53	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	0.84	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	0.99	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.81	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.86	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.79	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.84	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.95	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.66	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.86	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.37	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.85	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.58	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BN06168.D**	Sample Name	**3003204**
Operator	**B.Patel**	Misc Info	**M5MW10**
Date Acquired	**31-Jan-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.86	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.71	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.86	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.67	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.19	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	0.76	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.83	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.75	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.66	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.61	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.36	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.84	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	0.72	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.61	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	0.60	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.71	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.89	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.67	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.69	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	0.79	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.91	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.06	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	0.59	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.88	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.96	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.72	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.56	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.91	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.66	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID: **M5MW10**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30032 Location: M5 SDG No: _____

Matrix: (soil/water) WATER Lab Sample ID: 3003204

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN06168.D

Level: (low/med) LOW Date Received: 1/22/03

% Moisture: _____ decanted: (Y/N) N Date Extracted: 1/27/03

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/31/03

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.68	7	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BN06169.D**	Sample Name	**3003205**
Operator	**B.Patel**	Misc Info	**M5MW11**
Date Acquired	**31-Jan-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	1.27	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.78	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.11	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.45	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.10	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	0.97	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.90	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.80	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.93	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.99	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	0.78	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.96	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	0.78	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	1.01	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.88	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	1.15	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.92	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.00	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	0.82	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.83	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	0.74	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.77	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.66	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.68	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.24	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.84	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	0.69	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.62	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.53	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	0.84	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	0.99	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.81	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.86	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.79	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.84	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.95	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.66	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.86	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.37	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.85	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.58	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BN06169.D**	Sample Name	**3003205**
Operator	**B.Patel**	Misc Info	**M5MW11**
Date Acquired	**31-Jan-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.86	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.71	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.86	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.67	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.19	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	0.76	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.83	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.75	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.66	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.61	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.36	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.84	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	0.72	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.61	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	0.60	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.71	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.89	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.67	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.69	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	0.79	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.91	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.06	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	0.59	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.88	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.96	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.72	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.56	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.91	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.66	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID: **M5MW11**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30032 Location: M5 SDG No: _____

Matrix: (soil/water) WATER Lab Sample ID: 3003205

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN06169.D

Level: (low/med) LOW Date Received: 1/22/03

% Moisture: _____ decanted: (Y/N) N Date Extracted: 1/27/03

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/31/03

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.68	7	J
2.	unknown	35.19	15	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BN06170.D**	Sample Name	**3003206**
Operator	**B.Patel**	Misc Info	**M5MW12**
Date Acquired	**31-Jan-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	1.27	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.78	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.11	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.45	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.10	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	0.97	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.90	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.80	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.93	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.99	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	0.78	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.96	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	0.78	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	1.01	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.88	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	1.15	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.92	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.00	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	0.82	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.83	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	0.74	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.77	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.66	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.68	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.24	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.84	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	0.69	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.62	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.53	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	0.84	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	0.99	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.81	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.86	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.79	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.84	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.95	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.66	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.86	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.37	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.85	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.58	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BN06170.D**	Sample Name	**3003206**
Operator	**B.Patel**	Misc Info	**M5MW12**
Date Acquired	**31-Jan-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.86	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.71	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.86	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.67	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.19	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	0.76	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.83	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.75	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.66	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.61	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.36	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.84	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	0.72	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.61	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	0.60	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.71	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.89	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.67	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.69	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	0.79	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.91	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate	28.40	33685	1.30 ug/L	30	1.06	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	0.59	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.88	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.96	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.72	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.56	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.91	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.66	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID: **M5MW12**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30032 Location: M5 SDG No: _____

Matrix: (soil/water) WATER Lab Sample ID: 3003206

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN06170.D

Level: (low/med) LOW Date Received: 1/22/03

% Moisture: _____ decanted: (Y/N) N Date Extracted: 1/27/03

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/31/03

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 3 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.68	7	J
2. 000112-80-1	Oleic Acid	24.97	7	JN
3.	unknown	35.20	7	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BN06171.D**	Sample Name	**3003207**
Operator	**B.Patel**	Misc Info	**M5MW13**
Date Acquired	**31-Jan-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	1.27	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.78	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.11	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.45	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.10	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	0.97	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.90	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.80	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.93	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.99	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	0.78	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.96	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	0.78	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	1.01	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.88	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	1.15	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.92	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.00	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	0.82	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.83	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	0.74	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.77	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.66	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.68	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.24	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.84	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	0.69	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.62	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.53	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	0.84	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	0.99	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.81	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.86	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.79	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.84	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.95	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.66	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.86	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.37	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.85	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.58	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BN06171.D**	Sample Name	**3003207**
Operator	**B.Patel**	Misc Info	**M5MW13**
Date Acquired	**31-Jan-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.86	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.71	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.86	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.67	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.19	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	0.76	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.83	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.75	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.66	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.61	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.36	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.84	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	0.72	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.61	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	0.60	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.71	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.89	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.67	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.69	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	0.79	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.91	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate	28.40	28383	1.14 ug/L	30	1.06	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	0.59	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.88	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.96	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.72	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.56	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.91	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.66	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID: **M5MW13**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30032 Location: M5 SDG No:

Matrix: (soil/water) WATER Lab Sample ID: 3003207

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN06171.D

Level: (low/med) LOW Date Received: 1/22/03

% Moisture: decanted: (Y/N) N Date Extracted: 1/27/03

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/31/03

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 3 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.68	7	J
2. 004727-18-8	Cyclopentadecanone, 2-hydroxy-	30.45	19	JN
3.	unknown	35.23	96	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BN06172.D**	Sample Name	**3003208**
Operator	**B.Patel**	Misc Info	**M5MW14**
Date Acquired	**31-Jan-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	1.27	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.78	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.11	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.45	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.10	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	0.97	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.90	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.80	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.93	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.99	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	0.78	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.96	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	0.78	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	1.01	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.88	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	1.15	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.92	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.00	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	0.82	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.83	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	0.74	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.77	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.66	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.68	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.24	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.84	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	0.69	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.62	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.53	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	0.84	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	0.99	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.81	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.86	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.79	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.84	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.95	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.66	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.86	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.37	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.85	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.58	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BN06172.D**	Sample Name	**3003208**
Operator	**B.Patel**	Misc Info	**M5MW14**
Date Acquired	**31-Jan-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.86	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.71	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.86	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.67	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.19	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	0.76	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.83	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.75	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.66	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.61	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.36	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.84	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	0.72	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.61	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	0.60	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.71	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.89	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.67	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.69	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	0.79	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.91	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.06	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	0.59	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.88	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.96	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.72	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.56	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.91	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.66	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID: **M5MW14**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30032 Location: M5 SDG No: _____

Matrix: (soil/water) WATER Lab Sample ID: 3003208

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN06172.D

Level: (low/med) LOW Date Received: 1/22/03

% Moisture: _____ decanted: (Y/N) N Date Extracted: 1/27/03

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/31/03

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

CONCENTRATION UNITS:

Number TICs found: 1 (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.68	20	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BN06173.D**	Sample Name	**3003209**
Operator	**B.Patel**	Misc Info	**M5MW15**
Date Acquired	**31-Jan-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	1.27	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.78	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.11	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.45	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.10	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	0.97	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.90	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.80	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.93	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.99	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	0.78	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.96	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	0.78	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	1.01	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.88	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	1.15	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.92	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.00	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	0.82	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.83	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	0.74	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.77	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.66	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.68	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.24	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.84	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	0.69	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.62	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.53	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	0.84	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	0.99	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.81	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.86	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.79	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.84	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.95	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.66	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.86	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.37	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.85	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.58	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BN06173.D**	Sample Name	**3003209**
Operator	**B.Patel**	Misc Info	**M5MW15**
Date Acquired	**31-Jan-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.86	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.71	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.86	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.67	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.19	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	0.76	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.83	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.75	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.66	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.61	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.36	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.84	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	0.72	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.61	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	0.60	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.71	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.89	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.67	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.69	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	0.79	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.91	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.06	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	0.59	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.88	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.96	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.72	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.56	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.91	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.66	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID: **M5MW15**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30032 Location: M5 SDG No: _____

Matrix: (soil/water) WATER Lab Sample ID: 3003209

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN06173.D

Level: (low/med) LOW Date Received: 1/22/03

% Moisture: _____ decanted: (Y/N) N Date Extracted: 1/27/03

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/31/03

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.67	18	J
2. 000119-47-1	Phenol, 2,2'-methylenebis[6-(1,1-	27.51	6	JN

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BN06174.D**	Sample Name	**3003210**
Operator	**B.Patel**	Misc Info	**M5MW16**
Date Acquired	**31-Jan-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	1.27	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.78	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.11	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.45	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.10	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	0.97	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.90	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.80	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.93	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.99	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	0.78	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.96	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	0.78	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	1.01	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.88	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	1.15	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.92	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.00	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	0.82	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.83	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	0.74	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.77	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.66	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.68	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.24	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.84	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	0.69	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.62	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.53	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	0.84	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	0.99	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.81	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.86	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.79	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.84	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.95	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.66	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.86	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.37	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.85	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.58	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BN06174.D**	Sample Name	**3003210**
Operator	**B.Patel**	Misc Info	**M5MW16**
Date Acquired	**31-Jan-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.86	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.71	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.86	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.67	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.19	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	0.76	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.83	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.75	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.66	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.61	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.36	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.84	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	0.72	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.61	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	0.60	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.71	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.89	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.67	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.69	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	0.79	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.91	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.06	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	0.59	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.88	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.96	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.72	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.56	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.91	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.66	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID: **M5MW16**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30032 Location: M5 SDG No:

Matrix: (soil/water) WATER Lab Sample ID: 3003210

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN06174.D

Level: (low/med) LOW Date Received: 1/22/03

% Moisture: decanted: (Y/N) N Date Extracted: 1/27/03

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/31/03

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.68	17	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BN06175.D**	Sample Name	**3003211**
Operator	**B.Patel**	Misc Info	**M5MW18**
Date Acquired	**31-Jan-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	1.27	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.78	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.11	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.45	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.10	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	0.97	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.90	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.80	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.93	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.99	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	0.78	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.96	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	0.78	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	1.01	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.88	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	1.15	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.92	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.00	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	0.82	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.83	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	0.74	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.77	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.66	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.68	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.24	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.84	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	0.69	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.62	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.53	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	0.84	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	0.99	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.81	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.86	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.79	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.84	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.95	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.66	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.86	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.37	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.85	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.58	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BN06175.D**	Sample Name	**3003211**
Operator	**B.Patel**	Misc Info	**M5MW18**
Date Acquired	**31-Jan-03**	Sample Multiplier	1

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.86	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.71	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.86	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.67	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.19	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	0.76	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.83	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.75	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.66	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.61	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.36	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.84	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	0.72	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.61	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	0.60	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.71	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.89	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.67	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.69	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	0.79	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.91	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.06	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	0.59	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.88	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.96	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.72	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.56	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.91	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.66	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID: **M5MW18**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30032 Location: M5 SDG No: _____

Matrix: (soil/water) WATER Lab Sample ID: 3003211

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN06175.D

Level: (low/med) LOW Date Received: 1/22/03

% Moisture: _____ decanted: (Y/N) N Date Extracted: 1/27/03

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/31/03

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.67	15	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BN06176.D**	Sample Name	**3003212**
Operator	**B.Patel**	Misc Info	**M5MW19**
Date Acquired	**31-Jan-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	1.27	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.78	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.11	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.45	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.10	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	0.97	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.90	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.80	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.93	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.99	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	0.78	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.96	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	0.78	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	1.01	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.88	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	1.15	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.92	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.00	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	0.82	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.83	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	0.74	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.77	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.66	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.68	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.24	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.84	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	0.69	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.62	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.53	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	0.84	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	0.99	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.81	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.86	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.79	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.84	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.95	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.66	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.86	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.37	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.85	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.58	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BN06176.D**	Sample Name	**3003212**
Operator	**B.Patel**	Misc Info	**M5MW19**
Date Acquired	**31-Jan-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.86	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.71	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.86	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.67	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.19	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	0.76	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.83	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.75	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.66	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.61	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.36	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.84	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	0.72	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.61	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	0.60	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.71	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.89	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.67	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.69	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	0.79	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.91	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.06	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	0.59	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.88	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.96	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.72	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.56	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.91	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.66	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID: **M5MW19**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30032 Location: M5 SDG No: _____

Matrix: (soil/water) WATER Lab Sample ID: 3003212

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN06176.D

Level: (low/med) LOW Date Received: 1/22/03

% Moisture: _____ decanted: (Y/N) N Date Extracted: 1/27/03

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/31/03

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.67	21	J
2. 010544-50-0	Sulfur, mol. (S8)	19.05	7	JN

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BN06177.D**	Sample Name	**3003213**
Operator	**B.Patel**	Misc Info	**M5MW20**
Date Acquired	**31-Jan-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	1.27	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.78	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.11	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.45	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.10	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	0.97	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.90	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.80	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.93	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.99	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	0.78	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.96	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	0.78	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	1.01	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.88	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	1.15	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.92	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.00	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	0.82	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.83	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	0.74	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.77	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.66	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.68	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.24	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.84	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	0.69	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.62	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.53	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	0.84	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	0.99	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.81	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.86	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.79	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.84	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.95	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.66	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.86	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.37	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.85	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.58	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BN06177.D**	Sample Name	**3003213**
Operator	**B.Patel**	Misc Info	**M5MW20**
Date Acquired	**31-Jan-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.86	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.71	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.86	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.67	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.19	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	0.76	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.83	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.75	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.66	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.61	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.36	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.84	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	0.72	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.61	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	0.60	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.71	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.89	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.67	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.69	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	0.79	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.91	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.06	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	0.59	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.88	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.96	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.72	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.56	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.91	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.66	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID: **M5MW20**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30032 Location: M5 SDG No:

Matrix: (soil/water) WATER Lab Sample ID: 3003213

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN06177.D

Level: (low/med) LOW Date Received: 1/22/03

% Moisture: decanted: (Y/N) N Date Extracted: 1/27/03

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/31/03

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.67	18	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BN06178.D**	Sample Name	**3003214**
Operator	**B.Patel**	Misc Info	**M5MW23**
Date Acquired	**31-Jan-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	1.27	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.78	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.11	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.45	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.10	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	0.97	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.90	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.80	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.93	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.99	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	0.78	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.96	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	0.78	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	1.01	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.88	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	1.15	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.92	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.00	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	0.82	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.83	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	0.74	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.77	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.66	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.68	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.24	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.84	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	0.69	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.62	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.53	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	0.84	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	0.99	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.81	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.86	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.79	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.84	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.95	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.66	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.86	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.37	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.85	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.58	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BN06178.D**	Sample Name	**3003214**
Operator	**B.Patel**	Misc Info	**M5MW23**
Date Acquired	**31-Jan-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.86	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.71	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.86	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.67	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.19	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	0.76	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.83	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.75	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.66	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.61	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.36	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.84	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	0.72	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.61	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	0.60	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.71	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.89	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.67	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.69	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	0.79	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.91	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.06	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	0.59	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.88	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.96	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.72	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.56	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.91	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.66	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID: **M5MW23**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30032 Location: M5 SDG No: _____

Matrix: (soil/water) WATER Lab Sample ID: 3003214

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN06178.D

Level: (low/med) LOW Date Received: 1/22/03

% Moisture: _____ decanted: (Y/N) N Date Extracted: 1/27/03

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/31/03

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000123-42-2	2-Pentanone, 4-hydroxy-4-methyl	7.67	21	JN

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BN06179.D**	Sample Name	**3003215**
Operator	**B.Patel**	Misc Info	**M5MW25**
Date Acquired	**31-Jan-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	1.27	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.78	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.11	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.45	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	1.10	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	0.97	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.90	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.80	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.93	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.99	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	0.78	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.96	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	0.78	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	1.01	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.88	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	1.15	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.92	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.00	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	0.82	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.83	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	0.74	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.77	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.66	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.68	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.24	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.84	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	0.69	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.62	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.53	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	0.84	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	0.99	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.81	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	0.86	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.79	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.84	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	0.95	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.66	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.86	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.37	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.85	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.58	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BN06179.D**	Sample Name	**3003215**
Operator	**B.Patel**	Misc Info	**M5MW25**
Date Acquired	**31-Jan-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.86	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.71	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.86	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.67	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	1.19	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	0.76	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.83	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.75	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.66	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.61	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.36	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.84	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	0.72	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.61	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	0.60	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.71	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.89	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.67	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.69	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	0.79	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.91	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.06	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	0.59	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.88	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	0.96	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.72	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	2.56	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	0.91	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	0.66	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID: **M5MW25**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30032 Location: M5 SDG No: _____

Matrix: (soil/water) WATER Lab Sample ID: 3003215

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN06179.D

Level: (low/med) LOW Date Received: 1/22/03

% Moisture: _____ decanted: (Y/N) N Date Extracted: 1/27/03

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 1/31/03

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.67	19	J

TABULATED ANALYTICAL REPORT
SW 846 8081

mb 012803

Matrix: Aqueous
Date Extracted: 1/22/03
Ext. Batch: 12803
Filename: 00319.D
Date Analysed: 2/28/03

Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	MDL (ug/L)
319-84-6	**alpha-BHC**	U	0.0011
319-85-7	**beta-BHC**	U	0.0050
58-89-9	**gamma-BHC**	U	0.0013
319-86-8	**delta-BHC**	U	0.0016
76-44-8	**Heptachlor**	U	0.0035
309-00-2	**Aldrin**	U	0.0026
1024-57-3	**Heptachlor epoxide**	U	0.0020
5103-71-9	**gamma-Chlordane**	U	0.0007
5103-74-2	**alpha-Chlordane**	U	0.0036
959-98-8	**Endosulfan I**	U	0.0016
72-55-9	**4,4'-DDE**	U	0.0021
60-57-1	**Dieldrin**	U	0.0020
72-20-8	**Endrin**	U	0.0032
33213-65-9	**Endosulfan II**	U	0.0022
72-54-8	**4,4'-DDD**	U	0.0020
7421-93-4	**Endrin aldehyde**	U	0.0100
50-29-3	**4,4'-DDT**	U	0.0052
1031-07-8	**Endosulfan sulfate**	U	0.0026
53494-70-5	**Endrin ketone**	U	0.0026
72-43-5	**Methoxychlor**	U	0.0100
8001-35-2	**Toxaphene**	U	0.0157
12674-11-2	**Arochlor 1016**	U	0.0683
11104-28-2	**Arochlor 1221**	U	0.0666
11141-16-5	**Arochlor 1232**	U	0.0648
53469-21-9	**Arochlor 1242**	U	0.0485
12672-29-6	**Arochlor 1248**	U	0.0544
11097-69-1	**Arochlor 1254**	U	0.0608
11096-82-5	**Arochlor 1260**	U	0.0732

MDL = METHOD DETECTION LIMIT
U =UNDETECTED BELOW THE MDL

Initial vol. (ml): 1000.00
Final vol. (ml): 10

U. S. Army, Fort Monmouth Environmental Laboratory.
173 Riverside Avenue, NJ 07703.

Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: MS Wells
Field ID: FIELDBLANK
Lab ID: 3003202
Filename: 00321.D
Lab Project : 30032

Location: MS Wells 1st Qrtr. '03
MATRIX: Aqueous
Ext. Batch:
Date Extracted: 01/22/03
Date Analyzed: 02/28/03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS	Reporting Limit	Regulatory Level	Qualifier	MDL
		(ug/L)	(ug/L)	(ug/L)		(ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.50		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: MS Wells
Field ID: Dupe
Lab ID: 3003203
Filename: 00322.D
Lab Project : 30032

Location: MS Wells 1st Qrtr. '03
MATRIX: Aqueous
Ext. Batch:
Date Extracted: 01/22/03
Date Analyzed: 02/28/03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.50		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client:	U.S. Army, DPW, SELFM-PW-EV	**Location:**	MS Wells 1st Qrtr. '03
Project Name:	MS Wells	**MATRIX:**	Aqueous
Field ID:	MS MW 10	**Ext. Batch:**	
Lab ID:	3003204	**Date Extracted:**	01/22/03
Filename:	00323.D	**Date Analyzed:**	02/28/03
Lab Project :	30032	**Dilution:**	1
		Analyst:	A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.2		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.50		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: MS Wells
Field ID: MS MW 11
Lab ID: 3003205
Filename: 00324.D
Lab Project : 30032

Location: MS Wells 1st Qrtr. '03
MATRIX: Aqueous
Ext. Batch:
Date Extracted: 01/22/03
Date Analyzed: 02/28/03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.2		0.0050
58-89-9	gamma-BHC	ND	0.01	0.2		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.50		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client:	U.S. Army, DPW, SELFM-PW-EV	**Location:**	MS Wells 1st Qrtr. '03
Project Name:	MS Wells	**MATRIX:**	Aqueous
Field ID:	MS MW 12	**Ext. Batch:**	
Lab ID:	3003206	**Date Extracted:**	01/22/03
Filename:	00325.D	**Date Analyzed:**	02/28/03
Lab Project :	30032	**Dilution:**	1
		Analyst:	A.A.

CAS #	COMPOUNDS	RESULTS	Reporting Limit	Regulatory Level	Qualifier	MDL
		(ug/L)	(ug/L)	(ug/L)		(ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.2		0.0050
58-89-9	gamma-BHC	ND	0.01	0.2		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.50		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.

ND =Not Decteded / Below MDL.

B = Present in the associated Blank.

E = Exceeded Calibration Range, Dilution to follow.

D = Dilution.

NLE = No Limit Established.

RL = Reporting Limit.

PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0

Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6

*Results between MDL and RL are estimated.

Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.

Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client:	U.S. Army, DPW, SELFM-PW-EV	**Location:**	MS Wells 1st Qrtr. '03
Project Name:	MS Wells	**MATRIX:**	Aqueous
Field ID:	MS MW 13	**Ext. Batch:**	
Lab ID:	3003207	**Date Extracted:**	01/22/03
Filename:	00326.D	**Date Analyzed:**	02/28/03
Lab Project :	30032	**Dilution:**	1
		Analyst:	A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.2		0.0050
58-89-9	gamma-BHC	ND	0.01	0.2		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.4		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.50		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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173 Riverside Avenue, NJ 07703.

Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client:	U.S. Army, DPW, SELFM-PW-EV	**Location:**	MS Wells 1st Qrtr. '03
Project Name:	MS Wells	**MATRIX:**	Aqueous
Field ID:	MS MW 14	**Ext. Batch:**	
Lab ID:	3003208	**Date Extrac**	01/22/03
Filename:	00327.D	**Date Analyz**	02/28/03
Lab Project :	30032	**Dilution:**	1
		Analyst:	A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.2		0.0050
58-89-9	gamma-BHC	ND	0.01	0.2		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.4		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.50		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.

ND =Not Decteded / Below MDL.

B = Present in the associated Blank.

E = Exceeded Calibration Range, Dilution to follow.

D = Dilution.

NLE = No Limit Established.

RL = Reporting Limit.

PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0

Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6

*Results between MDL and RL are estimated.

Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.

Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client:	U.S. Army, DPW, SELFM-PW-EV	Location:	MS Wells 1st Qrtr. '03
Project Name:	MS Wells	MATRIX:	Aqueous
Field ID:	MS MW 15	Ext. Batch:	
Lab ID:	3003209	Date Extrac	01/22/03
Filename:	00328.D	Date Analyz	02/28/03
Lab Project :	30032	Dilution:	1
		Analyst:	A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.2		0.0050
58-89-9	gamma-BHC	ND	0.01	0.2		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.4		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.2		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.50		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client:	U.S. Army, DPW, SELFM-PW-EV	**Location:**	MS Wells 1st Qrtr. '03
Project Name:	MS Wells	**MATRIX:**	Aqueous
Field ID:	MS MW 16	**Ext. Batch:**	
Lab ID:	3003210	**Date Extracted**	01/22/03
Filename:	00346A.D	**Date Analyz**	3 Mar 2003 10:55 am
Lab Project :	30032	**Dilution:**	1
		Analyst:	A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.2		0.0050
58-89-9	gamma-BHC	ND	0.01	0.2		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.4		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.2		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.5		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.50		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in tbe associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client:	U.S. Army, DPW, SELFM-PW-EV	**Location:**	MS Wells 1st Qrtr. '03
Project Name:	MS Wells	**MATRIX:**	Aqueous
Field ID:	MS MW 18	**Ext. Batch:**	
Lab ID:	3003211	**Date Extracted**	01/22/03
Filename:	00347A.D	**Date Analyzed**	3 Mar 2003 11:29 am
Lab Project :	30032	**Dilution:**	1
		Analyst:	A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.2		0.0050
58-89-9	gamma-BHC	ND	0.01	0.2		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.4		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.2		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.5		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.5		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.50		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client:	U.S. Army, DPW, SELFM-PW-EV	**Location:**	MS Wells 1st Qrtr. '03
Project Name:	MS Wells	**MATRIX:**	Aqueous
Field ID:	MS MW 19	**Ext. Batch:**	
Lab ID:	3003212	**Date Extracted:**	01/22/03
Filename:	00348A.D	**Date Analyzed:**	3 Mar 2003 12:02 pm
Lab Project :	30032	**Dilution:**	1
		Analyst:	A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.2		0.0050
58-89-9	gamma-BHC	ND	0.01	0.2		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.4		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.2		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.5		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.5		0.0036
959-98-8	Endosulfan I	ND	0.01	0.4		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.50		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client:	U.S. Army, DPW, SELFM-PW-EV	**Location:**	MS Wells 1st Qrtr. '03
Project Name:	MS Wells	**MATRIX:**	Aqueous
Field ID:	MS MW 20	**Ext. Batch:**	
Lab ID:	3003213	**Date Extracted**	01/22/03
Filename:	00349A.D	**Date Analyzed**	3 Mar 2003 12:36 pm
Lab Project :	30032	**Dilution:**	1
		Analyst:	A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.2		0.0050
58-89-9	gamma-BHC	ND	0.01	0.2		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.4		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.2		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.5		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.5		0.0036
959-98-8	Endosulfan I	ND	0.01	0.4		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.1		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.50		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client:	U.S. Army, DPW, SELFM-PW-EV	**Location:**	MS Wells 1st Qrtr. '03
Project Name:	MS Wells	**MATRIX:**	Aqueous
Field ID:	MS MW 23	**Ext. Batch:**	
Lab ID:	3003214	**Date Extrac**	01/22/03
Filename:	00350A.D	**Date Analyzed**	3 Mar 2003 1:10 pm
Lab Project :	30032	**Dilution:**	1
		Analyst:	A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.2		0.0050
58-89-9	gamma-BHC	ND	0.01	0.2		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.4		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.2		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.5		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.5		0.0036
959-98-8	Endosulfan I	ND	0.01	0.4		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.1		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.50		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client:	U.S. Army, DPW, SELFM-PW-EV	**Location:**	MS Wells 1st Qrtr. '03
Project Name:	MS Wells	**MATRIX:**	Aqueous
Field ID:	MS MW 25	**Ext. Batch:**	
Lab ID:	3003215	**Date Extrac**	01/22/03
Filename:	00351.D	**Date Analyz**	3 Mar 2003 1:43 pm
Lab Project :	30032	**Dilution:**	1
		Analyst:	A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.2		0.0050
58-89-9	gamma-BHC	ND	0.01	0.2		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.4		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.2		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.5		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.5		0.0036
959-98-8	Endosulfan I	ND	0.01	0.4		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.1		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.50		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.

ND =Not Decteded / Below MDL.

B = Present in the associated Blank.

E = Exceeded Calibration Range, Dilution to follow.

D = Dilution.

NLE = No Limit Established.

RL = Reporting Limit.

PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0

Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6

*Results between MDL and RL are estimated.

Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.

Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 30032
Sample Prepared: 01/27/03

Site: M5
Ft. Monmouth, New Jersey

Field ID#: Method Blank

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	01/27/03	ND	200	100	10.0
Antimony	01/27/03	ND	20	10	2.0
Arsenic	01/27/03	ND	8	5.0	2.0
Barium	01/27/03	ND	2000	10	0.5
Beryllium	01/27/03	ND	20	0.25	0.5
Cadmium	01/27/03	ND	4	1.0	0.5
Calcium	01/27/03	102	NLE	100	20.0
Chromium	01/27/03	1.16	100	10	0.5
Cobalt	01/27/03	ND	NLE	5.0	0.5
Copper	01/27/03	ND	1000	10	2.0
Iron	01/27/03	ND	300	200	10.0
Lead	01/27/03	ND	10	5.0	1.0
Magnesium	01/27/03	ND	NLE	100	10.0
Manganese	01/27/03	ND	50	5.0	0.5
Mercury	01/31/03	ND	2	0.20	0.15
Nickel	01/27/03	ND	100	5.0	1.0
Potassium	01/27/03	466	NLE	200	40.0
Selenium	01/27/03	ND	50	10	3.0
Silver	01/27/03	ND	20	5.0	1.0
Sodium	01/27/03	278	50000	200	20.0
Thallium	01/27/03	ND	10	10	2.0
Vanadium	01/27/03	ND	NLE	5.0	0.5
Zinc	01/27/03	ND	5000	500	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3003202
Sample Received: 01/22/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: Field Blank

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	01/27/03	ND	200	100	10.0
Antimony	01/27/03	ND	20	10	2.0
Arsenic	01/27/03	ND	8	5.0	2.0
Barium	01/27/03	ND	2000	10	0.5
Beryllium	01/27/03	ND	20	0.25	0.5
Cadmium	01/27/03	ND	4	1.0	0.5
Calcium	01/27/03	25.0	NLE	100	20.0
Chromium	01/27/03	ND	100	10	0.5
Cobalt	01/27/03	ND	NLE	5.0	0.5
Copper	01/27/03	ND	1000	10	2.0
Iron	01/27/03	ND	300	200	10.0
Lead	01/27/03	ND	10	5.0	1.0
Magnesium	01/27/03	ND	NLE	100	10.0
Manganese	01/27/03	ND	50	5.0	0.5
Mercury	01/31/03	ND	2	0.20	0.15
Nickel	01/27/03	ND	100	5.0	1.0
Potassium	01/27/03	396	NLE	200	40.0
Selenium	01/27/03	ND	50	10	3.0
Silver	01/27/03	ND	20	5.0	1.0
Sodium	01/27/03	ND	50000	200	20.0
Thallium	01/27/03	ND	10	10	2.0
Vanadium	01/27/03	ND	NLE	5.0	0.5
Zinc	01/27/03	ND	5000	500	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3003203
Sample Received: 01/22/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: Dupe

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	01/27/03	86.4	200	100	10.0
Antimony	01/27/03	ND	20	10	2.0
Arsenic	01/27/03	ND	8	5.0	2.0
Barium	01/27/03	49.0	2000	10	0.5
Beryllium	01/27/03	ND	20	0.25	0.5
Cadmium	01/27/03	ND	4	1.0	0.5
Calcium	01/27/03	23000	NLE	100	20.0
Chromium	01/27/03	0.597	100	10	0.5
Cobalt	01/27/03	ND	NLE	5.0	0.5
Copper	01/27/03	ND	1000	10	2.0
Iron	01/27/03	11800	300	200	10.0
Lead	01/27/03	ND	10	5.0	1.0
Magnesium	01/27/03	4160	NLE	100	10.0
Manganese	01/27/03	55.6	50	5.0	0.5
Mercury	01/31/03	ND	2	0.20	0.15
Nickel	01/27/03	ND	100	5.0	1.0
Potassium	01/27/03	8210	NLE	200	40.0
Selenium	01/27/03	ND	50	10	3.0
Silver	01/27/03	ND	20	5.0	1.0
Sodium	01/27/03	8510	50000	200	20.0
Thallium	01/27/03	ND	10	10	2.0
Vanadium	01/27/03	ND	NLE	5.0	0.5
Zinc	01/27/03	ND	5000	500	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3003204
Sample Received: 01/22/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: 00M5MW10

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	01/27/03	306	200	100	10.0
Antimony	01/27/03	5.95	20	10	2.0
Arsenic	01/27/03	2.65	8	5.0	2.0
Barium	01/27/03	183	2000	10	0.5
Beryllium	01/27/03	ND	20	0.25	0.5
Cadmium	01/27/03	1.13	4	1.0	0.5
Calcium	01/27/03	14900	NLE	100	20.0
Chromium	01/27/03	5.53	100	10	0.5
Cobalt	01/27/03	ND	NLE	5.0	0.5
Copper	01/27/03	6.26	1000	10	2.0
Iron	01/27/03	17100	300	200	10.0
Lead	01/27/03	3.39	10	5.0	1.0
Magnesium	01/27/03	10800	NLE	100	10.0
Manganese	01/27/03	252	50	5.0	0.5
Mercury	01/31/03	ND	2	0.20	0.15
Nickel	01/27/03	ND	100	5.0	1.0
Potassium	01/27/03	7500	NLE	200	40.0
Selenium	01/27/03	ND	50	10	3.0
Silver	01/27/03	ND	20	5.0	1.0
Sodium	01/27/03	43100	50000	200	20.0
Thallium	01/27/03	ND	10	10	2.0
Vanadium	01/27/03	2.27	NLE	5.0	0.5
Zinc	01/27/03	27.7	5000	500	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3003205
Sample Received: 01/22/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: 00M5MW11

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	01/27/03	202	200	100	10.0
Antimony	01/27/03	ND	20	10	2.0
Arsenic	01/27/03	2.60	8	5.0	2.0
Barium	01/27/03	5.68	2000	10	0.5
Beryllium	01/27/03	ND	20	0.25	0.5
Cadmium	01/27/03	ND	4	1.0	0.5
Calcium	01/27/03	11800	NLE	100	20.0
Chromium	01/27/03	2.49	100	10	0.5
Cobalt	01/27/03	ND	NLE	5.0	0.5
Copper	01/27/03	ND	1000	10	2.0
Iron	01/27/03	5250	300	200	10.0
Lead	01/27/03	ND	10	5.0	1.0
Magnesium	01/27/03	3610	NLE	100	10.0
Manganese	01/27/03	15.6	50	5.0	0.5
Mercury	01/31/03	ND	2	0.20	0.15
Nickel	01/27/03	ND	100	5.0	1.0
Potassium	01/27/03	1950	NLE	200	40.0
Selenium	01/27/03	ND	50	10	3.0
Silver	01/27/03	ND	20	5.0	1.0
Sodium	01/27/03	13400	50000	200	20.0
Thallium	01/27/03	ND	10	10	2.0
Vanadium	01/27/03	8.52	NLE	5.0	0.5
Zinc	01/27/03	75.7	5000	500	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3003206
Sample Received: 01/22/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: 00M5MW12

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	01/27/03	830	200	100	10.0
Antimony	01/27/03	ND	20	10	2.0
Arsenic	01/27/03	ND	8	5.0	2.0
Barium	01/27/03	24.6	2000	10	0.5
Beryllium	01/27/03	ND	20	0.25	0.5
Cadmium	01/27/03	0.646	4	1.0	0.5
Calcium	01/27/03	18900	NLE	100	20.0
Chromium	01/27/03	7.71	100	10	0.5
Cobalt	01/27/03	ND	NLE	5.0	0.5
Copper	01/27/03	13.3	1000	10	2.0
Iron	01/27/03	10700	300	200	10.0
Lead	01/27/03	4.16	10	5.0	1.0
Magnesium	01/27/03	25900	NLE	100	10.0
Manganese	01/27/03	45.9	50	5.0	0.5
Mercury	01/31/03	ND	2	0.20	0.15
Nickel	01/27/03	ND	100	5.0	1.0
Potassium	01/27/03	20100	NLE	200	40.0
Selenium	01/27/03	4.10	50	10	3.0
Silver	01/27/03	ND	20	5.0	1.0
Sodium	01/27/03	53500	50000	200	20.0
Thallium	01/27/03	ND	10	10	2.0
Vanadium	01/27/03	5.02	NLE	5.0	0.5
Zinc	01/27/03	31.3	5000	500	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3003207
Sample Received: 01/22/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: 00M5MW13

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	01/27/03	246	200	100	10.0
Antimony	01/27/03	ND	20	10	2.0
Arsenic	01/27/03	ND	8	5.0	2.0
Barium	01/27/03	132	2000	10	0.5
Beryllium	01/27/03	ND	20	0.25	0.5
Cadmium	01/27/03	1.64	4	1.0	0.5
Calcium	01/27/03	19100	NLE	100	20.0
Chromium	01/27/03	3.56	100	10	0.5
Cobalt	01/27/03	0.685	NLE	5.0	0.5
Copper	01/27/03	2.52	1000	10	2.0
Iron	01/27/03	29600	300	200	10.0
Lead	01/27/03	3.26	10	5.0	1.0
Magnesium	01/27/03	11300	NLE	100	10.0
Manganese	01/27/03	339	50	5.0	0.5
Mercury	01/31/03	ND	2	0.20	0.15
Nickel	01/27/03	ND	100	5.0	1.0
Potassium	01/27/03	5090	NLE	200	40.0
Selenium	01/27/03	ND	50	10	3.0
Silver	01/27/03	ND	20	5.0	1.0
Sodium	01/27/03	67000	50000	200	20.0
Thallium	01/27/03	ND	10	10	2.0
Vanadium	01/27/03	3.49	NLE	5.0	0.5
Zinc	01/27/03	20.1	5000	500	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3003208
Sample Received: 01/22/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: 00M5MW14

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	01/27/03	72.5	200	100	10.0
Antimony	01/27/03	ND	20	10	2.0
Arsenic	01/27/03	ND	8	5.0	2.0
Barium	01/27/03	217	2000	10	0.5
Beryllium	01/27/03	ND	20	0.25	0.5
Cadmium	01/27/03	0.602	4	1.0	0.5
Calcium	01/27/03	57900	NLE	100	20.0
Chromium	01/27/03	2.35	100	10	0.5
Cobalt	01/27/03	2.80	NLE	5.0	0.5
Copper	01/27/03	2.96	1000	10	2.0
Iron	01/27/03	20100	300	200	10.0
Lead	01/27/03	ND	10	5.0	1.0
Magnesium	01/27/03	18100	NLE	100	10.0
Manganese	01/27/03	221	50	5.0	0.5
Mercury	01/31/03	ND	2	0.20	0.15
Nickel	01/27/03	1.46	100	5.0	1.0
Potassium	01/27/03	10600	NLE	200	40.0
Selenium	01/27/03	ND	50	10	3.0
Silver	01/27/03	ND	20	5.0	1.0
Sodium	01/27/03	32400	50000	200	20.0
Thallium	01/27/03	ND	10	10	2.0
Vanadium	01/27/03	0.686	NLE	5.0	0.5
Zinc	01/27/03	13.3	5000	500	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3003209
Sample Received: 01/22/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: 00M5MW15

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	01/27/03	708	200	100	10.0
Antimony	01/27/03	ND	20	10	2.0
Arsenic	01/27/03	ND	8	5.0	2.0
Barium	01/27/03	72.1	2000	10	0.5
Beryllium	01/27/03	1.14	20	0.25	0.5
Cadmium	01/27/03	ND	4	1.0	0.5
Calcium	01/27/03	6770	NLE	100	20.0
Chromium	01/27/03	1.01	100	10	0.5
Cobalt	01/27/03	8.04	NLE	5.0	0.5
Copper	01/27/03	ND	1000	10	2.0
Iron	01/27/03	276	300	200	10.0
Lead	01/27/03	ND	10	5.0	1.0
Magnesium	01/27/03	11300	NLE	100	10.0
Manganese	01/27/03	17.5	50	5.0	0.5
Mercury	01/31/03	ND	2	0.20	0.15
Nickel	01/27/03	16.9	100	5.0	1.0
Potassium	01/27/03	4210	NLE	200	40.0
Selenium	01/27/03	ND	50	10	3.0
Silver	01/27/03	ND	20	5.0	1.0
Sodium	01/27/03	11500	50000	200	20.0
Thallium	01/27/03	ND	10	10	2.0
Vanadium	01/27/03	0.624	NLE	5.0	0.5
Zinc	01/27/03	108	5000	500	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3003210
Sample Received: 01/22/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: 00M5MW16

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	01/27/03	301	200	100	10.0
Antimony	01/27/03	ND	20	10	2.0
Arsenic	01/27/03	12.6	8	5.0	2.0
Barium	01/27/03	135	2000	10	0.5
Beryllium	01/27/03	ND	20	0.25	0.5
Cadmium	01/27/03	0.872	4	1.0	0.5
Calcium	01/27/03	15300	NLE	100	20.0
Chromium	01/27/03	1.92	100	10	0.5
Cobalt	01/27/03	2.09	NLE	5.0	0.5
Copper	01/27/03	ND	1000	10	2.0
Iron	01/27/03	14600	300	200	10.0
Lead	01/27/03	ND	10	5.0	1.0
Magnesium	01/27/03	5350	NLE	100	10.0
Manganese	01/27/03	45.2	50	5.0	0.5
Mercury	01/31/03	ND	2	0.20	0.15
Nickel	01/27/03	7.06	100	5.0	1.0
Potassium	01/27/03	4750	NLE	200	40.0
Selenium	01/27/03	ND	50	10	3.0
Silver	01/27/03	ND	20	5.0	1.0
Sodium	01/27/03	26800	50000	200	20.0
Thallium	01/27/03	ND	10	10	2.0
Vanadium	01/27/03	1.98	NLE	5.0	0.5
Zinc	01/27/03	36.3	5000	500	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3003211
Sample Received: 01/22/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: 00M5MW18

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	01/27/03	293	200	100	10.0
Antimony	01/27/03	ND	20	10	2.0
Arsenic	01/27/03	8.40	8	5.0	2.0
Barium	01/27/03	561	2000	10	0.5
Beryllium	01/27/03	ND	20	0.25	0.5
Cadmium	01/27/03	3.60	4	1.0	0.5
Calcium	01/27/03	27200	NLE	100	20.0
Chromium	01/27/03	1.19	100	10	0.5
Cobalt	01/27/03	ND	NLE	5.0	0.5
Copper	01/27/03	40.1	1000	10	2.0
Iron	01/27/03	62100	300	200	10.0
Lead	01/27/03	4.38	10	5.0	1.0
Magnesium	01/27/03	4580	NLE	100	10.0
Manganese	01/27/03	65.5	50	5.0	0.5
Mercury	01/31/03	ND	2	0.20	0.15
Nickel	01/27/03	2.87	100	5.0	1.0
Potassium	01/27/03	9430	NLE	200	40.0
Selenium	01/27/03	ND	50	10	3.0
Silver	01/27/03	ND	20	5.0	1.0
Sodium	01/27/03	8490	50000	200	20.0
Thallium	01/27/03	ND	10	10	2.0
Vanadium	01/27/03	ND	NLE	5.0	0.5
Zinc	01/27/03	72.6	5000	500	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3003212
Sample Received: 01/22/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: 00M5MW19

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	01/27/03	33.7	200	100	10.0
Antimony	01/27/03	ND	20	10	2.0
Arsenic	01/27/03	ND	8	5.0	2.0
Barium	01/27/03	48.0	2000	10	0.5
Beryllium	01/27/03	ND	20	0.25	0.5
Cadmium	01/27/03	0.735	4	1.0	0.5
Calcium	01/27/03	22900	NLE	100	20.0
Chromium	01/27/03	0.711	100	10	0.5
Cobalt	01/27/03	ND	NLE	5.0	0.5
Copper	01/27/03	2.57	1000	10	2.0
Iron	01/27/03	11700	300	200	10.0
Lead	01/27/03	ND	10	5.0	1.0
Magnesium	01/27/03	4160	NLE	100	10.0
Manganese	01/27/03	55.0	50	5.0	0.5
Mercury	01/31/03	ND	2	0.20	0.15
Nickel	01/27/03	ND	100	5.0	1.0
Potassium	01/27/03	8120	NLE	200	40.0
Selenium	01/27/03	ND	50	10	3.0
Silver	01/27/03	ND	20	5.0	1.0
Sodium	01/27/03	8420	50000	200	20.0
Thallium	01/27/03	ND	10	10	2.0
Vanadium	01/27/03	ND	NLE	5.0	0.5
Zinc	01/27/03	7.41	5000	500	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3003213
Sample Received: 01/22/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: 00M5MW20

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	01/27/03	109	200	100	10.0
Antimony	01/27/03	ND	20	10	2.0
Arsenic	01/27/03	ND	8	5.0	2.0
Barium	01/27/03	9.36	2000	10	0.5
Beryllium	01/27/03	ND	20	0.25	0.5
Cadmium	01/27/03	ND	4	1.0	0.5
Calcium	01/27/03	17100	NLE	100	20.0
Chromium	01/27/03	1.40	100	10	0.5
Cobalt	01/27/03	ND	NLE	5.0	0.5
Copper	01/27/03	ND	1000	10	2.0
Iron	01/27/03	292	300	200	10.0
Lead	01/27/03	ND	10	5.0	1.0
Magnesium	01/27/03	5050	NLE	100	10.0
Manganese	01/27/03	9.34	50	5.0	0.5
Mercury	01/31/03	ND	2	0.20	0.15
Nickel	01/27/03	1.53	100	5.0	1.0
Potassium	01/27/03	2440	NLE	200	40.0
Selenium	01/27/03	ND	50	10	3.0
Silver	01/27/03	ND	20	5.0	1.0
Sodium	01/27/03	57200	50000	200	20.0
Thallium	01/27/03	ND	10	10	2.0
Vanadium	01/27/03	1.04	NLE	5.0	0.5
Zinc	01/27/03	6.89	5000	500	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3003214
Sample Received: 01/22/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: 00M5MW23

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	01/27/03	6920	200	100	10.0
Antimony	01/27/03	ND	20	10	2.0
Arsenic	01/27/03	86.7	8	5.0	2.0
Barium	01/27/03	39.1	2000	10	0.5
Beryllium	01/27/03	0.570	20	0.25	0.5
Cadmium	01/27/03	8.11	4	1.0	0.5
Calcium	01/27/03	19300	NLE	100	20.0
Chromium	01/27/03	72.5	100	10	0.5
Cobalt	01/27/03	4.67	NLE	5.0	0.5
Copper	01/27/03	ND	1000	10	2.0
Iron	01/27/03	137000	300	200	10.0
Lead	01/27/03	8.02	10	5.0	1.0
Magnesium	01/27/03	5710	NLE	100	10.0
Manganese	01/27/03	49.2	50	5.0	0.5
Mercury	01/31/03	ND	2	0.20	0.15
Nickel	01/27/03	3.96	100	5.0	1.0
Potassium	01/27/03	5610	NLE	200	40.0
Selenium	01/27/03	ND	50	10	3.0
Silver	01/27/03	ND	20	5.0	1.0
Sodium	01/27/03	96300	50000	200	20.0
Thallium	01/27/03	ND	10	10	2.0
Vanadium	01/27/03	50.0	NLE	5.0	0.5
Zinc	01/27/03	35.3	5000	500	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3003215
Sample Received: 01/22/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: 00M5MW25

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	01/27/03	185	200	100	10.0
Antimony	01/27/03	ND	20	10	2.0
Arsenic	01/27/03	2.72	8	5.0	2.0
Barium	01/27/03	50.5	2000	10	0.5
Beryllium	01/27/03	ND	20	0.25	0.5
Cadmium	01/27/03	1.53	4	1.0	0.5
Calcium	01/27/03	12200	NLE	100	20.0
Chromium	01/27/03	7.09	100	10	0.5
Cobalt	01/27/03	1.99	NLE	5.0	0.5
Copper	01/27/03	30.8	1000	10	2.0
Iron	01/27/03	12400	300	200	10.0
Lead	01/27/03	ND	10	5.0	1.0
Magnesium	01/27/03	4550	NLE	100	10.0
Manganese	01/27/03	41.7	50	5.0	0.5
Mercury	01/31/03	ND	2	0.20	0.15
Nickel	01/27/03	13.1	100	5.0	1.0
Potassium	01/27/03	3550	NLE	200	40.0
Selenium	01/27/03	ND	50	10	3.0
Silver	01/27/03	ND	20	5.0	1.0
Sodium	01/27/03	43500	50000	200	20.0
Thallium	01/27/03	ND	10	10	2.0
Vanadium	01/27/03	1.08	NLE	5.0	0.5
Zinc	01/27/03	380	5000	500	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

	Lab	Iron	Manganese	Aluminum	Calcium	Lead	Magnesium	Potassium	Sodium	Depth to Water	Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet	-
NJDEP Criteria:	-	300	50	200	NLE	10	NLE	NLE	50000	-	-
05/08/1997	FMETL	4080	87	-	-	-	-	-	-	4.20	V,S,P,M
08/08/1997	FMETL	1680	59	-	-	-		-	-	4.40	V,S,P,M
10/29/1997	FMETL	7386	200	105	31340	8	16140	13450	82150	4.30	V,S,P,M
02/18/1998	FMETL	4899	138	96	17870	ND	14860	11160	114800	3.00	V,S,P,M
05/06/1998	FMETL	6027	75	60.1	8165	ND	5989	6453	39780	3.90	V,S,P,M
08/04/1998	FMETL	2850	35.4	103	10300	ND	12500	22700	23400	4.54	V,S,P,M
10/27/1998	FMETL	3690	47.8	106	12900	2.45	13400	20700	29100	5.03	V,S,P,M
02/02/1999	FMETL	8760	175	ND	15200	ND	6920	3300	42400	4.07	V,S,P,M
04/13/1999	FMETL	6110	135	43.9	13100	3.79	8050	6350	35200	3.81	V,S,P,M
09/13/1999	FMETL	4330	66.7	ND	14400	ND	14600	15100	47100	4.83	V,S,P,M
11/18/1999	FMETL	5880	33.6	21.4	9270	ND	11400	15500	22900	4.65	V,S,P,M
03/03/2000	FMETL	11700	166	404	18200	14.9	12800	17000	44200	4.53	V,S,P,M
05/31/2000	FMETL	6360	86.8	429	11800	8.36	9970	18800	30900	4.30	V,S,P,M
08/21/2000	FMETL	5940	218	259	19600	3.56	9610	10700	49800	4.43	V,S,P,M
12/11/2000	FMETL	3250	92.2	86.1	13400	ND	9600	14800	29900	4.57	V,S,P,M
03/19/2001	FMETL	23600	796	80	35400	ND	27300	8.25	175000	4.37	V,S,P,M
06/05/2001	FMETL	14200	237	ND	16200	4.50	14100	12300	39400	4.32	V,S,P,M
09/05/2001	FMETL	4130	76.8	ND	11300	ND	14500	15400	42300	4.89	V,S,P,M
10/04/2001	FMETL	27400	1180	ND	138000	3.33	142000	50600	996000	4.29	V,S,P,M
01/14/2002	FMETL	14400	524	25.5	36400	3.42	30200	15900	169000	4.96	V,S,P,M
04/23/2002	FMETL	10000	112	79.8	13900	3.07	14700	13600	49100	4.93	V,S,P,M
08/21/2002	FMETL	1460	62.3	246	14800	ND	14100	15300	91200	4.94	V,S,P,M
10/28/2002	FMETL	6260	304	281	15700	4.45	9840	7580	57600	4.14	V,S,P,M
01/22/2003	FMETL	17100	252	306	14900	3.39	10800	7500	43100	4.43	V,S,P,M

SOURCE: 00M5MW10

Sampling Dates:
05/08/1997 - 01/22/2003

NOTES:

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 3 of 14

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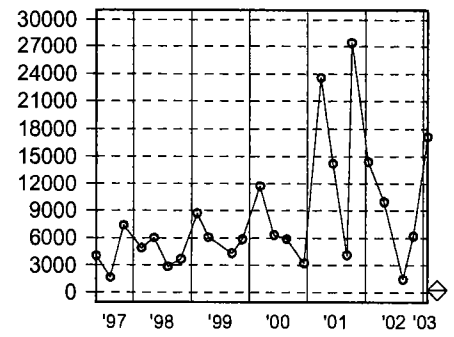
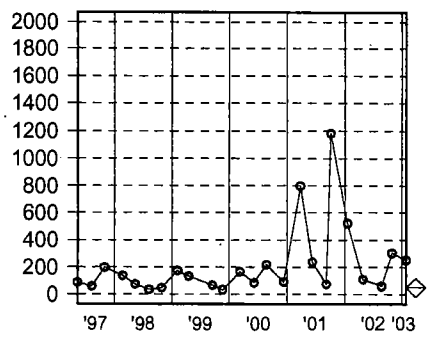
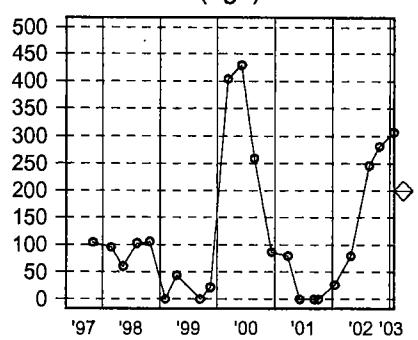
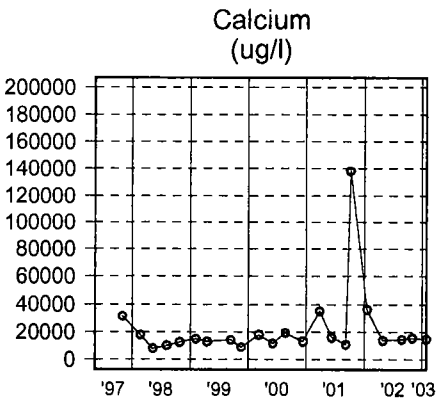
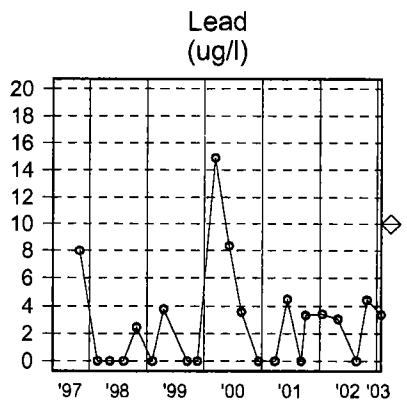
U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

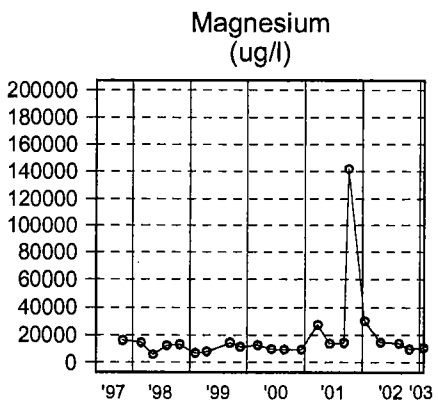


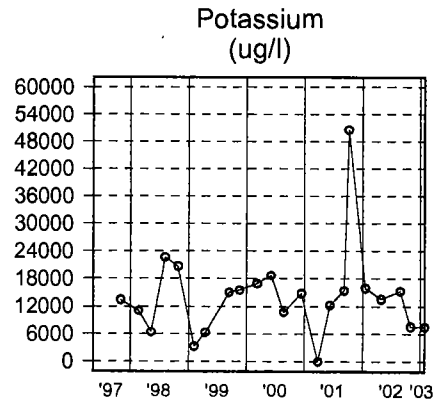


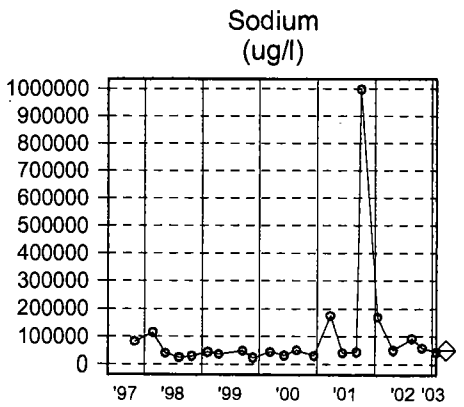


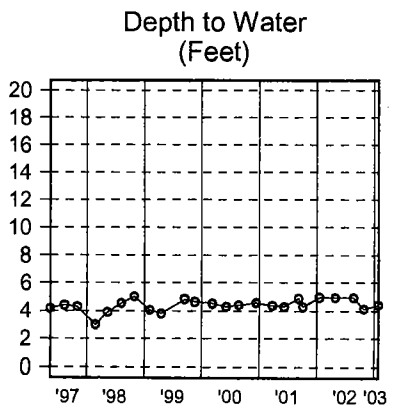












SOURCE: 00M5MW10

Sampling Dates:
05/08/1997 - 01/22/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 3 of 14, Graph

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U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

03-13-2003 X:\MtechData\M-5\M-5.WSF

	Lab	2-Butanone	cis-1,2-Dichloroethene	Trichloroethene	Tetrachloroethene	Iron	Manganese	Aluminum	Sodium	Depth to Water	Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet	-
NJDEP Criteria:	-	300	10	1	1	300	50	200	50000	-	-
05/08/1997	FMETL	ND	ND	ND	63	4060	85	-	-	7.10	V,S,P,M
08/08/1997	FMETL	ND	ND	ND	58	110	66		-	7.70	V,S,P,M
10/29/1997	FMETL	ND	ND	ND	65	1551	12.7	669	19220	7.75	V,S,P,M
02/18/1998	FMETL	ND	ND	ND	39	305	32	222	14550	6.65	V,S,P,M
05/06/1998	FMETL	ND	ND	ND	24.39	58	6.4	ND	14570	6.80	V,S,P,M
08/04/1998	FMETL	2.92	ND	ND	18.37	1500	16.9	4570	20800	7.91	V,S,P,M
10/27/1998	FMETL	ND	ND	ND	52.64	184	7.74	78.8	10200	8.51	V,S,P,M
02/02/1999	FMETL	ND	ND	ND	5.16	1670	44.4	267	22300	6.99	V,S,P,M
04/13/1999	FMETL	ND	ND	ND	33.38	227	9.71	92.9	12400	7.16	V,S,P,M
09/13/1999	FMETL	ND	ND	ND	49.25	680	16.5	ND	45900	8.35	V,S,P,M
11/18/1999	FMETL	ND	ND	ND	74.12	30.5	ND	ND	2150	7.62	V,S,P,M
03/03/2000	FMETL	ND	ND	ND	30.62	330	9.56	189	8380	7.21	V,S,P,M
05/31/2000	FMETL	ND	ND	ND	13.38	657	10.1	76.2	14000	7.28	V,S,P,M
08/21/2000	FMETL	ND	ND	ND	18.79	438	38.8	350	18900	6.97	V,S,P,M
08/21/2000D	FMETL	ND	ND	ND	19.64	583	38	414	19900	6.97	V,S,P,M
12/11/2000	FMETL	7.89	ND	ND	18.86	5580	24.4	279	16100	7.43	V,S,P,M
12/11/2000D	FMETL	9.66	ND	ND	17.98	5610	25.4	260	16200	7.43	V,S,P,M
03/19/2001	FMETL	ND	ND	ND	11.01	35200	17.7	240	14300	6.77	V,S,P,M
06/05/2001	FMETL	ND	ND	ND	11.27	6590	31.9	ND	20000	7.26	V,S,P,M
09/05/2001	FMETL	ND	6.64	1.28	6.11	31100	93.3	ND	35300	8.05	V,S,P,M
10/04/2001	FMETL	ND	ND	1.05	15.13	18500	62.7	75.2	37100	7.88	V,S,P,M
01/14/2002	FMETL	ND	ND	1.40	19.04	10400	174	31.1	31700	7.83	V,S,P,M
04/23/2002	FMETL	ND	ND	ND	14.43	7850	34.2	48.1	27500	7.54	V,S,P,M
08/21/2002	FMETL	370.61	7.39	ND	8.90	18000	61.3	137	25000	8.25	V,S,P,M
10/28/2002	FMETL	ND	ND	ND	8.14	2240	15.8	111	13000	6.81	V,S,P,M
01/22/2003	FMETL	ND	ND	1.06	5.20	5250	15.6	202	13400	7.00	V,S,P,M

SOURCE: 00M5MW11

Sampling Dates:
05/08/1997 - 01/22/2003

NOTES:

FORT MONMOUTH

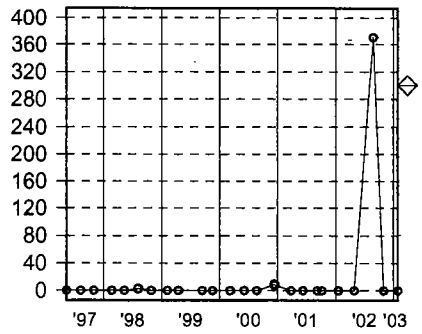
GW MONITORING
Bldg. M-5

Source 4 of 14

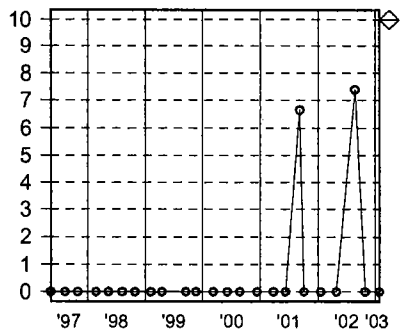
Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

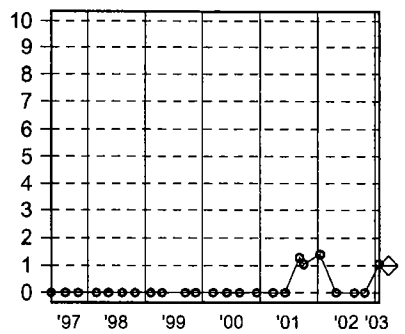
2-Butanone
(ug/l)



cis-1,2-Dichloroethene
(ug/l)



Trichloroethene
(ug/l)



Tetrachlorethene
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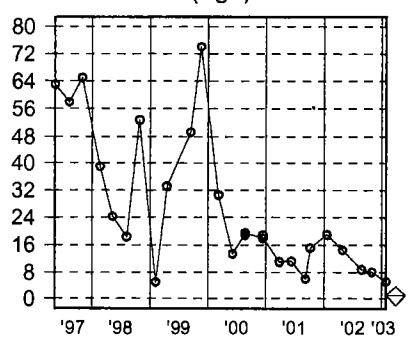

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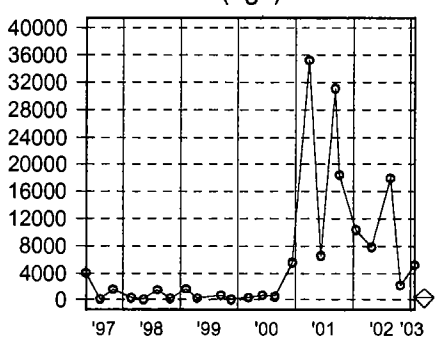
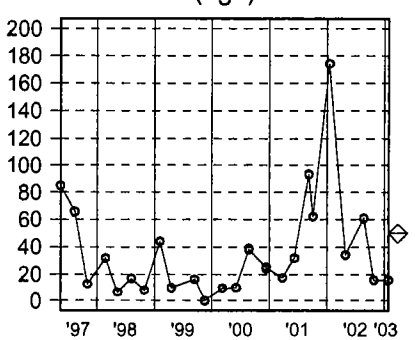
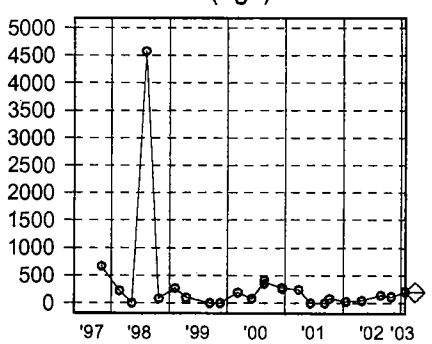
(ug/l)



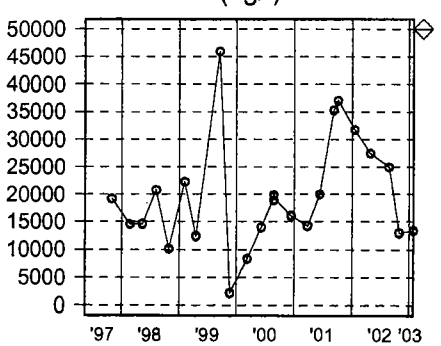
Manganese
(ug/l)



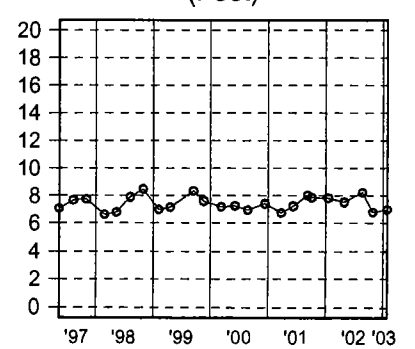
Aluminum
(ug/l)



Sodium
(ug/l)



Depth to Water
(Feet)



SOURCE: 00M5MW11

Sampling Dates:
05/08/1997 - 01/22/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 4 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

03-13-2003 X:\MtechData\M-5\M-5.WSF

	Lab	Iron	Manganese	Aluminum	Calcium	Lead	Magnesium	Potassium	Sodium	Depth to Water	Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet	-
NJDEP Criteria:	-	300	50	200	NLE	10	NLE	NLE	50000	-	-
10/07/1998	FMETL	51400	1340	3310	111000	7	168000	65300	1860000	6.86	V,S,P,M
10/21/1998	FMETL	28400	853	359	98000	ND	145000	42100	1240000	6.62	V,S,P,M
02/02/1999	FMETL	ND	ND	1910	28200	5.45	26300	15900	235000	6.36	V,S,P,M
04/13/1999	FMETL	29500	263	1880	17400	7.66	20500	18300	75300	5.92	V,S,P,M
09/13/1999	FMETL	36500	566	119	152000	ND	284000	89200	2040000	6.86	V,S,P,M
11/18/1999	FMETL	7020	76.9	80.9	22300	ND	32800	23800	171000	7.96	V,SP,M
03/06/2000	FMETL	13000	109	1060	22200	6.78	31800	20000	77000	5.95	V,S,P,M
05/31/2000	FMETL	11400	67.9	422	16500	19.3	26200	20500	71800	5.93	V,S,P,M
08/21/2000	FMETL	9060	97	503	16600	1.83	26300	20800	72600	5.84	V,S,P,M
12/11/2000	FMETL	6620	43.8	189	13400	4.85	22900	21100	46000	5.89	V,S,P,M
03/19/2001	FMETL	15100	181	170	30300	ND	41100	22600	114000	5.83	V,S,P,M
06/05/2001	FMETL	8030	50.8	ND	17300	ND	28900	21300	57000	5.73	V,S,P,M
09/05/2001	FMETL	19900	155	732	36700	4.43	55000	30400	149000	6.29	V,S,P,M
10/04/2001	FMETL	ND	ND	24.6	66500	1.30	78500	35000	341000	5.64	V,S,P,M
01/14/2002	FMETL	15600	328	192	38200	16.8	52800	29400	169000	5.21	V,S,P,M
04/23/2002	FMETL	16500	72.4	481	20700	2.64	32200	21700	64000	5.98	V,S,P,M
08/21/2002	FMETL	13800	78.1	1140	23700	2.40	36300	26000	82500	6.41	V,S,P,M
10/28/2002	FMETL	6090	54.6	90.9	18600	2.12	27700	20700	61100	5.60	V,S,P,M
01/22/2003	FMETL	10700	45.9	830	18900	4.16	25900	20100	53500	5.95	V,S,P,M

SOURCE: 00M5MW12

Sampling Dates:
10/07/1998 - 01/22/2003

NOTES:

Well installed 9/98.

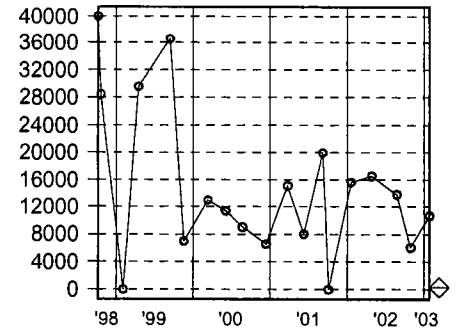
FORT MONMOUTH

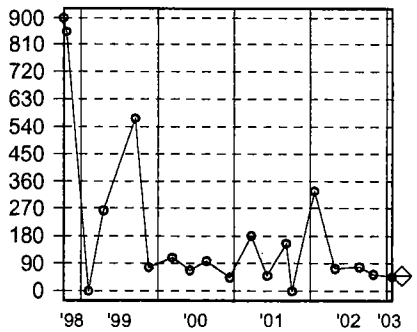
GW MONITORING
Bldg. M-5

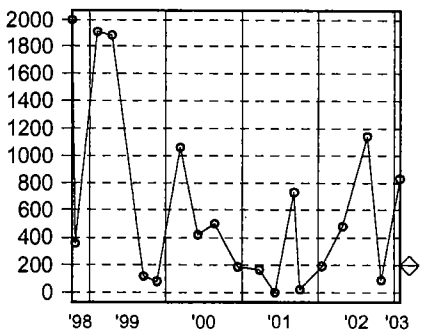
Source 5 of 14

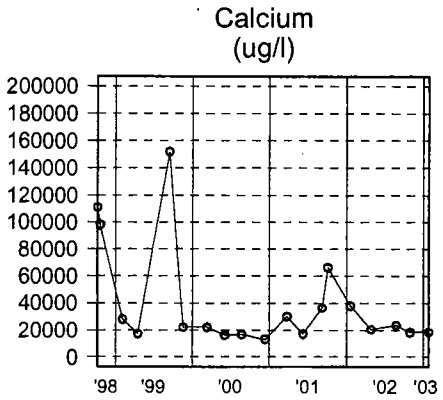
Ag in blank > GW Criteria for 5/8/97.

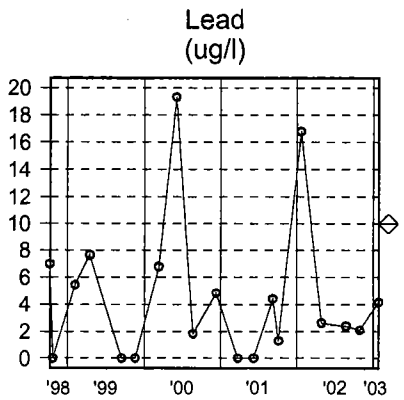
U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

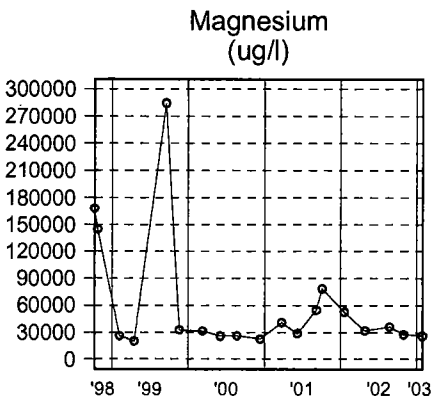


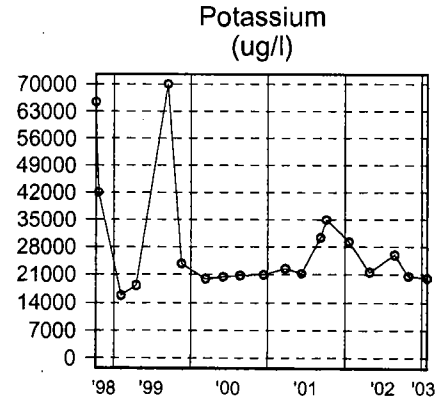


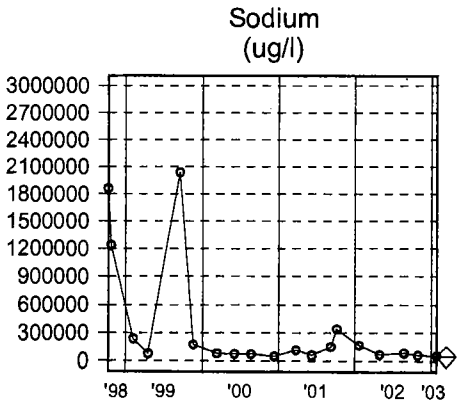


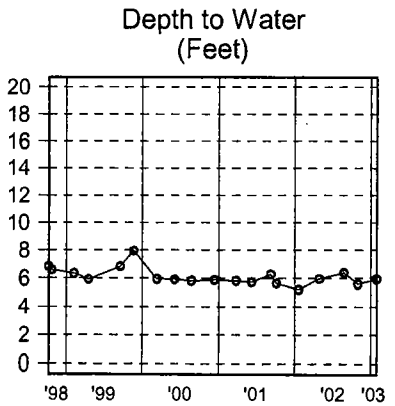












SOURCE: 00M5MW12

Sampling Dates:
10/07/1998 - 01/22/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 5 of 14, Graph

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U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

03-13-2003 X:\MtechData\M-5\M-5.WSF

	Lab	Iron	Manganese	Aluminum	Calcium	Lead	Magnesium	Potassium	Sodium	Depth to Water	Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet	-
NJDEP Criteria:	-	300	50	200	NLE	10	NLE	NLE	50000	-	-
10/21/1998	FMETL	11700	203	287	67000	ND	112000	46400	1030000	3.75	V,S,P,M
02/02/1999	FMETL	9810	137	244	13700	17.6	9990	5090	80100	2.67	V,S,P,M
04/13/1999	FMETL	1170	18.4	64.8	35100	2.37	17700	13100	7630	2.48	V,S,P,M
09/13/1999	FMETL	9520	203	225	130000	ND	324000	114000	2690000	3.41	V,S,P,M
11/18/1999	FMETL	9860	87.8	901	16200	3.04	17300	15100	103000	3.40	V,S,P,M
03/06/2000	FMETL	26300	366	282	34300	3.62	27100	15000	121000	2.64	V,S,P,M
05/31/2000	FMETL	12900	173	174	20100	ND	17100	11000	88700	2.54	V,S,P,M
08/21/2000	FMETL	7170	261	301	20000	2.49	15400	8380	88900	2.39	V,S,P,M
12/11/2000	FMETL	16500	255	128	20500	11.7	15700	10400	61200	2.68	V,S,P,M
03/19/2001	FMETL	24200	717	510	34400	ND	23300	68800	149000	2.23	V,S,P,M
06/05/2001	FMETL	12100	357	ND	22700	ND	16600	8050	81400	2.44	V,S,P,M
09/05/2001	FMETL	17300	348	711	33900	5.36	24800	14200	96300	3.12	V,S,P,M
10/04/2001	FMETL	27000	880	16.0	59600	284	51900	21300	331000	2.24	V,S,P,M
01/14/2002	FMETL	33300	1030	66.5	53500	1.81	44000	16700	286000	2.53	V,S,P,M
04/23/2002	FMETL	25200	391	606	32000	11.1	25000	12300	152000	2.73	V,S,P,M
08/21/2002	FMETL	11900	237	179	28900	ND	23300	14400	108000	3.32	V,S,P,M
10/28/2002	FMETL	10900	364	132	21700	2.02	15500	6960	92700	2.08	V,S,P,M
01/22/2003	FMETL	29600	339	246	19100	3.26	11300	5090	67000	2.37	V,S,P,M

SOURCE: 00M5MW13

Sampling Dates:
10/21/1998 - 01/22/2003

NOTES:

Well installed 9/98.

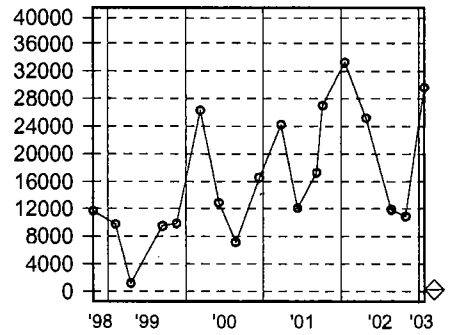
FORT MONMOUTH

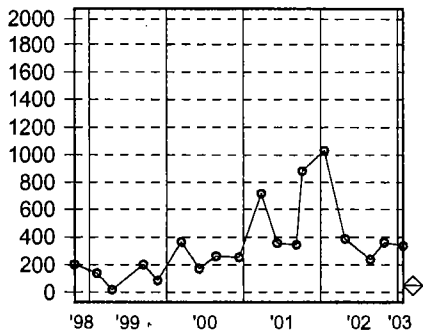
GW MONITORING
Bldg. M-5

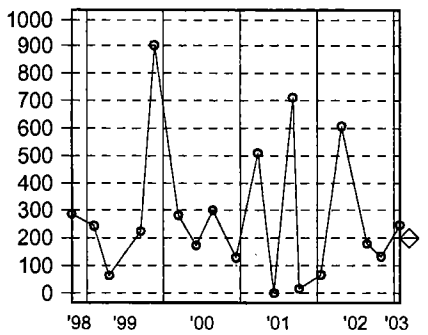
Source 6 of 14

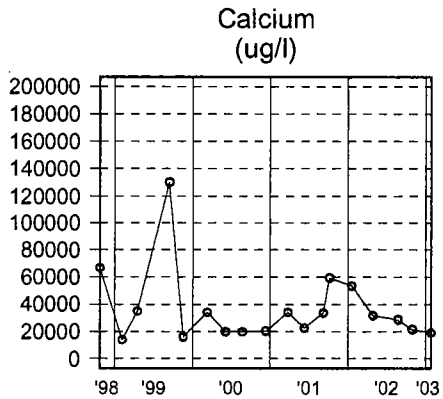
Ag in blank > GW Criteria for 5/8/97.

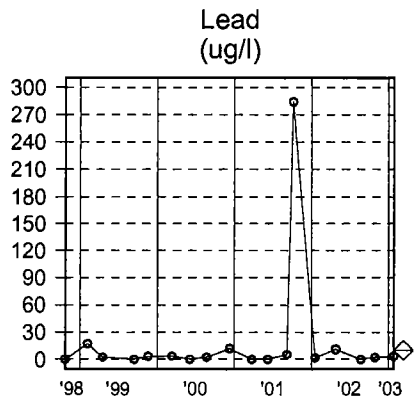
U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

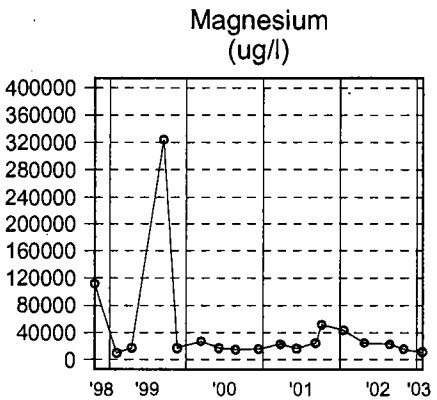


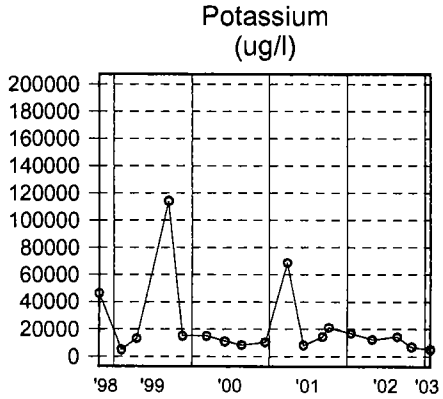


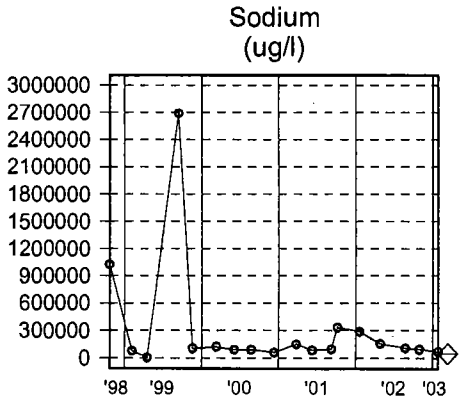


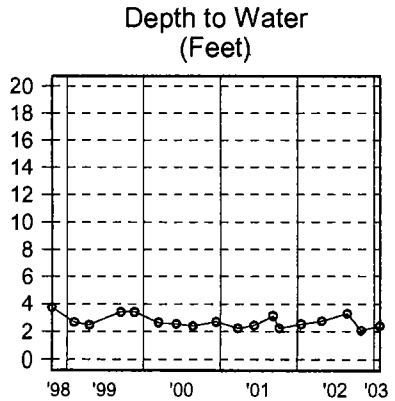












SOURCE: 00M5MW13

Sampling Dates:
10/21/1998 - 01/22/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 6 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

03-13-2003 X:\MtechData\M-5\M-5.WSF

	Lab	Iron	Manganese	Aluminum	Calcium	Lead	Magnesium	Potassium	Sodium	Depth to Water	Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet	-
NJDEP Criteria:	-	300	50	200	NLE	10	NLE	NLE	50000	-	-
10/07/1998	FMETL	ND	ND	1210	38000	ND	23900	27000	45400	3.54	V,S,P,M
10/21/1998	FMETL	911	15	120	34600	ND	19300	16200	8970	4.24	V,S,P,M
02/02/1999	FMETL	1910	20.7	172	36100	ND	17900	12900	9450	2.63	V,S,P,M
04/13/1999	FMETL	14000	191	658	16400	6.77	11600	7220	63400	2.57	V,S,P,M
09/13/1999	FMETL	571	16.4	ND	41300	ND	17600	13300	7290	4.35	V,S,P,M
11/18/1999	FMETL	639	17.9	ND	39700	ND	16400	12400	8460	3.92	V,S,P,M
03/06/2000	FMETL	6660	29.1	79.2	45200	ND	17300	10700	10300	2.75	V,S,P,M
05/31/2000	FMETL	2480	178	ND	57600	ND	14700	7850	70700	3.55	V,S,P,M
08/21/2000	FMETL	844	96.3	242	46300	12	18000	11800	11200	2.71	V,S,P,M
12/11/2000	FMETL	6920	21.5	234	44000	ND	17000	13400	8240	3.48	V,S,P,M
03/19/2001	FMETL	12400	18.4	20.0	46500	ND	18100	12000	81000	3.66	V,S,P,M
06/05/2001	FMETL	758	14.3	ND	43500	ND	16200	11000	14200	3.57	V,S,P,M
09/05/2001	FMETL	987	30.0	ND	47300	ND	18400	12500	10000	3.30	V,S,P,M
10/04/2001	FMETL	953	14.2	27.2	44800	ND	21700	12700	72000	2.91	V,S,P,M
01/14/2002	FMETL	6010	165	11.7	46700	ND	17800	13300	10500	3.97	V,S,P,M
04/23/2002	FMETL	4850	18.5	69.0	47300	ND	17300	11400	8250	3.23	V,S,P,M
08/21/2002	FMETL	874	21.5	21.2	47600	1.81	17700	12700	7910	3.29	V,S,P,M
10/28/2002	FMETL	1110	632	18.3	42700	ND	16600	10500	36000	2.29	V,S,P,M
01/22/2003	FMETL	20100	221	72.5	57900	ND	18100	10600	32400	3.42	V,S,P,M

SOURCE: 00M5MW14

Sampling Dates:
10/07/1998 - 01/22/2003

NOTES:

Well installed 9/98.

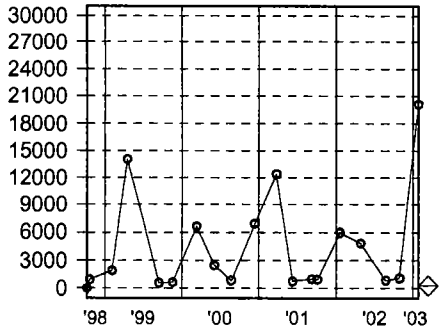
FORT MONMOUTH

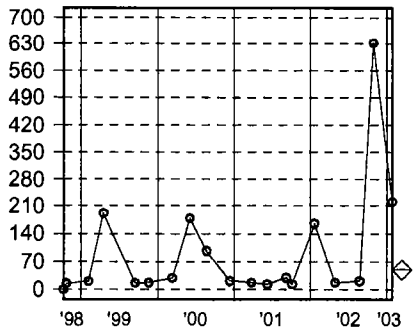
GW MONITORING
Bldg. M-5

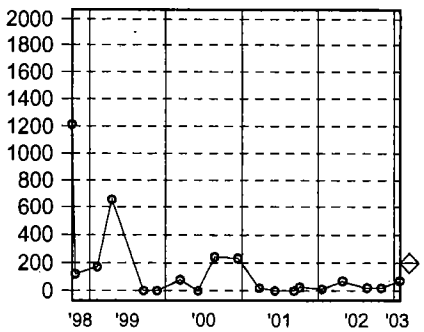
Source 7 of 14

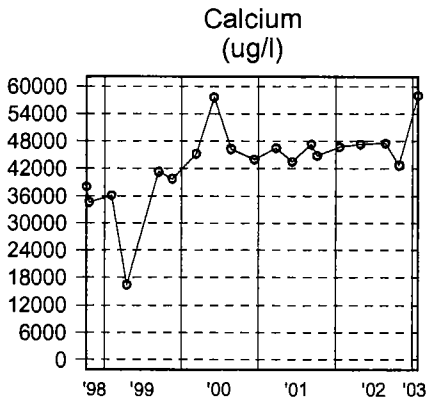
Ag in blank > GW Criteria for 5/8/97.

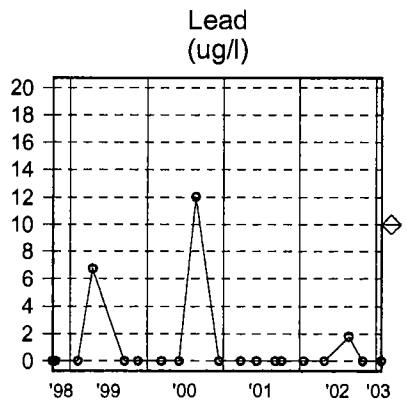
U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

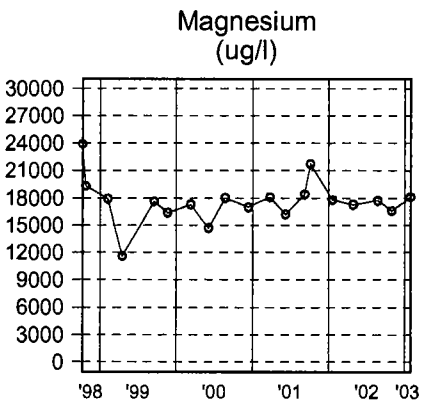


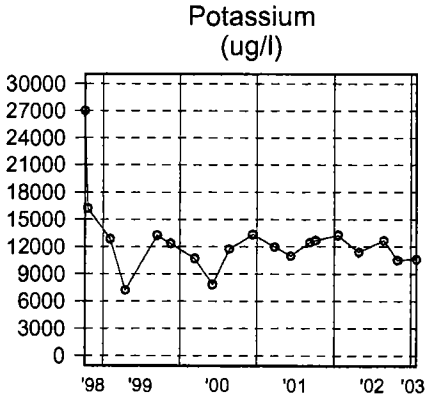


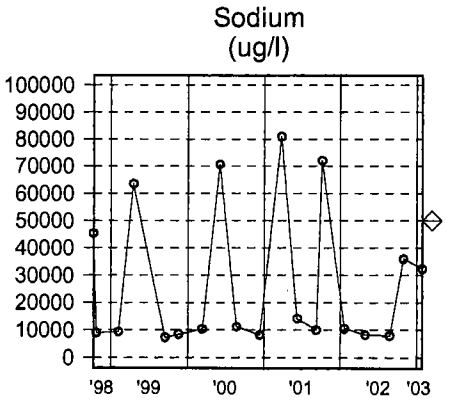


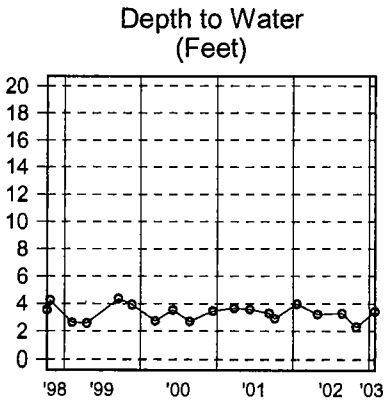












SOURCE: 00M5MW14

Sampling Dates:
10/07/1998 - 01/22/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 7 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

03-13-2003 X:\MtechData\M-5\M-5.WSF

	Lab	Tetra chloro ethene	Iron	Manganese	Aluminum	Calcium	Lead	Magnesium	Potassium	Depth to Water	Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet	-
NJDEP Criteria:	-	1	300	50	200	NLE	10	NLE	NLE	-	-
04/14/1999	FMETL	ND	654	30.2	606	11100	ND	9370	4240	8.59	V,S,P,M
04/28/1999	FMETL	ND	108	20.7	564	7240	ND	10600	4540	9.04	V,S,P,M
09/14/1999	FMETL	2.15	1050	15.7	702	4890	ND	9050	4920	11.03	V,S,P,M
11/18/1999	FMETL	ND	316	13.9	357	4760	ND	8870	3950	9.87	V,S,P,M
03/03/2000	FMETL	ND	477	16.8	508	4970	ND	9190	2950	8.68	V,S,P,M
05/31/2000	FMETL	ND	203	18.2	441	5450	ND	10200	3410	8.88	V,S,P,M
08/21/2000	FMETL	ND	510	27.3	933	6170	ND	11200	4330	8.21	V,S,P,M
12/11/2000	FMETL	ND	319	16.7	556	5040	ND	10100	4120	9.48	V,S,P,M
03/19/2001	FMETL	ND	300	23.9	1100	76300	ND	15700	37300	7.88	V,S,P,M
06/05/2001	FMETL	ND	150	31.1	996	11000	ND	22700	5270	7.93	V,S,P,M
09/05/2001	FMETL	ND	788	27.1	1220	8180	1.64	17700	6310	10.35	V,S,P,M
10/04/2001	FMETL	ND	588	21.0	981	7560	3.22	15300	5570	10.24	V,S,P,M
01/14/2002	FMETL	ND	334	157	629	6610	ND	13100	4310	10.51	V,S,P,M
04/23/2002	FMETL	ND	48.2	19.5	676	6720	ND	13600	4740	9.49	V,S,P,M
08/21/2002	FMETL	ND	93.6	14.9	624	5850	ND	11200	4700	10.70	V,S,P,M
10/28/2002	FMETL	ND	797	15.5	511	4980	1.32	9370	4040	7.87	V,S,P,M
01/22/2003	FMETL	ND	276	17.5	708	6770	ND	11300	4210	7.91	V,S,P,M

SOURCE: 00M5MW15

Sampling Dates:
04/14/1999 - 01/22/2003

NOTES:

Installed 3/99

FORT MONMOUTH

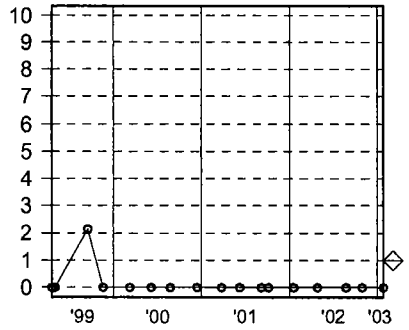
GW MONITORING
Bldg. M-5

Source 8 of 14

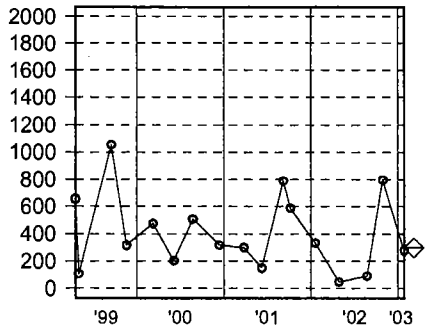
Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

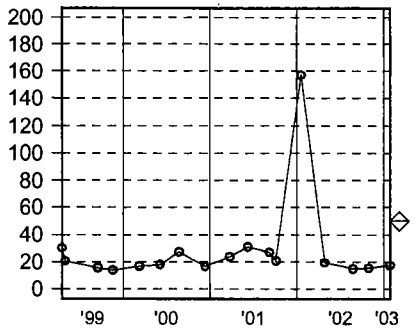
Tetrachlorethene (ug/l)



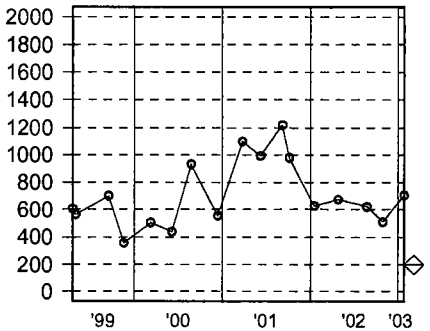
Iron (ug/l)



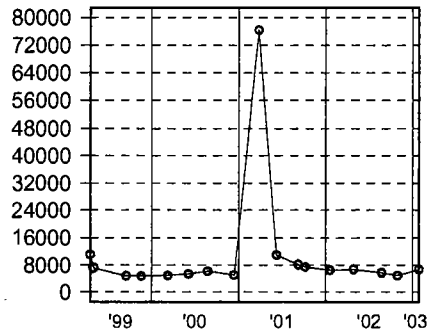
Manganese (ug/l)



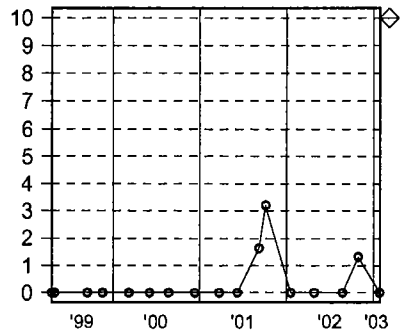
Aluminum (ug/l)



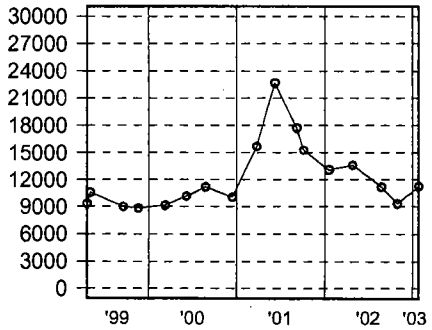
Calcium (ug/l)



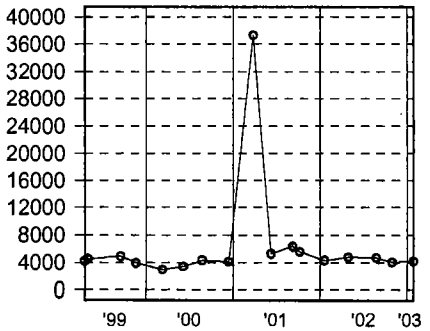
Lead (ug/l)



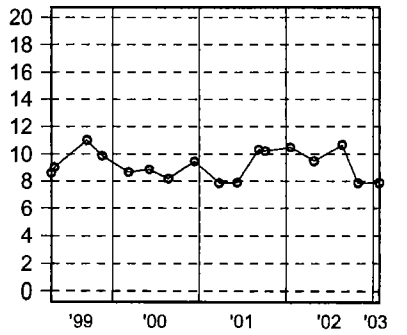
Magnesium (ug/l)



Potassium (ug/l)



Depth to Water (Feet)



SOURCE: 00M5MW15

Sampling Dates:
04/14/1999 - 01/22/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 8 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

03-13-2003 X:\MtechData\M-5\M-5.WSF

	Lab	cis-1,2-Dichloro ethene	Tri chloro ethene	Tetra chloro ethene	Iron	Manganese	Aluminum	Chromium	Nickel	Depth to Water	Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet	-
NJDEP Criteria:	-	10	1	1	300	50	200	100	100	-	-
04/14/1999	FMETL	ND	ND	96.37	4770	29.2	1030	8.33	6.65	6.96	V,S,P,M
04/28/1999	FMETL	ND	ND	8.35	11800	31.9	1240	8.43	5.88	7.26	V,S,P,M
09/14/1999	FMETL	ND	ND	639.7	11100	32.1	3510	37.4	10.8	8.66	V,S,P,M
11/18/1999	FMETL	ND	ND	54.42	9840	24.7	242	1.72	6.73	7.76	V,S,P,M
03/03/2000	FMETL	ND	ND	37.76	37800	119	848	3830	24700	7.00	V,S,P,M
05/31/2000	FMETL	ND	ND	27.79	10000	35.8	78.2	1.99	8.11	7.06	V,S,P,M
08/21/2000	FMETL	ND	ND	20.36	8060	49.3	293	ND	6.59	6.70	V,S,P,M
12/11/2000	FMETL	ND	ND	23.20	11400	33.2	258	ND	1.43	7.40	V,S,P,M
03/19/2001	FMETL	ND	ND	17.88	13000	73.0	220	15.1	22.0	6.37	V,S,P,M
06/05/2001	FMETL	ND	ND	24.47	14500	46.6	ND	0.982	10.5	7.02	V,S,P,M
09/05/2001	FMETL	ND	ND	205.77	14800	83.4	175	1.90	14.8	8.14	V,S,P,M
10/04/2001	FMETL	ND	ND	620.81	32100	83.0	1710	15.6	16.1	8.04	V,S,P,M
01/14/2002	FMETL	1.93	1.93	839.5	9910	197	863	2.73	20.3	8.04	V,S,P,M
04/23/2002	FMETL	69.44	35.84	213.53	10000	63.5	1010	5.39	15.1	7.52	V,S,P,M
08/21/2002	FMETL	3.38	ND	416.79	4560	112	1560	5.66	32.6	8.53	V,S,P,M
10/28/2002	FMETL	103.82	2.23	42.41	32300	85.6	446	7.10	15.3	6.84	V,S,P,M
01/22/2003	FMETL	22.02	1.36	31.09	14600	45.2	301	1.92	7.06	6.45	V,S,P,M

SOURCE: 00M5MW16

Sampling Dates:
04/14/1999 - 01/22/2003

NOTES:

Installed 3/99.

FORT MONMOUTH

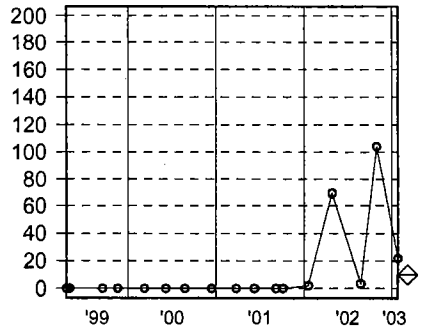
GW MONITORING
Bldg. M-5

Source 9 of 14

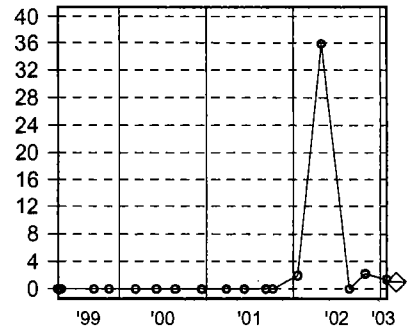
Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

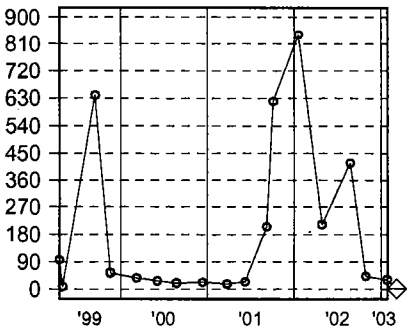
cis-1,2-Dichloroethene (ug/l)



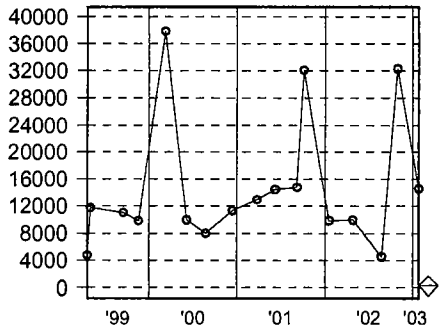
Trichloroethene (ug/l)



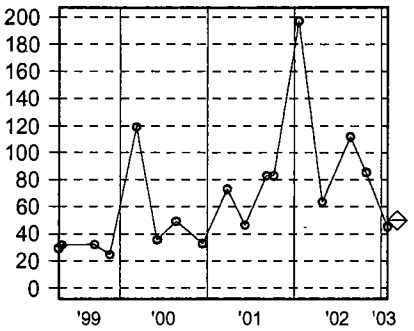
Tetrachlorethene (ug/l)



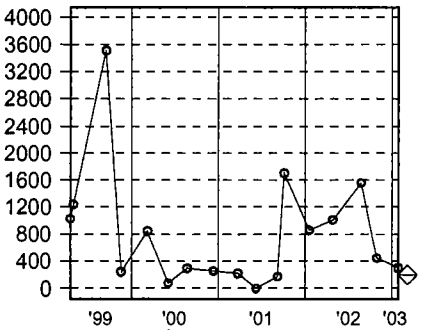
Iron (ug/l)



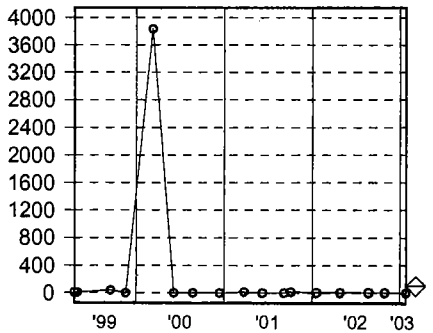
Manganese (ug/l)



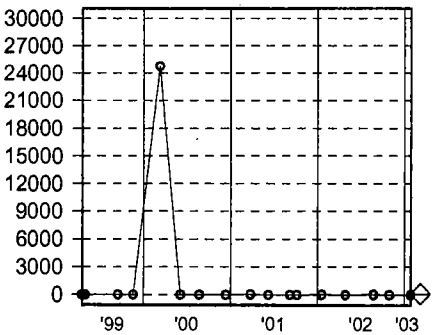
Aluminum (ug/l)



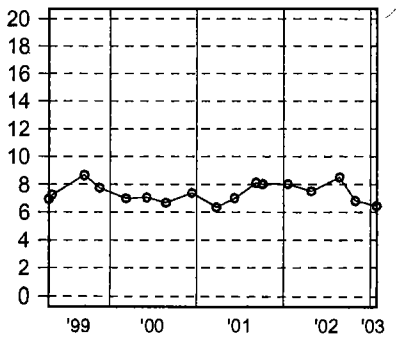
Chromium (ug/l)



Nickel (ug/l)



Depth to Water (Feet)



SOURCE: 00M5MW16

Sampling Dates:
04/14/1999 - 01/22/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 9 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

03-13-2003 X:\MtechData\M-5\M-5.WSF

	Lab	Tetra chloro ethene	Iron	Manganese	Aluminum	Barium	Lead	Magnesium	Potassium	Depth to Water	Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet	-
NJDEP Criteria:	-	1	300	50	200	2000	10	NLE	NLE	-	-
04/13/1999	FMETL	ND	6550	40.9	327	41.8	11.8	3380	6660	7.16	V,S,P,M
04/27/1999	FMETL	ND	8140	42.1	61.1	47	ND	3920	8150	7.68	V,S,P,M
09/14/1999	FMETL	ND	9640	65.8	541	104	ND	5800	7540	8.86	V,S,P,M
11/18/1999	FMETL	ND	10300	34.6	27	52.2	ND	2990	5610	8.02	V,S,P,M
03/03/2000	FMETL	ND	19800	48.6	131	115	ND	3840	6060	7.40	V,S,P,M
05/31/2000	FMETL	ND	16200	50.2	28.0	132	ND	3990	6690	7.48	V,S,P,M
08/21/2000	FMETL	ND	14900	53.7	325	83.3	1.89	4390	7580	7.12	V,S,P,M
12/11/2000	FMETL	ND	357000	88.4	942	3030	ND	4560	10300	7.71	V,S,P,M
03/19/2001	FMETL	ND	26200	59.1	60.0	182	ND	43600	67200	6.90	V,S,P,M
06/05/2001	FMETL	ND	98600	70.5	63.0	1690	3.08	4500	7740	7.39	V,S,P,M
09/05/2001	FMETL	ND	16500	69.7	38.3	177	1.14	5260	7770	8.39	V,S,P,M
10/04/2001	FMETL	2.95	21000	60.2	111	142	ND	4980	7770	8.30	V,S,P,M
01/14/2002	FMETL	1.34	18400	240	113	201	ND	7120	5170	8.33	V,S,P,M
04/23/2002	FMETL	ND	82000	66.8	541	752	1.35	4630	7760	7.75	V,S,P,M
08/21/2002	FMETL	ND	16500	49.0	162	119	ND	4080	7650	8.68	V,S,P,M
10/28/2002	FMETL	ND	13500	53.7	27.1	78.9	ND	4060	7280	6.76	V,S,P,M
01/22/2003	FMETL	ND	62100	65.5	293	561	4.38	4580	9430	6.99	V,S,P,M

SOURCE: 00M5MW18

Sampling Dates:
04/13/1999 - 01/22/2003

NOTES:

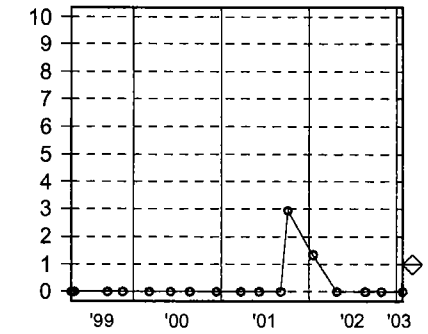
FORT MONMOUTH

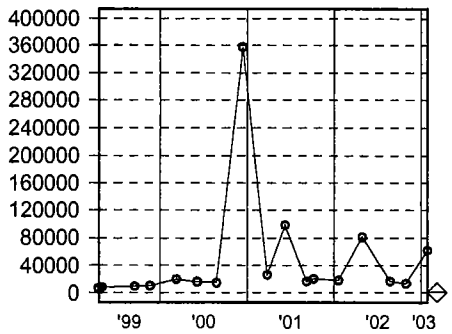
GW MONITORING
Bldg. M-5

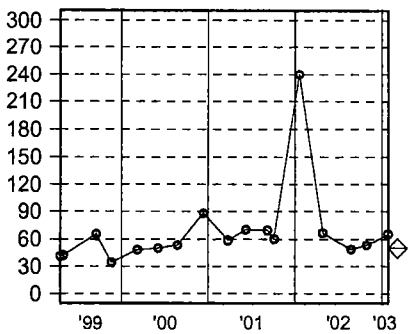
Source 10 of 14

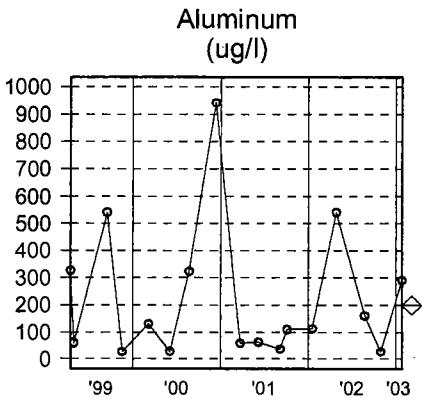
Ag in blank > GW Criteria for 5/8/97.

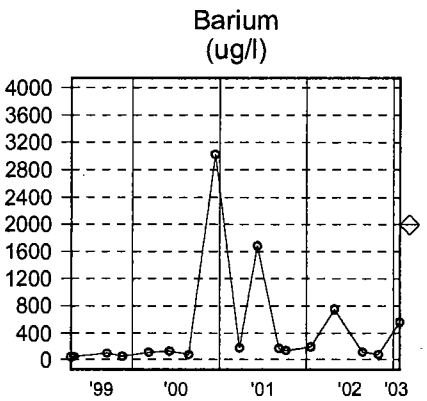
U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

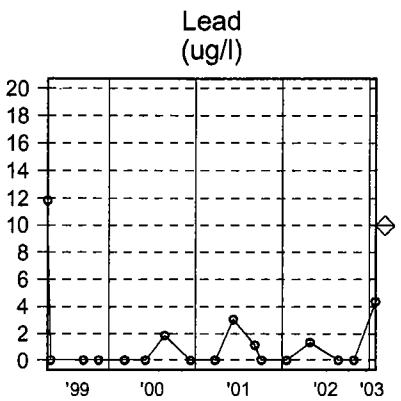


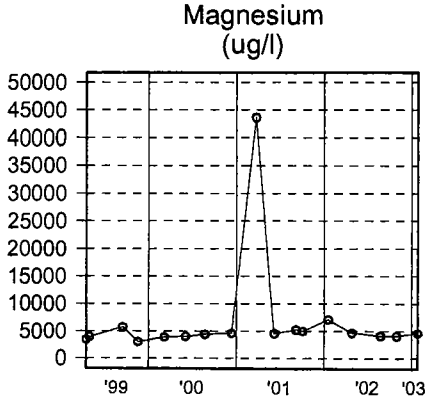


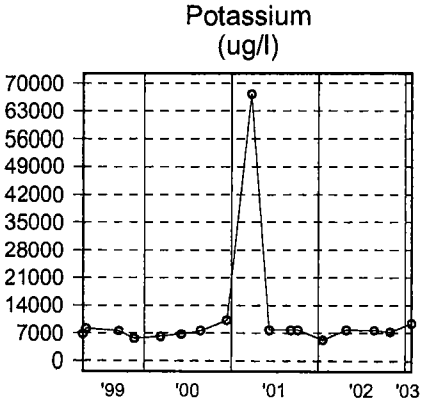


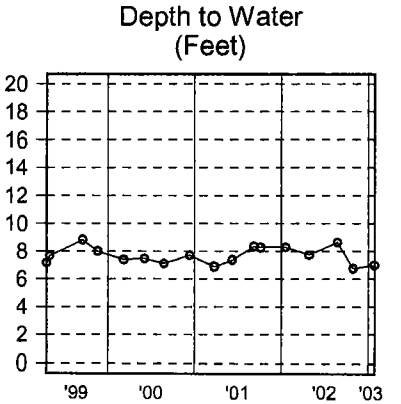












SOURCE: 00M5MW18

Sampling Dates:
04/13/1999 - 01/22/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 10 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

03-13-2003 X:\MtechData\M-5\M-5.WSF

	Lab	cis-1,2-Dichloro ethene	Tri chloro ethene	Tetra chloro ethene	Iron	Manganese	Aluminum	Lead	Potassium	Depth to Water	Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet	-
NJDEP Criteria:	-	10	1	1	300	50	200	10	NLE	-	-
04/13/1999	FMETL	ND	ND	11.53	7900	50.1	1110	4.92	8060	6.74	V,S,P,M
04/27/1999	FMETL	ND	ND	3.72	12300	49.1	1710	ND	9650	7.04	V,S,P,M
09/14/1999	FMETL	ND	ND	10.24	9230	33.8	2320	ND	8200	8.48	V,S,P,M
11/18/1999	FMETL	ND	ND	69.22	11700	39	130	ND	7080	7.63	V,S,P,M
03/06/2000	FMETL	ND	ND	5.44	15000	53.9	133	ND	6870	7.01	V,S,P,M
05/31/2000	FMETL	ND	ND	ND	12100	51.6	47.8	ND	7830	7.01	V,S,P,M
08/21/2000	FMETL	ND	ND	4.77	12400	71.7	227	1.14	8620	6.66	V,S,P,M
12/11/2000	FMETL	ND	ND	3.80	39600	56.2	271	ND	9180	7.28	V,S,P,M
03/19/2001	FMETL	ND	ND	2.43	17800	78.5	740	ND	74200	6.97	V,S,P,M
06/05/2001	FMETL	ND	ND	6.89	27300	72.3	ND	ND	7380	6.68	V,S,P,M
09/05/2001	FMETL	3.87	1.66	34.94	22100	75.3	ND	2.10	7890	8.03	V,S,P,M
10/04/2001	FMETL	1.84	ND	13.62	21700	66.3	ND	ND	7100	7.92	V,S,P,M
01/14/2002	FMETL	16.64	17.44	284.64	30100	229	185	ND	2710	8.04	V,S,P,M
04/23/2002	FMETL	5.93	2.80	18.2	28900	83.1	562	ND	5270	7.39	V,S,P,M
08/21/2002	FMETL	51.33	6.44	34.31	20800	74.3	152	ND	3700	8.33	V,S,P,M
10/28/2002	FMETL	2.28	1.00	5.10	21500	81.3	73.6	1.39	7280	6.47	V,S,P,M
01/22/2003	FMETL	ND	ND	1.54	11700	55.0	33.7	ND	8120	6.58	V,S,P,M

SOURCE: 00M5MW19

Sampling Dates:
04/13/1999 - 01/22/2003

NOTES:

FORT MONMOUTH

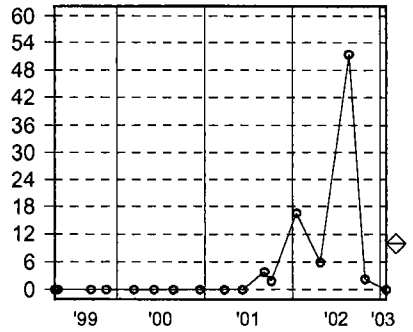
GW MONITORING
Bldg. M-5

Source 11 of 14

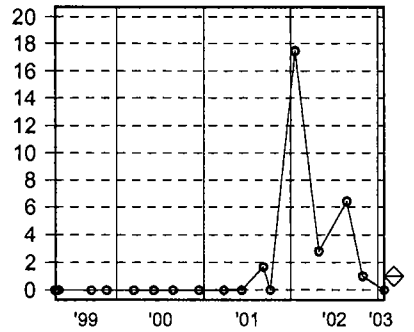
Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

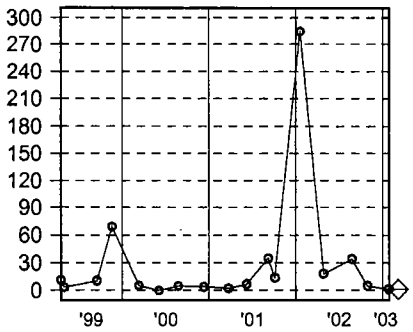
cis-1,2-Dichloroethene
(ug/l)



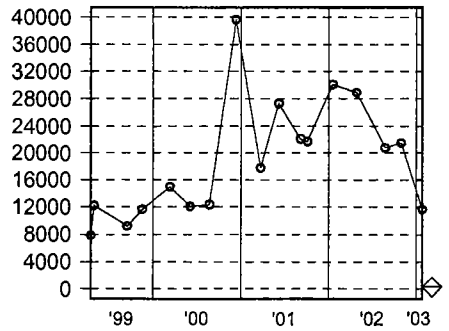
Trichloroethene
(ug/l)



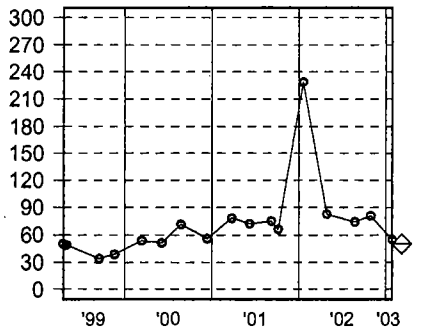
Tetrachlorethene
(ug/l)



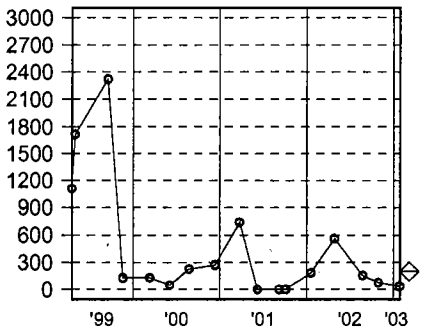
Iron
(ug/l)



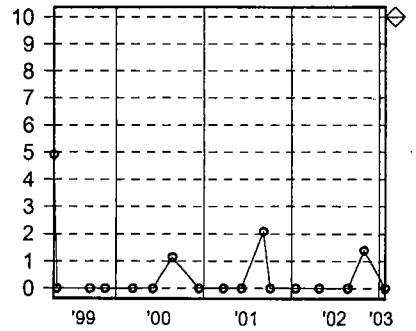
Manganese
(ug/l)



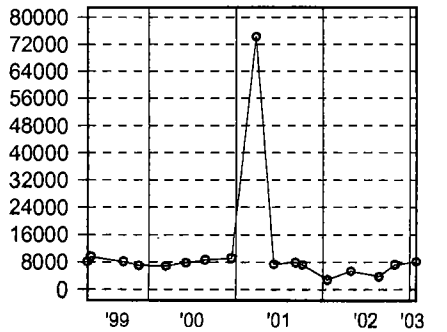
Aluminum
(ug/l)



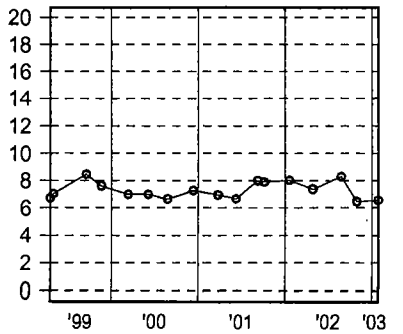
Lead
(ug/l)



Potassium
(ug/l)



Depth to Water
(Feet)



SOURCE: 00M5MW19

Sampling Dates:
04/13/1999 - 01/22/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 11 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

03-13-2003 X:\MtechData\M-5\M-5.WSF

	Lab	cis-1,2-Dichloro ethene	Tri chloro ethene	Tetra chloro ethene	Iron	Manganese	Aluminum	Calcium	Sodium	Depth to Water	Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet	-
NJDEP Criteria:	-	10	1	1	300	50	200	NLE	50000	-	-
04/13/1999	FMETL	ND	ND	142.59	9380	36.6	3150	17000	29200	5.72	V,S,P,M
04/27/1999	FMETL	ND	ND	169.54	7520	29.2	2980	21600	35000	6.08	V,S,P,M
09/13/1999	FMETL	ND	ND	156.58	376	28.0	64.6	14400	22000	7.42	V,S,P,M
11/18/1999	FMETL	ND	ND	143.93	676	21.1	143	12500	20300	6.61	V,S,P,M
03/03/2000	FMETL	ND	ND	90.03	1640	17.8	500	15200	20400	6.05	V,S,P,M
05/31/2000	FMETL	ND	ND	43.44	914	13.2	248	20800	44000	8.13	V,S,P,M
08/21/2000	FMETL	ND	ND	23.85	4060	14.9	1910	12900	40700	5.78	V,S,P,M
12/11/2000	FMETL	ND	ND	110.95	502	11.9	96.6	11000	29000	6.33	V,S,P,M
03/19/2001	FMETL	ND	ND	65.73	900	40.3	280	44600	79100	5.68	V,S,P,M
03/19/2001D	FMETL	ND	ND	65.5	870	27.7	300	43000	75200	5.68	V,S,P,M
06/05/2001	FMETL	ND	ND	45.30	495	15.4	ND	29000	82500	7.98	V,S,P,M
09/05/2001	FMETL	1.22	1.18	111.58	1320	26.9	204	12000	34300	7.04	V,S,P,M
10/04/2001	FMETL	3.38	3.56	83.81	1640	23.9	198	13400	33200	6.77	V,S,P,M
10/04/2001D	FMETL	3.41	3.66	82.54	1450	24.2	252	13700	34700	6.77	V,S,P,M
01/14/2002	FMETL	3.09	4.27	85.31	2020	159	452	16400	41200	6.74	V,S,P,M
04/23/2002	FMETL	ND	ND	76.89	1510	27.3	216	20900	44000	6.36	V,S,P,M
08/21/2002	FMETL	ND	ND	79.41	5320	34.5	1580	27400	51200	7.24	V,S,P,M
10/28/2002	FMETL	ND	ND	12.99	11500	19.6	6000	11700	38000	5.45	V,S,P,M
01/22/2003	FMETL	ND	ND	27.87	292	9.34	109	17100	57200	5.73	V,S,P,M

SOURCE: 00M5MW20

Sampling Dates:
04/13/1999 - 01/22/2003

NOTES:

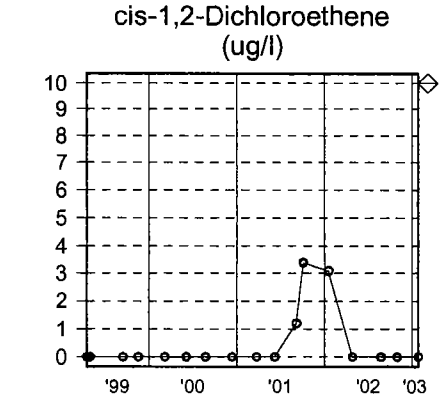
FORT MONMOUTH

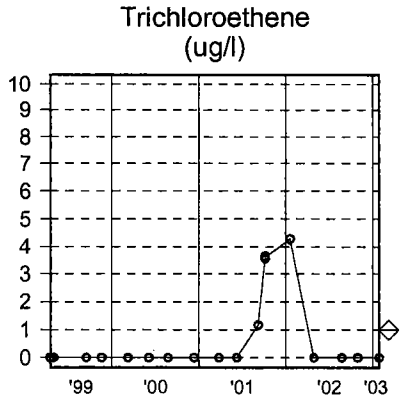
GW MONITORING
Bldg. M-5

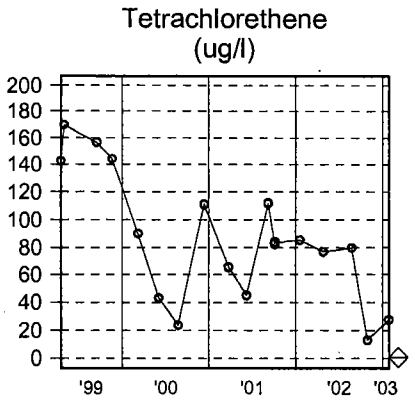
Source 12 of 14

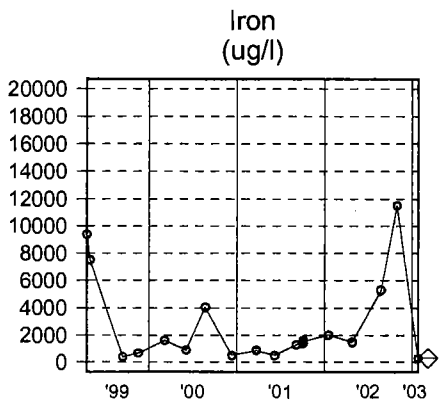
Ag in blank > GW Criteria for 5/8/97.

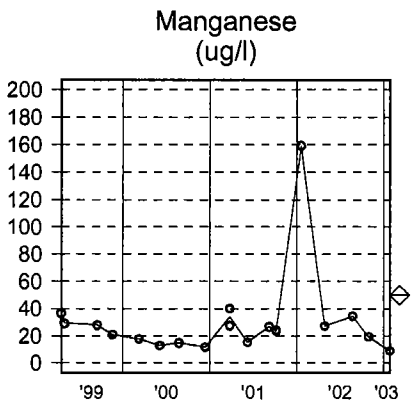
U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

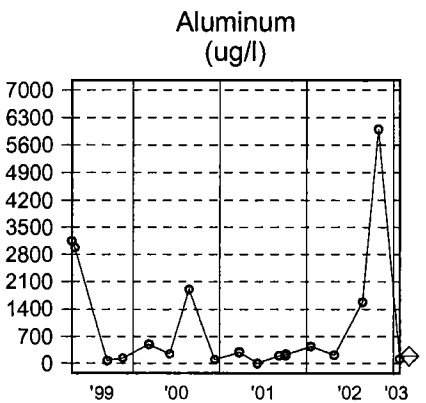


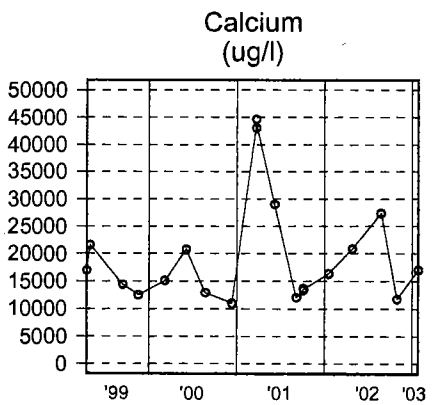


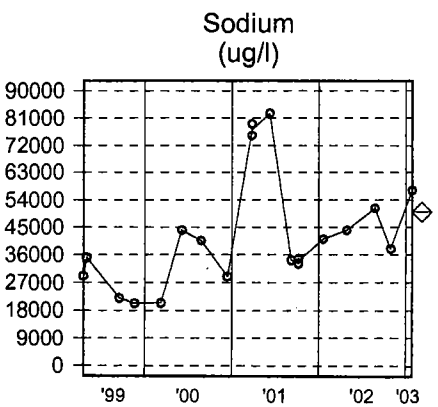


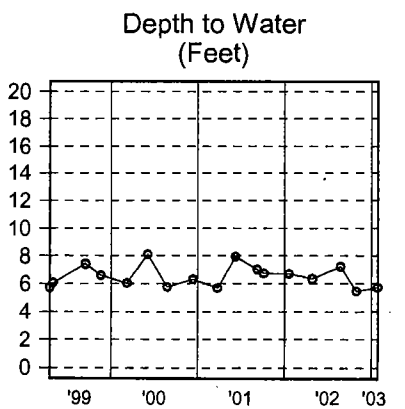












SOURCE: 00M5MW20

Sampling Dates:
04/13/1999 - 01/22/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 12 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

03-13-2003 X:\MIechData\M-5\M-5.WSF

	Lab	cis-1,2-Dichloro ethene	Tri chloro ethene	Tetra chloro ethene	Iron	Manganese	Aluminum	Potassium	Sodium	Depth to Water	Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet	-
NJDEP Criteria:	-	10	1	1	300	50	200	NLE	50000	-	-
04/14/1999	FMETL	ND	ND	84.93	848	9.64	148	3720	16500	8.19	V,S,P,M
04/28/1999	FMETL	ND	ND	44.43	1590	19.8	195	5640	28300	8.46	V,S,P,M
09/13/1999	FMETL	ND	ND	29.53	10700	10.4	1410	3670	12700	9.56	V,S,P,M
11/18/1999	FMETL	ND	ND	59.02	1290	10.4	157	2690	12100	8.88	V,S,P,M
03/03/2000	FMETL	ND	ND	11.53	13600	23.1	248	3470	28100	8.38	V,S,P,M
05/31/2000	FMETL	ND	ND	23.13	25100	23.6	ND	3240	37500	7.70	V,S,P,M
08/21/2000	FMETL	ND	ND	4.22	20300	30.9	332	3010	29200	7.93	V,S,P,M
12/11/2000	FMETL	ND	ND	14.27	19200	27.1	108	2470	14300	8.61	V,S,P,M
03/19/2001	FMETL	ND	ND	6.39	31400	26.6	810	33000	43500	7.85	V,S,P,M
06/05/2001	FMETL	ND	ND	33.84	3280	31.1	ND	2590	85600	8.33	V,S,P,M
06/05/2001D	FMETL	ND	ND	33.54	3650	31.6	ND	2630	87000	8.33	V,S,P,M
09/05/2001	FMETL	1.48	ND	3.41	21600	21.1	1300	2180	29100	9.15	V,S,P,M
10/04/2001	FMETL	1.77	ND	3.85	13000	16.5	1270	2190	23200	8.90	V,S,P,M
01/14/2002	FMETL	1.77	ND	8.26	36400	185	1340	3070	17100	9.03	V,S,P,M
04/23/2002	FMETL	3.31	ND	8.97	67900	42.8	5120	4850	19300	8.53	V,S,P,M
08/21/2002	FMETL	ND	ND	15.68	15400	37.6	426	3060	19400	9.33	V,S,P,M
10/28/2002	FMETL	ND	ND	ND	14000	24.3	100	1410	23900	7.72	V,S,P,M
01/22/2003	FMETL	ND	3.97	79.46	137000	49.2	6920	5610	96300	7.75	V,S,P,M

SOURCE: 00M5MW23

Sampling Dates:
04/14/1999 - 01/22/2003

NOTES:

FORT MONMOUTH

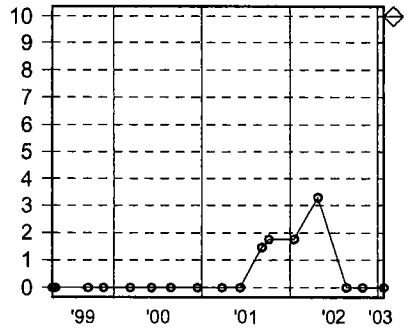
GW MONITORING
Bldg. M-5

Source 13 of 14

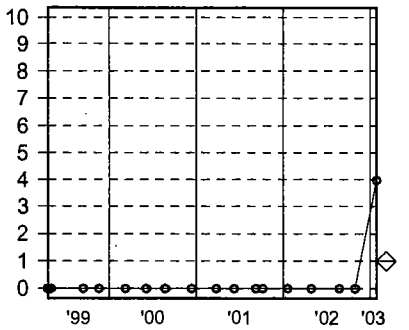
Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

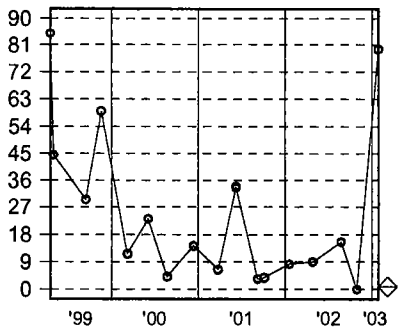
cis-1,2-Dichloroethene
(ug/l)



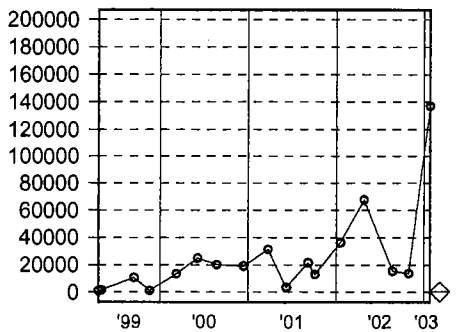
Trichloroethene
(ug/l)



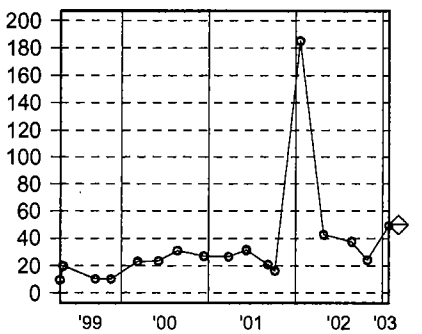
Tetrachlorethene
(ug/l)



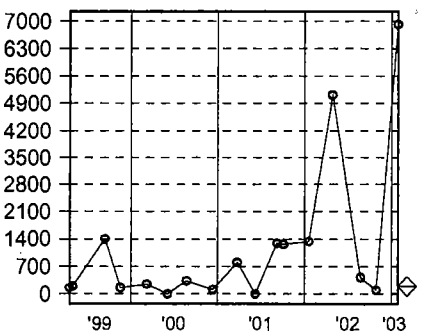
Iron
(ug/l)



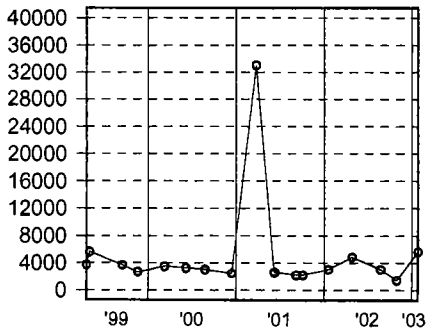
Manganese
(ug/l)



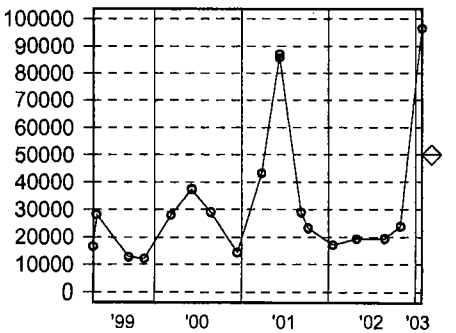
Aluminum
(ug/l)



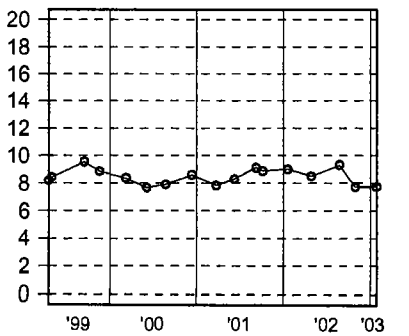
Potassium
(ug/l)



Sodium
(ug/l)



Depth to Water
(Feet)



SOURCE: 00M5MW23

Sampling Dates:
04/14/1999 - 01/22/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 13 of 14, Graph

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U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

03-13-2003 X:\MtechData\M-5\M-5.WSF

	Lab	Iron	Manganese	Aluminum	Calcium	Lead	Magnesium	Potassium	Sodium	Depth to Water	Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet	-
NJDEP Criteria:	-	300	50	200	NLE	10	NLE	NLE	50000	-	-
04/14/1999	FMETL	18000	41.9	5640	12100	4.75	6120	9700	18900	11.32	V,S,P,M
04/28/1999	FMETL	12300	48.3	4630	15500	6.35	4960	8700	25200	11.59	V,S,P,M
09/14/1999	FMETL	8930	43.9	151	17700	ND	3440	8110	8680	13.21	V,S,P,M
11/18/1999	FMETL	15400	35.1	3560	14100	ND	7040	9990	25700	12.26	V,S,P,M
03/03/2000	FMETL	783	25.3	220	11000	ND	4100	2740	22900	11.39	V,S,P,M
05/31/2000	FMETL	191	13.8	ND	8680	ND	3460	2120	49100	11.61	V,S,P,M
05/31/2000D	FMETL	712	15.3	98.7	9230	ND	3460	2220	36500	11.61	V,S,P,M
08/21/2000	FMETL	453	46.7	250	13200	1.91	4620	2990	42900	11.05	V,S,P,M
12/11/2000	FMETL	877	18.7	209	9160	ND	4130	2950	42000	12.00	V,S,P,M
03/19/2001	FMETL	10900	43.1	140	38800	ND	10400	30500	153000	10.98	V,S,P,M
06/05/2001	FMETL	295	27.7	ND	20900	ND	10400	3000	76100	11.84	V,S,P,M
09/05/2001	FMETL	21600	21.1	1300	5570	2.41	1900	2180	29100	12.72	V,S,P,M
09/05/2001D	FMETL	476	63.9	ND	28700	ND	13700	5680	71400	12.72	V,S,P,M
10/04/2001	FMETL	26500	56.4	6880	20300	6.17	13200	13200	56900	11.77	V,S,P,M
01/14/2002	FMETL	1570	182	388	18400	11.0	8590	5490	48300	12.97	V,S,P,M
04/23/2002	FMETL	101	27.8	70.2	16300	1.59	7320	1930	80400	11.90	V,S,P,M
08/21/2002	FMETL	836	40.6	262	17500	ND	8210	4250	64100	12.86	V,S,P,M
10/28/2002	FMETL	6510	101	129	13000	ND	4370	2890	49300	10.93	V,S,P,M
01/22/2003	FMETL	12400	41.7	185	12200	ND	4550	3550	43500	10.75	V,S,P,M

SOURCE: 00M5MW25

Sampling Dates:
04/14/1999 - 01/22/2003

NOTES:

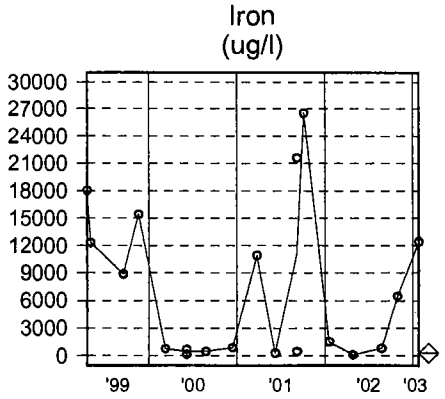
FORT MONMOUTH

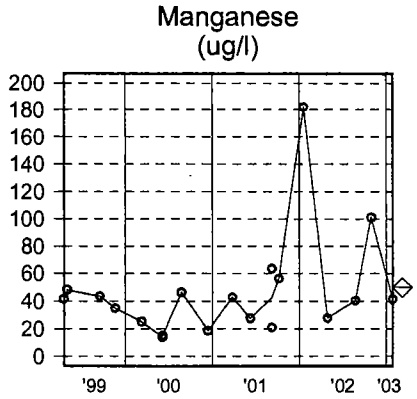
GW MONITORING
Bldg. M-5

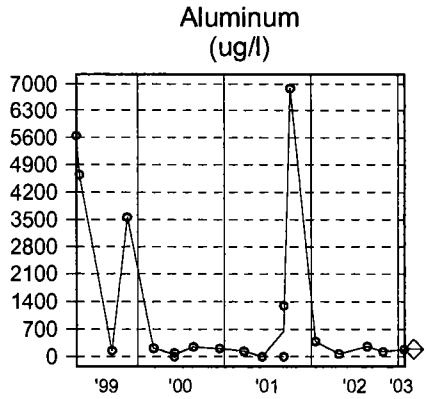
Source 14 of 14

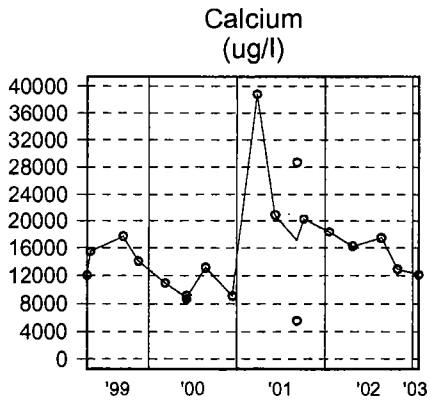
Ag in blank > GW Criteria for 5/8/97.

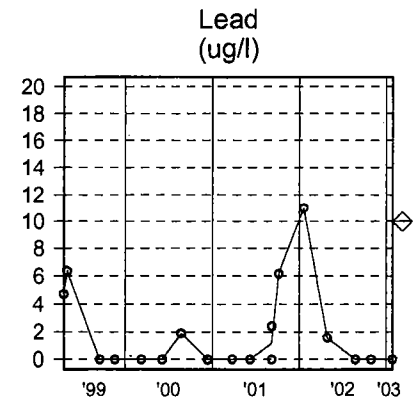
U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

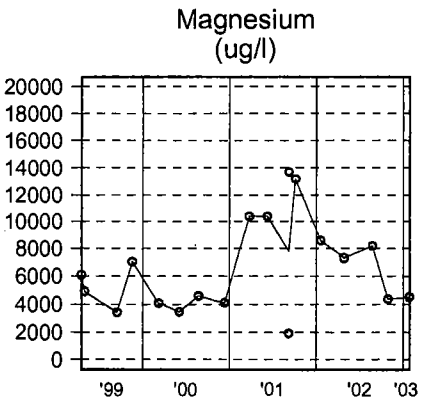


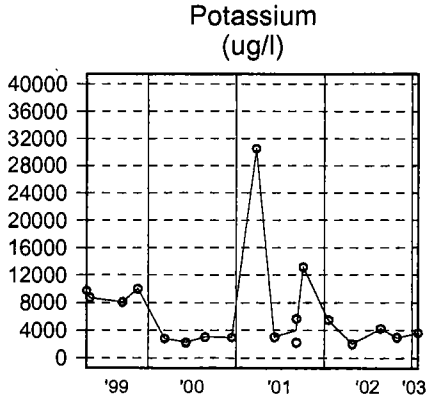


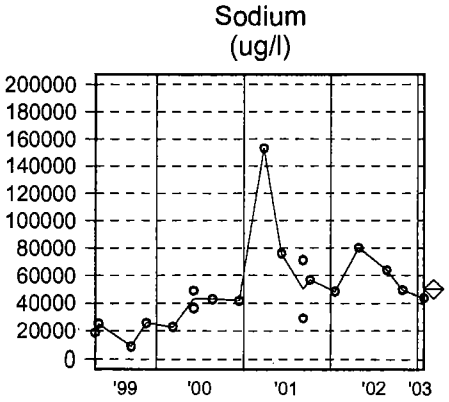


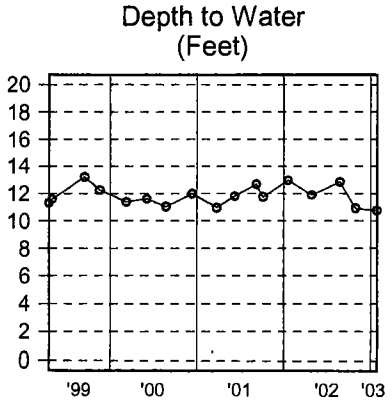












SOURCE: 00M5MW25

Sampling Dates:
04/14/1999 - 01/22/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 14 of 14, Graph

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FORT MONMOUTH
SELFM-PW-EV

03-13-2003 X:\MtechData\M-5\M-5.WSF

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS
PHONE: (732)532-4359 FAX: (732)532-6263
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING

ANALYTICAL DATA REPORT
FOR
Directorate of Public Works
Fort Monmouth, NJ 07703

PROJECT : DERA/ Long Term Monitoring

SAMPLE LOCATION AND IDENTIFICATION

SITE: M-5

LABORATORY ID #	MONITOR WELL#	NJDEP WELL ID#	SAMPLE DATE
3018004	00M5MW10	29-32574	04/21/03
3018005	00M5MW11	29-32575	04/21/03
3018006	00M5MW12	29-39179	04/21/03
3018007	00M5MW13	29-39178	04/21/03
3018008	00M5MW14	29-39177	04/21/03
3018009	00M5MW15	29-40120	04/21/03
3018010	00M5MW16	29-40121	04/21/03
3018011	00M5MW18	29-40123	04/21/03
3018012	00M5MW19	29-40124	04/21/03
3018013	00M5MW20	29-40122	04/21/03
3018014	00M5MW23	29-40125	04/21/03
3018015	00M5MW25	29-40126	04/21/03

NJDEP Laboratory Certification # 13461

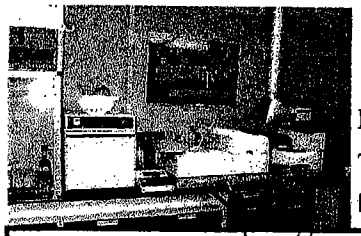
6-4-03

Daniel Wright/Date
Laboratory Director

METHODOLOGY SUMMARY

PARAMETER	REFERENCE
TARGET ANALYTE LIST METALS	Standard Methods, 18th ed.
Aluminum	3120B
Antimony	3120B
Arsenic	3120B
Barium	3120B
Beryllium	3120B
Cadmium	3120B
Calcium	3120B
Chromium	3120B
Cobalt	3120B
Copper	3120B
Iron	3120B
Lead	3120B
Magnesium	3120B
Manganese	3120B
Mercury	3112B
Nickel	3120B
Potassium	3120B
Selenium	3120B
Silver	3120B
Sodium	3120B
Thallium	3120B
Vanadium	3120B
Zinc	3120B

PARAMETER	REFERENCE
TARGET COMPOUND LIST ORGANICS	Federal Register 40 CFR Part 136 Appendix A
Base/Neutral and Acid Extractables by GC/MS	625
Purgeable Organics by GC/MS	624
Pesticide and PCB by GC	608



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:wrightd@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: J. FANNON
Phone #: X26223
( )DERA ( )OMA ( )Other:_____
Project No:
Location: MS wells
2nd Qrtr '03
Samplers Name / Company: Corey McCormack, TVS

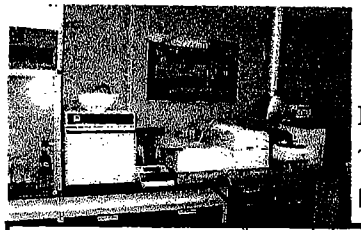
LIMS/Work Order #	Sample Location	Date	Time	Sample Type	# bottles	Analysis Parameters: VOA+15	TAL Mtls	Pest / PCB	BNA+25				Hnu Read	Comments: HCl/HNO_3/4°C Remarks / Preservation Method
30180 01	Trip	4/21/03	0739	AQ	2	✓							—	
02	Field Blank		0930		5	✓	✓	✓	✓				—	
03	Dupe		—		5	✓	✓	✓	✓				—	
04	MSmw10		1314		5	✓	✓	✓	✓				0.0	29- 32574
05	MSmw11		1107			✓	✓	✓	✓				0.0	29- 32575
06	MSmw12		1323			✓	✓	✓	✓				0.0	29- 39179
07	MSmw13		1411			✓	✓	✓	✓				0.0	29- 39178
08	MSmw14		1458			✓	✓	✓	✓				0.0	29-39197
09	MSmw15		1030			✓	✓	✓	✓				0.0	29- 40120
10	MSmw16		1037			✓	✓	✓	✓				0.0	29- 40121
11	MSmw18		1046			✓	✓	✓	✓				0.0	29- 40123
12	MSmw19		1053			✓	✓	✓	✓				0.0	29-40124
13	MSmw20		1100			✓	✓	✓	✓				0.0	29- 40122
14	MSmw23 *		1114			✓	✓	✓	✓				0.0	29- 40125

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Corey McCormack	4/21/03 1530				
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: (_)Full, (_)Reduced, (X)Standard, (_)Screen / non-certified, (_)EDD
Turnaround time: (X)Standard 3 wks, (_)Rush ____ Days, (_)ASAP Verbal ____ Hrs.

Remarks:
Tide: L, L→H

print legibly



Fort Monmouth Environmental Testing Laboratory

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Tel (732)532-4359 Fax (732)532-6263 EMail:wrightd@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: J. Fallon
Phone #: X26223
( )DERA ( )OMA ( )Other:_____

Project No:
Location: MS wells
2nd Qrtr '03

Samplers Name / Company: Corey McCormack, TVS

LIMS/Work Order #	Sample Location	Date	Time	Sample Type	# bottles	VOA's	TAL MHg's	Pest / PCB	BNA's				Haw Head	Remarks / Preservation Method
30180 15	MSMW25	4/21/03	0959	AQ	5	✓	✓	✓	✓				0.0	29-40126

Comments: HCL/HNO_3/4°C

Analysis Parameters

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Corey McCormack	4/21/03 1530	J. Wright			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: (_)Full, (_)Reduced, (X)Standard, (_)Screen / non-certified, (_)EDD
Turnaround time: (X)Standard 3 wks, (_)Rush ____ Days, (_)ASAP Verbal ____ Hrs.

Remarks:
Tide: L, L→H

print legibly

COC XLS 4/1/2003

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW10
NJDEP ID #: 29-32574
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 04/21/03
WEATHER: Sunny and cool.
TIDE: Low-Incoming.

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 4" INCH
DEPTH TO WATER: 4.07 ft
DEPTH OF WELL: 17.25 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 13.18 ft
(13.18) X .65 X 3 =25.70
GALLONS OF H_2O TO BE PURGED: 26 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 11:20
pH 6.11 su — TEMP 11.21 °C
DISSOLVED O_2 4.76 mg/L — SPECIFIC CONDUCTIVITY 621.7 ms/cm

PURGE END TIME: 13:13
pH 6.10 su — TEMP 11.07 °C
DISSOLVED O_2 2.70 mg/L — SPECIFIC CONDUCTIVITY 611.4 ms/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 4.44 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 26 gal

SAMPLE START TIME: 13:14
pH 6.10 su — TEMP 11.06 °C
DISSOLVED O_2 2.69 mg/L — SPECIFIC CONDUCTIVITY 611.3 ms/cm

SAMPLE END TIME: 13:19

COMMENTS: Low draw down.

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW11
NJDEP ID #: 29-32575
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 04/21/03
WEATHER: Sunny and cool.
TIDE: Low-Incoming.

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 4" INCH
DEPTH TO WATER: 6.70 ft
DEPTH OF WELL: 16.80 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 10.10 ft
(10.10) X .65 X 3 =19.69
GALLONS OF H_2O TO BE PURGED: 20 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 09:04
pH 5.61 su — TEMP 11.76 °C
DISSOLVED O_2 4.27 mg/L — SPECIFIC CONDUCTIVITY 321.4 ms/cm

PURGE END TIME: 10:31
pH 5.53 su — TEMP 11.54 °C
DISSOLVED O_2 3.01 mg/L — SPECIFIC CONDUCTIVITY 310.7 ms/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 7.63 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 20 gal

SAMPLE START TIME: 11:07
pH 5.52 su — TEMP 11.53 °C
DISSOLVED O_2 2.98 mg/L — SPECIFIC CONDUCTIVITY 308.9 ms/cm

SAMPLE END TIME: 11:12

COMMENTS:

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW12
NJDEP ID #: 29-39179
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 04/21/03
WEATHER: Sunny and cool.
TIDE: Low-Incoming.

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 2" INCH
DEPTH TO WATER: 5.53 ft
DEPTH OF WELL: 16.10 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 10.57 ft
(10.57) X .163 X 3 =5.16
GALLONS OF H_2O TO BE PURGED: 5 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 13:00
pH 6.37 su — TEMP 11.79 °C
DISSOLVED O_2 3.17 mg/L — SPECIFIC CONDUCTIVITY 891.4 ms/cm

PURGE END TIME: 13:22
pH 6.41 su — TEMP 11.60 °C
DISSOLVED O_2 2.17 mg/L — SPECIFIC CONDUCTIVITY 887.6 ms/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 6.78 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 5 gal

SAMPLE START TIME: 13:23
pH 6.40 su — TEMP 11.61 °C
DISSOLVED O_2 2.16 mg/L — SPECIFIC CONDUCTIVITY 887.4 ms/cm

SAMPLE END TIME: 13:27

COMMENTS: Slightly cloudy.

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW13
NJDEP ID #: 29-39178
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 04/21/03
WEATHER: Sunny and cool.
TIDE: Low-Incoming.

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 2" INCH
DEPTH TO WATER: 2.03 ft
DEPTH OF WELL: 18.82 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 16.79 ft
(16.79) X .163 X 3 =8.21
GALLONS OF H_2O TO BE PURGED: 8 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 13:35
pH 611 su — TEMP 11.70 °C
DISSOLVED O_2 3.70 mg/L — SPECIFIC CONDUCTIVITY 811.4 ms/cm

PURGE END TIME: 14:10
pH 5.95 su — TEMP 11.53 °C
DISSOLVED O_2 2.27 mg/L — SPECIFIC CONDUCTIVITY 821.5 ms/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 2.20 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 8 gal

SAMPLE START TIME: 14:11
pH 5.96 su — TEMP 11.54 °C
DISSOLVED O_2 2.27 mg/L — SPECIFIC CONDUCTIVITY 822.1 ms/cm

SAMPLE END TIME: 14:15

COMMENTS: Low draw down.

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW14
NJDEP ID #: 29-39177
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 04/21/03
WEATHER: Sunny and cool.
TIDE: Low-Incoming.

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 2" INCH
DEPTH TO WATER: 3.17 ft
DEPTH OF WELL: 20.15 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 16.98 ft
(16.98) X .163 X 3 =8.30
GALLONS OF H2O TO BE PURGED: 8 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 14:17
pH 6.50 su — TEMP 11.74 °C
DISSOLVED O_2 3.91 mg/L — SPECIFIC CONDUCTIVITY 607.4 ms/cm

PURGE END TIME: 14:52
pH 6.49 su — TEMP 11.43 °C
DISSOLVED O_2 3.00 mg/L — SPECIFIC CONDUCTIVITY 591.4 ms/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 3.90 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 8 gal

SAMPLE START TIME: 14:53
pH 6.49 su — TEMP 11.44 °C
DISSOLVED O_2 2.98 mg/L — SPECIFIC CONDUCTIVITY 592.1 ms/cm

SAMPLE END TIME: 14:58

COMMENTS: Slightly cloudy.

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW15
NJDEP ID #: 29-40120
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 04/21/03
WEATHER: Sunny and cool.
TIDE: Low

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 4" INCH
DEPTH TO WATER: 7.27 ft
DEPTH OF WELL: 19.71 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 12.44 ft
(12.44) X .65 X 3 =24.25
GALLONS OF H_2O TO BE PURGED: 24 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 08:45
pH 5.20 su — TEMP 11.47 °C
DISSOLVED O_2 4.76 mg/L — SPECIFIC CONDUCTIVITY 321.7 ms/cm

PURGE END TIME: 10:29
pH 5.76 su — TEMP 11.21 °C
DISSOLVED O_2 3.11 mg/L — SPECIFIC CONDUCTIVITY 311.4 ms/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 7.47 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 24 gal

SAMPLE START TIME: 10:30
pH 5.71 su — TEMP 11.20 °C
DISSOLVED O_2 3.10 mg/L — SPECIFIC CONDUCTIVITY 312.1 ms/cm

SAMPLE END TIME: 10:35

COMMENTS: Low draw down.

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW16
NJDEP ID #: 29-40121
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 04/21/03
WEATHER: Sunny and cool.
TIDE: Low

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 4" INCH
DEPTH TO WATER: 6.04 ft
DEPTH OF WELL: 17.93 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 11.89 ft
(11.89) X .65 X 3 = 23.18
GALLONS OF H_2O TO BE PURGED: 23 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 08:48
pH 5.41 su — TEMP 11.27 °C
DISSOLVED O_2 5.11 mg/L — SPECIFIC CONDUCTIVITY 407.1 ms/cm

PURGE END TIME: 10:28
pH 5.37 su — TEMP 11.10 °C
DISSOLVED O_2 1.27 mg/L — SPECIFIC CONDUCTIVITY 403.2 ms/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 6.64 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 23 gal

SAMPLE START TIME: 10:37
pH 5.35 su — TEMP 11.07 °C
DISSOLVED O_2 1.26 mg/L — SPECIFIC CONDUCTIVITY 403.1 ms/cm

SAMPLE END TIME: 10:42

COMMENTS: Very strong odor. Low draw down.

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW18
NJDEP ID #: 29-40123
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 04/21/03
WEATHER: Sunny and cool.
TIDE: Low

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 4" INCH
DEPTH TO WATER: 6.72 ft
DEPTH OF WELL: 20.17 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 13.45 ft
(13.45) X .65 X 3 =26.22
GALLONS OF H2O TO BE PURGED: 26 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 08:52
pH 6.11 su — TEMP 11.79 °C
DISSOLVED O_2 3.76 mg/L — SPECIFIC CONDUCTIVITY 371.7 ms/cm

PURGE END TIME: 10:45
pH 5.79 su — TEMP 11.54 °C
DISSOLVED O_2 2.21 mg/L — SPECIFIC CONDUCTIVITY 353.4 ms/cm

DEPTH TO H2O AFTER PURGE AND BEFORE SAMPLING: 6.93 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 26 gal

SAMPLE START TIME: 10:46
pH 5.77 su — TEMP 11.55 °C
DISSOLVED O_2 2.22 mg/L — SPECIFIC CONDUCTIVITY 353.3 ms/cm

SAMPLE END TIME: 10:50

COMMENTS: Low draw down, very cloudy orange.

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW19
NJDEP ID #: 29-40124
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 04/21/03
WEATHER: Sunny and cool.
TIDE: Low

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 4" INCH
DEPTH TO WATER: 6.35 ft
DEPTH OF WELL: 19.98 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 13.63 ft
(13.63) X .65 X 3 =26.57
GALLONS OF H_2O TO BE PURGED: 27 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 08:55
pH 5.76 su — TEMP 11.66 °C
DISSOLVED O_2 4.76 mg/L — SPECIFIC CONDUCTIVITY 327.9 ms/cm

PURGE END TIME: 10:52
pH 5.83 su — TEMP 11.40 °C
DISSOLVED O_2 2.01 mg/L — SPECIFIC CONDUCTIVITY 311.7 ms/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 6.49 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 27 gal

SAMPLE START TIME: 10:53
pH 5.82 su — TEMP 11.39 °C
DISSOLVED O_2 2.00 mg/L — SPECIFIC CONDUCTIVITY 311.8 ms/cm

SAMPLE END TIME: 10:58

COMMENTS: Low draw down. Strong odor.

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW20
NJDEP ID #: 29-40122
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 04/21/03
WEATHER: Sunny and cool.
TIDE: Low

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 4" INCH
DEPTH TO WATER: 5.47 ft
DEPTH OF WELL: 16.07 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 10.60 ft
(10.60) X .65 X 3 =20.67
GALLONS OF H_2O TO BE PURGED: 21 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 08:59
pH 5.57 su — TEMP 10.76 °C
DISSOLVED O_2 4.57 mg/L — SPECIFIC CONDUCTIVITY 541.7 ms/cm

PURGE END TIME: 10:30
pH 5.43 su — TEMP 10.39 °C
DISSOLVED O_2 2.03 mg/L — SPECIFIC CONDUCTIVITY 550.1 ms/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 5.73 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 21 gal

SAMPLE START TIME: 11:00
pH 5.42 su — TEMP 10.41 °C
DISSOLVED O_2 1.97 mg/L — SPECIFIC CONDUCTIVITY 550.0 ms/cm

SAMPLE END TIME: 11:08

COMMENTS:

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW23
NJDEP ID #: 29-40125
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 04/21/03
WEATHER: Sunny and cool.
TIDE: Low

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 4" INCH
DEPTH TO WATER: 7.54 ft
DEPTH OF WELL: 19.75 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 12.21 ft
(12.21) X .65 X 3 =23.80
GALLONS OF H_2O TO BE PURGED: 24 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 09:10
pH 5.88 su — TEMP 11.21 °C
DISSOLVED O_2 4.67 mg/L — SPECIFIC CONDUCTIVITY 876.4 ms/cm

PURGE END TIME: 10:54
pH 5.80 su — TEMP 11.04 °C
DISSOLVED O_2 2.30 mg/L — SPECIFIC CONDUCTIVITY 863.7 ms/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 7.93 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 24 gal

SAMPLE START TIME: 11:14
pH 5.81 su — TEMP 11.05 °C
DISSOLVED O_2 2.27 mg/L — SPECIFIC CONDUCTIVITY 863.4 ms/cm

SAMPLE END TIME: 11:19

COMMENTS: Low draw down, cloudy/orange. DUP. Here.

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW25
NJDEP ID #: 29-40126
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 04/21/03
WEATHER: Sunny and cool.
TIDE: Low

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 4" INCH
DEPTH TO WATER: 10.60 ft
DEPTH OF WELL: 19.94 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 9.34 ft
(9.34) X .65 X 3 =18.21
GALLONS OF H_2O TO BE PURGED: 18 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 08:40
pH 4.93 su — TEMP 11.03 °C
DISSOLVED O_2 4.32 mg/L — SPECIFIC CONDUCTIVITY 463.7 ms/cm

PURGE END TIME: 09:58
pH 4.80 su — TEMP 10.98 °C
DISSOLVED O_2 1.76 mg/L — SPECIFIC CONDUCTIVITY 454.1 ms/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 10.71 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 18 gal

SAMPLE START TIME: 09:59
pH 4.78 su — TEMP 10.99 °C
DISSOLVED O_2 1.75 mg/L — SPECIFIC CONDUCTIVITY 455.2 ms/cm

SAMPLE END TIME: 10:02

COMMENTS: Low draw down.

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEP CERTIFICATION # 13461

Definition of Qualifiers

MDL	**:**	**Method Detection Limit**
J	**:**	**Compound identified below detection limit**
B	**:**	**Compound found in blank**
D	**:**	**Results are from a dilution of the sample**
U	**:**	**Compound searched for but not detected**
E	**:**	**Compound exceeds calibration limit**
PQL	**:**	**Practical Quantitation Limit**
NLE	**:**	**No limit established**
RT	**:**	**Retention time**

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013518.D**	Sample Name	**MB 25Apr03**
Operator	**Skelton**	Field ID	**MB 25Apr03**
Date Acquired	**25 Apr 2003 1:19 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

MB 25Apr03

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30180 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: MB 25Apr03

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013518.D

Level: (low/med) LOW Date Received: 4/21/2003

% Moisture: not dec. Date Analyzed: 4/25/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	VB013601.D	Sample Name	MB 05May03
Operator	Skelton	Field ID	MB 05May03
Date Acquired	5 May 2003 5:42 pm	Sample Multiplier	1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **MB 05May03**

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30180 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: MB 05May03

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013601.D

Level: (low/med) LOW Date Received: 4/21/2003

% Moisture: not dec. Date Analyzed: 5/5/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013521.D**	Sample Name	**3018001**
Operator	**Skelton**	Field ID	**Trip Blank**
Date Acquired	**25 Apr 2003 4:58 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform	16.60	185928	3.06 ug/L	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **Trip Blank**

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30180 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3018001

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013521.D

Level: (low/med) LOW Date Received: 4/21/2003

% Moisture: not dec. Date Analyzed: 4/25/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013522.D**	Sample Name	**3018002**
Operator	**Skelton**	Field ID	**Field Blank**
Date Acquired	**25 Apr 2003 5:39 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform	16.60	183403	2.90 ug/L	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

Field Blank

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30180 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3018002

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013522.D

Level: (low/med) LOW Date Received: 4/21/2003

% Moisture: not dec. Date Analyzed: 4/25/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013523.D**	Sample Name	**3018003**
Operator	**Skelton**	Field ID	**Dupe**
Date Acquired	**25 Apr 2003 6:19 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	15.58	43102	1.07 ug/L	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene	19.84	91726	2.89 ug/L	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	24.47	494629	20.00 ug/L	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

Dupe

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30180 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3018003

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013523.D

Level: (low/med) LOW Date Received: 4/21/2003

% Moisture: not dec. Date Analyzed: 4/25/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013524.D**	Sample Name	**3018004**
Operator	**Skelton**	Field ID	**M5MW10**
Date Acquired	**25 Apr 2003 7:00 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

M5MW10

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30180 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3018004

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013524.D

Level: (low/med) LOW Date Received: 4/21/2003

% Moisture: not dec. Date Analyzed: 4/25/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	VB013527.D	Sample Name	3018005
Operator	Skelton	Field ID	M5MW11
Date Acquired	25 Apr 2003 9:00 pm	Sample Multiplier	1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	24.47	112943	4.50 ug/L	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **M5MW11**

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30180 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3018005

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013527.D

Level: (low/med) LOW Date Received: 4/21/2003

% Moisture: not dec. Date Analyzed: 4/25/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013528.D**	Sample Name	**3018006**
Operator	**Skelton**	Field ID	**M5MW12**
Date Acquired	**25 Apr 2003 9:40 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

M5MW12

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30180 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3018006

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013528.D

Level: (low/med) LOW Date Received: 4/21/2003

% Moisture: not dec. Date Analyzed: 4/25/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013529.D**	Sample Name	**3018007**
Operator	**Skelton**	Field ID	**M5MW13**
Date Acquired	**25 Apr 2003 10:20 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **M5MW13**

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30180 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3018007

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013529.D

Level: (low/med) LOW Date Received: 4/21/2003

% Moisture: not dec. Date Analyzed: 4/25/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013602.D**	Sample Name	**3018008**
Operator	**Skelton**	Field ID	**M5MW14**
Date Acquired	**5 May 2003 6:23 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

M5MW14

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30180 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3018008

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013602.D

Level: (low/med) LOW Date Received: 4/21/2003

% Moisture: not dec. Date Analyzed: 5/5/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013531.D**	Sample Name	**3018009**
Operator	**Skelton**	Field ID	**M5MW15**
Date Acquired	**25 Apr 2003 11:41 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **M5MW15**

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30180 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3018009

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013531.D

Level: (low/med) LOW Date Received: 4/21/2003

% Moisture: not dec. Date Analyzed: 4/25/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	VB013532.D	Sample Name	3018010
Operator	Skelton	Field ID	M5MW16
Date Acquired	26 Apr 2003 12:21 am	Sample Multiplier	1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	15.58	615178	16.12 ug/L	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene	19.84	72599	2.16 ug/L	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	24.47	276492	8.50 ug/L	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

M5MW16

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30180 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3018010

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013532.D

Level: (low/med) LOW Date Received: 4/21/2003

% Moisture: not dec. Date Analyzed: 4/26/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013533.D**	Sample Name	**3018011**
Operator	**Skelton**	Field ID	**M5MW18**
Date Acquired	**26 Apr 2003 1:01 am**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

M5MW18

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30180 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3018011

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013533.D

Level: (low/med) LOW Date Received: 4/21/2003

% Moisture: not dec. Date Analyzed: 4/26/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013534.D**	Sample Name	**3018012**
Operator	**Skelton**	Field ID	**M5MW19**
Date Acquired	**26 Apr 2003 1:41 am**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	24.46	53126	1.73 ug/L	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **M5MW19**

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30180 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3018012

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013534.D

Level: (low/med) LOW Date Received: 4/21/2003

% Moisture: not dec. Date Analyzed: 4/26/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013535.D**	Sample Name	**3018013**
Operator	**Skelton**	Field ID	**M5MW20**
Date Acquired	**26 Apr 2003 2:22 am**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	24.47	854706	27.99 ug/L	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

M5MW20

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30180 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3018013

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013535.D

Level: (low/med) LOW Date Received: 4/21/2003

% Moisture: not dec. Date Analyzed: 4/26/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013536.D**	Sample Name	**3018014**
Operator	**Skelton**	Field ID	**M5MW23**
Date Acquired	**26 Apr 2003 3:02 am**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	15.58	50669	1.37 ug/L	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene	19.83	104333	3.15 ug/L	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	24.47	588416	17.35 ug/L	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **M5MW23**

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30180 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3018014

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013536.D

Level: (low/med) LOW Date Received: 4/21/2003

% Moisture: not dec. Date Analyzed: 4/26/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013537.D**	Sample Name	**3018015**
Operator	**Skelton**	Field ID	**M5MW25**
Date Acquired	**26 Apr 2003 3:42 am**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **M5MW25**

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30180 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3018015

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013537.D

Level: (low/med) LOW Date Received: 4/21/2003

% Moisture: not dec. Date Analyzed: 4/26/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BN06390.D**	Sample Name	**MB-042803**
Operator	**B.Patel**	Misc Info	**MB-042803**
Date Acquired	**28-Apr-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	0.69	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.52	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.66	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.59	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.55	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	1.52	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.94	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.81	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.97	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.83	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	1.45	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.70	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	1.61	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.70	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.83	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.64	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.57	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.16	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	1.52	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.77	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	1.63	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.72	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.84	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.67	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.67	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.85	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	1.38	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.74	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.66	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	1.28	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	1.53	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.66	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.49	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.63	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.62	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	1.35	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.89	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.54	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.88	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.62	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.88	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BN06390.D**	Sample Name	**MB-042803**
Operator	**B.Patel**	Misc Info	**MB-042803**
Date Acquired	**28-Apr-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.58	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.60	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.54	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.60	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	1.02	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.59	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.52	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.57	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.60	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.56	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	1.24	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.51	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	1.21	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.22	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.55	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.61	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.54	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.06	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.57	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.63	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.48	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.67	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.11	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.97	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	1.16	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.26	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	1.24	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID: **MB-042803**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30180 Location: M5 SDG No:

Matrix: (soil/water) WATER Lab Sample ID: MB-042803

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN06390.D

Level: (low/med) LOW Date Received: 4/21/2003

% Moisture: decanted: (Y/N) N Date Extracted: 4/28/2003

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 4/28/2003

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.65	10	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BN06391.D**	Sample Name	**3018002**
Operator	**B.Patel**	Misc Info	**Field Blank**
Date Acquired	**28-Apr-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	0.69	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.52	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.66	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.59	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.55	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	1.52	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.94	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.81	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.97	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.83	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	1.45	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.70	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	1.61	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.70	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.83	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.64	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.57	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.16	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	1.52	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.77	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	1.63	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.72	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.84	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.67	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.67	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.85	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	1.38	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.74	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.66	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	1.28	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	1.53	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.66	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.49	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.63	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.62	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	1.35	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.89	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.54	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.88	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.62	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.88	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BN06391.D**	Sample Name	**3018002**
Operator	**B.Patel**	Misc Info	**Field Blank**
Date Acquired	**28-Apr-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.58	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.60	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.54	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.60	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	1.02	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.59	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.52	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.57	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.60	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.56	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	1.24	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.51	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	1.21	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.22	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.55	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.61	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.54	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.06	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.57	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.63	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.48	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.67	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.11	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.97	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	1.16	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.26	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	1.24	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID: **Field Blank**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30180 Location: M5 SDG No:

Matrix: (soil/water) WATER Lab Sample ID: 3018002

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN06391.D

Level: (low/med) LOW Date Received: 4/21/2003

% Moisture: decanted: (Y/N) N Date Extracted: 4/28/2003

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 4/28/2003

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.65	10	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BN06392.D**	Sample Name	**3018003**
Operator	**B.Patel**	Misc Info	**Dupe**
Date Acquired	**28-Apr-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	0.69	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.52	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.66	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.59	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.55	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	1.52	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.94	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.81	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.97	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.83	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	1.45	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.70	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	1.61	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.70	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.83	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.64	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.57	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.16	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	1.52	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.77	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	1.63	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.72	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.84	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.67	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.67	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.85	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	1.38	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.74	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.66	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	1.28	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	1.53	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.66	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.49	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.63	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.62	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	1.35	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.89	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.54	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.88	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.62	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.88	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BN06392.D**	Sample Name	**3018003**
Operator	**B.Patel**	Misc Info	**Dupe**
Date Acquired	**28-Apr-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.58	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.60	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.54	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.60	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	1.02	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.59	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.52	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.57	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.60	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.56	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	1.24	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.51	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	1.21	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.22	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.55	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.61	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.54	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.06	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.57	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.63	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.48	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.67	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.11	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.97	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	1.16	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.26	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	1.24	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID: **Dupe**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30180 Location: M5 SDG No:

Matrix: (soil/water) WATER Lab Sample ID: 3018003

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN06392.D

Level: (low/med) LOW Date Received: 4/21/2003

% Moisture: decanted: (Y/N) N Date Extracted: 4/28/2003

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 4/28/2003

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.66	10	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **BN06393.D**
Operator **B.Patel**
Date Acquired **28-Apr-03**

Sample Name **3018004**
Misc Info **M5MW10**
Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	0.69	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.52	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.66	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.59	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.55	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	1.52	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.94	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.81	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.97	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.83	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	1.45	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.70	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	1.61	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.70	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.83	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.64	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.57	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.16	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	1.52	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.77	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	1.63	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.72	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.84	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.67	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.67	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.85	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	1.38	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.74	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.66	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	1.28	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	1.53	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.66	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.49	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.63	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.62	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	1.35	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.89	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.54	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.88	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.62	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.88	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name **BN06393.D**
Operator **B.Patel**
Date Acquired **28-Apr-03**

Sample Name **3018004**
Misc Info **M5MW10**
Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.58	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.60	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.54	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.60	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	1.02	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.59	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.52	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.57	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.60	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.56	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	1.24	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.51	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	1.21	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.22	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.55	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.61	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.54	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.06	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.57	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.63	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.48	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.67	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.11	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.97	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	1.16	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.26	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	1.24	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID: **M5MW10**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30180 Location: M5 SDG No:

Matrix: (soil/water) WATER Lab Sample ID: 3018004

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN06393.D

Level: (low/med) LOW Date Received: 4/21/2003

% Moisture: decanted: (Y/N) N Date Extracted: 4/28/2003

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 4/28/2003

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.66	10	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **BN06394.D**
Operator **B.Patel**
Date Acquired **28-Apr-03**

Sample Name **3018005**
Misc Info **M5MW11**
Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	0.69	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.52	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.66	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.59	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.55	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	1.52	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.94	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.81	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.97	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.83	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	1.45	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.70	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	1.61	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.70	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.83	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.64	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.57	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.16	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	1.52	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.77	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	1.63	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.72	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.84	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.67	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.67	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.85	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	1.38	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.74	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.66	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	1.28	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	1.53	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.66	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.49	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.63	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.62	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	1.35	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.89	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.54	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.88	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.62	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.88	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name **BN06394.D**
Operator **B.Patel**
Date Acquired **28-Apr-03**

Sample Name **3018005**
Misc Info **M5MW11**
Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.58	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.60	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.54	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.60	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	1.02	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.59	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.52	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.57	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.60	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.56	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	1.24	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.51	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	1.21	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.22	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.55	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.61	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.54	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.06	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.57	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.63	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.48	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.67	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.11	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.97	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	1.16	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.26	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	1.24	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID: **M5MW11**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30180 Location: M5 SDG No:

Matrix: (soil/water) WATER Lab Sample ID: 3018005

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN06394.D

Level: (low/med) LOW Date Received: 4/21/2003

% Moisture: decanted: (Y/N) N Date Extracted: 4/28/2003

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 4/28/2003

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.66	9	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **BN06395.D**
Operator **B.Patel**
Date Acquired **28-Apr-03**

Sample Name **3018006**
Misc Info **M5MW12**
Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	0.69	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.52	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.66	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.59	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.55	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	1.52	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.94	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.81	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.97	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.83	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	1.45	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.70	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	1.61	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.70	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.83	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.64	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.57	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.16	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	1.52	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.77	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	1.63	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.72	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.84	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.67	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.67	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.85	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	1.38	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.74	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.66	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	1.28	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	1.53	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.66	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.49	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.63	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.62	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	1.35	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.89	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.54	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.88	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.62	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.88	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BN06395.D**	Sample Name	**3018006**
Operator	**B.Patel**	Misc Info	**M5MW12**
Date Acquired	**28-Apr-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.58	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.60	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.54	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.60	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	1.02	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.59	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.52	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.57	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.60	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.56	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	1.24	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.51	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	1.21	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.22	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.55	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.61	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.54	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.06	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.57	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.63	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.48	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.67	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.11	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.97	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	1.16	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.26	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	1.24	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID: **M5MW12**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30180 Location: M5 SDG No:

Matrix: (soil/water) WATER Lab Sample ID: 3018006

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN06395.D

Level: (low/med) LOW Date Received: 4/21/2003

% Moisture: decanted: (Y/N) N Date Extracted: 4/28/2003

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 4/28/2003

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.66	9	J
2. 000070-55-3	Benzenesulfonamide, 4-methyl-	20.44	7	JN

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **BN06396.D**
Operator **B.Patel**
Date Acquired **28-Apr-03**

Sample Name **3018007**
Misc Info **M5MW13**
Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	0.69	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.52	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.66	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.59	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.55	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	1.52	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.94	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.81	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.97	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.83	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	1.45	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.70	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	1.61	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.70	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.83	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.64	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.57	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.16	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	1.52	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.77	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	1.63	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.72	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.84	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.67	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.67	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.85	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	1.38	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.74	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.66	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	1.28	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	1.53	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.66	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.49	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.63	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.62	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	1.35	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.89	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.54	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.88	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.62	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.88	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BN06396.D**	Sample Name	**3018007**
Operator	**B.Patel**	Misc Info	**M5MW13**
Date Acquired	**28-Apr-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.58	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.60	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.54	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.60	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	1.02	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.59	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.52	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.57	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.60	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.56	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	1.24	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.51	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	1.21	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.22	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.55	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.61	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.54	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.06	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.57	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.63	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.48	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.67	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.11	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.97	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	1.16	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.26	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	1.24	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID: **M5MW13**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30180 Location: M5 SDG No: _____

Matrix: (soil/water) WATER Lab Sample ID: 3018007

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN06396.D

Level: (low/med) LOW Date Received: 4/21/2003

% Moisture: _____ decanted: (Y/N) N Date Extracted: 4/28/2003

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 4/28/2003

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.66	10	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **BN06397.D**
Operator **B.Patel**
Date Acquired **28-Apr-03**

Sample Name **3018008**
Misc Info **M5MW14**
Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	0.69	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.52	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.66	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.59	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.55	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	1.52	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.94	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.81	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.97	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.83	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	1.45	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.70	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	1.61	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.70	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.83	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.64	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.57	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.16	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	1.52	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.77	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	1.63	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.72	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.84	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.67	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.67	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.85	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	1.38	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.74	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.66	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	1.28	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	1.53	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.66	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.49	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.63	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.62	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	1.35	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.89	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.54	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.88	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.62	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.88	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BN06397.D**	Sample Name	**3018008**
Operator	**B.Patel**	Misc Info	**M5MW14**
Date Acquired	**28-Apr-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.58	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.60	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.54	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.60	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	1.02	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.59	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.52	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.57	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.60	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.56	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	1.24	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.51	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	1.21	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.22	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.55	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.61	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.54	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.06	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.57	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.63	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.48	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.67	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.11	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.97	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	1.16	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.26	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	1.24	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID: **M5MW14**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30180 Location: M5 SDG No:

Matrix: (soil/water) WATER Lab Sample ID: 3018008

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN06397.D

Level: (low/med) LOW Date Received: 4/21/2003

% Moisture: decanted: (Y/N) N Date Extracted: 4/28/2003

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 4/28/2003

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		unknown	7.65	11	J
2.	000070-55-3	Benzenesulfonamide, 4-methyl-	20.44	6	JN

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **BN06398.D**
Operator **B.Patel**
Date Acquired **29-Apr-03**

Sample Name **3018009**
Misc Info **M5MW15**
Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	0.69	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.52	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.66	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.59	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.55	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	1.52	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.94	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.81	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.97	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.83	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	1.45	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.70	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	1.61	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.70	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.83	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.64	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.57	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.16	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	1.52	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.77	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	1.63	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.72	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.84	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.67	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.67	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.85	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	1.38	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.74	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.66	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	1.28	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	1.53	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.66	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.49	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.63	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.62	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	1.35	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.89	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.54	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.88	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.62	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.88	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BN06398.D**	Sample Name	**3018009**
Operator	**B.Patel**	Misc Info	**M5MW15**
Date Acquired	**29-Apr-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.58	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.60	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.54	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.60	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	1.02	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.59	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.52	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.57	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.60	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.56	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	1.24	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.51	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	1.21	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.22	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.55	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.61	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.54	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.06	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.57	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.63	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.48	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.67	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.11	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.97	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	1.16	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.26	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	1.24	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID: **M5MW15**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30180 Location: M5 SDG No:

Matrix: (soil/water) WATER Lab Sample ID: 3018009

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN06398.D

Level: (low/med) LOW Date Received: 4/21/2003

% Moisture: decanted: (Y/N) N Date Extracted: 4/28/2003

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 4/29/2003

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.65	11	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BN06399.D**	Sample Name	**3018010**
Operator	**B.Patel**	Misc Info	**M5MW16**
Date Acquired	**29-Apr-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	0.69	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.52	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.66	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.59	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.55	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	1.52	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.94	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.81	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.97	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.83	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	1.45	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.70	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	1.61	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.70	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.83	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.64	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.57	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.16	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	1.52	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.77	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	1.63	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.72	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.84	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.67	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.67	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.85	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	1.38	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.74	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.66	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	1.28	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	1.53	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.66	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.49	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.63	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.62	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	1.35	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.89	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.54	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.88	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.62	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.88	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BN06399.D**	Sample Name	**3018010**
Operator	**B.Patel**	Misc Info	**M5MW16**
Date Acquired	**29-Apr-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.58	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.60	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.54	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.60	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	1.02	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.59	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.52	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.57	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.60	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.56	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	1.24	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.51	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	1.21	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.22	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.55	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.61	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.54	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.06	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.57	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.63	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.48	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.67	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.11	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.97	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	1.16	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.26	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	1.24	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID: **M5MW16**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30180 Location: M5 SDG No:

Matrix: (soil/water) WATER Lab Sample ID: 3018010

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN06399.D

Level: (low/med) LOW Date Received: 4/21/2003

% Moisture: decanted: (Y/N) N Date Extracted: 4/28/2003

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 4/29/2003

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.66	10	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BN06400.D**	Sample Name	**3018011**
Operator	**B.Patel**	Misc Info	**M5MW18**
Date Acquired	**29-Apr-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	0.69	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.52	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.66	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.59	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.55	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	1.52	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.94	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.81	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.97	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.83	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	1.45	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.70	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	1.61	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.70	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.83	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.64	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.57	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.16	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	1.52	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.77	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	1.63	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.72	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.84	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.67	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.67	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.85	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	1.38	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.74	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.66	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	1.28	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	1.53	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.66	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.49	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.63	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.62	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	1.35	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.89	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.54	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.88	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.62	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.88	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BN06400.D**	Sample Name	**3018011**
Operator	**B.Patel**	Misc Info	**M5MW18**
Date Acquired	**29-Apr-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.58	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.60	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.54	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.60	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	1.02	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.59	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.52	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.57	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.60	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.56	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	1.24	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.51	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	1.21	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.22	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.55	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.61	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.54	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.06	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.57	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.63	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.48	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.67	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.11	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.97	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	1.16	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.26	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	1.24	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID: **M5MW18**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30180 Location: M5 SDG No:

Matrix: (soil/water) WATER Lab Sample ID: 3018011

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN06400.D

Level: (low/med) LOW Date Received: 4/21/2003

% Moisture: decanted: (Y/N) N Date Extracted: 4/28/2003

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 4/29/2003

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.65	12	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **BN06401.D**
Operator **B.Patel**
Date Acquired **29-Apr-03**

Sample Name **3018012**
Misc Info **M5MW19**
Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	0.69	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.52	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.66	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.59	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.55	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	1.52	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.94	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.81	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.97	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.83	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	1.45	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.70	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	1.61	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.70	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.83	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.64	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.57	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.16	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	1.52	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.77	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	1.63	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.72	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.84	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.67	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.67	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.85	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	1.38	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.74	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.66	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	1.28	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	1.53	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.66	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.49	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.63	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.62	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	1.35	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.89	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.54	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.88	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.62	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.88	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BN06401.D**	Sample Name	**3018012**
Operator	**B.Patel**	Misc Info	**M5MW19**
Date Acquired	**29-Apr-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.58	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.60	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.54	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.60	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	1.02	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.59	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.52	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.57	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.60	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.56	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	1.24	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.51	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	1.21	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.22	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.55	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.61	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.54	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.06	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.57	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.63	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.48	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.67	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.11	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.97	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	1.16	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.26	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	1.24	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID: **M5MW19**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30180 Location: M5 SDG No:

Matrix: (soil/water) WATER Lab Sample ID: 3018012

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN06401.D

Level: (low/med) LOW Date Received: 4/21/2003

% Moisture: decanted: (Y/N) N Date Extracted: 4/28/2003

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 4/29/2003

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.66	11	J
2.	unknown	18.99	4	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **BN06402.D**
Operator **B.Patel**
Date Acquired **29-Apr-03**

Sample Name **3018013**
Misc Info **M5MW20**
Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	0.69	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.52	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.66	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.59	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.55	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	1.52	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.94	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.81	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.97	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.83	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	1.45	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.70	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	1.61	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.70	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.83	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.64	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.57	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.16	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	1.52	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.77	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	1.63	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.72	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.84	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.67	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.67	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.85	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	1.38	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.74	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.66	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	1.28	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	1.53	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.66	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.49	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.63	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.62	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	1.35	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.89	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.54	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.88	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.62	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.88	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BN06402.D**	Sample Name	**3018013**
Operator	**B.Patel**	Misc Info	**M5MW20**
Date Acquired	**29-Apr-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.58	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.60	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.54	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.60	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	1.02	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.59	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.52	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.57	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.60	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.56	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	1.24	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.51	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	1.21	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.22	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.55	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.61	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.54	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.06	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.57	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.63	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.48	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.67	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.11	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.97	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	1.16	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.26	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	1.24	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID: **M5MW20**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30180 Location: M5 SDG No:

Matrix: (soil/water) WATER Lab Sample ID: 3018013

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN06402.D

Level: (low/med) LOW Date Received: 4/21/2003

% Moisture: decanted: (Y/N) N Date Extracted: 4/28/2003

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 4/29/2003

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.66	10	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **BN06403.D**
Operator **B.Patel**
Date Acquired **29-Apr-03**

Sample Name **3018014**
Misc Info **M5MW23**
Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	0.69	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.52	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.66	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.59	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.55	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	1.52	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.94	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.81	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.97	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.83	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	1.45	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.70	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	1.61	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.70	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.83	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.64	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.57	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.16	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	1.52	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.77	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	1.63	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.72	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.84	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.67	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.67	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.85	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	1.38	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.74	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.66	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	1.28	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	1.53	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.66	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.49	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.63	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.62	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	1.35	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.89	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.54	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.88	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.62	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.88	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BN06403.D**	Sample Name	**3018014**
Operator	**B.Patel**	Misc Info	**M5MW23**
Date Acquired	**29-Apr-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.58	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.60	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.54	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.60	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	1.02	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.59	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.52	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.57	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.60	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.56	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	1.24	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.51	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	1.21	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.22	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.55	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.61	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.54	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.06	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.57	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.63	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.48	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.67	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.11	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.97	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	1.16	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.26	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	1.24	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID: **M5MW23**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30180 Location: M5 SDG No:

Matrix: (soil/water) WATER Lab Sample ID: 3018014

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN06403.D

Level: (low/med) LOW Date Received: 4/21/2003

% Moisture: decanted: (Y/N) N Date Extracted: 4/28/2003

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 4/29/2003

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.66	10	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **BN06404.D**
Operator **B.Patel**
Date Acquired **29-Apr-03**

Sample Name **3018015**
Misc Info **M5MW25**
Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	0.69	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.52	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.66	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.59	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.55	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	1.52	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.94	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.81	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.97	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.83	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	1.45	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.70	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	1.61	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.70	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.83	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.64	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.57	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.16	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	1.52	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.77	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	1.63	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.72	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.84	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.67	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.67	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.85	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	1.38	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.74	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.66	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	1.28	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	1.53	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.66	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.49	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.63	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.62	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	1.35	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.89	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.54	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.88	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.62	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.88	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name **BN06404.D**
Operator **B.Patel**
Date Acquired **29-Apr-03**

Sample Name **3018015**
Misc Info **M5MW25**
Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.58	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.60	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.54	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.60	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	1.02	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.59	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.52	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.57	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.60	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.56	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	1.24	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.51	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	1.21	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.22	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.55	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.61	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.54	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.06	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.57	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.63	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.48	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.67	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.11	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.97	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	1.16	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.26	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	1.24	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field ID: **M5MW25**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30180 Location: M5 SDG No: _____

Matrix: (soil/water) WATER Lab Sample ID: 3018015

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BN06404.D

Level: (low/med) LOW Date Received: 4/21/2003

% Moisture: _____ decanted: (Y/N) N Date Extracted: 4/28/2003

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 4/29/2003

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	7.65	9	J

U.S. Army, Fort Monmouth Environmental Laboratory.
173 Riverside Avenue, NJ 07703.

TABULATED ANALYTICAL REPORT
SW 846 608
Pesticides/PCB

mb 042503

Matrix: Aqueous
Date Extracted: 4/25/2003
Ext. Batch: 042503
Filename: 01030A.D
Date Analysed: 5/1/2003

Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.0011
319-85-7	beta-BHC	ND	0.0050
58-89-9	gamma-BHC	ND	0.0013
319-86-8	delta-BHC	ND	0.0016
76-44-8	Heptachlor	ND	0.0035
309-00-2	Aldrin	ND	0.0026
1024-57-3	Heptachlor epoxide	ND	0.0020
5103-71-9	gamma-Chlordane	ND	0.0007
5103-74-2	alpha-Chlordane	ND	0.0036
959-98-8	Endosulfan I	ND	0.0016
72-55-9	4,4'-DDE	ND	0.0021
60-57-1	Dieldrin	ND	0.0020
72-20-8	Endrin	ND	0.0032
33213-65-9	Endosulfan II	ND	0.0022
72-54-8	4,4'-DDD	ND	0.0020
7421-93-4	Endrin aldehyde	ND	0.0100
50-29-3	4,4'-DDT	ND	0.0052
1031-07-8	Endosulfan sulfate	ND	0.0026
53494-70-5	Endrin ketone	ND	0.0026
72-43-5	Methoxychlor	ND	0.0100
8001-35-2	Toxaphene	ND	0.0157
12674-11-2	Arochlor 1016	ND	0.0683
11104-28-2	Arochlor 1221	ND	0.0666
11141-16-5	Arochlor 1232	ND	0.0648
53469-21-9	Arochlor 1242	ND	0.0485
12672-29-6	Arochlor 1248	ND	0.0544
11097-69-1	Arochlor 1254	ND	0.0608
11096-82-5	Arochlor 1260	ND	0.0732

MDL = METHOD DETECTION LIMIT
ND =NOT DETECTED, BELOW MDL

Initial vol. (ml): 1000.00
Final vol. (ml): 10

U. S. Army, Fort Monmouth Environmental Laboratory.
173 Riverside Avenue, NJ 07703.

Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: M5 Wells, 2nd Qrtr.
Field ID: FIELDBLANK
Lab ID: 3018002
Filename: 01032.D
Lab Project : 30180

Location: M5 Wells
MATRIX: Aqueous
Ext. Batch: 042503
Date Extracted: 4/25/2003
Date Analyzed: 01-May-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

U. S. Army, Fort Monmouth Environmental Laboratory.
173 Riverside Avenue, NJ 07703.

Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: M5 Wells, 2nd Qrtr.
Field ID: Dupe
Lab ID: 3018003
Filename: 01033.D
Lab Project : 30180

Location: M5 Wells
MATRIX: Aqueous
Ext. Batch: 042503
Date Extracted: 4/25/2003
Date Analyzed: 01-May-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: M5 Wells, 2nd Qrtr.
Field ID: M5MW10
Lab ID: 3018004
Filename: 01034.D
Lab Project : 30180

Location: M5 Wells
MATRIX: Aqueous
Ext. Batch: 042503
Date Extracted: 4/25/2003
Date Analyzed: 01-May-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: M5 Wells, 2nd Qrtr.
Field ID: M5MW11
Lab ID: 3018005
Filename: 01035.D
Lab Project : 30180

Location: M5 Wells
MATRIX: Aqueous
Ext. Batch: 042503
Date Extracted: 4/25/2003
Date Analyzed: 01-May-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: M5 Wells, 2nd Qrtr.
Field ID: M5MW12
Lab ID: 3018006
Filename: 01036.D
Lab Project : 30180

Location: M5 Wells
MATRIX: Aqueous
Ext. Batch: 042503
Date Extracted: 4/25/2003
Date Analyzed: 01-May-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: M5 Wells, 2nd Qrtr.
Field ID: M5MW13
Lab ID: 3018007
Filename: 01037.D
Lab Project : 30180

Location: M5 Wells
MATRIX: Aqueous
Ext. Batch: 042503
Date Extracted: 4/25/2003
Date Analyzed: 01-May-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: M5 Wells, 2nd Qrtr.
Field ID: M5MW14
Lab ID: 3018008
Filename: 01038.D
Lab Project : 30180

Location: M5 Wells
MATRIX: Aqueous
Ext. Batch: 042503
Date Extracted: 4/25/2003
Date Analyzed: 01-May-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: M5 Wells, 2nd Qrtr.
Field ID: M5MW15
Lab ID: 3018009
Filename: 01039.D
Lab Project : 30180

Location: M5 Wells
MATRIX: Aqueous
Ext. Batch: 042503
Date Extracted: 4/25/2003
Date Analyzed: 01-May-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

U. S. Army, Fort Monmouth Environmental Laboratory.
173 Riverside Avenue, NJ 07703.

Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: M5 Wells, 2nd Qrtr.
Field ID: M5MW16
Lab ID: 3018010
Filename: 01040.D
Lab Project : 30180

Location: M5 Wells
MATRIX: Aqueous
Ext. Batch: 042503
Date Extracted: 4/25/2003
Date Analyzed: 01-May-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: M5 Wells, 2nd Qrtr.
Field ID: M5MW18
Lab ID: 3018011
Filename: 01041.D
Lab Project : 30180

Location: M5 Wells
MATRIX: Aqueous
Ext. Batch: 042503
Date Extracted: 4/25/2003
Date Analyzed: 01-May-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
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11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

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ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: M5 Wells, 2nd Qrtr.
Field ID: M5MW19
Lab ID: 3018012
Filename: 01042.D
Lab Project : 30180

Location: M5 Wells
MATRIX: Aqueous
Ext. Batch: 042503
Date Extracted: 4/25/2003
Date Analyzed: 01-May-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
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11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: M5 Wells, 2nd Qrtr.
Field ID: M5MW20
Lab ID: 3018013
Filename: 01043.D
Lab Project : 30180

Location: M5 Wells
MATRIX: Aqueous
Ext. Batch: 042503
Date Extracted: 4/25/2003
Date Analyzed: 01-May-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
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53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

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D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: M5 Wells, 2nd Qrtr.
Field ID: M5MW23
Lab ID: 3018014
Filename: 01044.D
Lab Project : 30180

Location: M5 Wells
MATRIX: Aqueous
Ext. Batch: 042503
Date Extracted: 4/25/2003
Date Analyzed: 01-May-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
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53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
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RL = Reporting Limit.
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Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: M5 Wells, 2nd Qrtr.
Field ID: M5MW25
Lab ID: 3018015
Filename: 01045.D
Lab Project : 30180

Location: M5 Wells
MATRIX: Aqueous
Ext. Batch: 042503
Date Extracted: 4/25/2003
Date Analyzed: 01-May-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
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11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

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D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 30180
Sample Prepared:

Site: M5
Ft. Monmouth, New Jersey

Field ID#: Method Blank

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	05/20/03	197	200	100	10.0
Antimony	05/20/03	ND	20	10	2.0
Arsenic	05/20/03	ND	8	5.0	2.0
Barium	05/20/03	ND	2000	10	0.5
Beryllium	05/20/03	ND	20	0.25	0.5
Cadmium	05/20/03	ND	4	1.0	0.5
Calcium	05/20/03	109	NLE	100	20.0
Chromium	05/20/03	ND	100	10	0.5
Cobalt	05/20/03	ND	NLE	5.0	0.5
Copper	05/20/03	ND	1000	10	2.0
Iron	05/20/03	ND	300	200	10.0
Lead	05/20/03	ND	10	5.0	1.0
Magnesium	05/20/03	ND	NLE	100	10.0
Manganese	05/20/03	ND	50	5.0	0.5
Mercury	05/15/03	ND	2	0.20	0.15
Nickel	05/20/03	ND	100	5.0	1.0
Potassium	05/20/03	646	NLE	200	40.0
Selenium	05/20/03	ND	50	10	3.0
Silver	05/20/03	ND	20	5.0	1.0
Sodium	05/20/03	ND	50000	200	20.0
Thallium	05/20/03	ND	10	10	2.0
Vanadium	05/20/03	ND	NLE	5.0	0.5
Zinc	05/20/03	ND	5000	500	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3018002
Sample Received: 04/21/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: Field Blank

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	05/20/03	232	200	100	10.0
Antimony	05/20/03	ND	20	10	2.0
Arsenic	05/20/03	ND	8	5.0	2.0
Barium	05/20/03	ND	2000	10	0.5
Beryllium	05/20/03	ND	20	0.25	0.5
Cadmium	05/20/03	ND	4	1.0	0.5
Calcium	05/20/03	72	NLE	100	20.0
Chromium	05/20/03	ND	100	10	0.5
Cobalt	05/20/03	ND	NLE	5.0	0.5
Copper	05/20/03	ND	1000	10	2.0
Iron	05/20/03	ND	300	200	10.0
Lead	05/20/03	ND	10	5.0	1.0
Magnesium	05/20/03	ND	NLE	100	10.0
Manganese	05/20/03	ND	50	5.0	0.5
Mercury	05/15/03	ND	2	0.20	0.15
Nickel	05/20/03	ND	100	5.0	1.0
Potassium	05/20/03	ND	NLE	200	40.0
Selenium	05/20/03	ND	50	10	3.0
Silver	05/20/03	ND	20	5.0	1.0
Sodium	05/20/03	270	50000	200	20.0
Thallium	05/20/03	ND	10	10	2.0
Vanadium	05/20/03	ND	NLE	5.0	0.5
Zinc	05/20/03	ND	5000	500	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3018003
Sample Received: 04/21/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: Dupe

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	05/20/03	1140	200	100	10.0
Antimony	05/20/03	ND	20	10	2.0
Arsenic	05/20/03	10.5	8	5.0	2.0
Barium	05/20/03	14.0	2000	10	0.5
Beryllium	05/20/03	ND	20	0.25	0.5
Cadmium	05/20/03	1.58	4	1.0	0.5
Calcium	05/20/03	8620	NLE	100	20.0
Chromium	05/20/03	12.5	100	10	0.5
Cobalt	05/20/03	ND	NLE	5.0	0.5
Copper	05/20/03	ND	1000	10	2.0
Iron	05/20/03	29700	300	200	10.0
Lead	05/20/03	ND	10	5.0	1.0
Magnesium	05/20/03	1980	NLE	100	10.0
Manganese	05/20/03	20.3	50	5.0	0.5
Mercury	05/15/03	ND	2	0.20	0.15
Nickel	05/20/03	ND	100	5.0	1.0
Potassium	05/20/03	3020	NLE	200	40.0
Selenium	05/20/03	ND	50	10	3.0
Silver	05/20/03	ND	20	5.0	1.0
Sodium	05/20/03	61200	50000	200	20.0
Thallium	05/20/03	ND	10	10	2.0
Vanadium	05/20/03	ND	NLE	5.0	0.5
Zinc	05/20/03	12.6	5000	500	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3018004
Sample Received: 04/21/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: M5MW10

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	05/20/03	241	200	100	10.0
Antimony	05/20/03	ND	20	10	2.0
Arsenic	05/20/03	ND	8	5.0	2.0
Barium	05/20/03	172	2000	10	0.5
Beryllium	05/20/03	ND	20	0.25	0.5
Cadmium	05/20/03	1.49	4	1.0	0.5
Calcium	05/20/03	29400	NLE	100	20.0
Chromium	05/20/03	1.46	100	10	0.5
Cobalt	05/20/03	3.37	NLE	5.0	0.5
Copper	05/20/03	8.87	1000	10	2.0
Iron	05/20/03	15400	300	200	10.0
Lead	05/20/03	2.34	10	5.0	1.0
Magnesium	05/20/03	18000	NLE	100	10.0
Manganese	05/20/03	1060	50	5.0	0.5
Mercury	05/15/03	ND	2	0.20	0.15
Nickel	05/20/03	3.59	100	5.0	1.0
Potassium	05/20/03	6630	NLE	200	40.0
Selenium	05/20/03	ND	50	10	3.0
Silver	05/20/03	ND	20	5.0	1.0
Sodium	05/20/03	93800	50000	200	20.0
Thallium	05/20/03	ND	10	10	2.0
Vanadium	05/20/03	1.39	NLE	5.0	0.5
Zinc	05/20/03	99.3	5000	500	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3018005
Sample Received: 04/21/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: M5MW11

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	05/20/03	185	200	100	10.0
Antimony	05/20/03	ND	20	10	2.0
Arsenic	05/20/03	2.80	8	5.0	2.0
Barium	05/20/03	6.33	2000	10	0.5
Beryllium	05/20/03	ND	20	0.25	0.5
Cadmium	05/20/03	0.51	4	1.0	0.5
Calcium	05/20/03	14400	NLE	100	20.0
Chromium	05/20/03	1.75	100	10	0.5
Cobalt	05/20/03	ND	NLE	5.0	0.5
Copper	05/20/03	1.15	1000	10	2.0
Iron	05/20/03	4000	300	200	10.0
Lead	05/20/03	ND	10	5.0	1.0
Magnesium	05/20/03	4890	NLE	100	10.0
Manganese	05/20/03	22.3	50	5.0	0.5
Mercury	05/15/03	ND	2	0.20	0.15
Nickel	05/20/03	1.27	100	5.0	1.0
Potassium	05/20/03	1840	NLE	200	40.0
Selenium	05/20/03	ND	50	10	3.0
Silver	05/20/03	ND	20	5.0	1.0
Sodium	05/20/03	16600	50000	200	20.0
Thallium	05/20/03	ND	10	10	2.0
Vanadium	05/20/03	3.92	NLE	5.0	0.5
Zinc	05/20/03	101	5000	500	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3018006
Sample Received: 04/21/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: M5MW12

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	05/20/03	639	200	100	10.0
Antimony	05/20/03	ND	20	10	2.0
Arsenic	05/20/03	ND	8	5.0	2.0
Barium	05/20/03	29.3	2000	10	0.5
Beryllium	05/20/03	ND	20	0.25	0.5
Cadmium	05/20/03	1.07	4	1.0	0.5
Calcium	05/20/03	20100	NLE	100	20.0
Chromium	05/20/03	6.11	100	10	0.5
Cobalt	05/20/03	ND	NLE	5.0	0.5
Copper	05/20/03	7.50	1000	10	2.0
Iron	05/20/03	13000	300	200	10.0
Lead	05/20/03	1.72	10	5.0	1.0
Magnesium	05/20/03	26300	NLE	100	10.0
Manganese	05/20/03	67.1	50	5.0	0.5
Mercury	05/15/03	ND	2	0.20	0.15
Nickel	05/20/03	ND	100	5.0	1.0
Potassium	05/20/03	18600	NLE	200	40.0
Selenium	05/20/03	ND	50	10	3.0
Silver	05/20/03	ND	20	5.0	1.0
Sodium	05/20/03	49400	50000	200	20.0
Thallium	05/20/03	ND	10	10	2.0
Vanadium	05/20/03	3.70	NLE	5.0	0.5
Zinc	05/20/03	16.4	5000	500	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3018007
Sample Received: 04/21/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: M5MW13

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	05/20/03	152	200	100	10.0
Antimony	05/20/03	ND	20	10	2.0
Arsenic	05/20/03	ND	8	5.0	2.0
Barium	05/20/03	133	2000	10	0.5
Beryllium	05/20/03	ND	20	0.25	0.5
Cadmium	05/20/03	1.54	4	1.0	0.5
Calcium	05/20/03	25800	NLE	100	20.0
Chromium	05/20/03	1.64	100	10	0.5
Cobalt	05/20/03	ND	NLE	5.0	0.5
Copper	05/20/03	ND	1000	10	2.0
Iron	05/20/03	20900	300	200	10.0
Lead	05/20/03	ND	10	5.0	1.0
Magnesium	05/20/03	15200	NLE	100	10.0
Manganese	05/20/03	415	50	5.0	0.5
Mercury	05/15/03	ND	2	0.20	0.15
Nickel	05/20/03	ND	100	5.0	1.0
Potassium	05/20/03	5430	NLE	200	40.0
Selenium	05/20/03	ND	50	10	3.0
Silver	05/20/03	ND	20	5.0	1.0
Sodium	05/20/03	89600	50000	200	20.0
Thallium	05/20/03	ND	10	10	2.0
Vanadium	05/20/03	2.06	NLE	5.0	0.5
Zinc	05/20/03	7.67	5000	500	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3018008
Sample Received: 04/21/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: M5MW14

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	05/20/03	174	200	100	10.0
Antimony	05/20/03	ND	20	10	2.0
Arsenic	05/20/03	ND	8	5.0	2.0
Barium	05/20/03	210	2000	10	0.5
Beryllium	05/20/03	ND	20	0.25	0.5
Cadmium	05/20/03	1.15	4	1.0	0.5
Calcium	05/20/03	58500	NLE	100	20.0
Chromium	05/20/03	3.81	100	10	0.5
Cobalt	05/20/03	ND	NLE	5.0	0.5
Copper	05/20/03	ND	1000	10	2.0
Iron	05/20/03	21100	300	200	10.0
Lead	05/20/03	ND	10	5.0	1.0
Magnesium	05/20/03	20900	NLE	100	10.0
Manganese	05/20/03	35.7	50	5.0	0.5
Mercury	05/15/03	ND	2	0.20	0.15
Nickel	05/20/03	ND	100	5.0	1.0
Potassium	05/20/03	14000	NLE	200	40.0
Selenium	05/20/03	ND	50	10	3.0
Silver	05/20/03	ND	20	5.0	1.0
Sodium	05/20/03	9900	50000	200	20.0
Thallium	05/20/03	ND	10	10	2.0
Vanadium	05/20/03	0.819	NLE	5.0	0.5
Zinc	05/20/03	7.59	5000	500	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3018009
Sample Received: 04/21/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: M5MW15

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	05/20/03	1790	200	100	10.0
Antimony	05/20/03	ND	20	10	2.0
Arsenic	05/20/03	ND	8	5.0	2.0
Barium	05/20/03	163	2000	10	0.5
Beryllium	05/20/03	2.22	20	0.25	0.5
Cadmium	05/20/03	1.28	4	1.0	0.5
Calcium	05/20/03	13000	NLE	100	20.0
Chromium	05/20/03	1.81	100	10	0.5
Cobalt	05/20/03	17.2	NLE	5.0	0.5
Copper	05/20/03	ND	1000	10	2.0
Iron	05/20/03	586	300	200	10.0
Lead	05/20/03	ND	10	5.0	1.0
Magnesium	05/20/03	24100	NLE	100	10.0
Manganese	05/20/03	34.7	50	5.0	0.5
Mercury	05/15/03	ND	2	0.20	0.15
Nickel	05/20/03	33.9	100	5.0	1.0
Potassium	05/20/03	4950	NLE	200	40.0
Selenium	05/20/03	ND	50	10	3.0
Silver	05/20/03	ND	20	5.0	1.0
Sodium	05/20/03	17700	50000	200	20.0
Thallium	05/20/03	ND	10	10	2.0
Vanadium	05/20/03	0.821	NLE	5.0	0.5
Zinc	05/20/03	221	5000	500	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3018010
Sample Received: 04/21/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: M5MW16

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	05/20/03	280	200	100	10.0
Antimony	05/20/03	ND	20	10	2.0
Arsenic	05/20/03	13.6	8	5.0	2.0
Barium	05/20/03	154	2000	10	0.5
Beryllium	05/20/03	ND	20	0.25	0.5
Cadmium	05/20/03	1.12	4	1.0	0.5
Calcium	05/20/03	18700	NLE	100	20.0
Chromium	05/20/03	1.15	100	10	0.5
Cobalt	05/20/03	1.90	NLE	5.0	0.5
Copper	05/20/03	ND	1000	10	2.0
Iron	05/20/03	16400	300	200	10.0
Lead	05/20/03	ND	10	5.0	1.0
Magnesium	05/20/03	6890	NLE	100	10.0
Manganese	05/20/03	84.7	50	5.0	0.5
Mercury	05/15/03	ND	2	0.20	0.15
Nickel	05/20/03	7.31	100	5.0	1.0
Potassium	05/20/03	4860	NLE	200	40.0
Selenium	05/20/03	ND	50	10	3.0
Silver	05/20/03	ND	20	5.0	1.0
Sodium	05/20/03	25800	50000	200	20.0
Thallium	05/20/03	ND	10	10	2.0
Vanadium	05/20/03	1.30	NLE	5.0	0.5
Zinc	05/20/03	17.1	5000	500	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3018011
Sample Received: 04/21/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: M5MW18

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	05/20/03	800	200	100	10.0
Antimony	05/20/03	ND	20	10	2.0
Arsenic	05/20/03	20.8	8	5.0	2.0
Barium	05/20/03	4490	2000	10	0.5
Beryllium	05/20/03	0.62	20	0.25	0.5
Cadmium	05/20/03	11.4	4	1.0	0.5
Calcium	05/20/03	41500	NLE	100	20.0
Chromium	05/20/03	2.05	100	10	0.5
Cobalt	05/20/03	ND	NLE	5.0	0.5
Copper	05/20/03	ND	1000	10	2.0
Iron	05/20/03	204000	300	200	10.0
Lead	05/20/03	5.65	10	5.0	1.0
Magnesium	05/20/03	5390	NLE	100	10.0
Manganese	05/20/03	137	50	5.0	0.5
Mercury	05/15/03	ND	2	0.20	0.15
Nickel	05/20/03	ND	100	5.0	1.0
Potassium	05/20/03	10400	NLE	200	40.0
Selenium	05/20/03	ND	50	10	3.0
Silver	05/20/03	ND	20	5.0	1.0
Sodium	05/20/03	8130	50000	200	20.0
Thallium	05/20/03	ND	10	10	2.0
Vanadium	05/20/03	ND	NLE	5.0	0.5
Zinc	05/20/03	82.5	5000	500	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3018012
Sample Received: 04/21/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: M5MW19

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	05/20/03	97.4	200	100	10.0
Antimony	05/20/03	ND	20	10	2.0
Arsenic	05/20/03	ND	8	5.0	2.0
Barium	05/20/03	52.5	2000	10	0.5
Beryllium	05/20/03	ND	20	0.25	0.5
Cadmium	05/20/03	0.724	4	1.0	0.5
Calcium	05/20/03	22100	NLE	100	20.0
Chromium	05/20/03	ND	100	10	0.5
Cobalt	05/20/03	ND	NLE	5.0	0.5
Copper	05/20/03	ND	1000	10	2.0
Iron	05/20/03	11800	300	200	10.0
Lead	05/20/03	ND	10	5.0	1.0
Magnesium	05/20/03	4090	NLE	100	10.0
Manganese	05/20/03	55.2	50	5.0	0.5
Mercury	05/15/03	ND	2	0.20	0.15
Nickel	05/20/03	ND	100	5.0	1.0
Potassium	05/20/03	7780	NLE	200	40.0
Selenium	05/20/03	ND	50	10	3.0
Silver	05/20/03	ND	20	5.0	1.0
Sodium	05/20/03	8440	50000	200	20.0
Thallium	05/20/03	ND	10	10	2.0
Vanadium	05/20/03	ND	NLE	5.0	0.5
Zinc	05/20/03	8.60	5000	500	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3018013
Sample Received: 04/21/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: M5MW20

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	05/20/03	431	200	100	10.0
Antimony	05/20/03	ND	20	10	2.0
Arsenic	05/20/03	ND	8	5.0	2.0
Barium	05/20/03	30.7	2000	10	0.5
Beryllium	05/20/03	ND	20	0.25	0.5
Cadmium	05/20/03	ND	4	1.0	0.5
Calcium	05/20/03	63300	NLE	100	20.0
Chromium	05/20/03	3.30	100	10	0.5
Cobalt	05/20/03	ND	NLE	5.0	0.5
Copper	05/20/03	ND	1000	10	2.0
Iron	05/20/03	1370	300	200	10.0
Lead	05/20/03	ND	10	5.0	1.0
Magnesium	05/20/03	19700	NLE	100	10.0
Manganese	05/20/03	32.9	50	5.0	0.5
Mercury	05/15/03	ND	2	0.20	0.15
Nickel	05/20/03	3.21	100	5.0	1.0
Potassium	05/20/03	3940	NLE	200	40.0
Selenium	05/20/03	ND	50	10	3.0
Silver	05/20/03	ND	20	5.0	1.0
Sodium	05/20/03	115000	50000	200	20.0
Thallium	05/20/03	ND	10	10	2.0
Vanadium	05/20/03	2.23	NLE	5.0	0.5
Zinc	05/20/03	12.9	5000	500	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3018014
Sample Received: 04/21/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: M5MW23

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	05/20/03	1060	200	100	10.0
Antimony	05/20/03	ND	20	10	2.0
Arsenic	05/20/03	13.2	8	5.0	2.0
Barium	05/20/03	15.7	2000	10	0.5
Beryllium	05/20/03	ND	20	0.25	0.5
Cadmium	05/20/03	1.93	4	1.0	0.5
Calcium	05/20/03	8980	NLE	100	20.0
Chromium	05/20/03	12.9	100	10	0.5
Cobalt	05/20/03	ND	NLE	5.0	0.5
Copper	05/20/03	ND	1000	10	2.0
Iron	05/20/03	37000	300	200	10.0
Lead	05/20/03	ND	10	5.0	1.0
Magnesium	05/20/03	2070	NLE	100	10.0
Manganese	05/20/03	22.2	50	5.0	0.5
Mercury	05/15/03	ND	2	0.20	0.15
Nickel	05/20/03	ND	100	5.0	1.0
Potassium	05/20/03	3080	NLE	200	40.0
Selenium	05/20/03	ND	50	10	3.0
Silver	05/20/03	ND	20	5.0	1.0
Sodium	05/20/03	70100	50000	200	20.0
Thallium	05/20/03	ND	10	10	2.0
Vanadium	05/20/03	8.82	NLE	5.0	0.5
Zinc	05/20/03	15.2	5000	500	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3018015
Sample Received: 04/21/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: M5MW25

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	05/20/03	194	200	100	10.0
Antimony	05/20/03	ND	20	10	2.0
Arsenic	05/20/03	ND	8	5.0	2.0
Barium	05/20/03	47.5	2000	10	0.5
Beryllium	05/20/03	ND	20	0.25	0.5
Cadmium	05/20/03	0.84	4	1.0	0.5
Calcium	05/20/03	9460	NLE	100	20.0
Chromium	05/20/03	9.55	100	10	0.5
Cobalt	05/20/03	1.41	NLE	5.0	0.5
Copper	05/20/03	25.9	1000	10	2.0
Iron	05/20/03	2500	300	200	10.0
Lead	05/20/03	ND	10	5.0	1.0
Magnesium	05/20/03	3480	NLE	100	10.0
Manganese	05/20/03	24.1	50	5.0	0.5
Mercury	05/15/03	ND	2	0.20	0.15
Nickel	05/20/03	9.36	100	5.0	1.0
Potassium	05/20/03	2410	NLE	200	40.0
Selenium	05/20/03	ND	50	10	3.0
Silver	05/20/03	ND	20	5.0	1.0
Sodium	05/20/03	35100	50000	200	20.0
Thallium	05/20/03	ND	10	10	2.0
Vanadium	05/20/03	0.88	NLE	5.0	0.5
Zinc	05/20/03	305	5000	500	5.0

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

	Lab	Iron	Manganese	Aluminum	Chromium	Copper	Lead	Nickel	Depth to Water		Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet		-
NJDEP Criteria:	-	300	50	200	100	1000	10	100	-		-
05/08/1997	FMETL	4080	87	-	-	-	-	-	4.20		V,S,P,M
08/08/1997	FMETL	1680	59	-	-	-	-	-	4.40		V,S,P,M
10/29/1997	FMETL	7386	200	105	2.6	11	8	1.3	4.30		V,S,P,M
02/18/1998	FMETL	4899	138	96	ND	10	ND	2.3	3.00		V,S,P,M
05/06/1998	FMETL	6027	75	60.1	ND	10	ND	2.2	3.90		V,S,P,M
08/04/1998	FMETL	2850	35.4	103	3.33	ND	ND	ND	4.54		V,S,P,M
10/27/1998	FMETL	3690	47.8	106	3.98	6.27	2.45	1.53	5.03		V,S,P,M
02/02/1999	FMETL	8760	175	ND	3.17	5.29	ND	1.81	4.07		V,S,P,M
04/13/1999	FMETL	6110	135	43.9	4.09	22.1	3.79	0.584	3.81		V,S,P,M
09/13/1999	FMETL	4330	66.7	ND	5.11	10.1	ND	ND	4.83		V,S,P,M
11/18/1999	FMETL	5880	33.6	21.4	4.68	34.6	ND	1.71	4.65		V,S,P,M
03/03/2000	FMETL	11700	166	404	6.39	7.40	14.9	2.15	4.53		V,S,P,M
05/31/2000	FMETL	6360	86.8	429	8.43	ND	8.36	1.62	4.30		V,S,P,M
08/21/2000	FMETL	5940	218	259	ND	7.39	3.56	ND	4.43		V,S,P,M
12/11/2000	FMETL	3250	92.2	86.1	ND	ND	ND	ND	4.57		V,S,P,M
03/19/2001	FMETL	23600	796	80	5.8	11.0	ND	ND	4.37		V,S,P,M
06/05/2001	FMETL	14200	237	ND	2.83	16.7	4.50	4.64	4.32		V,S,P,M
09/05/2001	FMETL	4130	76.8	ND	3.73	17.1	ND	ND	4.89		V,S,P,M
10/04/2001	FMETL	27400	1180	ND	2.30	10.4	3.33	9.96	4.29		V,S,P,M
01/14/2002	FMETL	14400	524	25.5	2.90	5.11	3.42	ND	4.96		V,S,P,M
04/23/2002	FMETL	10000	112	79.8	3.80	10.1	3.07	ND	4.93		V,S,P,M
08/21/2002	FMETL	1460	62.3	246	2.05	14.9	ND	2.21	4.94		V,S,P,M
10/28/2002	FMETL	6260	304	281	2.45	10.8	4.45	ND	4.14		V,S,P,M
01/22/2003	FMETL	17100	252	306	5.53	6.26	3.39	ND	4.43		V,S,P,M
04/21/2003	FMETL	15400	1060	241	1.46	8.87	2.34	3.59	4.07		V,S,P,M

SOURCE: 00M5MW10

Sampling Dates:
05/08/1997 - 04/21/2003

NOTES:

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 3 of 14

Ag in blank > GW Criteria for 5/8/97.

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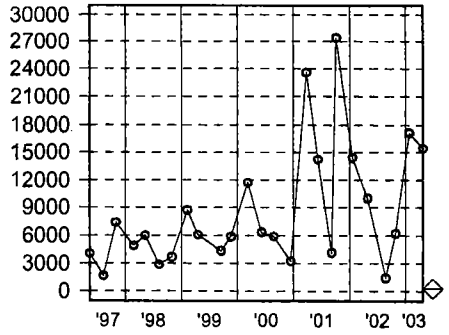
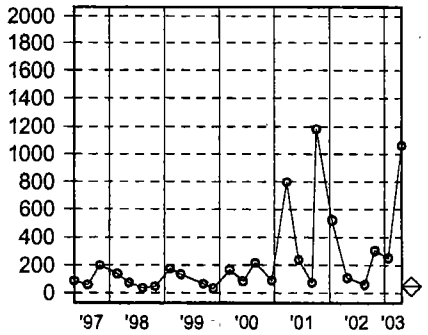
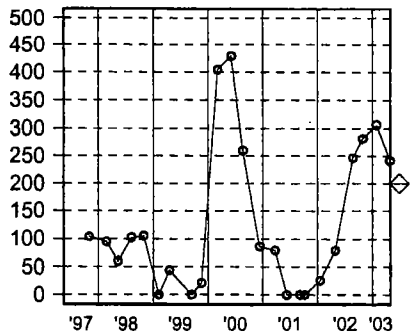
Iron
(ug/l)



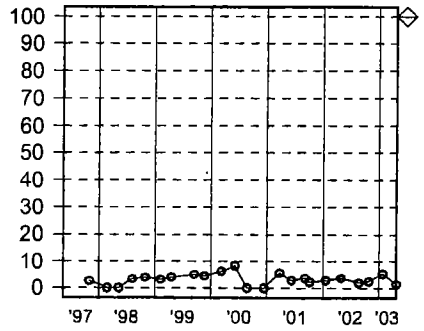
Manganese
(ug/l)



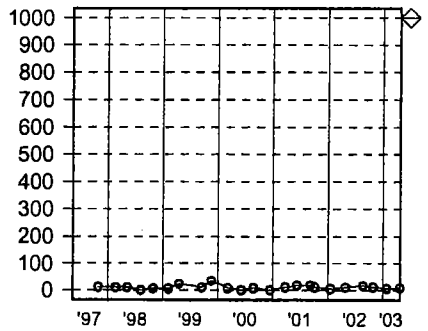
Aluminum
(ug/l)



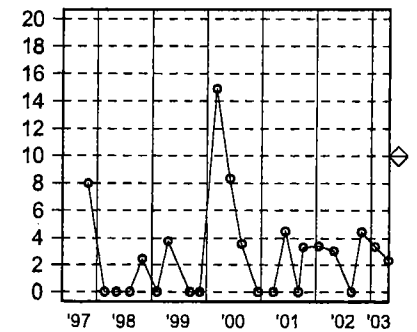
Chromium
(ug/l)



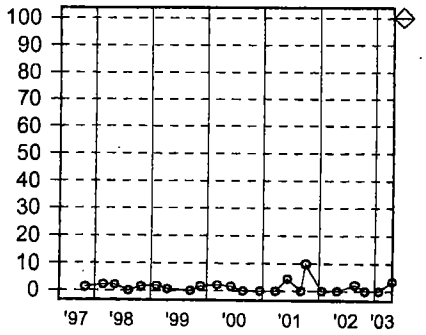
Copper
(ug/l)



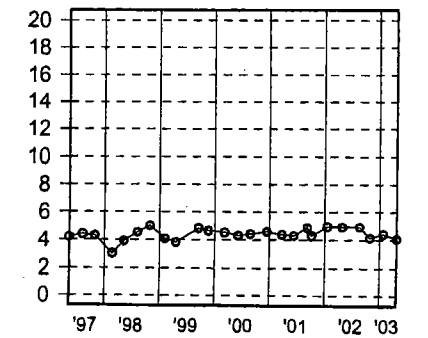
Lead
(ug/l)



Nickel
(ug/l)



Depth to Water
(Feet)



SOURCE: 00M5MW10

Sampling Dates:
05/08/1997 - 04/21/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 3 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

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FORT MONMOUTH
SELFM-PW-EV

06-04-2003 X:\MtechData\M-5\M-5.WSF

	Lab	cis-1,2-Dichloro ethene	Tri chloro ethene	Tetra chloro ethene	Iron	Manganese	Aluminum	Chromium	Copper	Depth to Water	Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet	-
NJDEP Criteria:	-	10	1	1	300	50	200	100	1000	-	-
05/08/1997	FMETL	ND	ND	63	4060	85	-	-	-	7.10	V,S,P,M
08/08/1997	FMETL	ND	ND	58	110	66		-	-	7.70	V,S,P,M
10/29/1997	FMETL	ND	ND	65	1551	12.7	669	5.4	16	7.75	V,S,P,M
02/18/1998	FMETL	ND	ND	39	305	32	222	ND	17	6.65	V,S,P,M
05/06/1998	FMETL	ND	ND	24.39	58	6.4	ND	ND	6.8	6.80	V,S,P,M
08/04/1998	FMETL	ND	ND	18.37	1500	16.9	4570	16.5	3.37	7.91	V,S,P,M
10/27/1998	FMETL	ND	ND	52.64	184	7.74	78.8	ND	7.86	8.51	V,S,P,M
02/02/1999	FMETL	ND	ND	5.16	1670	44.4	267	3.34	ND	6.99	V,S,P,M
04/13/1999	FMETL	ND	ND	33.38	227	9.71	92.9	1.72	8.28	7.16	V,S,P,M
09/13/1999	FMETL	ND	ND	49.25	680	16.5	ND	2.11	4.28	8.35	V,S,P,M
11/18/1999	FMETL	ND	ND	74.12	30.5	ND	ND	ND	8.54	7.62	V,S,P,M
03/03/2000	FMETL	ND	ND	30.62	330	9.56	189	ND	ND	7.21	V,S,P,M
05/31/2000	FMETL	ND	ND	13.38	657	10.1	76.2	2.72	ND	7.28	V,S,P,M
08/21/2000	FMETL	ND	ND	18.79	438	38.8	350	ND	108	6.97	V,S,P,M
08/21/2000D	FMETL	ND	ND	19.64	583	38	414	ND	37.2	6.97	V,S,P,M
12/11/2000	FMETL	ND	ND	18.86	5580	24.4	279	4.63	ND	7.43	V,S,P,M
12/11/2000D	FMETL	ND	ND	17.98	5610	25.4	260	4.22	ND	7.43	V,S,P,M
03/19/2001	FMETL	ND	ND	11.01	35200	17.7	240	3.1	8.0	6.77	V,S,P,M
06/05/2001	FMETL	ND	ND	11.27	6590	31.9	ND	1.46	8.21	7.26	V,S,P,M
09/05/2001	FMETL	6.64	1.28	6.11	31100	93.3	ND	2.04	68.4	8.05	V,S,P,M
10/04/2001	FMETL	ND	1.05	15.13	18500	62.7	75.2	2.45	2.70	7.88	V,S,P,M
01/14/2002	FMETL	ND	1.40	19.04	10400	174	31.1	2.04	2.25	7.83	V,S,P,M
04/23/2002	FMETL	ND	ND	14.43	7850	34.2	48.1	2.03	3.17	7.54	V,S,P,M
08/21/2002	FMETL	7.39	ND	8.90	18000	61.3	137	2.82	ND	8.25	V,S,P,M
10/28/2002	FMETL	ND	ND	8.14	2240	15.8	111	2.26	ND	6.81	V,S,P,M
01/22/2003	FMETL	ND	1.06	5.20	5250	15.6	202	2.49	ND	7.00	V,S,P,M
04/21/2003	FMETL	ND	ND	4.50	4000	22.3	185	1.75	1.15	6.70	V,S,P,M

SOURCE: 00M5MW11

Sampling Dates:
05/08/1997 - 04/21/2003

NOTES:

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 4 of 14

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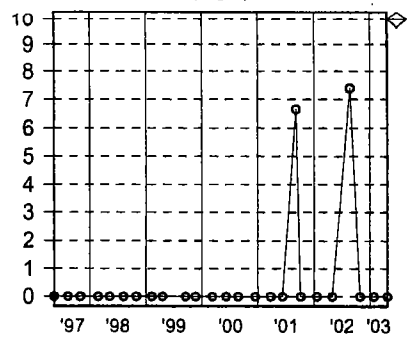
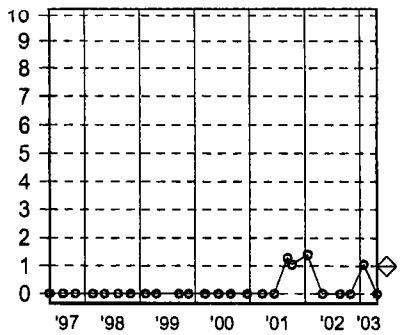
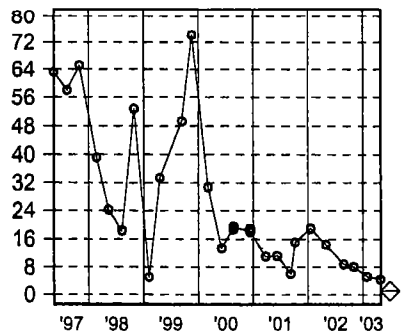
cis-1,2-Dichloroethene (ug/l)



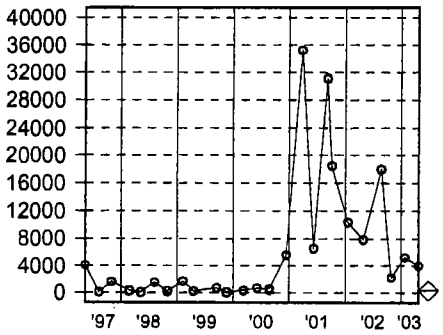
Trichloroethene (ug/l)



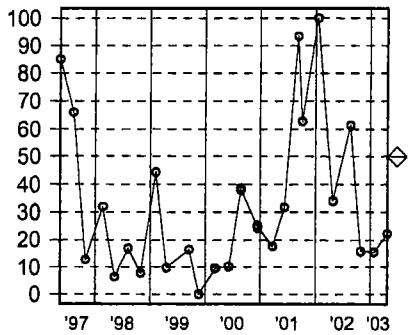
Tetrachlorethene (ug/l)



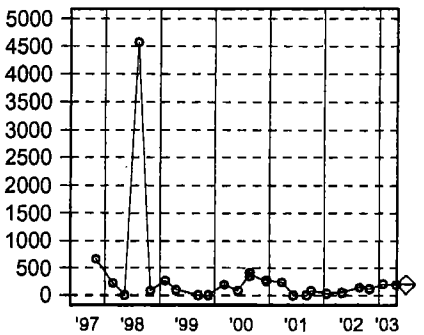
Iron (ug/l)



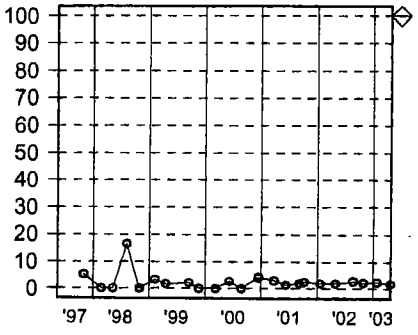
Manganese (ug/l)



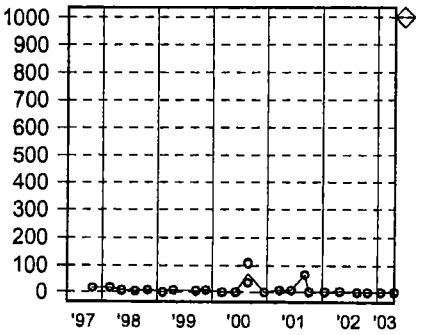
Aluminum (ug/l)



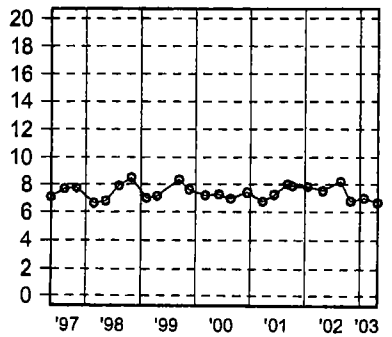
Chromium (ug/l)



Copper (ug/l)



Depth to Water (Feet)



SOURCE: 00M5MW11

Sampling Dates:
05/08/1997 - 04/21/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 4 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

06-04-2003 X:\MtechData\M-5\M-5.WSF

	Lab	Iron	Manganese	Aluminum	Chromium	Copper	Lead	Nickel	Depth to Water		Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet		-
NJDEP Criteria:	-	300	50	200	100	1000	10	100	-		-
10/07/1998	FMETL	51400	1340	3310	28.5	40	7	5.7	6.86		V,S,P,M
10/21/1998	FMETL	28400	853	359	5.87	ND	ND	ND	6.62		V,S,P,M
02/02/1999	FMETL	ND	ND	1910	13.2	ND	5.45	8.54	6.36		V,S,P,M
04/13/1999	FMETL	29500	263	1880	14.8	11.1	7.66	3.79	5.92		V,S,P,M
09/13/1999	FMETL	36500	566	119	13.3	ND	ND	ND	6.86		V,S,P,M
11/18/1999	FMETL	7020	76.9	80.9	6.06	19.2	ND	0.594	7.96		V,SP,M
03/06/2000	FMETL	13000	109	1060	17.1	3.71	6.78	6.29	5.95		V,S,P,M
05/31/2000	FMETL	11400	67.9	422	15.9	82.6	19.3	5.28	5.93		V,S,P,M
08/21/2000	FMETL	9060	97	503	ND	ND	1.83	ND	5.84		V,S,P,M
12/11/2000	FMETL	6620	43.8	189	1.88	ND	4.85	ND	5.89		V,S,P,M
03/19/2001	FMETL	15100	181	170	8.2	6.0	ND	ND	5.83		V,S,P,M
06/05/2001	FMETL	8030	50.8	ND	2.75	3.89	ND	3.31	5.73		V,S,P,M
09/05/2001	FMETL	19900	155	732	8.87	18.0	4.43	ND	6.29		V,S,P,M
10/04/2001	FMETL	ND	ND	24.6	2.28	3.42	1.30	ND	5.64		V,S,P,M
01/14/2002	FMETL	15600	328	192	5.28	155	16.8	7.06	5.21		V,S,P,M
04/23/2002	FMETL	16500	72.4	481	6.75	5.94	2.64	ND	5.98		V,S,P,M
08/21/2002	FMETL	13800	78.1	1140	9.97	7.24	2.40	ND	6.41		V,S,P,M
10/28/2002	FMETL	6090	54.6	90.9	1.95	5.87	2.12	ND	5.60		V,S,P,M
01/22/2003	FMETL	10700	45.9	830	7.71	13.3	4.16	ND	5.95		V,S,P,M
04/21/2003	FMETL	13000	67.1	639	6.11	7.50	1.72	ND	5.53		V,S,P,M

SOURCE: 00M5MW12

Sampling Dates:
10/07/1998 - 04/21/2003

NOTES:

Well installed 9/98.

FORT MONMOUTH

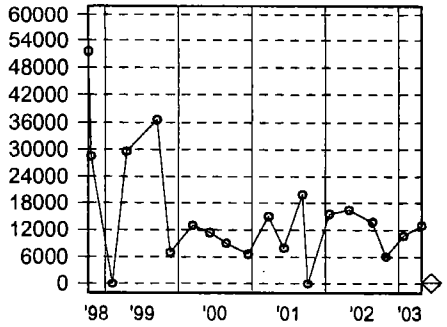
GW MONITORING
Bldg. M-5

Source 5 of 14

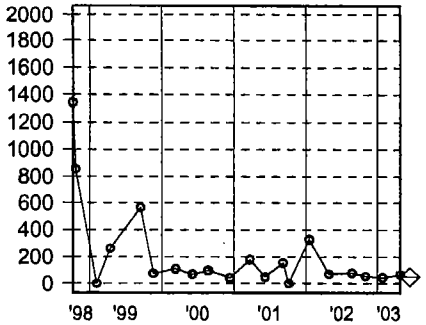
Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

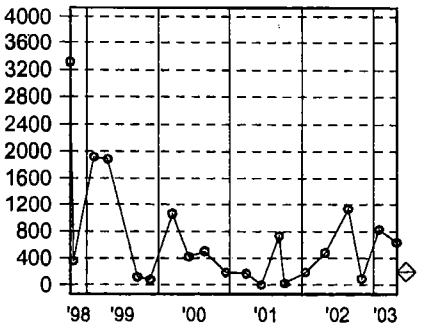
Iron
(ug/l)



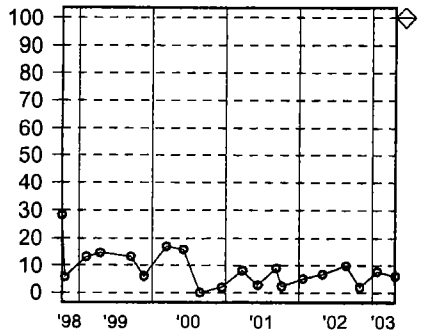
Manganese
(ug/l)



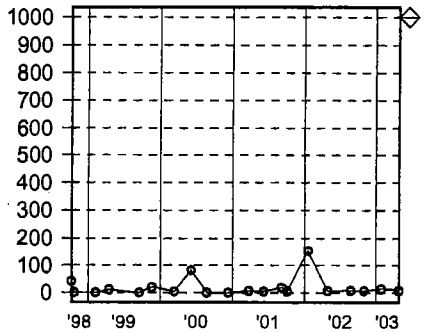
Aluminum
(ug/l)



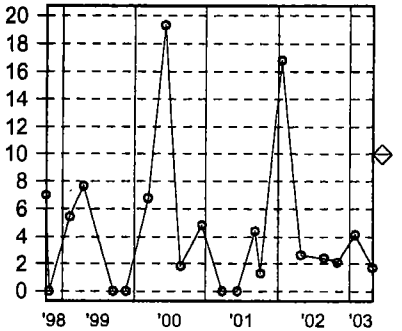
Chromium
(ug/l)



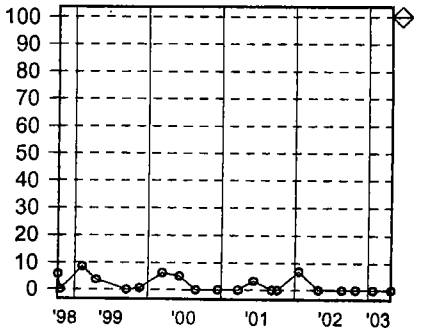
Copper
(ug/l)



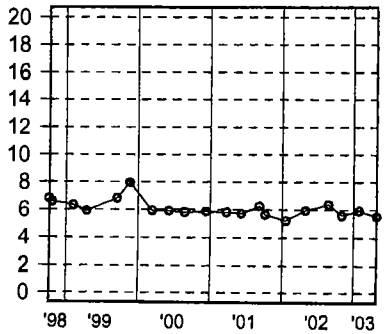
Lead
(ug/l)



Nickel
(ug/l)



Depth to Water
(Feet)



SOURCE: 00M5MW12

Sampling Dates:
10/07/1998 - 04/21/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 5 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

06-04-2003 X:\MtechData\M-5\M-5.WSF

	Lab	Iron	Manganese	Aluminum	Chromium	Copper	Lead	Nickel	Depth to Water		Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet		-
NJDEP Criteria:	-	300	50	200	100	1000	10	100	-		-
10/21/1998	FMETL	11700	203	287	5.25	ND	ND	ND	3.75		V,S,P,M
02/02/1999	FMETL	9810	137	244	5.80	5.72	17.6	3.35	2.67		V,S,P,M
04/13/1999	FMETL	1170	18.4	64.8	3.40	5	2.37	0.743	2.48		V,S,P,M
09/13/1999	FMETL	9520	203	225	14.1	7.59	ND	2.75	3.41		V,S,P,M
11/18/1999	FMETL	9860	87.8	901	13.4	15.2	3.04	1.80	3.40		V,S,P,M
03/06/2000	FMETL	26300	366	282	10.8	ND	3.62	4.70	2.64		V,S,P,M
05/31/2000	FMETL	12900	173	174	7.31	ND	ND	1.79	2.54		V,S,P,M
08/21/2000	FMETL	7170	261	301	ND	ND	2.49	2.11	2.39		V,S,P,M
12/11/2000	FMETL	16500	255	128	ND	ND	11.7	ND	2.68		V,S,P,M
03/19/2001	FMETL	24200	717	510	6.7	9.0	ND	ND	2.23		V,S,P,M
06/05/2001	FMETL	12100	357	ND	2.26	2.18	ND	3.98	2.44		V,S,P,M
09/05/2001	FMETL	17300	348	711	10.2	13.3	5.36	ND	3.12		V,S,P,M
10/04/2001	FMETL	27000	880	16.0	1.84	65.4	284	ND	2.24		V,S,P,M
01/14/2002	FMETL	33300	1030	66.5	2.69	5.79	1.81	ND	2.53		V,S,P,M
04/23/2002	FMETL	25200	391	606	6.75	113	11.1	3.85	2.73		V,S,P,M
08/21/2002	FMETL	11900	237	179	4.33	19.0	ND	ND	3.32		V,S,P,M
10/28/2002	FMETL	10900	364	132	1.94	ND	2.02	ND	2.08		V,S,P,M
01/22/2003	FMETL	29600	339	246	3.56	2.52	3.26	ND	2.37		V,S,P,M
04/21/2003	FMETL	20900	415	152	1.64	ND	ND	ND	2.03		V,S,P,M

SOURCE: 00M5MW13

Sampling Dates:
10/21/1998 - 04/21/2003

NOTES:

Well installed 9/98.

FORT MONMOUTH

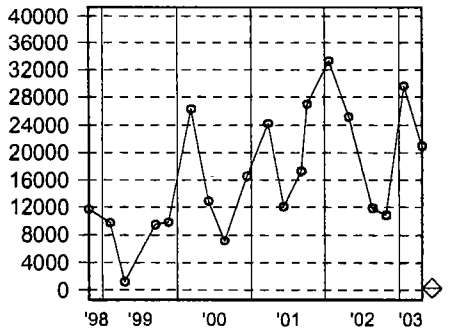
GW MONITORING
Bldg. M-5

Source 6 of 14

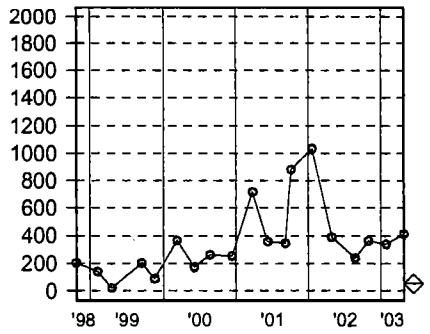
Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

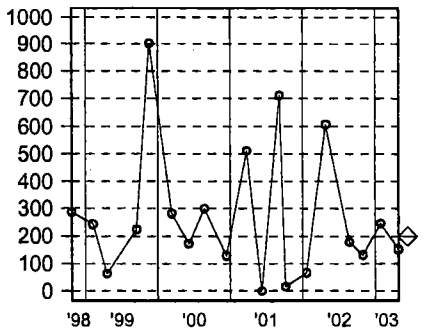
Iron
(ug/l)



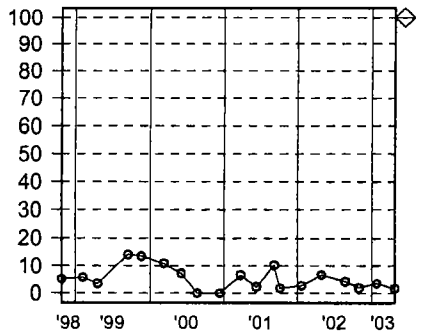
Manganese
(ug/l)



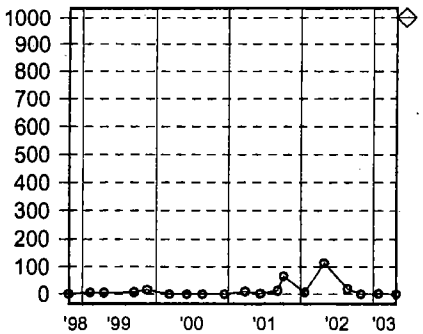
Aluminum
(ug/l)



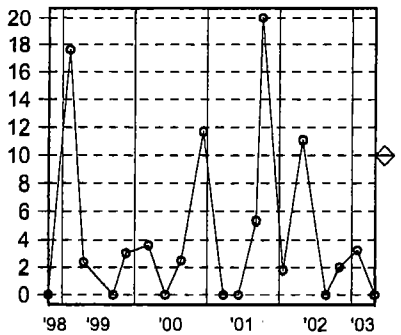
Chromium
(ug/l)



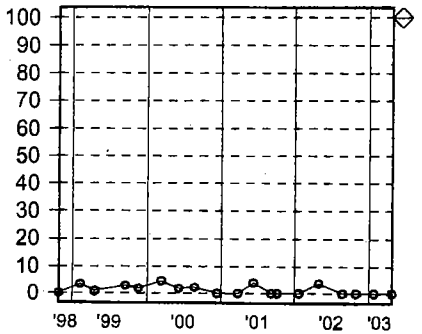
Copper
(ug/l)



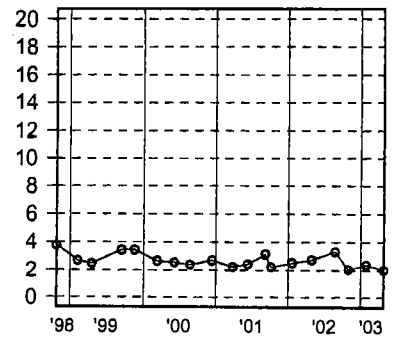
Lead
(ug/l)



Nickel
(ug/l)



Depth to Water
(Feet)



SOURCE: 00M5MW13

Sampling Dates:
10/21/1998 - 04/21/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 6 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

06-04-2003 X:\MtechData\M-5\M-5.WSF

	Lab	Iron	Manganese	Aluminum	Chromium	Copper	Lead	Nickel	Depth to Water		Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet		-
NJDEP Criteria:	-	300	50	200	100	1000	10	100	-		-
10/07/1998	FMETL	ND	ND	1210	10.8	ND	ND	2.2	3.54		V,S,P,M
10/21/1998	FMETL	911	15	120	1.16	ND	ND	ND	4.24		V,S,P,M
02/02/1999	FMETL	1910	20.7	172	5.25	8.6	ND	1.96	2.63		V,S,P,M
04/13/1999	FMETL	14000	191	658	9.65	7.48	6.77	2.70	2.57		V,S,P,M
09/13/1999	FMETL	571	16.4	ND	3.31	10.5	ND	ND	4.35		V,S,P,M
11/18/1999	FMETL	639	17.9	ND	2.92	9.21	ND	1.27	3.92		V,S,P,M
03/06/2000	FMETL	6660	29.1	79.2	5.06	ND	ND	3.66	2.75		V,S,P,M
05/31/2000	FMETL	2480	178	ND	4.45	ND	ND	5.55	3.55		V,S,P,M
08/21/2000	FMETL	844	96.3	242	ND	34.6	12	4.85	2.71		V,S,P,M
12/11/2000	FMETL	6920	21.5	234	1.53	ND	ND	ND	3.48		V,S,P,M
03/19/2001	FMETL	12400	18.4	20.0	2.60	8.0	ND	ND	3.66		V,S,P,M
06/05/2001	FMETL	758	14.3	ND	0.986	ND	ND	3.43	3.57		V,S,P,M
09/05/2001	FMETL	987	30.0	ND	1.04	8.84	ND	ND	3.30		V,S,P,M
10/04/2001	FMETL	953	14.2	27.2	1.16	10.5	ND	ND	2.91		V,S,P,M
01/14/2002	FMETL	6010	165	11.7	1.99	2.82	ND	ND	3.97		V,S,P,M
04/23/2002	FMETL	4850	18.5	69.0	2.40	3.52	ND	1.59	3.23		V,S,P,M
08/21/2002	FMETL	874	21.5	21.2	ND	11.8	1.81	ND	3.29		V,S,P,M
10/28/2002	FMETL	1110	632	18.3	1.97	ND	ND	3.70	2.29		V,S,P,M
01/22/2003	FMETL	20100	221	72.5	2.35	2.96	ND	1.46	3.42		V,S,P,M
04/21/2003	FMETL	21100	35.7	174	3.81	ND	ND	ND	3.17		V,S,P,M

SOURCE: 00M5MW14

Sampling Dates:
10/07/1998 - 04/21/2003

NOTES:

Well installed 9/98.

FORT MONMOUTH

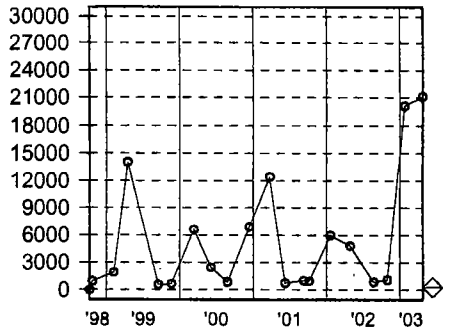
GW MONITORING
Bldg. M-5

Source 7 of 14

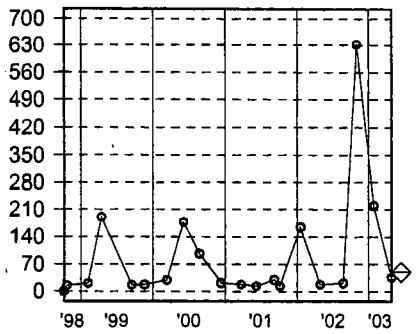
Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

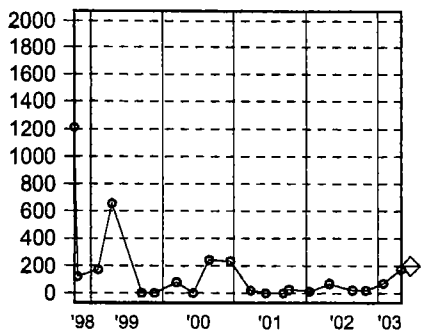
Iron
(ug/l)



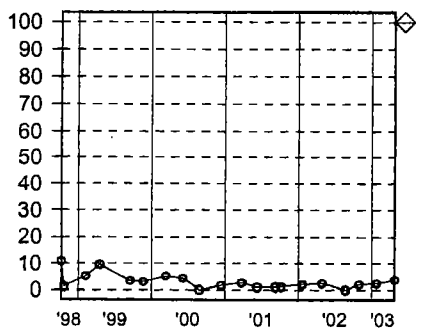
Manganese
(ug/l)



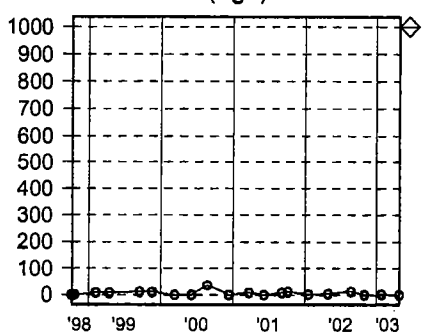
Aluminum
(ug/l)



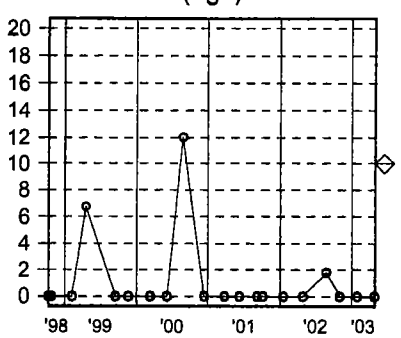
Chromium
(ug/l)



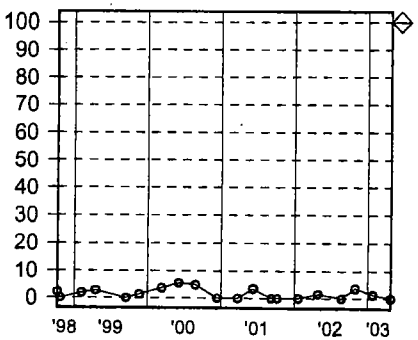
Copper
(ug/l)



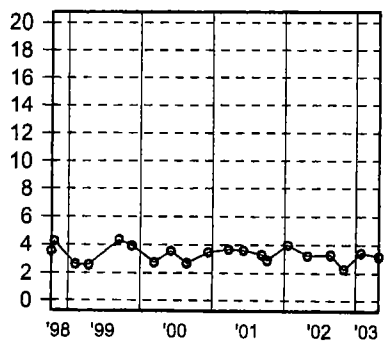
Lead
(ug/l)



Nickel
(ug/l)



Depth to Water
(Feet)



SOURCE: 00M5MW14

Sampling Dates:
10/07/1998 - 04/21/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 7 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

06-04-2003 X:\MtechData\M-5\M-5.WSF

	Lab	Iron	Manganese	Aluminum	Chromium	Copper	Lead	Nickel	Depth to Water		Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet		-
NJDEP Criteria:	-	300	50	200	100	1000	10	100	-		-
04/14/1999	FMETL	654	30.2	606	2.98	ND	ND	15.2	8.59		V,S,P,M
04/28/1999	FMETL	108	20.7	564	1.97	ND	ND	15.2	9.04		V,S,P,M
09/14/1999	FMETL	1050	15.7	702	5.30	5.18	ND	13.4	11.03		V,S,P,M
11/18/1999	FMETL	316	13.9	357	2.72	7.64	ND	14.2	9.87		V,S,P,M
03/03/2000	FMETL	477	16.8	508	ND	6.47	ND	19.1	8.68		V,S,P,M
05/31/2000	FMETL	203	18.2	441	3.88	ND	ND	18.5	8.88		V,S,P,M
08/21/2000	FMETL	510	27.3	933	ND	ND	ND	16.7	8.21		V,S,P,M
12/11/2000	FMETL	319	16.7	556	ND	ND	ND	12.4	9.48		V,S,P,M
03/19/2001	FMETL	300	23.9	1100	2.90	20.0	ND	25.0	7.88		V,S,P,M
06/05/2001	FMETL	150	31.1	996	2.27	ND	ND	36.0	7.93		V,S,P,M
09/05/2001	FMETL	788	27.1	1220	6.92	9.43	1.64	23.9	10.35		V,S,P,M
10/04/2001	FMETL	588	21.0	981	3.60	8.15	3.22	21.5	10.24		V,S,P,M
01/14/2002	FMETL	334	157	629	2.04	2.55	ND	21.3	10.51		V,S,P,M
04/23/2002	FMETL	48.2	19.5	676	1.78	2.33	ND	19.4	9.49		V,S,P,M
08/21/2002	FMETL	93.6	14.9	624	0.633	3.58	ND	16.2	10.70		V,S,P,M
10/28/2002	FMETL	797	15.5	511	1.25	ND	1.32	13.2	7.87		V,S,P,M
01/22/2003	FMETL	276	17.5	708	1.01	ND	ND	16.9	7.91		V,S,P,M
04/21/2003	FMETL	586	34.7	1790	1.81	ND	ND	33.9	7.27		V,S,P,M

SOURCE: 00M5MW15

Sampling Dates:
04/14/1999 - 04/21/2003

NOTES:

Installed 3/99

FORT MONMOUTH

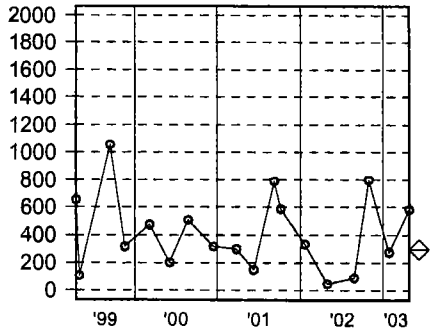
GW MONITORING
Bldg. M-5

Source 8 of 14

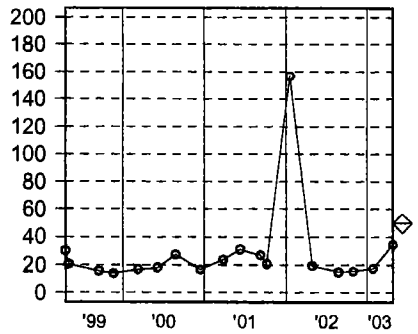
Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

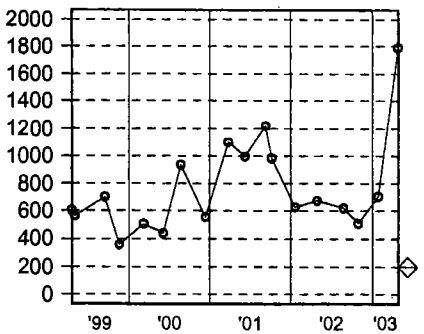
Iron
(ug/l)



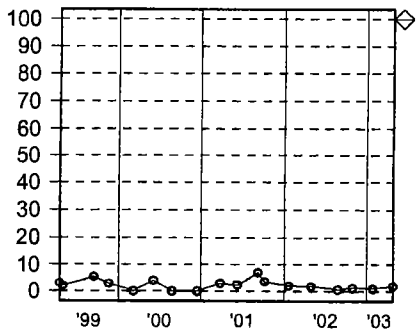
Manganese
(ug/l)



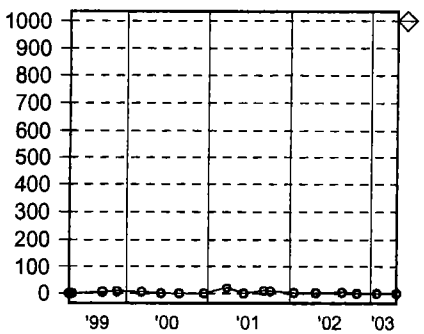
Aluminum
(ug/l)



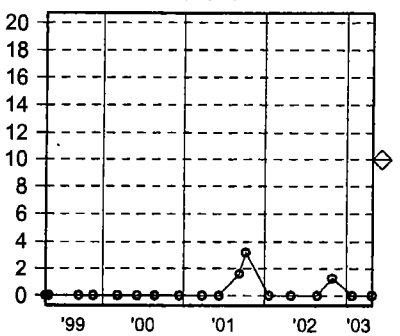
Chromium
(ug/l)



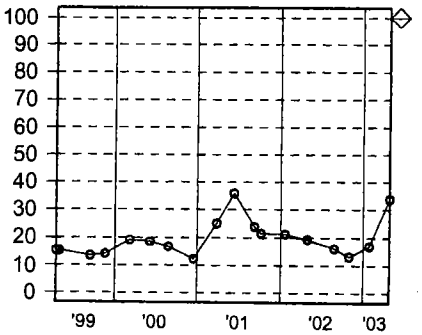
Copper
(ug/l)



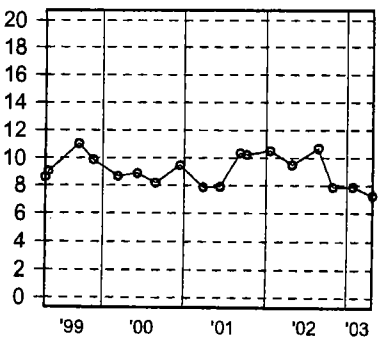
Lead
(ug/l)



Nickel
(ug/l)



Depth to Water
(Feet)



SOURCE: 00M5MW15

Sampling Dates:
04/14/1999 - 04/21/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 8 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

06-04-2003 X:\MtechData\M-5\M-5.WSF

	Lab	cis-1,2-Dichloro ethene	Tri chloro ethene	Tetra chloro ethene	Iron	Manganese	Aluminum	Chromium	Nickel	Depth to Water	Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet	-
NJDEP Criteria:	-	10	1	1	300	50	200	100	100	-	-
04/14/1999	FMETL	ND	ND	96.37	4770	29.2	1030	8.33	6.65	6.96	V,S,P,M
04/28/1999	FMETL	ND	ND	8.35	11800	31.9	1240	8.43	5.88	7.26	V,S,P,M
09/14/1999	FMETL	ND	ND	639.7	11100	32.1	3510	37.4	10.8	8.66	V,S,P,M
11/18/1999	FMETL	ND	ND	54.42	9840	24.7	242	1.72	6.73	7.76	V,S,P,M
03/03/2000	FMETL	ND	ND	37.76	37800	119	848	3830	24700	7.00	V,S,P,M
05/31/2000	FMETL	ND	ND	27.79	10000	35.8	78.2	1.99	8.11	7.06	V,S,P,M
08/21/2000	FMETL	ND	ND	20.36	8060	49.3	293	ND	6.59	6.70	V,S,P,M
12/11/2000	FMETL	ND	ND	23.20	11400	33.2	258	ND	1.43	7.40	V,S,P,M
03/19/2001	FMETL	ND	ND	17.88	13000	73.0	220	15.1	22.0	6.37	V,S,P,M
06/05/2001	FMETL	ND	ND	24.47	14500	46.6	ND	0.982	10.5	7.02	V,S,P,M
09/05/2001	FMETL	ND	ND	205.77	14800	83.4	175	1.90	14.8	8.14	V,S,P,M
10/04/2001	FMETL	ND	ND	620.81	32100	83.0	1710	15.6	16.1	8.04	V,S,P,M
01/14/2002	FMETL	1.93	1.93	839.5	9910	197	863	2.73	20.3	8.04	V,S,P,M
04/23/2002	FMETL	69.44	35.84	213.53	10000	63.5	1010	5.39	15.1	7.52	V,S,P,M
08/21/2002	FMETL	3.38	ND	416.79	4560	112	1560	5.66	32.6	8.53	V,S,P,M
10/28/2002	FMETL	103.82	2.23	42.41	32300	85.6	446	7.10	15.3	6.84	V,S,P,M
01/22/2003	FMETL	22.02	1.36	31.09	14600	45.2	301	1.92	7.06	6.45	V,S,P,M
04/21/2003	FMETL	16.12	2.16	8.50	16400	84.7	280	1.15	7.31	6.04	V,S,P,M

SOURCE: 00M5MW16

Sampling Dates:
04/14/1999 - 04/21/2003

NOTES:

Installed 3/99.

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 9 of 14

Ag in blank > GW Criteria for 5/8/97.

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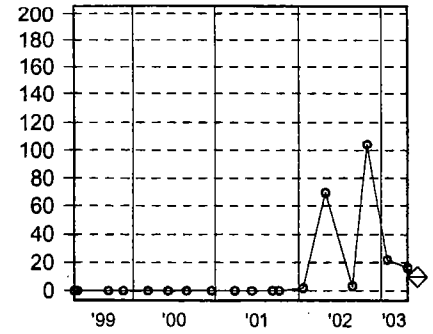
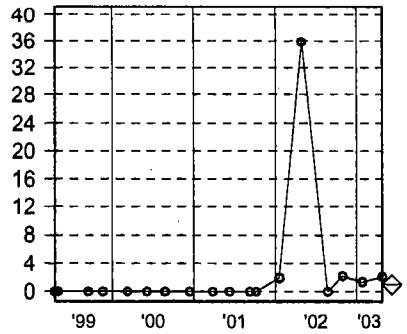
SELFM-PW-EV

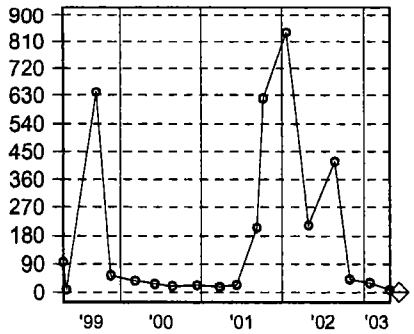
cis-1,2-Dichloroethene (ug/l)



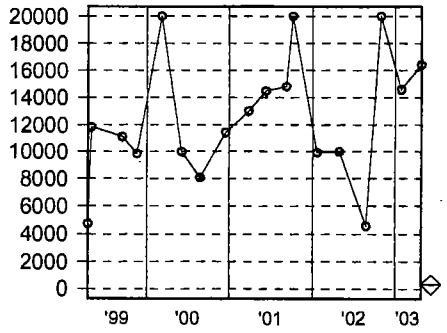
Trichloroethene (ug/l)



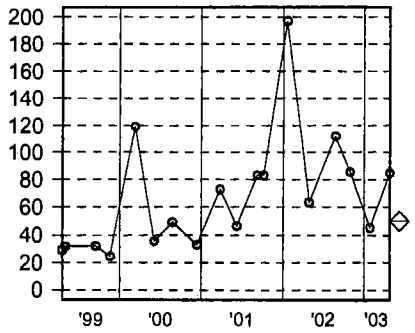
Tetrachlorethene (ug/l)



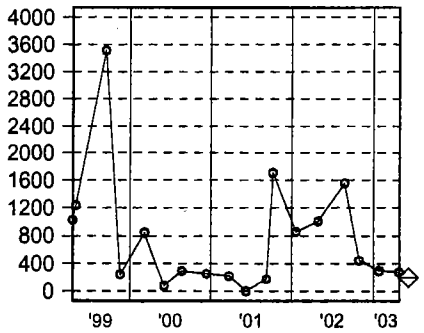
Iron (ug/l)



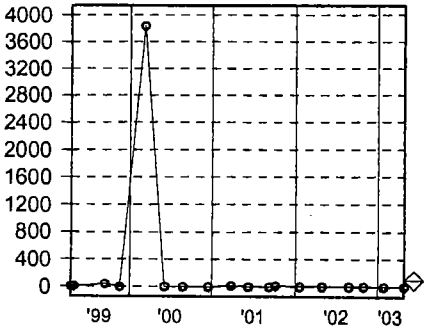
Manganese (ug/l)



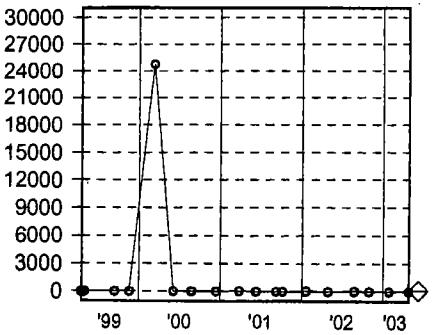
Aluminum (ug/l)



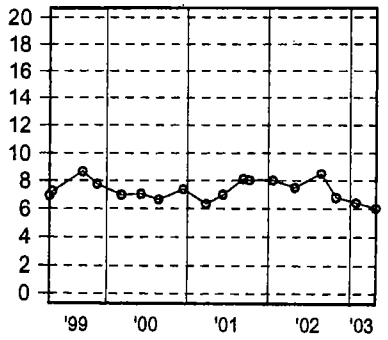
Chromium (ug/l)



Nickel (ug/l)



Depth to Water (Feet)



SOURCE: 00M5MW16

Sampling Dates:
04/14/1999 - 04/21/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 9 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

06-04-2003 X:\MtechData\M-5\M-5.WSF

	Lab	Tetra chloro ethene	Iron	Manganese	Aluminum	Chromium	Copper	Lead	Nickel	Depth to Water	Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet	-
NJDEP Criteria:	-	1	300	50	200	100	1000	10	100	-	-
04/13/1999	FMETL	ND	6550	40.9	327	1.97	5.04	11.8	2.63	7.16	V,S,P,M
04/27/1999	FMETL	ND	8140	42.1	61.1	1.02	ND	ND	1.86	7.68	V,S,P,M
09/14/1999	FMETL	ND	9640	65.8	541	4.06	4.58	ND	7.64	8.86	V,S,P,M
11/18/1999	FMETL	ND	10300	34.6	27	0.573	14.9	ND	1.73	8.02	V,S,P,M
03/03/2000	FMETL	ND	19800	48.6	131	ND	ND	ND	3.39	7.40	V,S,P,M
05/31/2000	FMETL	ND	16200	50.2	28.0	1.46	ND	ND	2.84	7.48	V,S,P,M
08/21/2000	FMETL	ND	14900	53.7	325	ND	ND	1.89	ND	7.12	V,S,P,M
12/11/2000	FMETL	ND	357000	88.4	942	4.74	ND	ND	ND	7.71	V,S,P,M
03/19/2001	FMETL	ND	26200	59.1	60.0	5.3	12.0	ND	3.00	6.90	V,S,P,M
06/05/2001	FMETL	ND	98600	70.5	63.0	ND	8.52	3.08	3.13	7.39	V,S,P,M
09/05/2001	FMETL	ND	16500	69.7	38.3	1.74	5.99	1.14	2.48	8.39	V,S,P,M
10/04/2001	FMETL	2.95	21000	60.2	111	1.68	ND	ND	1.73	8.30	V,S,P,M
01/14/2002	FMETL	1.34	18400	240	113	1.64	2.82	ND	16.5	8.33	V,S,P,M
04/23/2002	FMETL	ND	82000	66.8	541	3.20	2.92	1.35	ND	7.75	V,S,P,M
08/21/2002	FMETL	ND	16500	49.0	162	ND	4.49	ND	1.25	8.68	V,S,P,M
10/28/2002	FMETL	ND	13500	53.7	27.1	1.27	ND	ND	ND	6.76	V,S,P,M
01/22/2003	FMETL	ND	62100	65.5	293	1.19	40.1	4.38	2.87	6.99	V,S,P,M
04/21/2003	FMETL	ND	204000	137	800	2.05	ND	5.65	ND	6.72	V,S,P,M

SOURCE: 00M5MW18

Sampling Dates:
04/13/1999 - 04/21/2003

NOTES:

FORT MONMOUTH

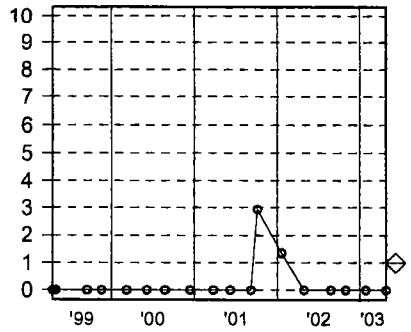
GW MONITORING
Bldg. M-5

Source 10 of 14

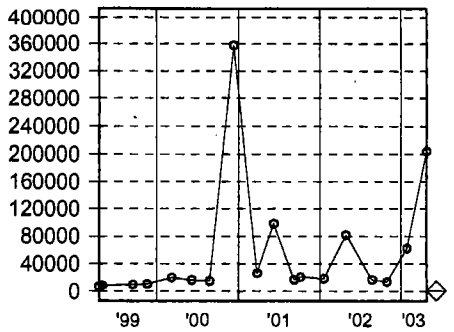
Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

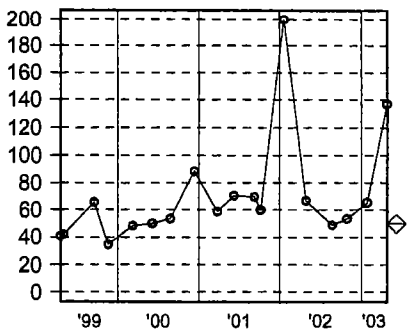
Tetrachlorethene (ug/l)



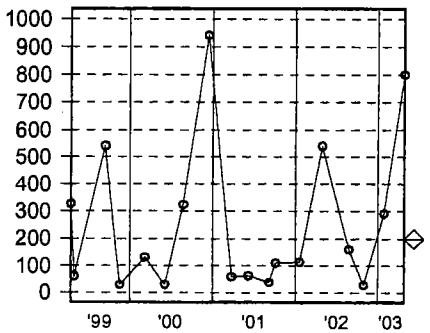
Iron (ug/l)



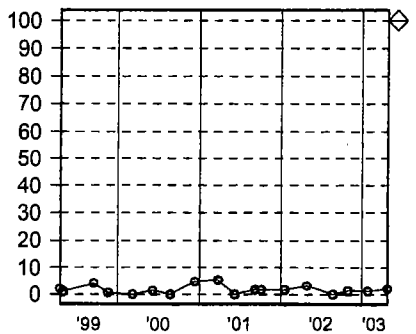
Manganese (ug/l)



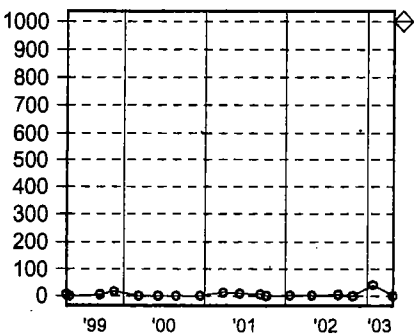
Aluminum (ug/l)



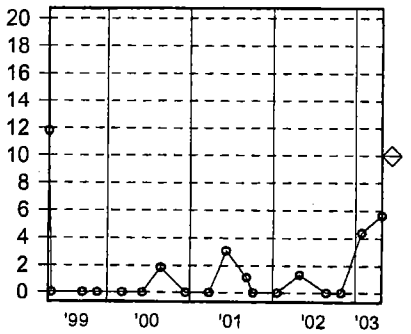
Chromium (ug/l)



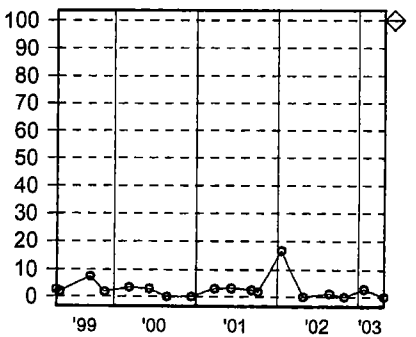
Copper (ug/l)



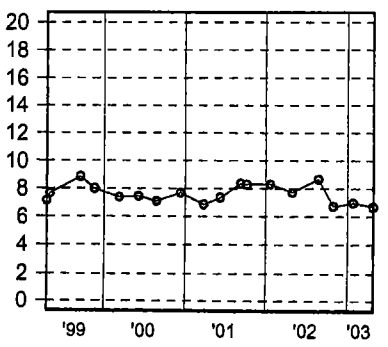
Lead (ug/l)



Nickel (ug/l)



Depth to Water (Feet)



SOURCE: 00M5MW18

Sampling Dates:
04/13/1999 - 04/21/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 10 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

06-04-2003 X:\MtechData\M-5\M-5.WSF

	Lab	cis-1,2-Dichloro ethene	Tri chloro ethene	Tetra chloro ethene	Iron	Manganese	Aluminum	Chromium	Copper	Depth to Water	Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet	-
NJDEP Criteria:	-	10	1	1	300	50	200	100	1000	-	-
04/13/1999	FMETL	ND	ND	11.53	7900	50.1	1110	10.6	6.31	6.74	V,S,P,M
04/27/1999	FMETL	ND	ND	3.72	12300	49.1	1710	12.1	ND	7.04	V,S,P,M
09/14/1999	FMETL	ND	ND	10.24	9230	33.8	2320	32.8	5.35	8.48	V,S,P,M
11/18/1999	FMETL	ND	ND	69.22	11700	39	130	1.65	33	7.63	V,S,P,M
03/06/2000	FMETL	ND	ND	5.44	15000	53.9	133	ND	ND	7.01	V,S,P,M
05/31/2000	FMETL	ND	ND	ND	12100	51.6	47.8	1.69	ND	7.01	V,S,P,M
08/21/2000	FMETL	ND	ND	4.77	12400	71.7	227	ND	ND	6.66	V,S,P,M
12/11/2000	FMETL	ND	ND	3.80	39600	56.2	271	ND	ND	7.28	V,S,P,M
03/19/2001	FMETL	ND	ND	2.43	17800	78.5	740	4.70	18.0	6.97	V,S,P,M
06/05/2001	FMETL	ND	ND	6.89	27300	72.3	ND	1.34	ND	6.68	V,S,P,M
09/05/2001	FMETL	3.87	1.66	34.94	22100	75.3	ND	ND	20.8	8.03	V,S,P,M
10/04/2001	FMETL	1.84	ND	13.62	21700	66.3	ND	ND	ND	7.92	V,S,P,M
01/14/2002	FMETL	16.64	17.44	284.64	30100	229	185	0.874	ND	8.04	V,S,P,M
04/23/2002	FMETL	5.93	2.80	18.2	28900	83.1	562	6.20	9.43	7.39	V,S,P,M
08/21/2002	FMETL	51.33	6.44	34.31	20800	74.3	152	0.845	ND	8.33	V,S,P,M
10/28/2002	FMETL	2.28	1.00	5.10	21500	81.3	73.6	2.42	ND	6.47	V,S,P,M
01/22/2003	FMETL	ND	ND	1.54	11700	55.0	33.7	0.711	2.57	6.58	V,S,P,M
04/21/2003	FMETL	ND	ND	1.73	11800	55.2	97.4	ND	ND	6.35	V,S,P,M

SOURCE: 00M5MW19

Sampling Dates:
04/13/1999 - 04/21/2003

NOTES:

FORT MONMOUTH

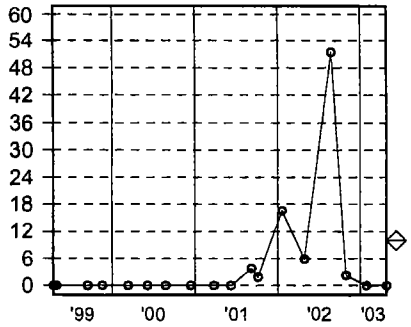
GW MONITORING
Bldg. M-5

Source 11 of 14

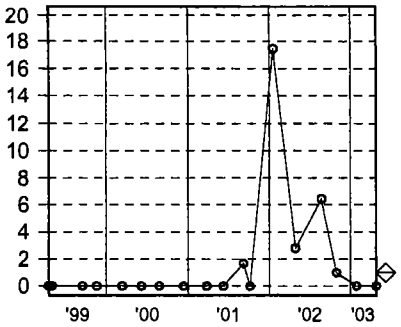
Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

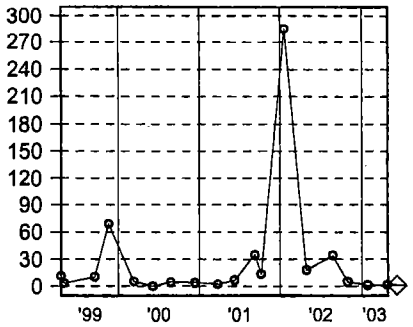
cis-1,2-Dichloroethene
(ug/l)



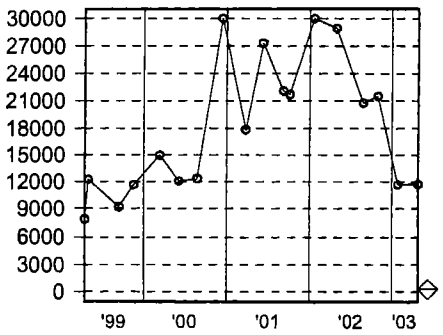
Trichloroethene
(ug/l)



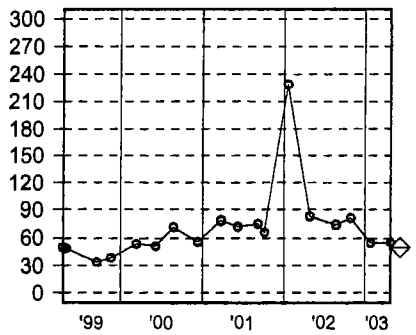
Tetrachlorethene
(ug/l)



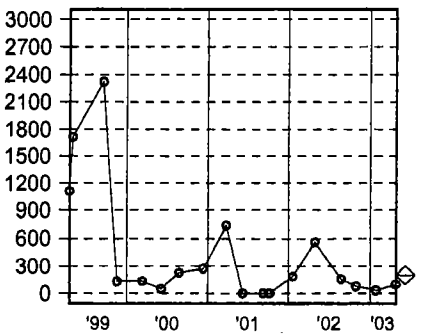
Iron
(ug/l)



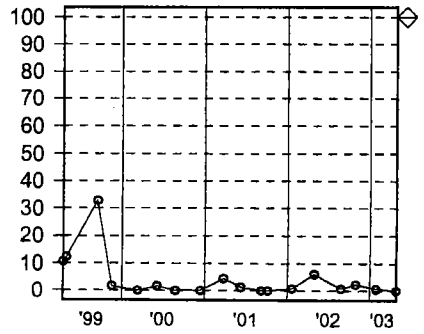
Manganese
(ug/l)



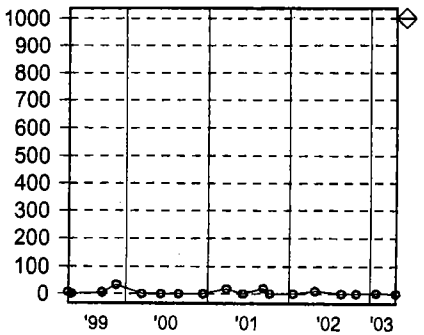
Aluminum
(ug/l)



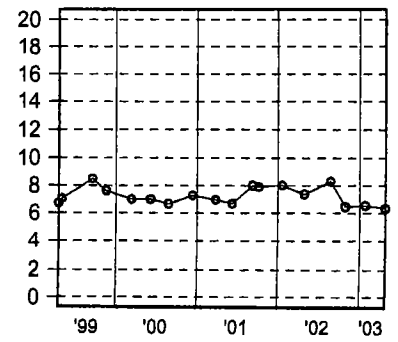
Chromium
(ug/l)



Copper
(ug/l)



Depth to Water
(Feet)



SOURCE: 00M5MW19

Sampling Dates:
04/13/1999 - 04/21/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 11 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

06-04-2003 X:\MtechData\M-5\M-5.WSF

	Lab	cis-1,2-Dichloro ethene	Tri chloro ethene	Tetra chloro ethene	Iron	Manganese	Aluminum	Chromium	Copper	Depth to Water	Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet	-
NJDEP Criteria:	-	10	1	1	300	50	200	100	1000	-	-
04/13/1999	FMETL	ND	ND	142.59	9380	36.6	3150	30.7	4.46	5.72	V,S,P,M
04/27/1999	FMETL	ND	ND	169.54	7520	29.2	2980	24.9	6.08	6.08	V,S,P,M
09/13/1999	FMETL	ND	ND	156.58	376	28.0	64.6	2.80	6.05	7.42	V,S,P,M
11/18/1999	FMETL	ND	ND	143.93	676	21.1	143	3.37	4.14	6.61	V,S,P,M
03/03/2000	FMETL	ND	ND	90.03	1640	17.8	500	4.34	ND	6.05	V,S,P,M
05/31/2000	FMETL	ND	ND	43.44	914	13.2	248	4.37	ND	8.13	V,S,P,M
08/21/2000	FMETL	ND	ND	23.85	4060	14.9	1910	3.94	ND	5.78	V,S,P,M
12/11/2000	FMETL	ND	ND	110.95	502	11.9	96.6	ND	ND	6.33	V,S,P,M
03/19/2001	FMETL	ND	ND	65.73	900	40.3	280	3.60	16.0	5.68	V,S,P,M
03/19/2001D	FMETL	ND	ND	65.5	870	27.7	300	3.4	5.0	5.68	V,S,P,M
06/05/2001	FMETL	ND	ND	45.30	495	15.4	ND	1.03	ND	7.98	V,S,P,M
09/05/2001	FMETL	1.22	1.18	111.58	1320	26.9	204	4.96	11.3	7.04	V,S,P,M
10/04/2001	FMETL	3.38	3.56	83.81	1640	23.9	198	3.00	3.03	6.77	V,S,P,M
10/04/2001D	FMETL	3.41	3.66	82.54	1450	24.2	252	3.61	2.52	6.77	V,S,P,M
01/14/2002	FMETL	3.09	4.27	85.31	2020	159	452	5.43	ND	6.74	V,S,P,M
04/23/2002	FMETL	ND	ND	76.89	1510	27.3	216	2.64	13.1	6.36	V,S,P,M
08/21/2002	FMETL	ND	ND	79.41	5320	34.5	1580	12.6	2.97	7.24	V,S,P,M
10/28/2002	FMETL	ND	ND	12.99	11500	19.6	6000	40.3	4.93	5.45	V,S,P,M
01/22/2003	FMETL	ND	ND	27.87	292	9.34	109	1.40	ND	5.73	V,S,P,M
04/21/2003	FMETL	ND	ND	27.99	1370	32.9	431	3.30	ND	5.47	V,S,P,M

SOURCE: 00M5MW20

Sampling Dates:
04/13/1999 - 04/21/2003

NOTES:

FORT MONMOUTH

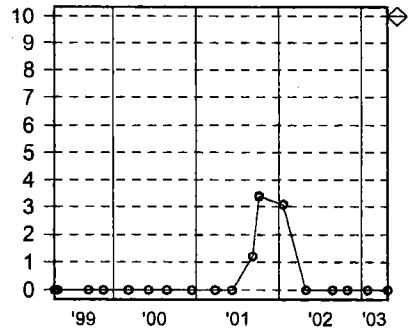
GW MONITORING
Bldg. M-5

Source 12 of 14

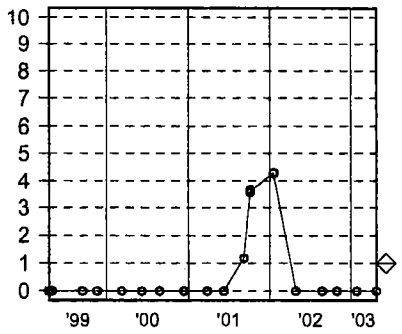
Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

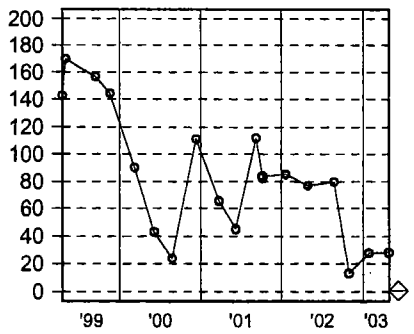
cis-1,2-Dichloroethene
(ug/l)



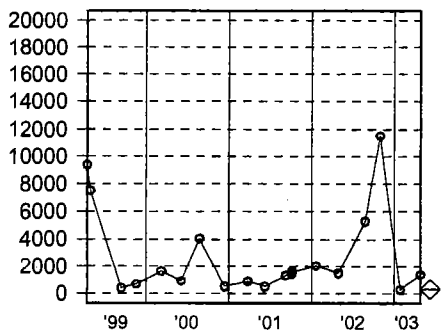
Trichloroethene
(ug/l)



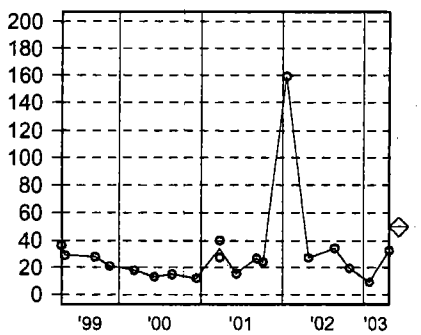
Tetrachlorethene
(ug/l)



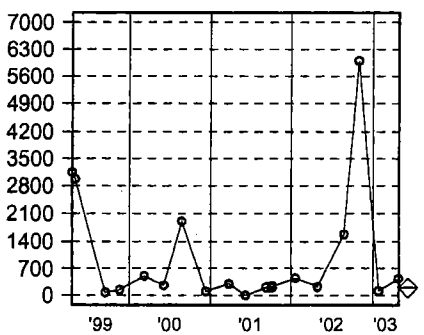
Iron
(ug/l)



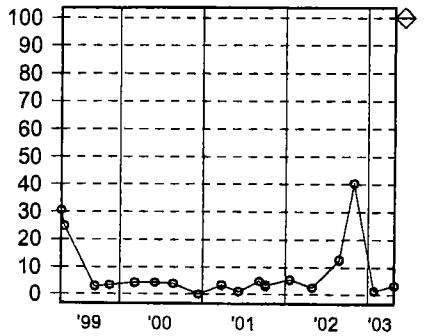
Manganese
(ug/l)



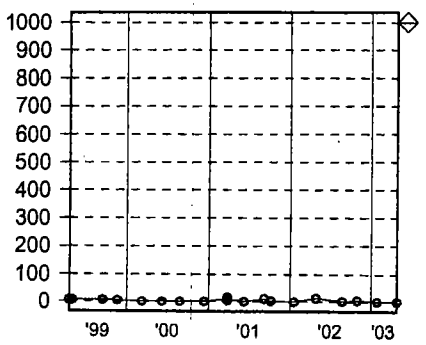
Aluminum
(ug/l)



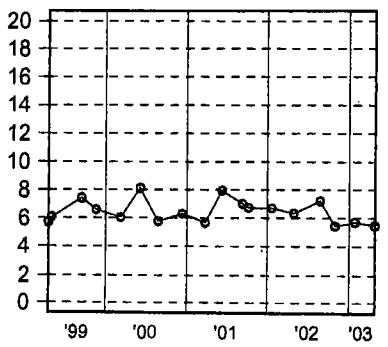
Chromium
(ug/l)



Copper
(ug/l)



Depth to Water
(Feet)



SOURCE: 00M5MW20

Sampling Dates:
04/13/1999 - 04/21/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 12 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

06-04-2003 X:\MtechData\M-5\M-5.WSF

	Lab	cis-1,2-Dichloro ethene	Tri chloro ethene	Tetra chloro ethene	Iron	Manganese	Aluminum	Chromium	Copper	Depth to Water	Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet	-
NJDEP Criteria:	-	10	1	1	300	50	200	100	1000	-	-
04/14/1999	FMETL	ND	ND	84.93	848	9.64	148	13.4	ND	8.19	V,S,P,M
04/28/1999	FMETL	ND	ND	44.43	1590	19.8	195	8.97	ND	8.46	V,S,P,M
09/13/1999	FMETL	ND	ND	29.53	10700	10.4	1410	22.6	6.92	9.56	V,S,P,M
11/18/1999	FMETL	ND	ND	59.02	1290	10.4	157	3.29	ND	8.88	V,S,P,M
03/03/2000	FMETL	ND	ND	11.53	13600	23.1	248	1.52	ND	8.38	V,S,P,M
05/31/2000	FMETL	ND	ND	23.13	25100	23.6	ND	1.71	ND	7.70	V,S,P,M
08/21/2000	FMETL	ND	ND	4.22	20300	30.9	332	ND	ND	7.93	V,S,P,M
12/11/2000	FMETL	ND	ND	14.27	19200	27.1	108	ND	ND	8.61	V,S,P,M
03/19/2001	FMETL	ND	ND	6.39	31400	26.6	810	13.6	8.00	7.85	V,S,P,M
06/05/2001	FMETL	ND	ND	33.84	3280	31.1	ND	1.12	ND	8.33	V,S,P,M
06/05/2001D	FMETL	ND	ND	33.54	3650	31.6	ND	1.92	16.2	8.33	V,S,P,M
09/05/2001	FMETL	1.48	ND	3.41	21600	21.1	1300	17.5	8.27	9.15	V,S,P,M
10/04/2001	FMETL	1.77	ND	3.85	13000	16.5	1270	15.6	3.40	8.90	V,S,P,M
01/14/2002	FMETL	1.77	ND	8.26	36400	185	1340	16.0	3.29	9.03	V,S,P,M
04/23/2002	FMETL	3.31	ND	8.97	67900	42.8	5120	53.6	4.89	8.53	V,S,P,M
08/21/2002	FMETL	ND	ND	15.68	15400	37.6	426	11.9	ND	9.33	V,S,P,M
10/28/2002	FMETL	ND	ND	ND	14000	24.3	100	2.40	ND	7.72	V,S,P,M
01/22/2003	FMETL	ND	3.97	79.46	137000	49.2	6920	72.5	ND	7.75	V,S,P,M
04/21/2003	FMETL	1.37	3.15	17.35	37000	22.2	1060	12.9	ND	7.54	V,S,P,M

SOURCE: 00M5MW23

Sampling Dates:
04/14/1999 - 04/21/2003

NOTES:

FORT MONMOUTH

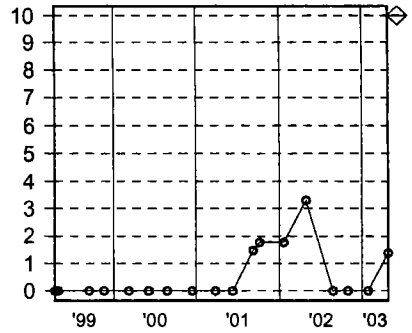
GW MONITORING
Bldg. M-5

Source 13 of 14

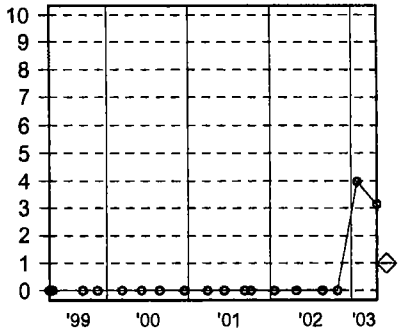
Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

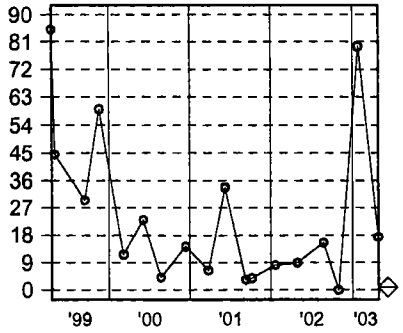
cis-1,2-Dichloroethene (ug/l)



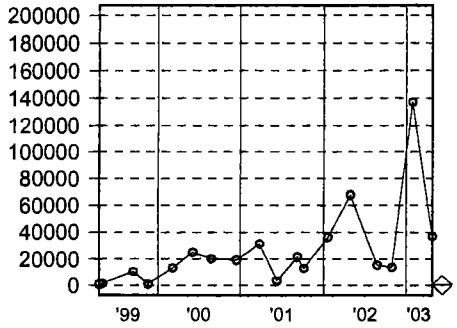
Trichloroethene (ug/l)



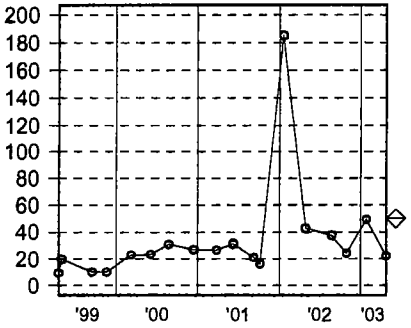
Tetrachlorethene (ug/l)



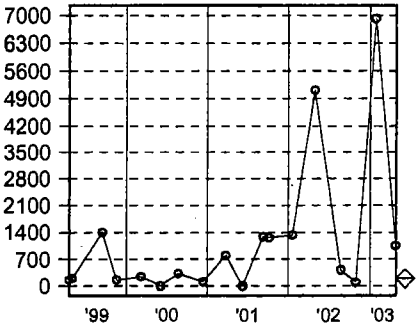
Iron (ug/l)



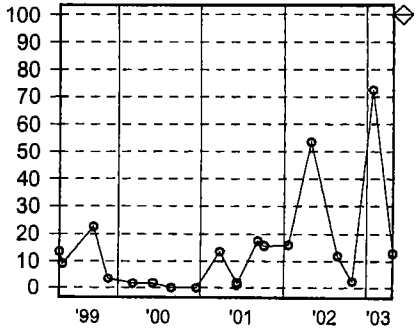
Manganese (ug/l)



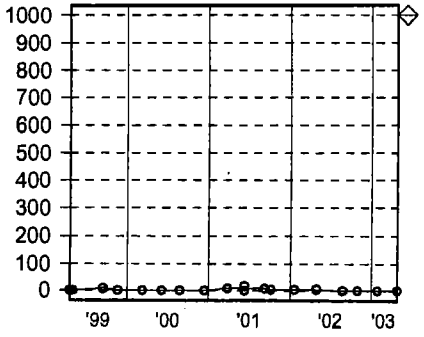
Aluminum (ug/l)



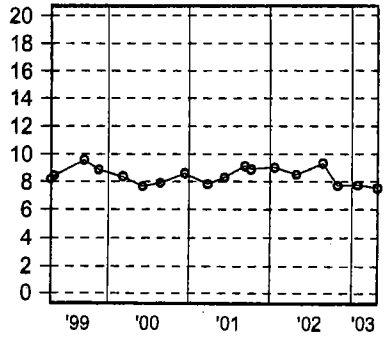
Chromium (ug/l)



Copper (ug/l)



Depth to Water (Feet)



SOURCE: 00M5MW23

Sampling Dates:
04/14/1999 - 04/21/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 13 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

06-04-2003 X:\MtechData\M-5\M-5.WSF

	Lab	Iron	Manganese	Aluminum	Chromium	Copper	Lead	Nickel	Depth to Water		Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet		-
NJDEP Criteria:	-	300	50	200	100	1000	10	100	-		-
04/14/1999	FMETL	18000	41.9	5640	56.3	ND	4.75	8.13	11.32		V,S,P,M
04/28/1999	FMETL	12300	48.3	4630	40.5	14.3	6.35	7.43	11.59		V,S,P,M
09/14/1999	FMETL	8930	43.9	151	2.32	ND	ND	ND	13.21		V,S,P,M
11/18/1999	FMETL	15400	35.1	3560	53.4	3.45	ND	14.8	12.26		V,S,P,M
03/03/2000	FMETL	783	25.3	220	4.77	ND	ND	10.7	11.39		V,S,P,M
05/31/2000	FMETL	191	13.8	ND	2.72	ND	ND	4.92	11.61		V,S,P,M
05/31/2000D	FMETL	712	15.3	98.7	4.64	ND	ND	7.93	11.61		V,S,P,M
08/21/2000	FMETL	453	46.7	250	ND	35.4	1.91	10.7	11.05		V,S,P,M
12/11/2000	FMETL	877	18.7	209	ND	ND	ND	2.38	12.00		V,S,P,M
03/19/2001	FMETL	10900	43.1	140	6.40	5.00	ND	7.00	10.98		V,S,P,M
06/05/2001	FMETL	295	27.7	ND	2.50	ND	ND	17.0	11.84		V,S,P,M
09/05/2001	FMETL	21600	21.1	1300	17.5	8.27	2.41	ND	12.72		V,S,P,M
09/05/2001D	FMETL	476	63.9	ND	2.93	14.2	ND	22.0	12.72		V,S,P,M
10/04/2001	FMETL	26500	56.4	6880	99.0	6.99	6.17	21.4	11.77		V,S,P,M
01/14/2002	FMETL	1570	182	388	6.34	99.1	11.0	21.3	12.97		V,S,P,M
04/23/2002	FMETL	101	27.8	70.2	1.88	4.87	1.59	10.7	11.90		V,S,P,M
08/21/2002	FMETL	836	40.6	262	2.82	ND	ND	14.5	12.86		V,S,P,M
10/28/2002	FMETL	6510	101	129	5.80	ND	ND	13.0	10.93		V,S,P,M
01/22/2003	FMETL	12400	41.7	185	7.09	30.8	ND	13.1	10.75		V,S,P,M
04/21/2003	FMETL	2500	24.1	194	9.55	25.9	ND	9.36	10.60		V,S,P,M

SOURCE: 00M5MW25

Sampling Dates:
04/14/1999 - 04/21/2003

NOTES:

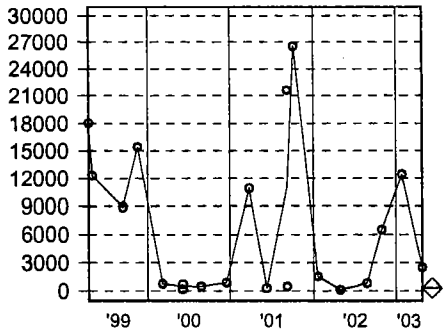
FORT MONMOUTH

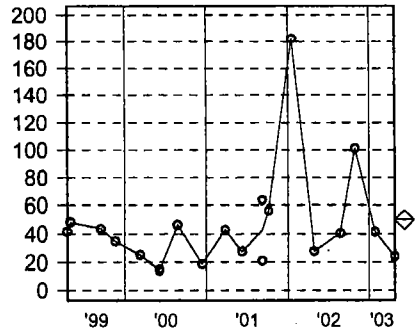
GW MONITORING
Bldg. M-5

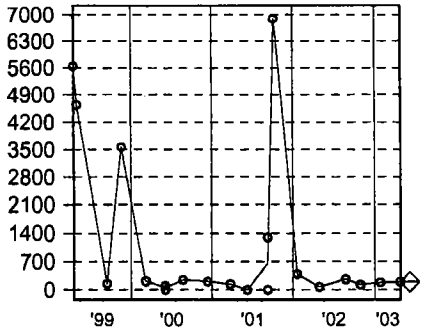
Source 14 of 14

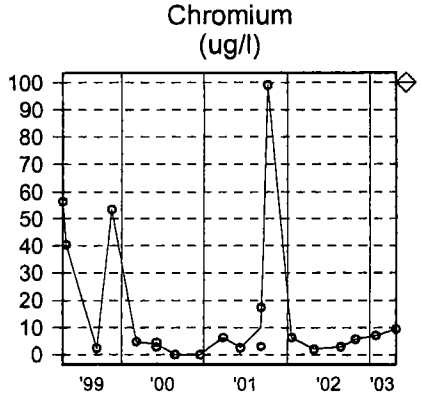
Ag in blank > GW Criteria for 5/8/97.

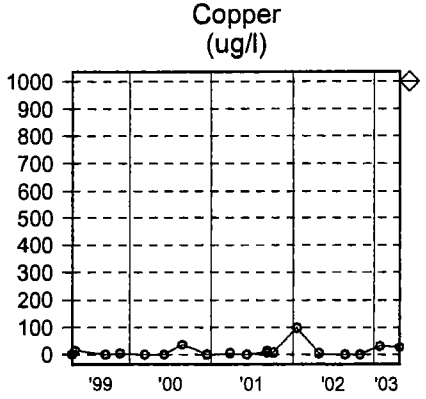
U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

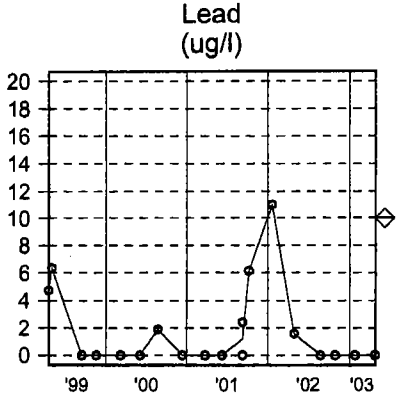


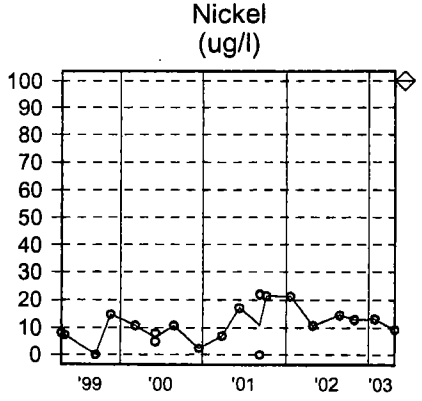


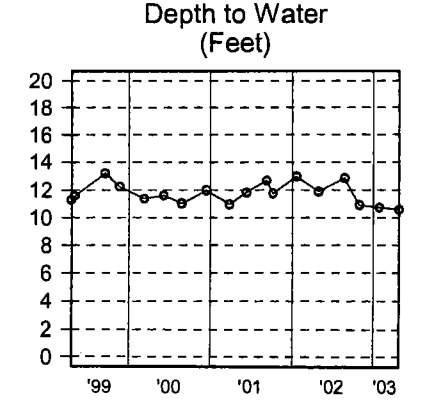












SOURCE: 00M5MW25

Sampling Dates:
04/14/1999 - 04/21/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 14 of 14, Graph

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U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

06-04-2003 X:\MtechData\M-5\M-5.WSF

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS
PHONE: (732)532-4359 FAX: (732)532-6263
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING

ANALYTICAL DATA REPORT
FOR
Directorate of Public Works
Fort Monmouth, NJ 07703

PROJECT : DERA/ Long Term Monitoring

SAMPLE LOCATION AND IDENTIFICATION

SITE: M-5

LABORATORY ID #	MONITOR WELL#	NJDEP WELL ID#	SAMPLE DATE
3043904	00M5MW10	29-32574	07/30/03
3043905	00M5MW11	29-32575	07/30/03
3043906	00M5MW12	29-39179	07/30/03
3043907	00M5MW13	29-39178	07/30/03
3043908	00M5MW14	29-39177	07/30/03
3043909	00M5MW15	29-40120	07/30/03
3043910	00M5MW16	29-40121	07/30/03
3043911	00M5MW18	29-40123	07/30/03
3043912	00M5MW19	29-40124	07/30/03
3043913	00M5MW20	29-40122	07/30/03
3043914	00M5MW23	29-40125	07/30/03
3043915	00M5MW25	29-40126	07/30/03

NJDEP Laboratory Certification # 13461

8-25-03
Daniel Wright/Date
Laboratory Director

METHODOLOGY SUMMARY

PARAMETER	REFERENCE
TARGET ANALYTE LIST	Standard Methods, 18th ed.
Aluminum	3120B
Antimony	3120B
Arsenic	3120B
Barium	3120B
Beryllium	3120B
Cadmium	3120B
Calcium	3120B
Chromium	3120B
Cobalt	3120B
Copper	3120B
Iron	3120B
Lead	3120B
Magnesium	3120B
Manganese	3120B
Mercury	3112B
Nickel	3120B
Potassium	3120B
Selenium	3120B
Silver	3120B
Sodium	3120B
Thallium	3120B
Vanadium	3120B
Zinc	3120B
TARGET COMPOUND LIST	Federal Register 40 CFR Part 136 Appendix A
Base/Neutrals and Acid Extractables by GC/MS	625
Purgeable Organcis by GC/MS	624
Pesticides and PCB's by GC	608

Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:wrightd@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: J. FALLON
Phone #: 426223
(X)DERA ( )OMA ( )Other:_____

Project No:
Location: MS Wells
3rd Qtr '03

Samplers Name / Company: Corey McCormack, TVS

LIMS/Work Order #		Sample Location	Date	Time	Sample Type	# bottles	VOA+15	TAL MHs	Pest / PCB	BNA+25				Haz Lead	Remarks / Preservation Method
30439	01	Trip	7/30/03	0720	AQ	2	✓							1	
	02	Field Blank		0725		5	✓	✓	✓	✓				1	
	03	Dupe		—		5	✓	✓	✓	✓				1	
	04	MSMW10		1254		5	✓	✓	✓	✓				0.0	29 - 32574
	05	MSMW11		0957			✓	✓	✓	✓				0.0	29 - 32575
	06	MSMW12		1328			✓	✓	✓	✓				0.0	29 - 39179
	07	MSMW13		1435			✓	✓	✓	✓				0.0	29 - 39178
	08	MS MW14		1518			✓	✓	✓	✓				0.0	29 - 39177
	09	MS MW15		0907			✓	✓	✓	✓				0.0	29 - 40120
	10	MS MW16		0914			✓	✓	✓	✓				0.0	29 - 40121
	11	MS MW18		0934			✓	✓	✓	✓				0.0	29 - 40123
	12	MS MW19		0941			✓	✓	✓	✓				0.0	29 - 40124
	13	MS MW 28I		0921			✓	✓	✓	✓				0.0	29 - 40122
	14	MS MW ~~28~~ 23		0949		9	✓	✓	✓	✓				0.0	29 - 40125

Comments: HCl/HNO_3/4°C

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Corey McCormack	7/30/03 1600				
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: (_)Full, (_)Reduced, (X)Standard, (_)Screen / non-certified, (_)EDD
Turnaround time: (X)Standard 3 wks, (_)Rush ____ Days, (_)ASAP Verbal ____ Hrs.

Remarks:
Tide: L→H

print legibly

COC.XLS6/17/2003

Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:wrightd@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: J Fallon
Phone #: 426223
(X) DERA ( )OMA ( )Other:_____

Project No:
Location: MS wells
3rd Qrt '03

Samplers Name / Company: Corey McCormack, TVS

LIMS/Work Order #	Sample Location	Date	Time	Sample Type	# bottles	VOTIS	TAL MHs	Pest / PCB	BNA+25				Hex Cad	Comments: HCL/HNO_3/4°C Remarks / Preservation Method
30439 15	MSmw25 *	7/30/03	0841	AQ	5	✓	✓	✓	✓				0.0	29-40126

Analysis Parameters

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Corey McCormack	7/30/03 1600	J. Callahan			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: (_)Full, (_)Reduced, (X)Standard, (_)Screen / non-certified, (_)EDD
Turnaround time: (X)Standard 3 wks, (_)Rush ____ Days, (_)ASAP Verbal ____Hrs.

Remarks:
Tide: L

print legibly

COC.XLS6/17/2003

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW10
NJDEP ID #: 29-32574
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 07/30/03
WEATHER: Sunny and warm.
TIDE: Low-Incoming.

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 4" INCH
DEPTH TO WATER: 4.48 ft
DEPTH OF WELL: 17.25 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 12.77 ft
(12.77) X .65 X 3 =24.90
GALLONS OF H_2O TO BE PURGED: 25 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 11:05
pH 6.15 su — TEMP 16.14 °C
DISSOLVED O_2 3.90 mg/L — SPECIFIC CONDUCTIVITY 301 µs/cm

PURGE END TIME: 12:53
pH 6.18 su — TEMP 16.12 °C
DISSOLVED O_2 1.19 mg/L — SPECIFIC CONDUCTIVITY 301 µs/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 5.28 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 25 gal

SAMPLE START TIME: 12:54
pH 6.19 su — TEMP 16.11 °C
DISSOLVED O_2 1.09 mg/L — SPECIFIC CONDUCTIVITY 301 µs/cm

SAMPLE END TIME: 12:59

COMMENTS:

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW11
NJDEP ID #: 29-32575
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 07/30/03
WEATHER: Sunny and warm.
TIDE: Low-Incoming.

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 4" INCH
DEPTH TO WATER: 7.38 ft
DEPTH OF WELL: 16.80 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 9.42 ft
(9.42) X .65 X 3 =18.36
GALLONS OF H_2O TO BE PURGED: 18 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 08:05
pH 5.67 su — TEMP 19.65 °C
DISSOLVED O_2 3.37 mg/L — SPECIFIC CONDUCTIVITY 415 µs/cm

PURGE END TIME: 09:23
pH 5.59 su — TEMP 18.82 °C
DISSOLVED O_2 1.23 mg/L — SPECIFIC CONDUCTIVITY 404 µs/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 8.38 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 18 gal

SAMPLE START TIME: 09:57
pH 5.58 su — TEMP 18.84 °C
DISSOLVED O_2 1.22 mg/L — SPECIFIC CONDUCTIVITY 403 µs/cm

SAMPLE END TIME: 10:03

COMMENTS: Orange particles.

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW12
NJDEP ID #: 29-39179
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 07/30/03
WEATHER: Sunny and warm.
TIDE: Low-Incoming.

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 2" INCH
DEPTH TO WATER: 6.08 ft
DEPTH OF WELL: 16.10 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 10.02 ft
(10.02) X .163 X 3 =4.89
GALLONS OF H_2O TO BE PURGED: 5 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 13:05
pH 6.21 su — TEMP 16.91 °C
DISSOLVED O_2 3.47 mg/L — SPECIFIC CONDUCTIVITY 321 µs/cm

PURGE END TIME: 13:27
pH 6.17 su — TEMP 16.76 °C
DISSOLVED O_2 1.01 mg/L — SPECIFIC CONDUCTIVITY 310 µs/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 12.70 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 5 gal

SAMPLE START TIME: 13:28
pH 6.18 su — TEMP 16.77 °C
DISSOLVED O_2 1.00 mg/L — SPECIFIC CONDUCTIVITY 311 µs/cm

SAMPLE END TIME: 13:33

COMMENTS: Low draw down, cloudy end of bail.

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW13
NJDEP ID #: 29-39178
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 07/30/03
WEATHER: Sunny and warm.
TIDE: Low-Incoming.

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 2" INCH
DEPTH TO WATER: 2.80 ft
DEPTH OF WELL: 18.82 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 16.02 ft
(16.02) X .163 X 3 =7.83
GALLONS OF H_2O TO BE PURGED: 8 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 13:59
pH 5.76 su — TEMP 18.40 °C
DISSOLVED O_2 5.10 mg/L — SPECIFIC CONDUCTIVITY 699 µs/cm

PURGE END TIME: 14:34
pH 5.76 su — TEMP 18.40 °C
DISSOLVED O_2 2.00 mg/L — SPECIFIC CONDUCTIVITY 699 µs/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 3.39 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 8 gal

SAMPLE START TIME: 14:35
pH 5.76 su — TEMP 18.37 °C
DISSOLVED O_2 1.50 mg/L — SPECIFIC CONDUCTIVITY 700 µs/cm

SAMPLE END TIME: 14:39

COMMENTS:

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW14
NJDEP ID #: 29-39177
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 07/30/03
WEATHER: Sunny and warm.
TIDE: Low-Incoming.

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 2" INCH
DEPTH TO WATER: 3.37 ft
DEPTH OF WELL: 20.15 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 16.78 ft
(16.78) X .163 X 3 =8.20
GALLONS OF H2O TO BE PURGED: 8 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 14:42
pH 6.05 su — TEMP 15.87 °C
DISSOLVED O_2 4.60 mg/L — SPECIFIC CONDUCTIVITY 381 µs/cm

PURGE END TIME: 15:17
pH 6.15 su — TEMP 15.44 °C
DISSOLVED O_2 1.16 mg/L — SPECIFIC CONDUCTIVITY 340 µs/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 4.00 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 8 gal

SAMPLE START TIME: 15:18
pH 6.15 su — TEMP 15.47 °C
DISSOLVED O_2 1.11 mg/L — SPECIFIC CONDUCTIVITY 340 µs/cm

SAMPLE END TIME: 15:26

COMMENTS:

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW15
NJDEP ID #: 29-40120
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 07/30/03
WEATHER: Sunny and warm.
TIDE: Low

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 4" INCH
DEPTH TO WATER: 8.97 ft
DEPTH OF WELL: 19.71 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 10.74 ft
(10.74) X .65 X 3 =20.94
GALLONS OF H_2O TO BE PURGED: 21 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 07:35
pH 4.69 su — TEMP 18.40 °C
DISSOLVED O_2 4.00 mg/L — SPECIFIC CONDUCTIVITY 439 µs/cm

PURGE END TIME: 09:06
pH 4.65 su — TEMP 17.93 °C
DISSOLVED O_2 1.12 mg/L — SPECIFIC CONDUCTIVITY 358 µs/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 9.22 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 21 gal

SAMPLE START TIME: 09:07
pH 4.65 su — TEMP 17.89 °C
DISSOLVED O_2 1.13 mg/L — SPECIFIC CONDUCTIVITY 353 µs/cm

SAMPLE END TIME: 09:12

COMMENTS:

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW16
NJDEP ID #: 29-40121
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 07/30/03
WEATHER: Sunny and warm.
TIDE: Low

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 4" INCH
DEPTH TO WATER: 7.05 ft
DEPTH OF WELL: 17.93 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 10.88 ft
(10.88) X .65 X 3 = 21.21
GALLONS OF H_2O TO BE PURGED: 21 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 07:40
pH 5.36 su — TEMP 20.71 °C
DISSOLVED O_2 0.24 mg/L — SPECIFIC CONDUCTIVITY 631 µs/cm

PURGE END TIME: 09:11
pH 5.45 su — TEMP 20.64 °C
DISSOLVED O_2 0.15 mg/L — SPECIFIC CONDUCTIVITY 684 µs/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 7.73 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 21 gal

SAMPLE START TIME: 09:14
pH 5.46 su — TEMP 20.65 °C
DISSOLVED O_2 0.16 mg/L — SPECIFIC CONDUCTIVITY 685 µs/cm

SAMPLE END TIME: 09:19

COMMENTS: Strong odor.

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW18
NJDEP ID #: 29-40123
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 07/30/03
WEATHER: Sunny and warm.
TIDE: Low

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 4" INCH
DEPTH TO WATER: 7.48 ft
DEPTH OF WELL: 20.17 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 12.69 ft
(12.69) X .65 X 3 =24.74
GALLONS OF H2O TO BE PURGED: 25 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 07:45
pH 6.03 su — TEMP 16.96 °C
DISSOLVED O_2 4.19 mg/L — SPECIFIC CONDUCTIVITY 300 µs/cm

PURGE END TIME: 09:33
pH 5.97 su — TEMP 16.36 °C
DISSOLVED O_2 1.21 mg/L — SPECIFIC CONDUCTIVITY 281 µs/cm

DEPTH TO H2O AFTER PURGE AND BEFORE SAMPLING: 7.65 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 25 gal

SAMPLE START TIME: 09:34
pH 5.95 su — TEMP 16.30 °C
DISSOLVED O_2 1.20 mg/L — SPECIFIC CONDUCTIVITY 277 µs/cm

SAMPLE END TIME: 09:39

COMMENTS: Low draw down. Cloudy and yellow.

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW19
NJDEP ID #: 29-40124
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 07/30/03
WEATHER: Sunny and warm.
TIDE: Low

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 4" INCH
DEPTH TO WATER: 7.12 ft
DEPTH OF WELL: 19.98 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 12.86 ft
(12.86) X .65 X 3 =25.07
GALLONS OF H_2O TO BE PURGED: 25 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 07:50
pH 5.69 su — TEMP 18.13 °C
DISSOLVED O_2 5.10 mg/L — SPECIFIC CONDUCTIVITY 274 µs/cm

PURGE END TIME: 09:38
pH 5.70 su — TEMP 17.96 °C
DISSOLVED O_2 1.17 mg/L — SPECIFIC CONDUCTIVITY 278 µs/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 7.45 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 25 gal

SAMPLE START TIME: 09:41
pH 5.71 su — TEMP 17.98 °C
DISSOLVED O_2 1.17 mg/L — SPECIFIC CONDUCTIVITY 278 µs/cm

SAMPLE END TIME: 09:46

COMMENTS: Low draw down.

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW20
NJDEP ID #: 29-40122
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 07/30/03
WEATHER: Sunny and warm.
TIDE: Low

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 4" INCH
DEPTH TO WATER: 6.15 ft
DEPTH OF WELL: 16.07 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 9.92 ft
(9.92) X .65 X 3 =19.39
GALLONS OF H_2O TO BE PURGED: 19 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 07:55
pH 5.55 su — TEMP 21.78 °C
DISSOLVED O_2 5.18 mg/L — SPECIFIC CONDUCTIVITY 546 µs/cm

PURGE END TIME: 09:17
pH 5.51 su — TEMP 21.82 °C
DISSOLVED O_2 2.10 mg/L — SPECIFIC CONDUCTIVITY 554 µs/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 6.40 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 19 gal

SAMPLE START TIME: 09:21
pH 5.52 su — TEMP 21.63 °C
DISSOLVED O_2 2.01 mg/L — SPECIFIC CONDUCTIVITY 554 µs/cm

SAMPLE END TIME: 09:26

COMMENTS: Low draw down.

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW23
NJDEP ID #: 29-40125
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 07/30/03
WEATHER: Sunny and warm.
TIDE: Low

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 4" INCH
DEPTH TO WATER: 8.44 ft
DEPTH OF WELL: 19.75 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 11.31 ft
(11.31) X .65 X 3 =22.05
GALLONS OF H_2O TO BE PURGED: 22 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 08:00
pH 5.75 su — TEMP 20.66 °C
DISSOLVED O_2 5.00 mg/L — SPECIFIC CONDUCTIVITY 261 µs/cm

PURGE END TIME: 09:35
pH 5.72 su — TEMP 20.12 °C
DISSOLVED O_2 1.16 mg/L — SPECIFIC CONDUCTIVITY 267 µs/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 8.63 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 22 gal

SAMPLE START TIME: 09:49
pH 5.72 su — TEMP 20.12 °C
DISSOLVED O_2 1.15 mg/L — SPECIFIC CONDUCTIVITY 267 µs/cm

SAMPLE END TIME: 09:52

COMMENTS: Low draw down. Cloudy, orange and yellow. MS/MSD here.

U.S. ARMY FORT MONMOUTH
MONITORING WELL SAMPLING DATA

LOCATION: M5
MW#: 00M5MW25
NJDEP ID #: 29-40126
NJDEP CERT #: 13461
SAMPLING CONTRACTOR: TVS
SAMPLER: Corey McCormack
DATE: 07/30/03
WEATHER: Sunny and warm.
TIDE: Low

LNAPLs: N
DNAPLs N
ELEV. OF INNER CASING SURVEY MARK: N/A ft
INNER CASING DIA.: 4" INCH
DEPTH TO WATER: 11.73 ft
DEPTH OF WELL: 19.94 ft
DEPTH TO TOP OF SCREEN: N/A ft
HEIGHT OF WATER: 8.21 ft
(8.21) X .65 X 3 =16.00
GALLONS OF H_2O TO BE PURGED: 16 gal
PURGE METHOD: (FLOW OF <0.5 TO >5.0 gpm) PERISTALTIC
PURGE RATE: 0.23 gpm
Hnu READING: 0.0 ppm

PURGE START TIME: 07:31
pH 5.04 su — TEMP 16.87 °C
DISSOLVED O_2 4.11 mg/L — SPECIFIC CONDUCTIVITY 934 µs/cm

PURGE END TIME: 08:40
pH 4.89 su — TEMP 16.42 °C
DISSOLVED O_2 2.24 mg/L — SPECIFIC CONDUCTIVITY 937 µs/cm

DEPTH TO H_2O AFTER PURGE AND BEFORE SAMPLING: 11.85 ft
(SAMPLING METHOD: DEDICATED (LAW NJDEP FSPM 1992) TEFLON ® BAILER)
TOTAL VOLUME PURGED: 16 gal

SAMPLE START TIME: 08:41
pH 4.90 su — TEMP 16.43 °C
DISSOLVED O_2 2.23 mg/L — SPECIFIC CONDUCTIVITY 936 µs/cm

SAMPLE END TIME: 08:46

COMMENTS: Low draw down. DUP. Here.

LTM Depth to Water

Location: M5
Date: 07/30/03

Well	NJDEP Well ID	Depth of Well Feet	Well Diameter Inch	Depth to Water Feet
00M5MW10	29-325574	17.25	4	4.48
00M5MW11	29-325575	16.8	4	7.38
00M5MW12	29-39179	16.1	2	6.08
00M5MW13	29-39178	18.82	2	2.8
00M5MW14	29-39177	20.15	2	3.37
00M5MW15	29-40120	19.71	4	8.97
00M5MW16	29-40121	17.93	4	7.05
00M5MW18	29-40123	20.17	4	7.48
00M5MW19	29-40124	19.98	4	7.12
00M5MW20	29-40122	16.07	4	6.15
00M5MW23	29-40125	19.75	4	8.44
00M5MW25	29-40126	19.94	4	11.73

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEP CERTIFICATION # 13461

Definition of Qualifiers

MDL	**:**	**Method Detection Limit**
J	**:**	**Compound identified below detection limit**
B	**:**	**Compound found in blank**
D	**:**	**Results are from a dilution of the sample**
U	**:**	**Compound searched for but not detected**
E	**:**	**Compound exceeds calibration limit**
PQL	**:**	**Practical Quantitation Limit**
NLE	**:**	**No limit established**
RT	**:**	**Retention time**

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB014033.D**	Sample Name	**MB 08Aug03**
Operator	**Skelton**	Field ID	**MB 08Aug03**
Date Acquired	**8 Aug 2003 4:19 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **MB 08Aug03**

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30439 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: MB 08Aug03

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB014033.D

Level: (low/med) LOW Date Received: 7/30/2003

% Moisture: not dec. Date Analyzed: 8/8/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB014075.D**	Sample Name	**MB 12Aug03**
Operator	**Skelton**	Field ID	**MB 12Aug03**
Date Acquired	**12 Aug 2003 8:20 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

MB 12Aug03

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30439 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: MB 12Aug03

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB014075.D

Level: (low/med) LOW Date Received: 7/30/2003

% Moisture: not dec. Date Analyzed: 8/12/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB014076.D**	Sample Name	**3043901**
Operator	**Skelton**	Field ID	**Trip Blank**
Date Acquired	**12 Aug 2003 8:55 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78. ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform	16.17	72413	1.44 ug/L	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

Trip Blank

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30439 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 3043901

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB014076.D

Level: (low/med) LOW Date Received: 7/30/2003

% Moisture: not dec. Date Analyzed: 8/12/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB014077.D**	Sample Name	**3043902**
Operator	**Skelton**	Field ID	**Field Blank**
Date Acquired	**12 Aug 2003 9:31 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform	16.16	66477	1.28 ug/L	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

Field Blank

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30439 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 3043902

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB014077.D

Level: (low/med) LOW Date Received: 7/30/2003

% Moisture: not dec. Date Analyzed: 8/12/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB014078.D**	Sample Name	**3043903**
Operator	**Skelton**	Field ID	**Dupe**
Date Acquired	**12 Aug 2003 10:07 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

Dupe

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30439 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 3043903

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB014078.D

Level: (low/med) LOW Date Received: 7/30/2003

% Moisture: not dec. Date Analyzed: 8/12/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB014079.D**	Sample Name	**3043904**
Operator	**Skelton**	Field ID	**M5MW10**
Date Acquired	**12 Aug 2003 10:43 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **M5MW10**

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30439 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 3043904

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB014079.D

Level: (low/med) LOW Date Received: 7/30/2003

% Moisture: not dec. Date Analyzed: 8/12/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	16.13	3	J

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB014080.D**	Sample Name	**3043905**
Operator	**Skelton**	Field ID	**M5MW11**
Date Acquired	**12 Aug 2003 11:19 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene	18.68	39495	1.42 ug/L	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	22.24	145410	5.74 ug/L	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **M5MW11**

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30439 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 3043905

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB014080.D

Level: (low/med) LOW Date Received: 7/30/2003

% Moisture: not dec. Date Analyzed: 8/12/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB014081.D**	Sample Name	**3043906**
Operator	**Skelton**	Field ID	**M5MW12**
Date Acquired	**12 Aug 2003 11:55 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **M5MW12**

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30439 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 3043906

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB014081.D

Level: (low/med) LOW Date Received: 7/30/2003

% Moisture: not dec. Date Analyzed: 8/12/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB014049.D**	Sample Name	**3043907**
Operator	**Skelton**	Field ID	**M5MW13**
Date Acquired	**9 Aug 2003 1:56 am**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **M5MW13**

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30439 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 3043907

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB014049.D

Level: (low/med) LOW Date Received: 7/30/2003

% Moisture: not dec. Date Analyzed: 8/9/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB014050.D**	Sample Name	**3043908**
Operator	**Skelton**	Field ID	**M5MW14**
Date Acquired	**9 Aug 2003 2:31 am**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L.	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **M5MW14**

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30439 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 3043908

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB014050.D

Level: (low/med) LOW Date Received: 7/30/2003

% Moisture: not dec. Date Analyzed: 8/9/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB014051.D**	Sample Name	**3043909**
Operator	**Skelton**	Field ID	**M5MW15**
Date Acquired	**9 Aug 2003 3:08 am**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

M5MW15

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30439 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 3043909

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB014051.D

Level: (low/med) LOW Date Received: 7/30/2003

% Moisture: not dec. Date Analyzed: 8/9/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB014052.D**	Sample Name	**3043910**
Operator	**Skelton**	Field ID	**M5MW16**
Date Acquired	**9 Aug 2003 3:44 am**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	15.50	938659	20.30 ug/L	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene	18.68	199657	5.61 ug/L	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	22.24	668229	18.57 ug/L	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **M5MW16**

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30439 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 3043910

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB014052.D

Level: (low/med) LOW Date Received: 7/30/2003

% Moisture: not dec. Date Analyzed: 8/9/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB014053.D**	Sample Name	**3043911**
Operator	**Skelton**	Field ID	**M5MW18**
Date Acquired	**9 Aug 2003 4:20 am**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **M5MW18**

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30439 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 3043911

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB014053.D

Level: (low/med) LOW Date Received: 7/30/2003

% Moisture: not dec. Date Analyzed: 8/9/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB014054.D**	Sample Name	**3043912**
Operator	**Skelton**	Field ID	**M5MW19**
Date Acquired	**9 Aug 2003 4:56 am**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	22.24	34733	1.01 ug/L	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **M5MW19**

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30439 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 3043912

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB014054.D

Level: (low/med) LOW Date Received: 7/30/2003

% Moisture: not dec. Date Analyzed: 8/9/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB014055.D**	Sample Name	**3043913**
Operator	**Skelton**	Field ID	**M5MW20**
Date Acquired	**9 Aug 2003 5:32 am**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	15.49	46841	1.10 ug/L	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	22.24	513609	15.26 ug/L	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **M5MW20**

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30439 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 3043913

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB014055.D

Level: (low/med) LOW Date Received: 7/30/2003

% Moisture: not dec. Date Analyzed: 8/9/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB014056.D**	Sample Name	**3043914**
Operator	**Skelton**	Field ID	**M5MW23**
Date Acquired	**9 Aug 2003 6:08 am**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone	17.01	37132	2.75 ug/L	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	15.49	195853	4.60 ug/L	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene	18.67	82875	2.51 ug/L	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	22.24	679221	20.45 ug/L	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **M5MW23**

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30439 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 3043914

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB014056.D

Level: (low/med) LOW Date Received: 7/30/2003

% Moisture: not dec. Date Analyzed: 8/9/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB014057.D**	Sample Name	**3043915**
Operator	**Skelton**	Field ID	**M5MW25**
Date Acquired	**9 Aug 2003 6:44 am**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	50	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	50	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	70	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	30	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	5	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	10	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	2	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	700	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	100	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	70	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	300	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	10	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	6	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	30	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	2	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	1	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	2	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	1	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	1	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	400	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	1000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	nle	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	3	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	1	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	10	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	4	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	700	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	100	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	2	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6 2-Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **M5MW25**

Lab Name: FMETL Project: LTM

NJDEP#: 13461 Case No.: 30439 Location: M5 SDG No.: Wells

Matrix: (soil/water) WATER Lab Sample ID: 3043915

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB014057.D

Level: (low/med) LOW Date Received: 7/30/2003

% Moisture: not dec. Date Analyzed: 8/9/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA08317.D**	Sample Name	**MB-080503**
Operator	**BPatel**	Misc Info	**MB-080503-Aq.**
Date Acquired	**5-Aug-03**	Sample Multiplier	1

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	0.69	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.52	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.66	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.59	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.55	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	1.52	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.94	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.81	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.97	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.83	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	1.45	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.70	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	1.61	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.70	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.83	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.64	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.57	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.16	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	1.52	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.77	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	1.63	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.72	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.84	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.67	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.67	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.85	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	1.38	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.74	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.66	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	1.28	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	1.53	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.66	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.49	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.63	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.62	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	1.35	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.89	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.54	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.88	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.62	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.88	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA08317.D**	Sample Name	**MB-080503**
Operator	**BPatel**	Misc Info	**MB-080503-Aq.**
Date Acquired	**5-Aug-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.58	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.60	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.54	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.60	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	1.02	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.59	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.52	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.57	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.60	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.56	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	1.24	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.51	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	1.21	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.22	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.55	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.61	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.54	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.06	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.57	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.63	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.48	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.67	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.11	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.97	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	1.16	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.26	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	1.24	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **MB-080503**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30439 Location: M5 SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: MB-080503

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA08317.D

Level: (low/med) LOW Date Received: 7/30/2003

% Moisture: _____ decanted: (Y/N) N Date Extracted: 8/5/2003

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 8/5/2003

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	6.70	11	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA08321.D**	Sample Name	**3043902**
Operator	**BPatel**	Misc Info	**Field Blank**
Date Acquired	**5-Aug-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	0.69	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.52	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.66	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.59	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.55	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	1.52	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.94	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.81	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.97	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.83	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	1.45	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.70	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	1.61	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.70	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.83	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.64	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.57	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.16	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	1.52	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.77	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	1.63	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.72	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.84	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.67	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.67	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.85	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	1.38	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.74	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.66	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	1.28	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	1.53	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.66	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.49	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.63	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.62	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	1.35	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.89	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.54	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.88	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.62	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.88	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA08321.D**	Sample Name	**3043902**
Operator	**BPatel**	Misc Info	**Field Blank**
Date Acquired	**5-Aug-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.58	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.60	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.54	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.60	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	1.02	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.59	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.52	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.57	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.60	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.56	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	1.24	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.51	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	1.21	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.22	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.55	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.61	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.54	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.06	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.57	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.63	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.48	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.67	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.11	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.97	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	1.16	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.26	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	1.24	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **Field Blank**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30439 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3043902

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA08321.D

Level: (low/med) LOW Date Received: 7/30/2003

% Moisture: decanted: (Y/N) N Date Extracted: 8/5/2003

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 8/5/2003

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	6.70	9	J
2. 000646-13-9	Octadecanoic acid, 2-methylprop	26.29	4	JN

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA08322.D**	Sample Name	**3043903**
Operator	**BPatel**	Misc Info	**Dupe**
Date Acquired	**5-Aug-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	0.69	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.52	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.66	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.59	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.55	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	1.52	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.94	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.81	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.97	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.83	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	1.45	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.70	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	1.61	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.70	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.83	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.64	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.57	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.16	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	1.52	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.77	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	1.63	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.72	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.84	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.67	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.67	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.85	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	1.38	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.74	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.66	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	1.28	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	1.53	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.66	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.49	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.63	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.62	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	1.35	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.89	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.54	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.88	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.62	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.88	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA08322.D**	Sample Name	**3043903**
Operator	**BPatel**	Misc Info	**Dupe**
Date Acquired	**5-Aug-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.58	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.60	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.54	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.60	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	1.02	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.59	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.52	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.57	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.60	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.56	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	1.24	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.51	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	1.21	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.22	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.55	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.61	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.54	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.06	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.57	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.63	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.48	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.67	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.11	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.97	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	1.16	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.26	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	1.24	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **Dupe**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30439 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3043903

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA08322.D

Level: (low/med) LOW Date Received: 7/30/2003

% Moisture: decanted: (Y/N) N Date Extracted: 8/5/2003

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 8/5/2003

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	6.70	9	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA08323.D**	Sample Name	**3043904**
Operator	**BPatel**	Misc Info	**M5MW10**
Date Acquired	**5-Aug-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	0.69	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.52	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.66	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.59	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.55	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	1.52	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.94	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.81	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.97	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.83	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	1.45	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.70	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	1.61	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.70	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.83	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.64	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.57	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.16	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	1.52	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.77	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	1.63	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.72	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.84	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.67	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.67	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.85	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	1.38	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.74	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.66	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	1.28	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	1.53	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.66	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.49	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.63	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.62	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	1.35	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.89	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.54	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.88	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.62	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.88	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA08323.D**	Sample Name	**3043904**
Operator	**BPatel**	Misc Info	**M5MW10**
Date Acquired	**5-Aug-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.58	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.60	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.54	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.60	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	1.02	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.59	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.52	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.57	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.60	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.56	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	1.24	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.51	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	1.21	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.22	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.55	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.61	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.54	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.06	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.57	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.63	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.48	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.67	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.11	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.97	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	1.16	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.26	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	1.24	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **M5MW10**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30439 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3043904

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA08323.D

Level: (low/med) LOW Date Received: 7/30/2003

% Moisture: decanted: (Y/N) N Date Extracted: 8/5/2003

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 8/5/2003

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	6.70	9	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA08324.D**	Sample Name	**3043905**
Operator	**BPatel**	Misc Info	**M5MW11**
Date Acquired	**6-Aug-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	0.69	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.52	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.66	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.59	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.55	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	1.52	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.94	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.81	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.97	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.83	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	1.45	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.70	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	1.61	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.70	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.83	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.64	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.57	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.16	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	1.52	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.77	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	1.63	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.72	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.84	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.67	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.67	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.85	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	1.38	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.74	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.66	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	1.28	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	1.53	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.66	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.49	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.63	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.62	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	1.35	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.89	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.54	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.88	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.62	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.88	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name **BNA08324.D**
Operator **BPatel**
Date Acquired **6-Aug-03**

Sample Name **3043905**
Misc Info **M5MW11**
Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.58	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.60	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.54	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.60	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	1.02	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.59	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.52	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.57	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.60	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.56	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	1.24	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.51	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	1.21	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.22	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.55	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.61	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.54	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.06	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.57	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.63	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.48	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.67	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.11	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.97	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	1.16	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.26	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	1.24	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **M5MW11**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30439 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3043905

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA08324.D

Level: (low/med) LOW Date Received: 7/30/2003

% Moisture: decanted: (Y/N) N Date Extracted: 8/5/2003

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 8/6/2003

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 1 (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	6.70	9	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA08325.D**	Sample Name	**3043906**
Operator	**BPatel**	Misc Info	**M5MW12**
Date Acquired	**6-Aug-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	0.69	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.52	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.66	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.59	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.55	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	1.52	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.94	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.81	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.97	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.83	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	1.45	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.70	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	1.61	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.70	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.83	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.64	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.57	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.16	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	1.52	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.77	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	1.63	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.72	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.84	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.67	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.67	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.85	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	1.38	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.74	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.66	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	1.28	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	1.53	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.66	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.49	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.63	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.62	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	1.35	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.89	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.54	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.88	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.62	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.88	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA08325.D**	Sample Name	**3043906**
Operator	**BPatel**	Misc Info	**M5MW12**
Date Acquired	**6-Aug-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.58	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.60	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.54	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.60	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	1.02	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.59	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.52	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.57	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.60	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.56	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	1.24	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.51	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	1.21	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.22	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.55	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.61	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.54	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.06	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.57	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.63	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.48	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.67	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.11	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.97	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	1.16	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.26	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	1.24	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **M5MW12**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30439 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3043906

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA08325.D

Level: (low/med) LOW Date Received: 7/30/2003

% Moisture: decanted: (Y/N) N Date Extracted: 8/5/2003

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 8/6/2003

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 1 (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	6.70	12	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA08326.D**	Sample Name	**3043907**
Operator	**BPatel**	Misc Info	**M5MW13**
Date Acquired	**6-Aug-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	0.69	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.52	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.66	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.59	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.55	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	1.52	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.94	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.81	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.97	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.83	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	1.45	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.70	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	1.61	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.70	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.83	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.64	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.57	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.16	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	1.52	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.77	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	1.63	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.72	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.84	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.67	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.67	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.85	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	1.38	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.74	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.66	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	1.28	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	1.53	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.66	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.49	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.63	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.62	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	1.35	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.89	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.54	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.88	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.62	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.88	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA08326.D**	Sample Name	**3043907**
Operator	**BPatel**	Misc Info	**M5MW13**
Date Acquired	**6-Aug-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.58	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.60	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.54	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.60	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	1.02	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.59	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.52	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.57	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.60	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.56	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	1.24	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.51	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	1.21	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.22	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.55	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.61	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.54	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.06	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.57	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.63	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.48	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.67	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.11	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.97	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	1.16	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.26	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	1.24	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **M5MW13**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30439 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3043907

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA08326.D

Level: (low/med) LOW Date Received: 7/30/2003

% Moisture: decanted: (Y/N) N Date Extracted: 8/5/2003

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 8/6/2003

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	6.70	9	J
2.	unknown	9.43	5	J

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA08327.D**	Sample Name	**3043908**
Operator	**BPatel**	Misc Info	**M5MW14**
Date Acquired	**6-Aug-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	0.69	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.52	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.66	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.59	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.55	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	1.52	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.94	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.81	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.97	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.83	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	1.45	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.70	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	1.61	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.70	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.83	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.64	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.57	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.16	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	1.52	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.77	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	1.63	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.72	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.84	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.67	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.67	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.85	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	1.38	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.74	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.66	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	1.28	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	1.53	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.66	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.49	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.63	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.62	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	1.35	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.89	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.54	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.88	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.62	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.88	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA08327.D**	Sample Name	**3043908**
Operator	**BPatel**	Misc Info	**M5MW14**
Date Acquired	**6-Aug-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.58	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.60	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.54	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.60	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	1.02	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.59	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.52	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.57	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.60	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.56	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	1.24	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.51	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	1.21	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.22	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.55	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.61	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.54	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.06	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.57	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.63	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.48	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.67	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.11	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.97	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	1.16	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.26	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	1.24	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **M5MW14**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30439 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3043908

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA08327.D

Level: (low/med) LOW Date Received: 7/30/2003

% Moisture: decanted: (Y/N) N Date Extracted: 8/5/2003

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 8/6/2003

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 3 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	6.70	10	J
2.	unknown	24.56	6	J
3. 000646-13-9	Octadecanoic acid, 2-methylprop	26.29	6	JN

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA08328.D**	Sample Name	**3043909**
Operator	**BPatel**	Misc Info	**M5MW15**
Date Acquired	**6-Aug-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	0.69	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.52	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.66	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.59	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.55	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	1.52	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.94	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.81	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.97	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.83	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	1.45	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.70	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	1.61	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.70	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.83	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.64	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.57	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.16	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	1.52	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.77	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	1.63	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.72	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.84	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.67	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.67	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.85	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	1.38	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.74	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.66	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	1.28	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	1.53	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.66	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.49	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.63	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.62	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	1.35	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.89	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.54	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.88	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.62	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.88	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA08328.D**	Sample Name	**3043909**
Operator	**BPatel**	Misc Info	**M5MW15**
Date Acquired	**6-Aug-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.58	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.60	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.54	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.60	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	1.02	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.59	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.52	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.57	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.60	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.56	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	1.24	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.51	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	1.21	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.22	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.55	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.61	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.54	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.06	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.57	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.63	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.48	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.67	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.11	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.97	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	1.16	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.26	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	1.24	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **M5MW15**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30439 Location: M5 SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 3043909

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA08328.D

Level: (low/med) LOW Date Received: 7/30/2003

% Moisture: _____ decanted: (Y/N) N Date Extracted: 8/5/2003

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 8/6/2003

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 5 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 000541-05-9	Cyclotrisiloxane, hexamethyl-	5.97	8	JN
2.	unknown	6.70	10	J
3.	unknown	9.43	5	J
4.	unknown	24.56	6	J
5. 000646-13-9	Octadecanoic acid, 2-methylprop	26.29	6	JN

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA08329.D**	Sample Name	**3043910**
Operator	**BPatel**	Misc Info	**M5MW16**
Date Acquired	**6-Aug-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	0.69	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.52	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.66	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.59	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.55	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	1.52	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.94	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.81	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.97	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.83	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	1.45	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.70	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	1.61	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.70	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.83	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.64	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.57	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.16	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	1.52	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.77	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	1.63	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.72	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.84	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.67	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.67	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.85	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	1.38	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.74	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.66	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	1.28	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	1.53	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.66	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.49	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.63	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.62	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	1.35	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.89	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.54	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.88	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.62	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.88	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA08329.D**	Sample Name	**3043910**
Operator	**BPatel**	Misc Info	**M5MW16**
Date Acquired	**6-Aug-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.58	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.60	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.54	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.60	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	1.02	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.59	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.52	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.57	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.60	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.56	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	1.24	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.51	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	1.21	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.22	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.55	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.61	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.54	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.06	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.57	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.63	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.48	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.67	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.11	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.97	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	1.16	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.26	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	1.24	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **M5MW16**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30439 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3043910

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA08329.D

Level: (low/med) LOW Date Received: 7/30/2003

% Moisture: decanted: (Y/N) N Date Extracted: 8/5/2003

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 8/6/2003

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 3 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	6.70	12	J
2.	unknown	24.56	7	J
3. 000123-95-5	Octadecanoic acid, butyl ester	26.29	7	JN

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name **BNA08330.D**
Operator **BPatel**
Date Acquired **6-Aug-03**

Sample Name **3043911**
Misc Info **M5MW18**
Sample Multiplier **1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	0.69	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.52	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.66	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.59	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.55	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	1.52	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.94	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.81	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.97	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.83	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	1.45	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.70	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	1.61	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.70	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.83	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.64	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.57	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.16	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	1.52	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.77	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	1.63	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.72	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.84	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.67	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.67	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.85	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	1.38	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.74	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.66	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	1.28	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	1.53	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.66	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.49	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.63	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.62	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	1.35	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.89	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.54	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.88	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.62	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.88	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA08330.D**	Sample Name	**3043911**
Operator	**BPatel**	Misc Info	**M5MW18**
Date Acquired	**6-Aug-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.58	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.60	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.54	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.60	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	1.02	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.59	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.52	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.57	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.60	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.56	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	1.24	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.51	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	1.21	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.22	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.55	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.61	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.54	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.06	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.57	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.63	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.48	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.67	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.11	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.97	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	1.16	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.26	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	1.24	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **M5MW18**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30439 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3043911

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA08330.D

Level: (low/med) LOW Date Received: 7/30/2003

% Moisture: decanted: (Y/N) N Date Extracted: 8/5/2003

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 8/6/2003

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 6 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 059242-27-2	Furan, 2,5-dihydro-2,5-dimethyl-	5.71	9	JN
2.	unknown	5.96	6	J
3. 000541-05-9	Cyclotrisiloxane, hexamethyl-	6.01	12	JN
4.	unknown	6.70	6	J
5.	unknown	24.56	8	J
6. 000646-13-9	Octadecanoic acid, 2-methylprop	26.29	8	JN

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA08331.D**	Sample Name	**3043912**
Operator	**BPatel**	Misc Info	**M5MW19**
Date Acquired	**6-Aug-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	0.69	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.52	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.66	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.59	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.55	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	1.52	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.94	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.81	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.97	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.83	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	1.45	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.70	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	1.61	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.70	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.83	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.64	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.57	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.16	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	1.52	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.77	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	1.63	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.72	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.84	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.67	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.67	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.85	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	1.38	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.74	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.66	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	1.28	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	1.53	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.66	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.49	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.63	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.62	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	1.35	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.89	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.54	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.88	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.62	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.88	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA08331.D**	Sample Name	**3043912**
Operator	**BPatel**	Misc Info	**M5MW19**
Date Acquired	**6-Aug-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.58	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.60	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.54	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.60	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	1.02	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.59	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.52	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.57	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.60	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.56	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	1.24	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.51	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	1.21	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.22	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.55	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.61	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.54	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.06	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.57	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.63	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.48	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.67	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.11	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.97	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	1.16	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.26	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	1.24	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
MDL= Method Detection Limit
D= Value from dilution
NLE= No Limit Established
B= Compound in Related Blank
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **M5MW19**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30439 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3043912

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA08331.D

Level: (low/med) LOW Date Received: 7/30/2003

% Moisture: decanted: (Y/N) N Date Extracted: 8/5/2003

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 8/6/2003

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 3 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	6.70	11	J
2.	unknown	24.56	8	J
3. 000646-13-9	Octadecanoic acid, 2-methylprop	26.29	8	JN

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA08332.D**	Sample Name	**3043913**
Operator	**BPatel**	Misc Info	**M5MW20**
Date Acquired	**6-Aug-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	0.69	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.52	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.66	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.59	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.55	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	1.52	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.94	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.81	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.97	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.83	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	1.45	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.70	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	1.61	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.70	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.83	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.64	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.57	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.16	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	1.52	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.77	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	1.63	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.72	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.84	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.67	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.67	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.85	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	1.38	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.74	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.66	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	1.28	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	1.53	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.66	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.49	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.63	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.62	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	1.35	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.89	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.54	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.88	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.62	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.88	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA08332.D**	Sample Name	**3043913**
Operator	**BPatel**	Misc Info	**M5MW20**
Date Acquired	**6-Aug-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.58	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.60	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.54	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.60	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	1.02	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.59	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.52	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.57	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.60	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.56	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	1.24	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.51	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	1.21	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.22	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.55	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.61	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.54	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.06	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.57	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.63	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.48	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.67	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.11	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.97	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	1.16	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.26	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	1.24	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **M5MW20**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30439 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3043913

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA08332.D

Level: (low/med) LOW Date Received: 7/30/2003

% Moisture: decanted: (Y/N) N Date Extracted: 8/5/2003

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 8/6/2003

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 3 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	6.70	10	J
2.	unknown	24.56	10	J
3. 000123-95-5	Octadecanoic acid, butyl ester	26.29	9	JN

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA08333.D**	Sample Name	**3043914**
Operator	**BPatel**	Misc Info	**M5MW23**
Date Acquired	**6-Aug-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	0.69	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.52	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.66	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.59	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.55	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	1.52	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.94	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.81	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.97	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.83	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	1.45	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.70	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	1.61	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.70	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.83	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.64	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.57	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.16	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	1.52	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.77	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	1.63	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.72	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.84	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.67	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.67	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.85	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	1.38	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.74	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.66	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	1.28	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	1.53	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.66	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.49	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.63	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.62	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	1.35	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.89	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.54	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.88	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.62	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.88	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA08333.D**	Sample Name	**3043914**
Operator	**BPatel**	Misc Info	**M5MW23**
Date Acquired	**6-Aug-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.58	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.60	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.54	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.60	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	1.02	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.59	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.52	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.57	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.60	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.56	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	1.24	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.51	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	1.21	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.22	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.55	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.61	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.54	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.06	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.57	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.63	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.48	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.67	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.11	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.97	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	1.16	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.26	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	1.24	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **M5MW23**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30439 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3043914

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA08333.D

Level: (low/med) LOW Date Received: 7/30/2003

% Moisture: decanted: (Y/N) N Date Extracted: 8/5/2003

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 8/6/2003

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

Number TICs found: 3 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	6.70	12	J
2.	unknown	24.56	13	J
3. 000123-95-5	Octadecanoic acid, butyl ester	26.29	12	JN

Semi-Volatile Analysis Report

U.S. Army, Fort Monmouth Environmental Laboratory

NJDEP Certification #13461

Data File Name	**BNA08336.D**	Sample Name	**3043915**
Operator	**BPatel**	Misc Info	**M5MW25**
Date Acquired	**6-Aug-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
110-86-1	Pyridine			not detected	NLE	0.69	10.00	ug/L	
62-75-9	N-nitroso-dimethylamine			not detected	20	0.52	10.00	ug/L	
62-53-3	Aniline			not detected	NLE	1.66	10.00	ug/L	
108-95-2	Phenol			not detected	4000	0.59	10.00	ug/L	
111-44-4	bis(2-Chloroethyl)ether			not detected	10	0.55	10.00	ug/L	
95-57-8	2-Chlorophenol			not detected	40	1.52	10.00	ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	600	0.94	10.00	ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	75	0.81	10.00	ug/L	
100-51-6	Benzyl alcohol			not detected	NLE	0.97	10.00	ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	600	0.83	10.00	ug/L	
95-48-7	2-Methylphenol			not detected	NLE	1.45	10.00	ug/L	
39638-32-9	bis(2-chloroisopropyl)ether			not detected	300	0.70	10.00	ug/L	
106-44-5	4-Methylphenol			not detected	NLE	1.61	10.00	ug/L	
621-64-7	n-Nitroso-di-n-propylamine			not detected	20	0.70	10.00	ug/L	
67-72-1	Hexachloroethane			not detected	10	0.83	10.00	ug/L	
98-95-3	Nitrobenzene			not detected	10	0.64	10.00	ug/L	
78-59-1	Isophorone			not detected	100	0.57	10.00	ug/L	
88-75-5	2-Nitrophenol			not detected	NLE	1.16	10.00	ug/L	
105-67-9	2,4-Dimethylphenol			not detected	100	1.52	10.00	ug/L	
111-91-1	bis(2-Chloroethoxy)methane			not detected	NLE	0.77	10.00	ug/L	
120-83-2	2,4-Dichlorophenol			not detected	20	1.63	10.00	ug/L	
65-85-0	Benzoic Acid			not detected	NLE	0.72	10.00	ug/L	
120-82-1	1,2,4-Trichlorobenzene			not detected	9	0.84	10.00	ug/L	
91-20-3	Naphthalene			not detected	NLE	0.67	10.00	ug/L	
106-47-8	4-Chloroaniline			not detected	NLE	1.67	10.00	ug/L	
87-68-3	Hexachlorobutadiene			not detected	1	0.85	10.00	ug/L	
59-50-7	4-Chloro-3-methylphenol			not detected	NLE	1.38	10.00	ug/L	
91-57-6	2-Methylnaphthalene			not detected	NLE	0.74	10.00	ug/L	
77-47-4	Hexachlorocyclopentadiene			not detected	50	0.66	10.00	ug/L	
88-06-2	2,4,6-Trichlorophenol			not detected	20	1.28	10.00	ug/L	
95-95-4	2,4,5-Trichlorophenol			not detected	700	1.53	10.00	ug/L	
91-58-7	2-Chloronaphthalene			not detected	NLE	0.66	10.00	ug/L	
88-74-4	2-Nitroaniline			not detected	NLE	1.49	10.00	ug/L	
131-11-3	Dimethylphthalate			not detected	7000	0.63	10.00	ug/L	
208-96-8	Acenaphthylene			not detected	NLE	0.62	10.00	ug/L	
606-20-2	2,6-Dinitrotoluene			not detected	NLE	1.35	10.00	ug/L	
99-09-2	3-Nitroaniline			not detected	NLE	0.89	10.00	ug/L	
83-32-9	Acenaphthene			not detected	400	0.54	10.00	ug/L	
51-28-5	2,4-Dinitrophenol			not detected	40	0.88	10.00	ug/L	
132-64-9	Dibenzofuran			not detected	NLE	0.62	10.00	ug/L	
100-02-7	4-Nitrophenol			not detected	NLE	0.88	10.00	ug/L	

Semi-Volatile Analysis Report
Page 2

Data File Name	**BNA08336.D**	Sample Name	**3043915**
Operator	**BPatel**	Misc Info	**M5MW25**
Date Acquired	**6-Aug-03**	Sample Multiplier	**1**

CAS#	Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL		Qualifier
121-14-2	2,4-Dinitrotoluene			not detected	10	0.58	10.00	ug/L	
84-66-2	Diethylphthalate			not detected	5000	0.60	10.00	ug/L	
86-73-7	Fluorene			not detected	300	0.54	10.00	ug/L	
7005-72-3	4-Chlorophenyl-phenylether			not detected	NLE	0.60	10.00	ug/L	
100-01-6	4-Nitroaniline			not detected	NLE	0.77	10.00	ug/L	
534-52-1	4,6-Dinitro-2-methylphenol			not detected	NLE	1.02	10.00	ug/L	
86-30-6	n-Nitrosodiphenylamine			not detected	20	0.59	10.00	ug/L	
103-33-3	Azobenzene			not detected	NLE	0.52	10.00	ug/L	
101-55-3	4-Bromophenyl-phenylether			not detected	NLE	0.57	10.00	ug/L	
118-74-1	Hexachlorobenzene			not detected	10	0.60	10.00	ug/L	
87-86-5	Pentachlorophenol			not detected	1	0.95	10.00	ug/L	
85-01-8	Phenanthrene			not detected	NLE	0.56	10.00	ug/L	
120-12-7	Anthracene			not detected	2000	1.24	10.00	ug/L	
84-74-2	Di-n-butylphthalate			not detected	900	0.51	10.00	ug/L	
206-44-0	Fluoranthene			not detected	300	1.21	10.00	ug/L	
92-87-5	Benzidine			not detected	50	2.22	10.00	ug/L	
129-00-0	Pyrene			not detected	200	0.55	10.00	ug/L	
85-68-7	Butylbenzylphthalate			not detected	100	0.61	10.00	ug/L	
56-55-3	Benzo[a]anthracene			not detected	10	0.54	10.00	ug/L	
91-94-1	3,3'-Dichlorobenzidine			not detected	60	1.06	10.00	ug/L	
218-01-9	Chrysene			not detected	20	0.57	10.00	ug/L	
117-81-7	bis(2-Ethylhexyl)phthalate			not detected	30	1.63	10.00	ug/L	
117-84-0	Di-n-octylphthalate			not detected	100	1.48	10.00	ug/L	
205-99-2	Benzo[b]fluoranthene			not detected	10	0.67	10.00	ug/L	
207-08-9	Benzo[k]fluoranthene			not detected	2	1.11	10.00	ug/L	
50-32-8	Benzo[a]pyrene			not detected	20	0.97	10.00	ug/L	
193-39-5	Indeno[1,2,3-cd]pyrene			not detected	20	1.16	10.00	ug/L	
53-70-3	Dibenz[a,h]anthracene			not detected	20	1.26	10.00	ug/L	
191-24-2	Benzo[g,h,i]perylene			not detected	NLE	1.24	10.00	ug/L	

* Higher of PQL's and Ground Water Criteria as per NJAC 7:9-6 2-Sept-97

Qualifiers

E= Value Exceeds Linear Range
D= Value from dilution
B= Compound in Related Blank
MDL= Method Detection Limit
NLE= No Limit Established
R.T.=Retention Time
RL= Reporting Limit. The values between the MDL and RL are considered estimated.

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Field Id: **M5MW25**

Lab Name: FMETL Lab Code 13461

Project: LTM Case No.: 30439 Location: M5 SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3043915

Sample wt/vol: 1000 (g/ml) ML Lab File ID: BNA08336.D

Level: (low/med) LOW Date Received: 7/30/2003

% Moisture: decanted: (Y/N) N Date Extracted: 8/5/2003

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 8/6/2003

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

Number TICs found: 3 (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	6.70	11	J
2.	unknown	24.56	10	J
3. 000646-13-9	Octadecanoic acid, 2-methylprop	26.29	9	JN

U.S. Army, Fort Monmouth Environmental Laboratory.
173 Riverside Avenue, NJ 07703.

TABULATED ANALYTICAL REPORT
SW 846 608
Pesticides/PCB

mb 080603

Matrix: Aqueous
Date Extracted: 8/6/2003
Ext. Batch: 080603
Filename: 01028.D
Date Analysed: 8/6/2003

Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.0011
319-85-7	beta-BHC	ND	0.0050
58-89-9	gamma-BHC	ND	0.0013
319-86-8	delta-BHC	ND	0.0016
76-44-8	Heptachlor	ND	0.0035
309-00-2	Aldrin	ND	0.0026
1024-57-3	Heptachlor epoxide	ND	0.0020
5103-71-9	gamma-Chlordane	ND	0.0007
5103-74-2	alpha-Chlordane	ND	0.0036
959-98-8	Endosulfan I	ND	0.0016
72-55-9	4,4'-DDE	ND	0.0021
60-57-1	Dieldrin	ND	0.0020
72-20-8	Endrin	ND	0.0032
33213-65-9	Endosulfan II	ND	0.0022
72-54-8	4,4'-DDD	ND	0.0020
7421-93-4	Endrin aldehyde	ND	0.0100
50-29-3	4,4'-DDT	ND	0.0052
1031-07-8	Endosulfan sulfate	ND	0.0026
53494-70-5	Endrin ketone	ND	0.0026
72-43-5	Methoxychlor	ND	0.0100
8001-35-2	Toxaphene	ND	0.0157
12674-11-2	Arochlor 1016	ND	0.0683
11104-28-2	Arochlor 1221	ND	0.0666
11141-16-5	Arochlor 1232	ND	0.0648
53469-21-9	Arochlor 1242	ND	0.0485
12672-29-6	Arochlor 1248	ND	0.0544
11097-69-1	Arochlor 1254	ND	0.0608
11096-82-5	Arochlor 1260	ND	0.0732

MDL = METHOD DETECTION LIMIT
ND =NOT DETECTED, BELOW MDL

Initial vol. (ml): 1000.00
Final vol. (ml): 10

U. S. Army, Fort Monmouth Environmental Laboratory.
173 Riverside Avenue, NJ 07703.

Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client:	**U.S. Army, DPW, SELFM-PW-EV**	**Location:**	**M5 Wells 3rd Qrtr. '03**
Project Name:	**M5 Wells 3rd Qrtr. '03**	**MATRIX:**	**Aqueous**
Field ID:	**FIELDBLANK**	**Ext. Batch:**	**080603**
Lab ID:	**3043902**	**Date Extracted:**	**8/6/2003**
Filename:	**01030.D**	**Date Analyzed:**	**06-Aug-03**
Lab Project :	**30439**	**Dilution:**	**1**
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	**alpha-BHC**	ND	0.01	0.02		0.0011
319-85-7	**beta-BHC**	ND	0.01	0.20		0.0050
58-89-9	**gamma-BHC**	ND	0.01	0.20		0.0013
319-86-8	**delta-BHC**	ND	0.01	NLE		0.0016
76-44-8	**Heptachlor**	ND	0.01	0.40		0.0035
309-00-2	**Aldrin**	ND	0.01	0.04		0.0026
1024-57-3	**Heptachlor epoxide**	ND	0.01	0.20		0.0020
5103-71-9	**gamma-Chlordane**	ND	0.01	0.50		0.0007
5103-74-2	**alpha-Chlordane**	ND	0.01	0.50		0.0036
959-98-8	**Endosulfan I**	ND	0.01	0.40		0.0016
72-55-9	**4,4'-DDE**	ND	0.01	0.10		0.0021
60-57-1	**Dieldrin**	ND	0.01	0.03		0.0020
72-20-8	**Endrin**	ND	0.01	2.00		0.0032
33213-65-9	**Endosulfan II**	ND	0.01	0.40		0.0022
72-54-8	**4,4'-DDD**	ND	0.01	0.10		0.0020
7421-93-4	**Endrin aldehyde**	ND	0.01	NLE		0.0100
50-29-3	**4,4'-DDT**	ND	0.01	0.10		0.0052
1031-07-8	**Endosulfan sulfate**	ND	0.50	0.40		0.0026
53494-70-5	**Endrin ketone**	ND	0.50	0.01		0.0026
72-43-5	**Methoxychlor**	ND	0.50	40.00		0.0100
8001-35-2	**Toxaphene**	ND	0.50	3.00		0.0157
12674-11-2	**Arochlor 1016**	ND	0.50	0.50		0.0683
11104-28-2	**Arochlor 1221**	ND	0.50	0.5		0.0666
11141-16-5	**Arochlor 1232**	ND	0.50	0.50		0.0648
53469-21-9	**Arochlor 1242**	ND	0.50	0.50		0.0485
12672-29-6	**Arochlor 1248**	ND	0.50	0.50		0.0544
11097-69-1	**Arochlor 1254**	ND	0.50	0.50		0.0608
11096-82-5	**Arochlor 1260**	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) **1000.0**
Final Vol.(ml) **10.0**

***Higher of PQL's and ground water criteria as per NJAC 7:9-6**
***Results between MDL and RL are estimated.**
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

U. S. Army, Fort Monmouth Environmental Laboratory.

173 Riverside Avenue, NJ 07703.

Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client:	**U.S. Army, DPW, SELFM-PW-EV**	**Location:**	**M5 Wells 3rd Qrtr. '03**
Project Name:	**M5 Wells 3rd Qrtr. '03**	**MATRIX:**	**Aqueous**
Field ID:	**Dupe**	**Ext. Batch:**	**080603**
Lab ID:	**3043903**	**Date Extracted:**	**8/6/2003**
Filename:	**01031.D**	**Date Analyzed:**	**06-Aug-03**
Lab Project :	**30439**	**Dilution:**	**1**
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: M5 Wells 3rd Qrtr. '03
Field ID: M5MW10
Lab ID: 3043904
Filename: 01032.D
Lab Project : 30439

Location: M5 Wells 3rd Qrtr. '03
MATRIX: Aqueous
Ext. Batch: 080603
Date Extracted: 8/6/2003
Date Analyzed: 06-Aug-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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173 Riverside Avenue, NJ 07703.

Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client:	**U.S. Army, DPW, SELFM-PW-EV**	**Location:**	**M5 Wells 3rd Qrtr. '03**
Project Name:	**M5 Wells 3rd Qrtr. '03**	**MATRIX:**	**Aqueous**
Field ID:	**M5MW11**	**Ext. Batch:**	**080603**
Lab ID:	**3043905**	**Date Extracted:**	**8/6/2003**
Filename:	**01033.D**	**Date Analyzed:**	**06-Aug-03**
Lab Project :	**30439**	**Dilution:**	**1**
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: M5 Wells 3rd Qrtr. '03
Field ID: M5MW12
Lab ID: 3043906
Filename: 01034.D
Lab Project : 30439

Location: M5 Wells 3rd Qrtr. '03
MATRIX: Aqueous
Ext. Batch: 080603
Date Extracted: 8/6/2003
Date Analyzed: 06-Aug-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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173 Riverside Avenue, NJ 07703.

Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: M5 Wells 3rd Qrtr. '03
Field ID: M5MW13
Lab ID: 3043907
Filename: 01035.D
Lab Project : 30439

Location: M5 Wells 3rd Qrtr. '03
MATRIX: Aqueous
Ext. Batch: 080603
Date Extracted: 8/6/2003
Date Analyzed: 06-Aug-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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173 Riverside Avenue, NJ 07703.

Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: M5 Wells 3rd Qrtr. '03
Field ID: M5MW14
Lab ID: 3043908
Filename: 01036.D
Lab Project : 30439

Location: M5 Wells 3rd Qrtr. '03
MATRIX: Aqueous
Ext. Batch: 080603
Date Extracted: 8/6/2003
Date Analyzed: 06-Aug-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client:	**U.S. Army, DPW, SELFM-PW-EV**	**Location:**	**M5 Wells 3rd Qrtr. '03**
Project Name:	**M5 Wells 3rd Qrtr. '03**	**MATRIX:**	**Aqueous**
Field ID:	**M5MW15**	**Ext. Batch:**	**080603**
Lab ID:	**3043909**	**Date Extracted:**	**8/6/2003**
Filename:	**01037.D**	**Date Analyzed:**	**06-Aug-03**
Lab Project :	**30439**	**Dilution:**	**1**
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	**alpha-BHC**	ND	0.01	0.02		0.0011
319-85-7	**beta-BHC**	ND	0.01	0.20		0.0050
58-89-9	**gamma-BHC**	ND	0.01	0.20		0.0013
319-86-8	**delta-BHC**	ND	0.01	NLE		0.0016
76-44-8	**Heptachlor**	ND	0.01	0.40		0.0035
309-00-2	**Aldrin**	ND	0.01	0.04		0.0026
1024-57-3	**Heptachlor epoxide**	ND	0.01	0.20		0.0020
5103-71-9	**gamma-Chlordane**	ND	0.01	0.50		0.0007
5103-74-2	**alpha-Chlordane**	ND	0.01	0.50		0.0036
959-98-8	**Endosulfan I**	ND	0.01	0.40		0.0016
72-55-9	**4,4'-DDE**	ND	0.01	0.10		0.0021
60-57-1	**Dieldrin**	ND	0.01	0.03		0.0020
72-20-8	**Endrin**	ND	0.01	2.00		0.0032
33213-65-9	**Endosulfan II**	ND	0.01	0.40		0.0022
72-54-8	**4,4'-DDD**	ND	0.01	0.10		0.0020
7421-93-4	**Endrin aldehyde**	ND	0.01	NLE		0.0100
50-29-3	**4,4'-DDT**	ND	0.01	0.10		0.0052
1031-07-8	**Endosulfan sulfate**	ND	0.50	0.40		0.0026
53494-70-5	**Endrin ketone**	ND	0.50	0.01		0.0026
72-43-5	**Methoxychlor**	ND	0.50	40.00		0.0100
8001-35-2	**Toxaphene**	ND	0.50	3.00		0.0157
12674-11-2	**Arochlor 1016**	ND	0.50	0.50		0.0683
11104-28-2	**Arochlor 1221**	ND	0.50	0.5		0.0666
11141-16-5	**Arochlor 1232**	ND	0.50	0.50		0.0648
53469-21-9	**Arochlor 1242**	ND	0.50	0.50		0.0485
12672-29-6	**Arochlor 1248**	ND	0.50	0.50		0.0544
11097-69-1	**Arochlor 1254**	ND	0.50	0.50		0.0608
11096-82-5	**Arochlor 1260**	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) **1000.0**
Final Vol.(ml) **10.0**

***Higher of PQL's and ground water criteria as per NJAC 7:9-6**
***Results between MDL and RL are estimated.**
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: M5 Wells 3rd Qrtr. '03
Field ID: M5MW16
Lab ID: 3043910
Filename: 01038.D
Lab Project : 30439

Location: M5 Wells 3rd Qrtr. '03
MATRIX: Aqueous
Ext. Batch: 080603
Date Extracted: 8/6/2003
Date Analyzed: 06-Aug-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

U. S. Army, Fort Monmouth Environmental Laboratory.
173 Riverside Avenue, NJ 07703.

Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: M5 Wells 3rd Qrtr. '03
Field ID: M5MW18
Lab ID: 3043911
Filename: 01039.D
Lab Project : 30439

Location: M5 Wells 3rd Qrtr. '03
MATRIX: Aqueous
Ext. Batch: 080603
Date Extracted: 8/6/2003
Date Analyzed: 06-Aug-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

U. S. Army, Fort Monmouth Environmental Laboratory.
173 Riverside Avenue, NJ 07703.

Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: M5 Wells 3rd Qrtr. '03
Field ID: M5MW19
Lab ID: 3043912
Filename: 01040.D
Lab Project : 30439

Location: M5 Wells 3rd Qrtr. '03
MATRIX: Aqueous
Ext. Batch: 080603
Date Extracted: 8/6/2003
Date Analyzed: 06-Aug-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

U. S. Army, Fort Monmouth Environmental Laboratory.
173 Riverside Avenue, NJ 07703.

Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client:	**U.S. Army, DPW, SELFM-PW-EV**	**Location:**	**M5 Wells 3rd Qrtr. '03**
Project Name:	**M5 Wells 3rd Qrtr. '03**	**MATRIX:**	**Aqueous**
Field ID:	**M5MW20**	**Ext. Batch:**	**080603**
Lab ID:	**3043913**	**Date Extracted:**	**8/6/2003**
Filename:	**01041.D**	**Date Analyzed:**	**06-Aug-03**
Lab Project :	**30439**	**Dilution:**	**1**
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	**alpha-BHC**	ND	0.01	0.02		0.0011
319-85-7	**beta-BHC**	ND	0.01	0.20		0.0050
58-89-9	**gamma-BHC**	ND	0.01	0.20		0.0013
319-86-8	**delta-BHC**	ND	0.01	NLE		0.0016
76-44-8	**Heptachlor**	ND	0.01	0.40		0.0035
309-00-2	**Aldrin**	ND	0.01	0.04		0.0026
1024-57-3	**Heptachlor epoxide**	ND	0.01	0.20		0.0020
5103-71-9	**gamma-Chlordane**	ND	0.01	0.50		0.0007
5103-74-2	**alpha-Chlordane**	ND	0.01	0.50		0.0036
959-98-8	**Endosulfan I**	ND	0.01	0.40		0.0016
72-55-9	**4,4'-DDE**	ND	0.01	0.10		0.0021
60-57-1	**Dieldrin**	ND	0.01	0.03		0.0020
72-20-8	**Endrin**	ND	0.01	2.00		0.0032
33213-65-9	**Endosulfan II**	ND	0.01	0.40		0.0022
72-54-8	**4,4'-DDD**	ND	0.01	0.10		0.0020
7421-93-4	**Endrin aldehyde**	ND	0.01	NLE		0.0100
50-29-3	**4,4'-DDT**	ND	0.01	0.10		0.0052
1031-07-8	**Endosulfan sulfate**	ND	0.50	0.40		0.0026
53494-70-5	**Endrin ketone**	ND	0.50	0.01		0.0026
72-43-5	**Methoxychlor**	ND	0.50	40.00		0.0100
8001-35-2	**Toxaphene**	ND	0.50	3.00		0.0157
12674-11-2	**Arochlor 1016**	ND	0.50	0.50		0.0683
11104-28-2	**Arochlor 1221**	ND	0.50	0.5		0.0666
11141-16-5	**Arochlor 1232**	ND	0.50	0.50		0.0648
53469-21-9	**Arochlor 1242**	ND	0.50	0.50		0.0485
12672-29-6	**Arochlor 1248**	ND	0.50	0.50		0.0544
11097-69-1	**Arochlor 1254**	ND	0.50	0.50		0.0608
11096-82-5	**Arochlor 1260**	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) **1000.0**
Final Vol.(ml) **10.0**

***Higher of PQL's and ground water criteria as per NJAC 7:9-6**
***Results between MDL and RL are estimated.**
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

U. S. Army, Fort Monmouth Environmental Laboratory.
173 Riverside Avenue, NJ 07703.

Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: M5 Wells 3rd Qrtr. '03
Field ID: M5MW23
Lab ID: 3043914
Filename: 01042.D
Lab Project : 30439

Location: M5 Wells 3rd Qrtr. '03
MATRIX: Aqueous
Ext. Batch: 080603
Date Extracted: 8/6/2003
Date Analyzed: 06-Aug-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

U. S. Army, Fort Monmouth Environmental Laboratory.
173 Riverside Avenue, NJ 07703.

Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: M5 Wells 3rd Qrtr. '03
Field ID: M5MW25
Lab ID: 3043915
Filename: 01043.D
Lab Project : 30439

Location: M5 Wells 3rd Qrtr. '03
MATRIX: Aqueous
Ext. Batch: 080603
Date Extracted: 8/6/2003
Date Analyzed: 07-Aug-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 30439
Sample Prepared:

Site: M5
Ft. Monmouth, New Jersey

Field ID#: Method Blank

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	08/07/03	190	200	200	21.8
Antimony	08/07/03	ND	20	20.0	3.70
Arsenic	08/07/03	ND	8	5.00	2.30
Barium	08/07/03	ND	2000	5.00	0.500
Beryllium	08/07/03	ND	20	0.500	0.020
Cadmium	08/07/03	ND	4	2.00	0.400
Calcium	08/07/03	121	NLE	1000	65.0
Chromium	08/07/03	ND	100	5.00	1.00
Cobalt	08/07/03	ND	NLE	2.00	0.300
Copper	08/07/03	1.18	1000	5.00	0.300
Iron	08/07/03	ND	300	500	78.0
Lead	08/07/03	ND	10	5.00	0.800
Magnesium	08/07/03	ND	NLE	1000	11.0
Manganese	08/07/03	ND	50	5.00	0.900
Mercury	08/05/03	ND	2	0.500	0.150
Nickel	08/07/03	ND	100	5.00	0.700
Potassium	08/07/03	139	NLE	1000	25.0
Selenium	08/07/03	5.32	50	20.0	4.80
Silver	08/07/03	ND	20	5.00	0.600
Sodium	08/07/03	ND	50000	5000	1160
Thallium	08/07/03	ND	10	10.0	1.90
Vanadium	08/07/03	ND	NLE	5.00	0.200
Zinc	08/07/03	ND	5000	50.0	1.60

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3043902
Sample Received: 07/30/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: Field Blank

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	08/07/03	45.1	200	200	21.8
Antimony	08/07/03	ND	20	20.0	3.70
Arsenic	08/07/03	ND	8	5.00	2.30
Barium	08/07/03	ND	2000	5.00	0.500
Beryllium	08/07/03	0.022	20	0.500	0.020
Cadmium	08/07/03	ND	4	2.00	0.400
Calcium	08/07/03	115	NLE	1000	65.0
Chromium	08/07/03	ND	100	5.00	1.00
Cobalt	08/07/03	ND	NLE	2.00	0.300
Copper	08/07/03	0.312	1000	5.00	0.300
Iron	08/07/03	ND	300	500	78.0
Lead	08/07/03	1.32	10	5.00	0.800
Magnesium	08/07/03	ND	NLE	1000	11.0
Manganese	08/07/03	13.5	50	5.00	0.900
Mercury	08/05/03	ND	2	0.500	0.150
Nickel	08/07/03	ND	100	5.00	0.700
Potassium	08/07/03	574	NLE	1000	25.0
Selenium	08/07/03	ND	50	20.0	4.80
Silver	08/07/03	ND	20	5.00	0.600
Sodium	08/07/03	ND	50000	5000	1160
Thallium	08/07/03	ND	10	10.0	1.90
Vanadium	08/07/03	ND	NLE	5.00	0.200
Zinc	08/07/03	16.6	5000	50.0	1.60

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3043903
Sample Received: 07/30/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: Dupe

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	08/07/03	362	200	200	21.8
Antimony	08/07/03	ND	20	20.0	3.70
Arsenic	08/07/03	ND	8	5.00	2.30
Barium	08/07/03	146	2000	5.00	0.500
Beryllium	08/07/03	0.377	20	0.500	0.020
Cadmium	08/07/03	0.966	4	2.00	0.400
Calcium	08/07/03	33800	NLE	1000	65.0
Chromium	08/07/03	2.90	100	5.00	1.00
Cobalt	08/07/03	7.38	NLE	2.00	0.300
Copper	08/07/03	6.40	1000	5.00	0.300
Iron	08/07/03	2800	300	500	78.0
Lead	08/07/03	1.02	10	5.00	0.800
Magnesium	08/07/03	18000	NLE	1000	11.0
Manganese	08/07/03	72.4	50	5.00	0.900
Mercury	08/05/03	ND	2	0.500	0.150
Nickel	08/07/03	17.2	100	5.00	0.700
Potassium	08/07/03	5380	NLE	1000	25.0
Selenium	08/07/03	8.92	50	20.0	4.80
Silver	08/07/03	ND	20	5.00	0.600
Sodium	08/07/03	152000	50000	5000	1160
Thallium	08/07/03	ND	10	10.0	1.90
Vanadium	08/07/03	1.63	NLE	5.00	0.200
Zinc	08/07/03	210	5000	50.0	1.60

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3043904
Sample Received: 07/30/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: M5MW10

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	08/07/03	93.2	200	200	21.8
Antimony	08/07/03	ND	20	20.0	3.70
Arsenic	08/07/03	ND	8	5.00	2.30
Barium	08/07/03	55.9	2000	5.00	0.500
Beryllium	08/07/03	ND	20	0.500	0.020
Cadmium	08/07/03	0.545	4	2.00	0.400
Calcium	08/07/03	11400	NLE	1000	65.0
Chromium	08/07/03	2.23	100	5.00	1.00
Cobalt	08/07/03	ND	NLE	2.00	0.300
Copper	08/07/03	3.78	1000	5.00	0.300
Iron	08/07/03	4280	300	500	78.0
Lead	08/07/03	ND	10	5.00	0.800
Magnesium	08/07/03	13700	NLE	1000	11.0
Manganese	08/07/03	106	50	5.00	0.900
Mercury	08/05/03	ND	2	0.500	0.150
Nickel	08/07/03	ND	100	5.00	0.700
Potassium	08/07/03	15600	NLE	1000	25.0
Selenium	08/07/03	6.64	50	20.0	4.80
Silver	08/07/03	ND	20	5.00	0.600
Sodium	08/07/03	26100	50000	5000	1160
Thallium	08/07/03	ND	10	10.0	1.90
Vanadium	08/07/03	1.49	NLE	5.00	0.200
Zinc	08/07/03	26.8	5000	50.0	1.60

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3043905
Sample Received: 07/30/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: M5MW11

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	08/07/03	240	200	200	21.8
Antimony	08/07/03	ND	20	20.0	3.70
Arsenic	08/07/03	4.12	8	5.00	2.30
Barium	08/07/03	8.91	2000	5.00	0.500
Beryllium	08/07/03	ND	20	0.500	0.020
Cadmium	08/07/03	0.759	4	2.00	0.400
Calcium	08/07/03	20500	NLE	1000	65.0
Chromium	08/07/03	3.03	100	5.00	1.00
Cobalt	08/07/03	2.03	NLE	2.00	0.300
Copper	08/07/03	1.54	1000	5.00	0.300
Iron	08/07/03	11100	300	500	78.0
Lead	08/07/03	0.804	10	5.00	0.800
Magnesium	08/07/03	7710	NLE	1000	11.0
Manganese	08/07/03	69.0	50	5.00	0.900
Mercury	08/05/03	ND	2	0.500	0.150
Nickel	08/07/03	2.78	100	5.00	0.700
Potassium	08/07/03	3690	NLE	1000	25.0
Selenium	08/07/03	ND	50	20.0	4.80
Silver	08/07/03	ND	20	5.00	0.600
Sodium	08/07/03	47300	50000	5000	1160
Thallium	08/07/03	ND	10	10.0	1.90
Vanadium	08/07/03	8.22	NLE	5.00	0.200
Zinc	08/07/03	111	5000	50.0	1.60

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3043906
Sample Received: 07/30/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: M5MW12

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	08/07/03	1310	200	200	21.8
Antimony	08/07/03	ND	20	20.0	3.70
Arsenic	08/07/03	ND	8	5.00	2.30
Barium	08/07/03	56.8	2000	5.00	0.500
Beryllium	08/07/03	0.0923	20	0.500	0.020
Cadmium	08/07/03	1.01	4	2.00	0.400
Calcium	08/07/03	22700	NLE	1000	65.0
Chromium	08/07/03	13.3	100	5.00	1.00
Cobalt	08/07/03	ND	NLE	2.00	0.300
Copper	08/07/03	3.01	1000	5.00	0.300
Iron	08/07/03	19500	300	500	78.0
Lead	08/07/03	2.15	10	5.00	0.800
Magnesium	08/07/03	32600	NLE	1000	11.0
Manganese	08/07/03	81.1	50	5.00	0.900
Mercury	08/05/03	ND	2	0.500	0.150
Nickel	08/07/03	1.47	100	5.00	0.700
Potassium	08/07/03	23700	NLE	1000	25.0
Selenium	08/07/03	ND	50	20.0	4.80
Silver	08/07/03	ND	20	5.00	0.600
Sodium	08/07/03	76200	50000	5000	1160
Thallium	08/07/03	ND	10	10.0	1.90
Vanadium	08/07/03	7.58	NLE	5.00	0.200
Zinc	08/07/03	36.5	5000	50.0	1.60

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3043907
Sample Received: 07/30/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: M5MW13

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	08/07/03	449	200	200	21.8
Antimony	08/07/03	ND	20	20.0	3.70
Arsenic	08/07/03	ND	8	5.00	2.30
Barium	08/07/03	142	2000	5.00	0.500
Beryllium	08/07/03	0.375	20	0.500	0.020
Cadmium	08/07/03	0.990	4	2.00	0.400
Calcium	08/07/03	30300	NLE	1000	65.0
Chromium	08/07/03	2.55	100	5.00	1.00
Cobalt	08/07/03	3.91	NLE	2.00	0.300
Copper	08/07/03	4.84	1000	5.00	0.300
Iron	08/07/03	16100	300	500	78.0
Lead	08/07/03	ND	10	5.00	0.800
Magnesium	08/07/03	3530	NLE	1000	11.0
Manganese	08/07/03	236	50	5.00	0.900
Mercury	08/05/03	ND	2	0.500	0.150
Nickel	08/07/03	15.4	100	5.00	0.700
Potassium	08/07/03	3980	NLE	1000	25.0
Selenium	08/07/03	ND	50	20.0	4.80
Silver	08/07/03	ND	20	5.00	0.600
Sodium	08/07/03	71400	50000	5000	1160
Thallium	08/07/03	ND	10	10.0	1.90
Vanadium	08/07/03	2.02	NLE	5.00	0.200
Zinc	08/07/03	65.0	5000	50.0	1.60

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3043908
Sample Received: 07/30/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: M5MW14

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	08/07/03	60.8	200	200	21.8
Antimony	08/07/03	ND	20	20.0	3.70
Arsenic	08/07/03	ND	8	5.00	2.30
Barium	08/07/03	75.5	2000	5.00	0.500
Beryllium	08/07/03	ND	20	0.500	0.020
Cadmium	08/07/03	ND	4	2.00	0.400
Calcium	08/07/03	45100	NLE	1000	65.0
Chromium	08/07/03	ND	100	5.00	1.00
Cobalt	08/07/03	ND	NLE	2.00	0.300
Copper	08/07/03	1.22	1000	5.00	0.300
Iron	08/07/03	3830	300	500	78.0
Lead	08/07/03	ND	10	5.00	0.800
Magnesium	08/07/03	16400	NLE	1000	11.0
Manganese	08/07/03	32.7	50	5.00	0.900
Mercury	08/05/03	ND	2	0.500	0.150
Nickel	08/07/03	ND	100	5.00	0.700
Potassium	08/07/03	12400	NLE	1000	25.0
Selenium	08/07/03	7.05	50	20.0	4.80
Silver	08/07/03	ND	20	5.00	0.600
Sodium	08/07/03	11200	50000	5000	1160
Thallium	08/07/03	ND	10	10.0	1.90
Vanadium	08/07/03	0.496	NLE	5.00	0.200
Zinc	08/07/03	7.65	5000	50.0	1.60

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3043909
Sample Received: 07/30/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: M5MW15

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	08/07/03	1590	200	200	21.8
Antimony	08/07/03	ND	20	20.0	3.70
Arsenic	08/07/03	ND	8	5.00	2.30
Barium	08/07/03	121	2000	5.00	0.500
Beryllium	08/07/03	2.28	20	0.500	0.020
Cadmium	08/07/03	0.553	4	2.00	0.400
Calcium	08/07/03	11300	NLE	1000	65.0
Chromium	08/07/03	2.09	100	5.00	1.00
Cobalt	08/07/03	12.5	NLE	2.00	0.300
Copper	08/07/03	0.563	1000	5.00	0.300
Iron	08/07/03	2480	300	500	78.0
Lead	08/07/03	ND	10	5.00	0.800
Magnesium	08/07/03	20100	NLE	1000	11.0
Manganese	08/07/03	28.9	50	5.00	0.900
Mercury	08/05/03	ND	2	0.500	0.150
Nickel	08/07/03	23.9	100	5.00	0.700
Potassium	08/07/03	7280	NLE	1000	25.0
Selenium	08/07/03	5.03	50	20.0	4.80
Silver	08/07/03	ND	20	5.00	0.600
Sodium	08/07/03	16400	50000	5000	1160
Thallium	08/07/03	ND	10	10.0	1.90
Vanadium	08/07/03	1.11	NLE	5.00	0.200
Zinc	08/07/03	152	5000	50.0	1.60

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3043910
Sample Received: 07/30/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: M5MW16

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	08/07/03	258	200	200	21.8
Antimony	08/07/03	ND	20	20.0	3.70
Arsenic	08/07/03	4.38	8	5.00	2.30
Barium	08/07/03	258	2000	5.00	0.500
Beryllium	08/07/03	0.166	20	0.500	0.020
Cadmium	08/07/03	1.47	4	2.00	0.400
Calcium	08/07/03	34100	NLE	1000	65.0
Chromium	08/07/03	1.40	100	5.00	1.00
Cobalt	08/07/03	2.29	NLE	2.00	0.300
Copper	08/07/03	ND	1000	5.00	0.300
Iron	08/07/03	44700	300	500	78.0
Lead	08/07/03	ND	10	5.00	0.800
Magnesium	08/07/03	13700	NLE	1000	11.0
Manganese	08/07/03	136	50	5.00	0.900
Mercury	08/05/03	ND	2	0.500	0.150
Nickel	08/07/03	9.46	100	5.00	0.700
Potassium	08/07/03	7210	NLE	1000	25.0
Selenium	08/07/03	ND	50	20.0	4.80
Silver	08/07/03	ND	20	5.00	0.600
Sodium	08/07/03	57800	50000	5000	1160
Thallium	08/07/03	ND	10	10.0	1.90
Vanadium	08/07/03	1.14	NLE	5.00	0.200
Zinc	08/07/03	57.1	5000	50.0	1.60

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
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NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3043911
Sample Received: 07/30/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: M5MW18

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	08/07/03	87.4	200	200	21.8
Antimony	08/07/03	ND	20	20.0	3.70
Arsenic	08/07/03	ND	8	5.00	2.30
Barium	08/07/03	202	2000	5.00	0.500
Beryllium	08/07/03	ND	20	0.500	0.020
Cadmium	08/07/03	1.11	4	2.00	0.400
Calcium	08/07/03	27600	NLE	1000	65.0
Chromium	08/07/03	ND	100	5.00	1.00
Cobalt	08/07/03	ND	NLE	2.00	0.300
Copper	08/07/03	ND	1000	5.00	0.300
Iron	08/07/03	27900	300	500	78.0
Lead	08/07/03	ND	10	5.00	0.800
Magnesium	08/07/03	4920	NLE	1000	11.0
Manganese	08/07/03	58.5	50	5.00	0.900
Mercury	08/05/03	ND	2	0.500	0.150
Nickel	08/07/03	1.06	100	5.00	0.700
Potassium	08/07/03	8700	NLE	1000	25.0
Selenium	08/07/03	ND	50	20.0	4.80
Silver	08/07/03	ND	20	5.00	0.600
Sodium	08/07/03	9810	50000	5000	1160
Thallium	08/07/03	ND	10	10.0	1.90
Vanadium	08/07/03	0.408	NLE	5.00	0.200
Zinc	08/07/03	8.15	5000	50.0	1.60

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3043912
Sample Received: 07/30/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: M5MW19

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	08/07/03	71.3	200	200	21.8
Antimony	08/07/03	ND	20	20.0	3.70
Arsenic	08/07/03	2.37	8	5.00	2.30
Barium	08/07/03	65.8	2000	5.00	0.500
Beryllium	08/07/03	ND	20	0.500	0.020
Cadmium	08/07/03	0.689	4	2.00	0.400
Calcium	08/07/03	28800	NLE	1000	65.0
Chromium	08/07/03	ND	100	5.00	1.00
Cobalt	08/07/03	ND	NLE	2.00	0.300
Copper	08/07/03	ND	1000	5.00	0.300
Iron	08/07/03	17600	300	500	78.0
Lead	08/07/03	ND	10	5.00	0.800
Magnesium	08/07/03	5390	NLE	1000	11.0
Manganese	08/07/03	71.5	50	5.00	0.900
Mercury	08/05/03	ND	2	0.500	0.150
Nickel	08/07/03	ND	100	5.00	0.700
Potassium	08/07/03	8920	NLE	1000	25.0
Selenium	08/07/03	ND	50	20.0	4.80
Silver	08/07/03	ND	20	5.00	0.600
Sodium	08/07/03	15300	50000	5000	1160
Thallium	08/07/03	ND	10	10.0	1.90
Vanadium	08/07/03	0.738	NLE	5.00	0.200
Zinc	08/07/03	6.35	5000	50.0	1.60

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3043913
Sample Received: 07/30/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: M5MW20

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	08/07/03	844	200	200	21.8
Antimony	08/07/03	ND	20	20.0	3.70
Arsenic	08/07/03	ND	8	5.00	2.30
Barium	08/07/03	11.3	2000	5.00	0.500
Beryllium	08/07/03	0.0825	20	0.500	0.020
Cadmium	08/07/03	ND	4	2.00	0.400
Calcium	08/07/03	27800	NLE	1000	65.0
Chromium	08/07/03	6.62	100	5.00	1.00
Cobalt	08/07/03	0.381	NLE	2.00	0.300
Copper	08/07/03	1.33	1000	5.00	0.300
Iron	08/07/03	4650	300	500	78.0
Lead	08/07/03	ND	10	5.00	0.800
Magnesium	08/07/03	8670	NLE	1000	11.0
Manganese	08/07/03	22.8	50	5.00	0.900
Mercury	08/05/03	ND	2	0.500	0.150
Nickel	08/07/03	2.08	100	5.00	0.700
Potassium	08/07/03	4090	NLE	1000	25.0
Selenium	08/07/03	6.37	50	20.0	4.80
Silver	08/07/03	ND	20	5.00	0.600
Sodium	08/07/03	92600	50000	5000	1160
Thallium	08/07/03	ND	10	10.0	1.90
Vanadium	08/07/03	4.63	NLE	5.00	0.200
Zinc	08/07/03	10.0	5000	50.0	1.60

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3043914
Sample Received: 07/30/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: M5MW23

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	08/07/03	255	200	200	21.8
Antimony	08/07/03	ND	20	20.0	3.70
Arsenic	08/07/03	13.3	8	5.00	2.30
Barium	08/07/03	119	2000	5.00	0.500
Beryllium	08/07/03	0.0632	20	0.500	0.020
Cadmium	08/07/03	1.45	4	2.00	0.400
Calcium	08/07/03	14200	NLE	1000	65.0
Chromium	08/07/03	3.55	100	5.00	1.00
Cobalt	08/07/03	ND	NLE	2.00	0.300
Copper	08/07/03	ND	1000	5.00	0.300
Iron	08/07/03	37800	300	500	78.0
Lead	08/07/03	ND	10	5.00	0.800
Magnesium	08/07/03	2990	NLE	1000	11.0
Manganese	08/07/03	37.7	50	5.00	0.900
Mercury	08/05/03	ND	2	0.500	0.150
Nickel	08/07/03	0.890	100	5.00	0.700
Potassium	08/07/03	4470	NLE	1000	25.0
Selenium	08/07/03	ND	50	20.0	4.80
Silver	08/07/03	ND	20	5.00	0.600
Sodium	08/07/03	31600	50000	5000	1160
Thallium	08/07/03	ND	10	10.0	1.90
Vanadium	08/07/03	2.60	NLE	5.00	0.200
Zinc	08/07/03	9.86	5000	50.0	1.60

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification # 13461

Client: U.S. Army
DPW, SELFM-PW-EV
Bldg. 173
Ft. Monmouth, NJ 07703

Lab ID #: 3043915
Sample Received: 07/30/03
Sample Matrix: Aqueous

Site: M5
Ft. Monmouth, New Jersey

Field ID#: M5MW25

Method of Digestion: E.P.A SW-846, Method 3015A
Method of Analysis: Std. Methods 18th, Method 3120B, 3112B

TAL-METALS RESULTS SUMMARY (ug/L)

Element	Date of Analysis	Result (ug/L)	Regulatory Level (ug/L)*	R.L. (ug/L)	MDL (ug/L)
Aluminum	08/07/03	275	200	200	21.8
Antimony	08/07/03	ND	20	20.0	3.70
Arsenic	08/07/03	ND	8	5.00	2.30
Barium	08/07/03	147	2000	5.00	0.500
Beryllium	08/07/03	0.373	20	0.500	0.020
Cadmium	08/07/03	1.02	4	2.00	0.400
Calcium	08/07/03	33300	NLE	1000	65.0
Chromium	08/07/03	1.99	100	5.00	1.00
Cobalt	08/07/03	7.54	NLE	2.00	0.300
Copper	08/07/03	4.77	1000	5.00	0.300
Iron	08/07/03	2160	300	500	78.0
Lead	08/07/03	ND	10	5.00	0.800
Magnesium	08/07/03	17800	NLE	1000	11.0
Manganese	08/07/03	46.7	50	5.00	0.900
Mercury	08/05/03	ND	2	0.500	0.150
Nickel	08/07/03	17.3	100	5.00	0.700
Potassium	08/07/03	5140	NLE	1000	25.0
Selenium	08/07/03	6.21	50	20.0	4.80
Silver	08/07/03	ND	20	5.00	0.600
Sodium	08/07/03	149000	50000	5000	1160
Thallium	08/07/03	ND	10	10.0	1.90
Vanadium	08/07/03	1.07	NLE	5.00	0.200
Zinc	08/07/03	180	5000	50.0	1.60

ND = Not Detected, MDL = Method Detection Limit, NLE = No Limit Established
* Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C. 7:9-6
R.L= Reporting limit. Note: The results reported between MDL and RL are estimated.

	Lab	Iron	Manganese	Aluminum	Lead	Depth to Water					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	Feet					-
NJDEP Criteria:	-	300	50	200	10	-					-
05/08/1997	FMETL	4080	87	-	-	4.20					V,S,P,M
08/08/1997	FMETL	1680	59	-	-	4.40					V,S,P,M
10/29/1997	FMETL	7386	200	105	8	4.30					V,S,P,M
02/18/1998	FMETL	4899	138	96	ND	3.00					V,S,P,M
05/06/1998	FMETL	6027	75	60.1	ND	3.90					V,S,P,M
08/04/1998	FMETL	2850	35.4	103	ND	4.54					V,S,P,M
10/27/1998	FMETL	3690	47.8	106	2.45	5.03					V,S,P,M
02/02/1999	FMETL	8760	175	ND	ND	4.07					V,S,P,M
04/13/1999	FMETL	6110	135	43.9	3.79	3.81					V,S,P,M
09/13/1999	FMETL	4330	66.7	ND	ND	4.83					V,S,P,M
11/18/1999	FMETL	5880	33.6	21.4	ND	4.65					V,S,P,M
03/03/2000	FMETL	11700	166	404	14.9	4.53					V,S,P,M
05/31/2000	FMETL	6360	86.8	429	8.36	4.30					V,S,P,M
08/21/2000	FMETL	5940	218	259	3.56	4.43					V,S,P,M
12/11/2000	FMETL	3250	92.2	86.1	ND	4.57					V,S,P,M
03/19/2001	FMETL	23600	796	80	ND	4.37					V,S,P,M
06/05/2001	FMETL	14200	237	ND	4.50	4.32					V,S,P,M
09/05/2001	FMETL	4130	76.8	ND	ND	4.89					V,S,P,M
10/04/2001	FMETL	27400	1180	ND	3.33	4.29					V,S,P,M
01/14/2002	FMETL	14400	524	25.5	3.42	4.96					V,S,P,M
04/23/2002	FMETL	10000	112	79.8	3.07	4.93					V,S,P,M
08/21/2002	FMETL	1460	62.3	246	ND	4.94					V,S,P,M
10/28/2002	FMETL	6260	304	281	4.45	4.14					V,S,P,M
01/22/2003	FMETL	17100	252	306	3.39	4.43					V,S,P,M
04/21/2003	FMETL	15400	1060	241	2.34	4.07					V,S,P,M
07/30/2003	FMETL	4280	106	93.2	ND	4.48					V,S,P,M

SOURCE: 00M5MW10

Sampling Dates:
05/08/1997 - 07/30/2003

NOTES:

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 3 of 14

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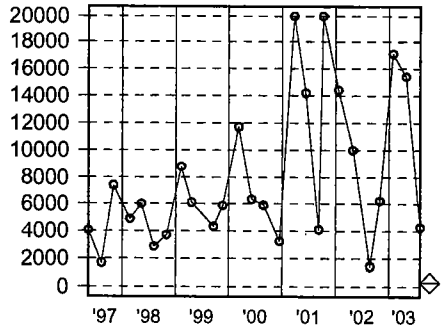
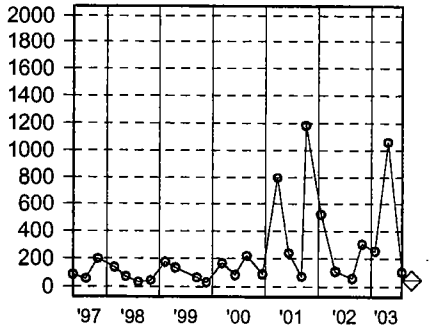
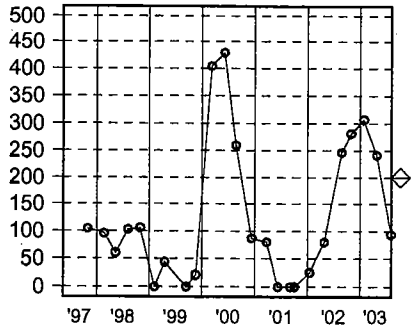
Iron
(ug/l)



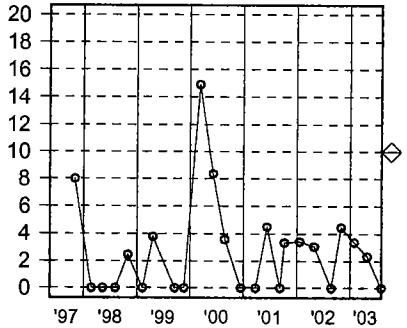
Manganese
(ug/l)



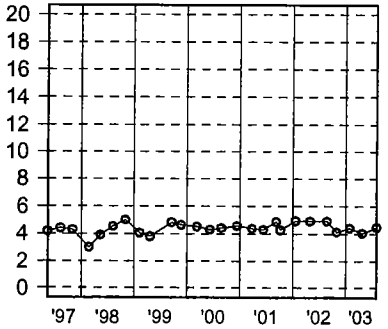
Aluminum
(ug/l)



Lead
(ug/l)



Depth to Water
(Feet)



SOURCE: 00M5MW10

Sampling Dates:
05/08/1997 - 07/30/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 3 of 14, Graph

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FORT MONMOUTH
SELFM-PW-EV

08-25-2003 X:\MtechData\M-5\M-5.WSF

	Lab	Tetra chloro ethene	Iron	Manganese	Aluminum	Lead	Depth to Water				Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	Feet				-
NJDEP Criteria:	-	1	300	50	200	10	-				-
05/08/1997	FMETL	63	4060	85	-	-	7.10				V,S,P,M
08/08/1997	FMETL	58	110	66		-	7.70				V,S,P,M
10/29/1997	FMETL	65	1551	12.7	669	8	7.75				V,S,P,M
02/18/1998	FMETL	39	305	32	222	ND	6.65				V,S,P,M
05/06/1998	FMETL	24.39	58	6.4	ND	ND	6.80				V,S,P,M
08/04/1998	FMETL	18.37	1500	16.9	4570	2.38	7.91				V,S,P,M
10/27/1998	FMETL	52.64	184	7.74	78.8	ND	8.51				V,S,P,M
02/02/1999	FMETL	5.16	1670	44.4	267	ND	6.99				V,S,P,M
04/13/1999	FMETL	33.38	227	9.71	92.9	ND	7.16				V,S,P,M
09/13/1999	FMETL	49.25	680	16.5	ND	ND	8.35				V,S,P,M
11/18/1999	FMETL	74.12	30.5	ND	ND	ND	7.62				V,S,P,M
03/03/2000	FMETL	30.62	330	9.56	189	ND	7.21				V,S,P,M
05/31/2000	FMETL	13.38	657	10.1	76.2	ND	7.28				V,S,P,M
08/21/2000	FMETL	18.79	438	38.8	350	1.34	6.97				V,S,P,M
08/21/2000D	FMETL	19.64	583	38	414	1.24	6.97				V,S,P,M
12/11/2000	FMETL	18.86	5580	24.4	279	ND	7.43				V,S,P,M
12/11/2000D	FMETL	17.98	5610	25.4	260	ND	7.43				V,S,P,M
03/19/2001	FMETL	11.01	35200	17.7	240	ND	6.77				V,S,P,M
06/05/2001	FMETL	11.27	6590	31.9	ND	ND	7.26				V,S,P,M
09/05/2001	FMETL	6.11	31100	93.3	ND	6.36	8.05				V,S,P,M
10/04/2001	FMETL	15.13	18500	62.7	75.2	ND	7.88				V,S,P,M
01/14/2002	FMETL	19.04	10400	174	31.1	ND	7.83				V,S,P,M
04/23/2002	FMETL	14.43	7850	34.2	48.1	ND	7.54				V,S,P,M
08/21/2002	FMETL	8.90	18000	61.3	137	ND	8.25				V,S,P,M
10/28/2002	FMETL	8.14	2240	15.8	111	1.84	6.81				V,S,P,M
01/22/2003	FMETL	5.20	5250	15.6	202	ND	7.00				V,S,P,M
04/21/2003	FMETL	4.50	4000	22.3	185	ND	6.70				V,S,P,M
07/30/2003	FMETL	5.74	11100	69.0	240	0.804	7.38				V,S,P,M

SOURCE: 00M5MW11

Sampling Dates:
05/08/1997 - 07/30/2003

NOTES:

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 4 of 14

Ag in blank > GW Criteria for 5/8/97.

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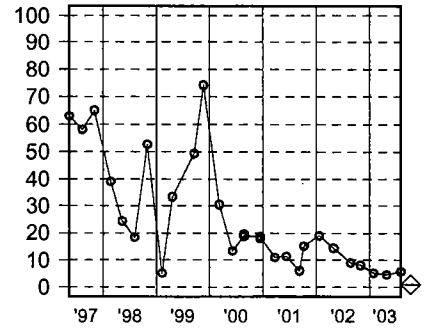

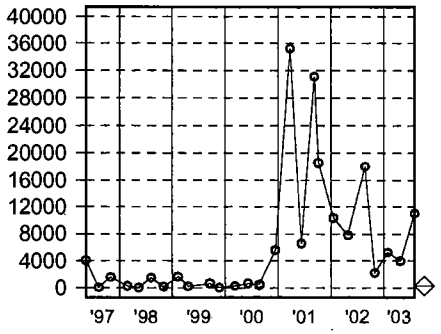

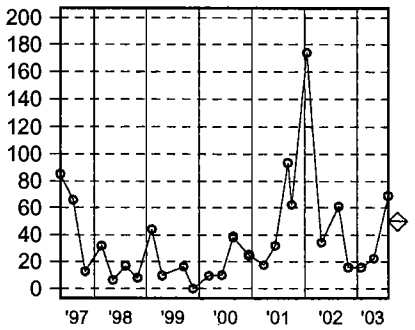

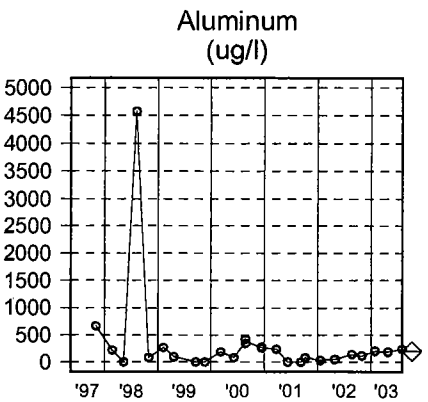

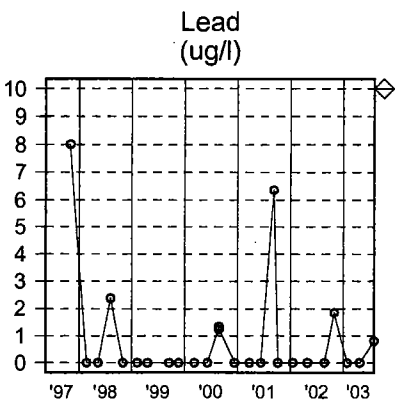

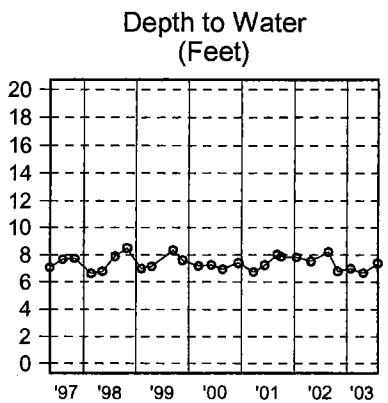

SOURCE: 00M5MW11

Sampling Dates:
05/08/1997 - 07/30/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 4 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

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FORT MONMOUTH
SELFM-PW-EV

08-25-2003 X:\MtechData\M-5\M-5.WSF

	Lab	Iron	Manganese	Aluminum	Lead	Depth to Water					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	Feet					-
NJDEP Criteria:	-	300	50	200	10	-					-
10/07/1998	FMETL	51400	1340	3310	7	6.86					V,S,P,M
10/21/1998	FMETL	28400	853	359	ND	6.62					V,S,P,M
02/02/1999	FMETL	ND	ND	1910	5.45	6.36					V,S,P,M
04/13/1999	FMETL	29500	263	1880	7.66	5.92					V,S,P,M
09/13/1999	FMETL	36500	566	119	ND	6.86					V,S,P,M
11/18/1999	FMETL	7020	76.9	80.9	ND	7.96					V,SP,M
03/06/2000	FMETL	13000	109	1060	6.78	5.95					V,S,P,M
05/31/2000	FMETL	11400	67.9	422	19.3	5.93					V,S,P,M
08/21/2000	FMETL	9060	97	503	1.83	5.84					V,S,P,M
12/11/2000	FMETL	6620	43.8	189	4.85	5.89					V,S,P,M
03/19/2001	FMETL	15100	181	170	ND	5.83					V,S,P,M
06/05/2001	FMETL	8030	50.8	ND	ND	5.73					V,S,P,M
09/05/2001	FMETL	19900	155	732	4.43	6.29					V,S,P,M
10/04/2001	FMETL	ND	ND	24.6	1.30	5.64					V,S,P,M
01/14/2002	FMETL	15600	328	192	16.8	5.21					V,S,P,M
04/23/2002	FMETL	16500	72.4	481	2.64	5.98					V,S,P,M
08/21/2002	FMETL	13800	78.1	1140	2.40	6.41					V,S,P,M
10/28/2002	FMETL	6090	54.6	90.9	2.12	5.60					V,S,P,M
01/22/2003	FMETL	10700	45.9	830	4.16	5.95					V,S,P,M
04/21/2003	FMETL	13000	67.1	639	1.72	5.53					V,S,P,M
07/30/2003	FMETL	19500	81.1	1310	2.15	6.08					V,S,P,M

SOURCE: 00M5MW12

Sampling Dates:
10/07/1998 - 07/30/2003

NOTES:

Well installed 9/98.

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 5 of 14

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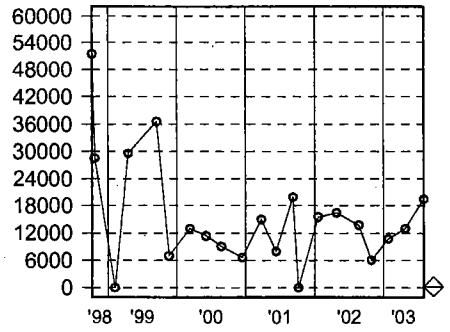
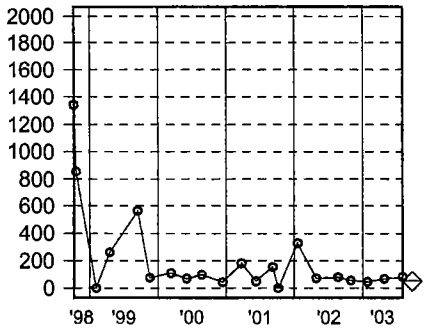
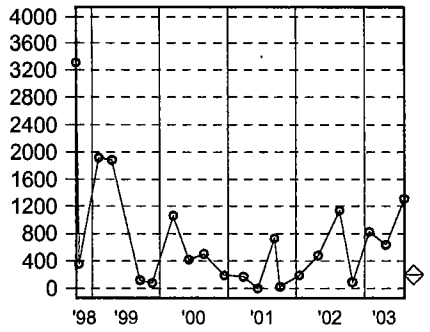
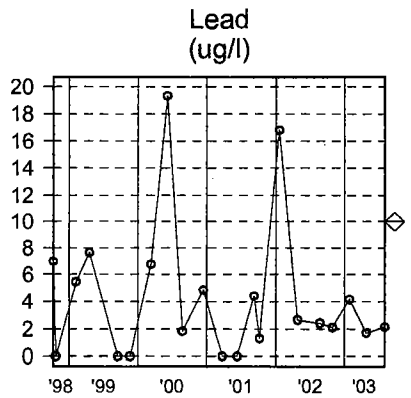
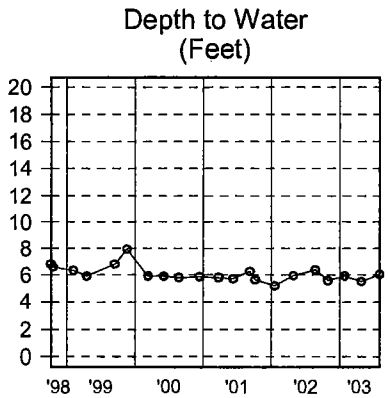
SELFM-PW-EV











SOURCE: 00M5MW12

Sampling Dates:
10/07/1998 - 07/30/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 5 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

08-25-2003 X:\MtechData\M-5\M-5.WSF

	Lab	Iron	Manganese	Aluminum	Lead	Depth to Water					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	Feet					-
NJDEP Criteria:	-	300	50	200	10	-					-
10/21/1998	FMETL	11700	203	287	ND	3.75					V,S,P,M
02/02/1999	FMETL	9810	137	244	17.6	2.67					V,S,P,M
04/13/1999	FMETL	1170	18.4	64.8	2.37	2.48					V,S,P,M
09/13/1999	FMETL	9520	203	225	ND	3.41					V,S,P,M
11/18/1999	FMETL	9860	87.8	901	3.04	3.40					V,S,P,M
03/06/2000	FMETL	26300	366	282	3.62	2.64					V,S,P,M
05/31/2000	FMETL	12900	173	174	ND	2.54					V,S,P,M
08/21/2000	FMETL	7170	261	301	2.49	2.39					V,S,P,M
12/11/2000	FMETL	16500	255	128	11.7	2.68					V,S,P,M
03/19/2001	FMETL	24200	717	510	ND	2.23					V,S,P,M
06/05/2001	FMETL	12100	357	ND	ND	2.44					V,S,P,M
09/05/2001	FMETL	17300	348	711	5.36	3.12					V,S,P,M
10/04/2001	FMETL	27000	880	16.0	284	2.24					V,S,P,M
01/14/2002	FMETL	33300	1030	66.5	1.81	2.53					V,S,P,M
04/23/2002	FMETL	25200	391	606	11.1	2.73					V,S,P,M
08/21/2002	FMETL	11900	237	179	ND	3.32					V,S,P,M
10/28/2002	FMETL	10900	364	132	2.02	2.08					V,S,P,M
01/22/2003	FMETL	29600	339	246	3.26	2.37					V,S,P,M
04/21/2003	FMETL	20900	415	152	ND	2.03					V,S,P,M
07/30/2003	FMETL	16100	236	449	ND	2.80					V,S,P,M

SOURCE: 00M5MW13

Sampling Dates:
10/21/1998 - 07/30/2003

NOTES:

Well installed 9/98.

FORT MONMOUTH

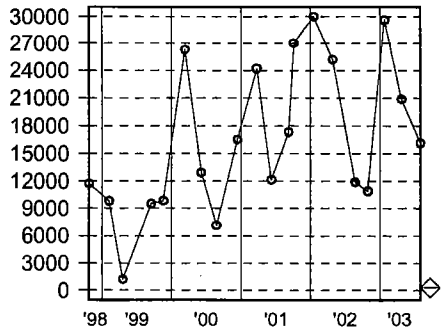
GW MONITORING
Bldg. M-5

Source 6 of 14

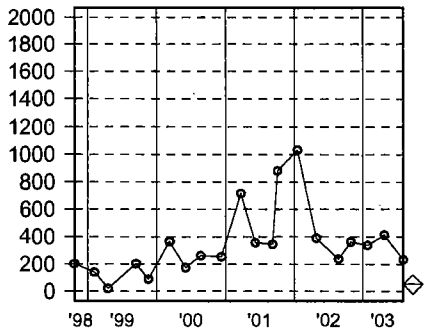
Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

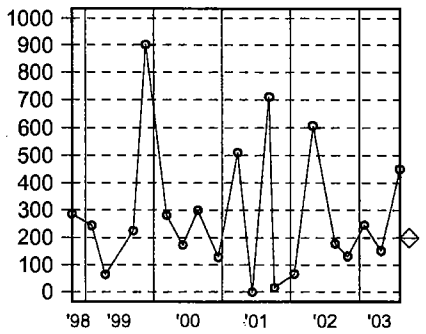
Iron
(ug/l)



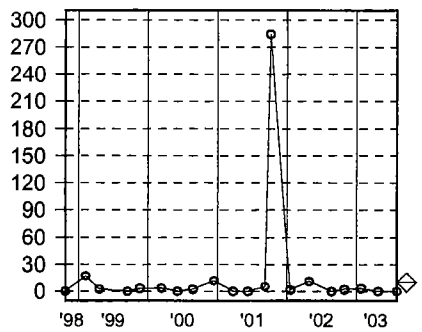
Manganese
(ug/l)



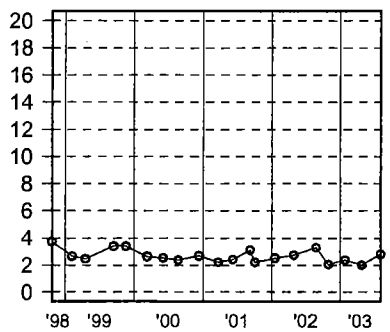
Aluminum
(ug/l)



Lead
(ug/l)



Depth to Water
(Feet)



SOURCE: 00M5MW13

Sampling Dates:
10/21/1998 - 07/30/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 6 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

08-25-2003 X:\MtechData\M-5\M-5.WSF

	Lab	Iron	Manganese	Aluminum	Lead	Depth to Water					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	Feet					-
NJDEP Criteria:	-	300	50	200	10	-					-
10/07/1998	FMETL	ND	ND	1210	ND	3.54					V,S,P,M
10/21/1998	FMETL	911	15	120	ND	4.24					V,S,P,M
02/02/1999	FMETL	1910	20.7	172	ND	2.63					V,S,P,M
04/13/1999	FMETL	14000	191	658	6.77	2.57					V,S,P,M
09/13/1999	FMETL	571	16.4	ND	ND	4.35					V,S,P,M
11/18/1999	FMETL	639	17.9	ND	ND	3.92					V,S,P,M
03/06/2000	FMETL	6660	29.1	79.2	ND	2.75					V,S,P,M
05/31/2000	FMETL	2480	178	ND	ND	3.55					V,S,P,M
08/21/2000	FMETL	844	96.3	242	12	2.71					V,S,P,M
12/11/2000	FMETL	6920	21.5	234	ND	3.48					V,S,P,M
03/19/2001	FMETL	12400	18.4	20.0	ND	3.66					V,S,P,M
06/05/2001	FMETL	758	14.3	ND	ND	3.57					V,S,P,M
09/05/2001	FMETL	987	30.0	ND	ND	3.30					V,S,P,M
10/04/2001	FMETL	953	14.2	27.2	ND	2.91					V,S,P,M
01/14/2002	FMETL	6010	165	11.7	ND	3.97					V,S,P,M
04/23/2002	FMETL	4850	18.5	69.0	ND	3.23					V,S,P,M
08/21/2002	FMETL	874	21.5	21.2	1.81	3.29					V,S,P,M
10/28/2002	FMETL	1110	632	18.3	ND	2.29					V,S,P,M
01/22/2003	FMETL	20100	221	72.5	ND	3.42					V,S,P,M
04/21/2003	FMETL	21100	35.7	174	ND	3.17					V,S,P,M
07/30/2003	FMETL	3830	32.7	60.8	ND	3.37					V,S,P,M

SOURCE: 00M5MW14

Sampling Dates:
10/07/1998 - 07/30/2003

NOTES:

Well installed 9/98.

FORT MONMOUTH

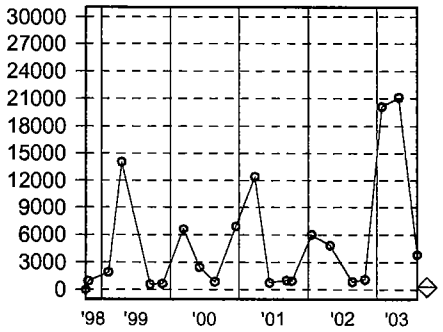
GW MONITORING
Bldg. M-5

Source 7 of 14

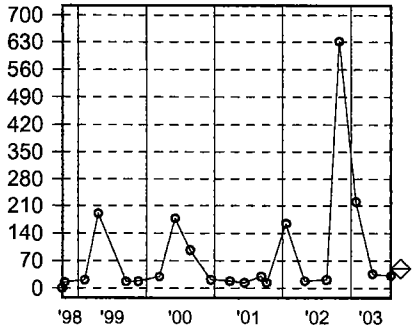
Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

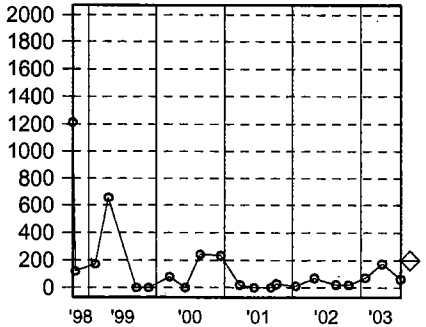
Iron
(ug/l)



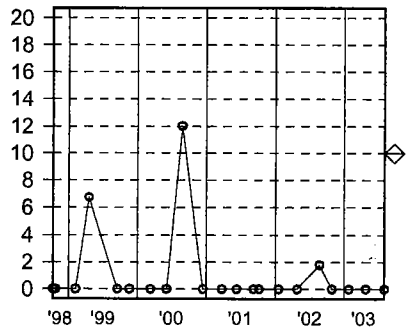
Manganese
(ug/l)



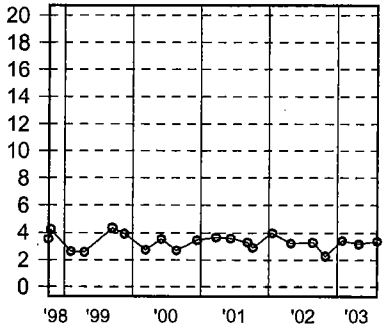
Aluminum
(ug/l)



Lead
(ug/l)



Depth to Water
(Feet)



SOURCE: 00M5MW14

Sampling Dates:
10/07/1998 - 07/30/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 7 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

08-25-2003 X:\MtechData\M-5\M-5.WSF

	Lab	Iron	Manganese	Aluminum	Lead	Depth to Water					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	Feet					-
NJDEP Criteria:	-	300	50	200	10	-					-
04/14/1999	FMETL	654	30.2	606	ND	8.59					V,S,P,M
04/28/1999	FMETL	108	20.7	564	ND	9.04					V,S,P,M
09/14/1999	FMETL	1050	15.7	702	ND	11.03					V,S,P,M
11/18/1999	FMETL	316	13.9	357	ND	9.87					V,S,P,M
03/03/2000	FMETL	477	16.8	508	ND	8.68					V,S,P,M
05/31/2000	FMETL	203	18.2	441	ND	8.88					V,S,P,M
08/21/2000	FMETL	510	27.3	933	ND	8.21					V,S,P,M
12/11/2000	FMETL	319	16.7	556	ND	9.48					V,S,P,M
03/19/2001	FMETL	300	23.9	1100	ND	7.88					V,S,P,M
06/05/2001	FMETL	150	31.1	996	ND	7.93					V,S,P,M
09/05/2001	FMETL	788	27.1	1220	1.64	10.35					V,S,P,M
10/04/2001	FMETL	588	21.0	981	3.22	10.24					V,S,P,M
01/14/2002	FMETL	334	157	629	ND	10.51					V,S,P,M
04/23/2002	FMETL	48.2	19.5	676	ND	9.49					V,S,P,M
08/21/2002	FMETL	93.6	14.9	624	ND	10.70					V,S,P,M
10/28/2002	FMETL	797	15.5	511	1.32	7.87					V,S,P,M
01/22/2003	FMETL	276	17.5	708	ND	7.91					V,S,P,M
04/21/2003	FMETL	586	34.7	1790	ND	7.27					V,S,P,M
07/30/2003	FMETL	2480	28.9	1590	ND	8.97					V,S,P,M

SOURCE: 00M5MW15

Sampling Dates:
04/14/1999 - 07/30/2003

NOTES:

Installed 3/99

FORT MONMOUTH

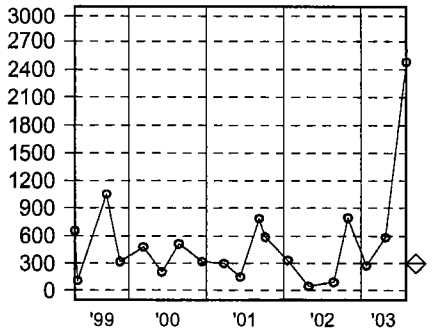
GW MONITORING
Bldg. M-5

Source 8 of 14

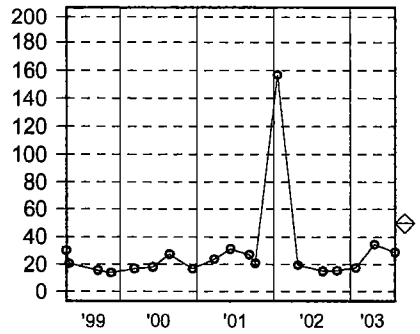
Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

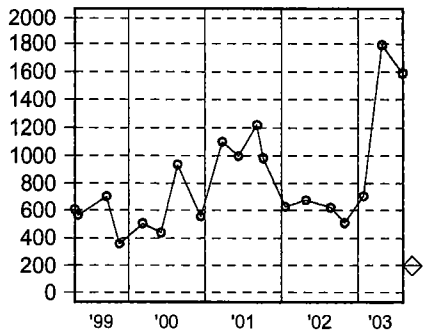
Iron
(ug/l)



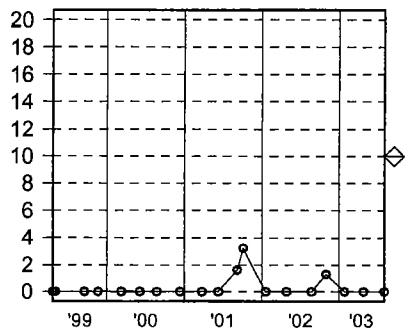
Manganese
(ug/l)



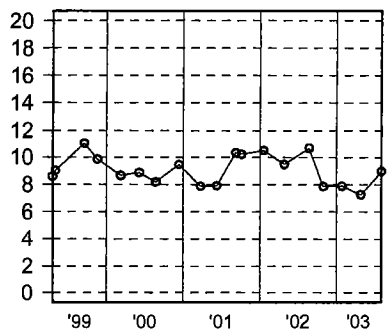
Aluminum
(ug/l)



Lead
(ug/l)



Depth to Water
(Feet)



SOURCE: 00M5MW15

Sampling Dates:
04/14/1999 - 07/30/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 8 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

08-25-2003 X:\MtechData\M-5\M-5.WSF

	Lab	cis-1,2-Dichloro ethene	Tri chloro ethene	Tetra chloro ethene	Iron	Manganese	Aluminum	Depth to Water			Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet			-
NJDEP Criteria:	-	10	1	1	300	50	200	-			-
04/14/1999	FMETL	ND	ND	96.37	4770	29.2	1030	6.96			V,S,P,M
04/28/1999	FMETL	ND	ND	8.35	11800	31.9	1240	7.26			V,S,P,M
09/14/1999	FMETL	ND	ND	639.7	11100	32.1	3510	8.66			V,S,P,M
11/18/1999	FMETL	ND	ND	54.42	9840	24.7	242	7.76			V,S,P,M
03/03/2000	FMETL	ND	ND	37.76	37800	119	848	7.00			V,S,P,M
05/31/2000	FMETL	ND	ND	27.79	10000	35.8	78.2	7.06			V,S,P,M
08/21/2000	FMETL	ND	ND	20.36	8060	49.3	293	6.70			V,S,P,M
12/11/2000	FMETL	ND	ND	23.20	11400	33.2	258	7.40			V,S,P,M
03/19/2001	FMETL	ND	ND	17.88	13000	73.0	220	6.37			V,S,P,M
06/05/2001	FMETL	ND	ND	24.47	14500	46.6	ND	7.02			V,S,P,M
09/05/2001	FMETL	ND	ND	205.77	14800	83.4	175	8.14			V,S,P,M
10/04/2001	FMETL	ND	ND	620.81	32100	83.0	1710	8.04			V,S,P,M
01/14/2002	FMETL	1.93	1.93	839.5	9910	197	863	8.04			V,S,P,M
04/23/2002	FMETL	69.44	35.84	213.53	10000	63.5	1010	7.52			V,S,P,M
08/21/2002	FMETL	3.38	ND	416.79	4560	112	1560	8.53			V,S,P,M
10/28/2002	FMETL	103.82	2.23	42.41	32300	85.6	446	6.84			V,S,P,M
01/22/2003	FMETL	22.02	1.36	31.09	14600	45.2	301	6.45			V,S,P,M
04/21/2003	FMETL	16.12	2.16	8.50	16400	84.7	280	6.04			V,S,P,M
07/30/2003	FMETL	20.3	5.61	18.57	44700	136	258	7.05			V,S,P,M

SOURCE: 00M5MW16

Sampling Dates:
04/14/1999 - 07/30/2003

NOTES:

Installed 3/99.

FORT MONMOUTH

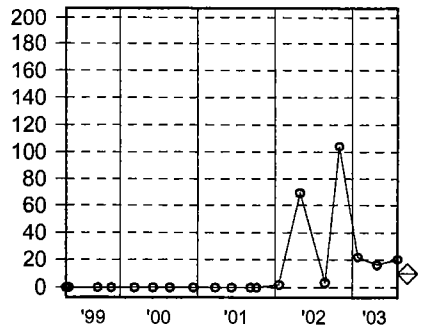
GW MONITORING
Bldg. M-5

Source 9 of 14

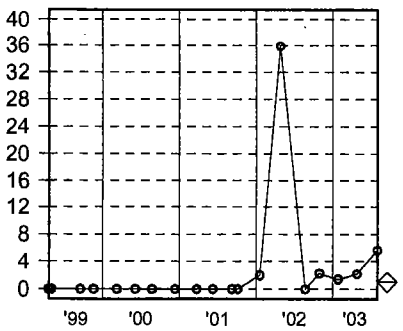
Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

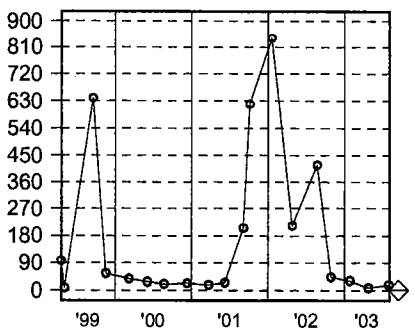
cis-1,2-Dichloroethene
(ug/l)



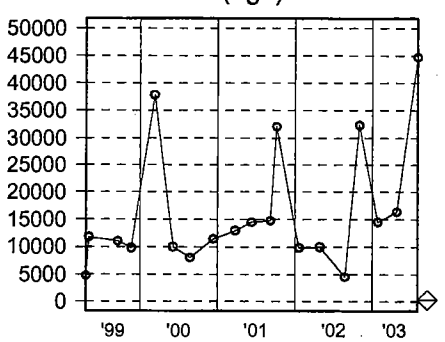
Trichloroethene
(ug/l)



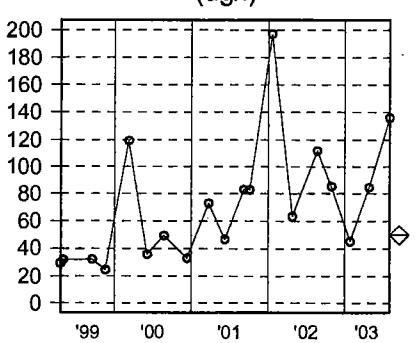
Tetrachlorethene
(ug/l)



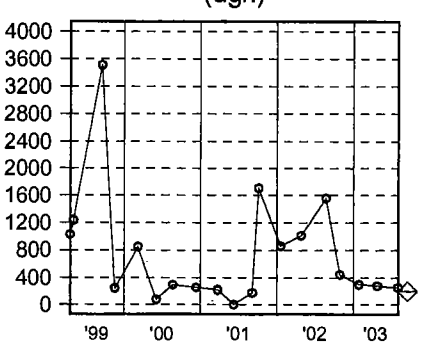
Iron
(ug/l)



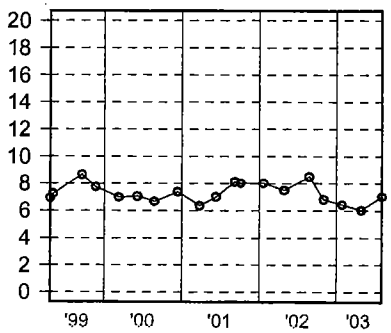
Manganese
(ug/l)



Aluminum
(ug/l)



Depth to Water
(Feet)



SOURCE: 00M5MW16

Sampling Dates:
04/14/1999 - 07/30/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 9 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

08-25-2003 X:\MtechData\M-5\M-5.WSF

	Lab	Iron	Manganese	Aluminum	Lead	Depth to Water					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	Feet					-
NJDEP Criteria:	-	300	50	200	10	-					-
04/13/1999	FMETL	6550	40.9	327	11.8	7.16					V,S,P,M
04/27/1999	FMETL	8140	42.1	61.1	ND	7.68					V,S,P,M
09/14/1999	FMETL	9640	65.8	541	ND	8.86					V,S,P,M
11/18/1999	FMETL	10300	34.6	27	ND	8.02					V,S,P,M
03/03/2000	FMETL	19800	48.6	131	ND	7.40					V,S,P,M
05/31/2000	FMETL	16200	50.2	28.0	ND	7.48					V,S,P,M
08/21/2000	FMETL	14900	53.7	325	1.89	7.12					V,S,P,M
12/11/2000	FMETL	357000	88.4	942	ND	7.71					V,S,P,M
03/19/2001	FMETL	26200	59.1	60.0	ND	6.90					V,S,P,M
06/05/2001	FMETL	98600	70.5	63.0	3.08	7.39					V,S,P,M
09/05/2001	FMETL	16500	69.7	38.3	1.14	8.39					V,S,P,M
10/04/2001	FMETL	21000	60.2	111	ND	8.30					V,S,P,M
01/14/2002	FMETL	18400	240	113	ND	8.33					V,S,P,M
04/23/2002	FMETL	82000	66.8	541	1.35	7.75					V,S,P,M
08/21/2002	FMETL	16500	49.0	162	ND	8.68					V,S,P,M
10/28/2002	FMETL	13500	53.7	27.1	ND	6.76					V,S,P,M
01/22/2003	FMETL	62100	65.5	293	4.38	6.99					V,S,P,M
04/21/2003	FMETL	204000	137	800	5.65	6.72					V,S,P,M
07/30/2003	FMETL	27900	58.5	87.4	ND	7.48					V,S,P,M

SOURCE: 00M5MW18

Sampling Dates:
04/13/1999 - 07/30/2003

NOTES:

FORT MONMOUTH

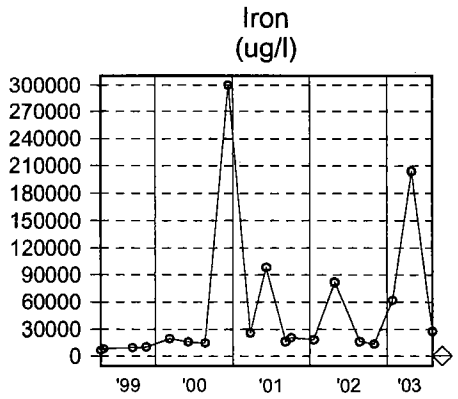
GW MONITORING
Bldg. M-5

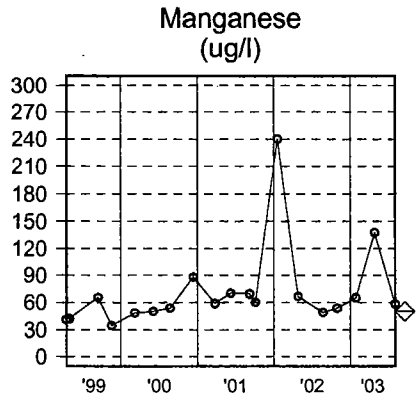
Source 10 of 14

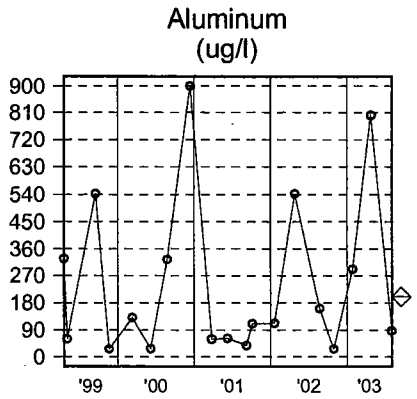
Ag in blank > GW Criteria for 5/8/97.

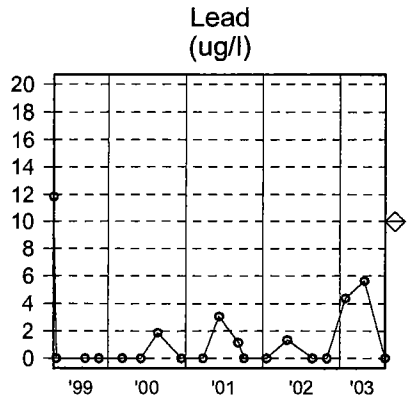
U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

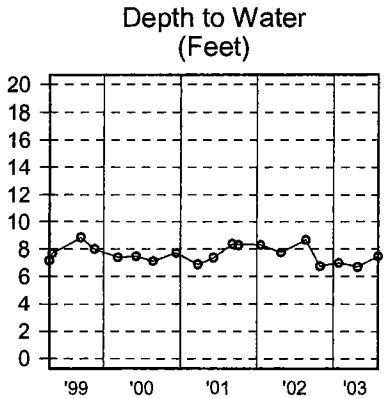
08-25-2003 X:\MtechData\M-5\M-5.WSF











SOURCE: 00M5MW18

Sampling Dates:
04/13/1999 - 07/30/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 10 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

08-25-2003 X:\MtechData\M-5\M-5.WSF

	Lab	cis-1,2-Dichloro ethene	Tri chloro ethene	Tetra chloro ethene	Iron	Manganese	Aluminum	Depth to Water			Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet			-
NJDEP Criteria:	-	10	1	1	300	50	200	-			-
04/13/1999	FMETL	ND	ND	11.53	7900	50.1	1110	6.74			V,S,P,M
04/27/1999	FMETL	ND	ND	3.72	12300	49.1	1710	7.04			V,S,P,M
09/14/1999	FMETL	ND	ND	10.24	9230	33.8	2320	8.48			V,S,P,M
11/18/1999	FMETL	ND	ND	69.22	11700	39	130	7.63			V,S,P,M
03/06/2000	FMETL	ND	ND	5.44	15000	53.9	133	7.01			V,S,P,M
05/31/2000	FMETL	ND	ND	ND	12100	51.6	47.8	7.01			V,S,P,M
08/21/2000	FMETL	ND	ND	4.77	12400	71.7	227	6.66			V,S,P,M
12/11/2000	FMETL	ND	ND	3.80	39600	56.2	271	7.28			V,S,P,M
03/19/2001	FMETL	ND	ND	2.43	17800	78.5	740	6.97			V,S,P,M
06/05/2001	FMETL	ND	ND	6.89	27300	72.3	ND	6.68			V,S,P,M
09/05/2001	FMETL	3.87	1.66	34.94	22100	75.3	ND	8.03			V,S,P,M
10/04/2001	FMETL	1.84	ND	13.62	21700	66.3	ND	7.92			V,S,P,M
01/14/2002	FMETL	16.64	17.44	284.64	30100	229	185	8.04			V,S,P,M
04/23/2002	FMETL	5.93	2.80	18.2	28900	83.1	562	7.39			V,S,P,M
08/21/2002	FMETL	51.33	6.44	34.31	20800	74.3	152	8.33			V,S,P,M
10/28/2002	FMETL	2.28	1.00	5.10	21500	81.3	73.6	6.47			V,S,P,M
01/22/2003	FMETL	ND	ND	1.54	11700	55.0	33.7	6.58			V,S,P,M
04/21/2003	FMETL	ND	ND	1.73	11800	55.2	97.4	6.35			V,S,P,M
07/30/2003	FMETL	ND	ND	1.01	17600	71.5	71.3	7.12			V,S,P,M

SOURCE: 00M5MW19

Sampling Dates:
04/13/1999 - 07/30/2003

NOTES:

FORT MONMOUTH

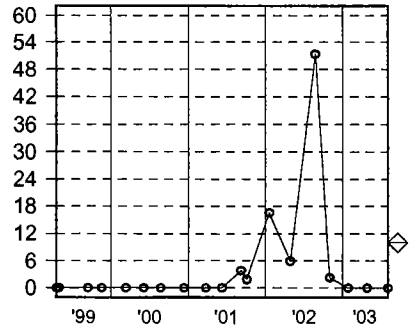
GW MONITORING
Bldg. M-5

Source 11 of 14

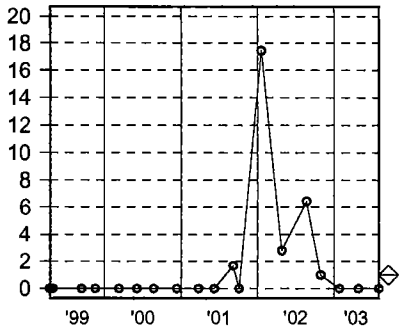
Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

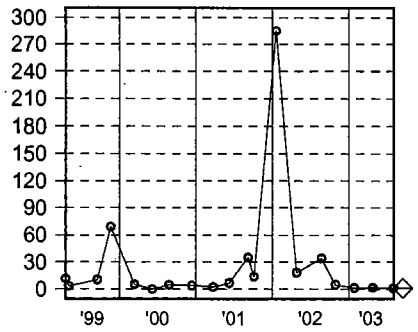
cis-1,2-Dichloroethene
(ug/l)



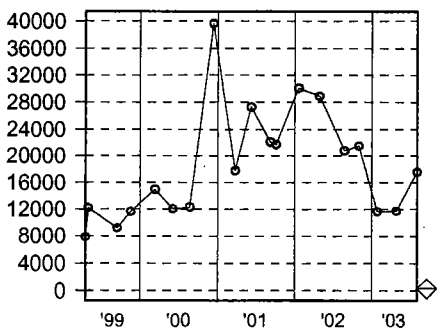
Trichloroethene
(ug/l)



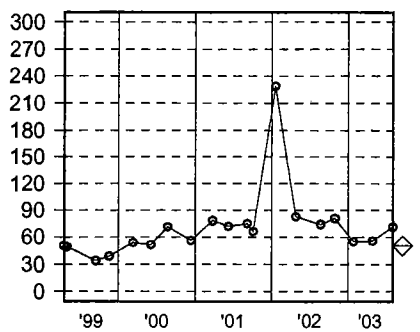
Tetrachlorethene
(ug/l)



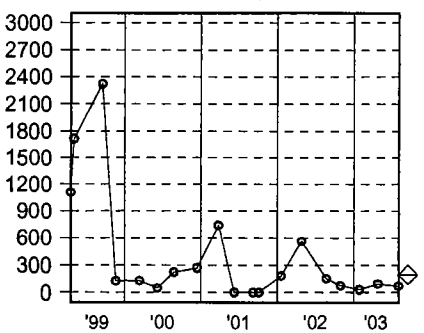
Iron
(ug/l)



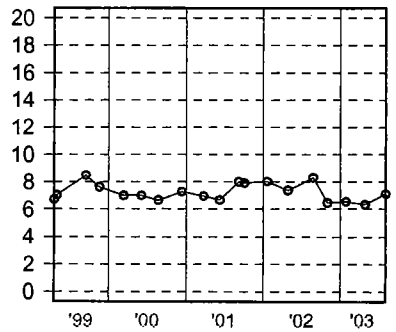
Manganese
(ug/l)



Aluminum
(ug/l)



Depth to Water
(Feet)



SOURCE: 00M5MW19

Sampling Dates:
04/13/1999 - 07/30/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 11 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

08-25-2003 X:\MtechData\M-5\M-5.WSF

	Lab	cis-1,2-Dichloro ethene	Tri chloro ethene	Tetra chloro ethene	Iron	Manganese	Aluminum	Lead	Depth to Water		Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet		-
NJDEP Criteria:	-	10	1	1	300	50	200	10	-		-
04/13/1999	FMETL	ND	ND	142.59	9380	36.6	3150	9.54	5.72		V,S,P,M
04/27/1999	FMETL	ND	ND	169.54	7520	29.2	2980	2.5	6.08		V,S,P,M
09/13/1999	FMETL	ND	ND	156.58	376	28.0	64.6	ND	7.42		V,S,P,M
11/18/1999	FMETL	ND	ND	143.93	676	21.1	143	ND	6.61		V,S,P,M
03/03/2000	FMETL	ND	ND	90.03	1640	17.8	500	ND	6.05		V,S,P,M
05/31/2000	FMETL	ND	ND	43.44	914	13.2	248	ND	8.13		V,S,P,M
08/21/2000	FMETL	ND	ND	23.85	4060	14.9	1910	1.66	5.78		V,S,P,M
12/11/2000	FMETL	ND	ND	110.95	502	11.9	96.6	ND	6.33		V,S,P,M
03/19/2001	FMETL	ND	ND	65.73	900	40.3	280	ND	5.68		V,S,P,M
03/19/2001D	FMETL	ND	ND	65.5	870	27.7	300	ND	5.68		V,S,P,M
06/05/2001	FMETL	ND	ND	45.30	495	15.4	ND	ND	7.98		V,S,P,M
09/05/2001	FMETL	1.22	1.18	111.58	1320	26.9	204	ND	7.04		V,S,P,M
10/04/2001	FMETL	3.38	3.56	83.81	1640	23.9	198	ND	6.77		V,S,P,M
10/04/2001D	FMETL	3.41	3.66	82.54	1450	24.2	252	1.65	6.77		V,S,P,M
01/14/2002	FMETL	3.09	4.27	85.31	2020	159	452	ND	6.74		V,S,P,M
04/23/2002	FMETL	ND	ND	76.89	1510	27.3	216	1.29	6.36		V,S,P,M
08/21/2002	FMETL	ND	ND	79.41	5320	34.5	1580	ND	7.24		V,S,P,M
10/28/2002	FMETL	ND	ND	12.99	11500	19.6	6000	4.41	5.45		V,S,P,M
01/22/2003	FMETL	ND	ND	27.87	292	9.34	109	ND	5.73		V,S,P,M
04/21/2003	FMETL	ND	ND	27.99	1370	32.9	431	ND	5.47		V,S,P,M
07/30/2003	FMETL	1.10	ND	15.26	4650	22.8	844	ND	6.15		V,S,P,M

SOURCE: 00M5MW20

Sampling Dates:
04/13/1999 - 07/30/2003

NOTES:

FORT MONMOUTH

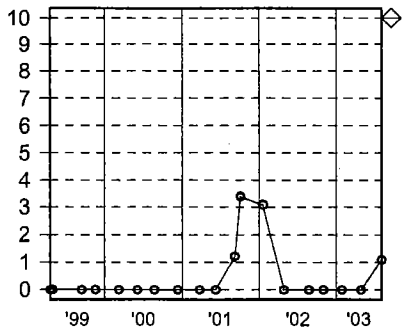
GW MONITORING
Bldg. M-5

Source 12 of 14

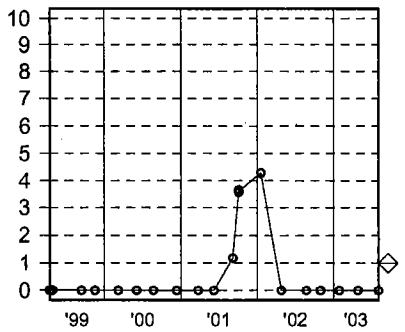
Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

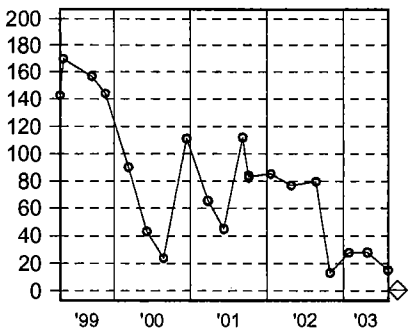
cis-1,2-Dichloroethene (ug/l)



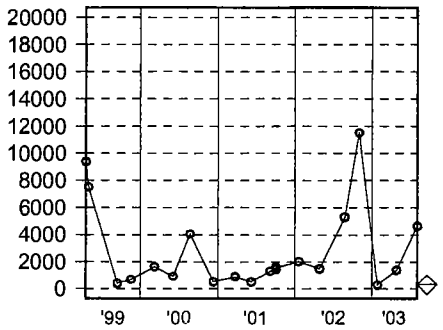
Trichloroethene (ug/l)



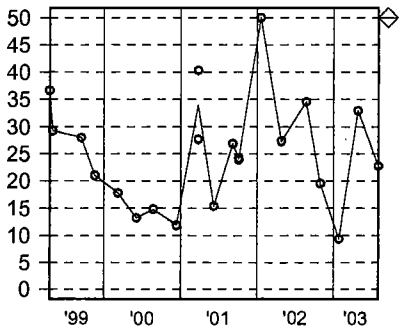
Tetrachlorethene (ug/l)



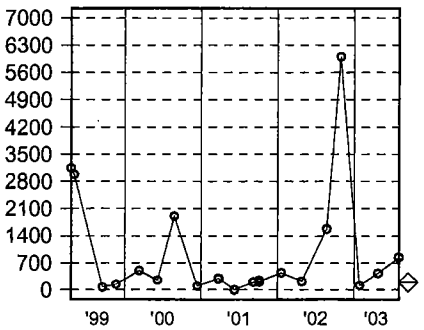
Iron (ug/l)



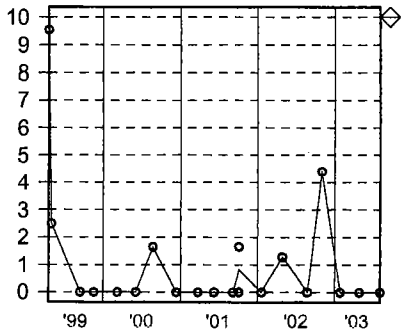
Manganese (ug/l)



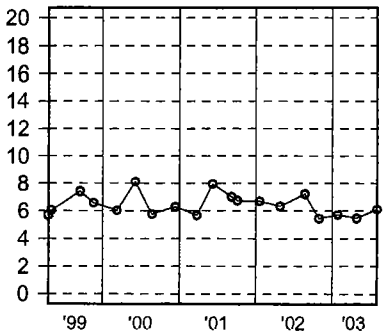
Aluminum (ug/l)



Lead (ug/l)



Depth to Water (Feet)



SOURCE: 00M5MW20

Sampling Dates:
04/13/1999 - 07/30/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 12 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

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FORT MONMOUTH
SELFM-PW-EV

08-25-2003 X:\MtechData\M-5\M-5.WSF

	Lab	cis-1,2-Dichloro ethene	Tri chloro ethene	Tetra chloro ethene	Iron	Manganese	Aluminum	Depth to Water			Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	Feet			-
NJDEP Criteria:	-	10	1	1	300	50	200	-			-
04/14/1999	FMETL	ND	ND	84.93	848	9.64	148	8.19			V,S,P,M
04/28/1999	FMETL	ND	ND	44.43	1590	19.8	195	8.46			V,S,P,M
09/13/1999	FMETL	ND	ND	29.53	10700	10.4	1410	9.56			V,S,P,M
11/18/1999	FMETL	ND	ND	59.02	1290	10.4	157	8.88			V,S,P,M
03/03/2000	FMETL	ND	ND	11.53	13600	23.1	248	8.38			V,S,P,M
05/31/2000	FMETL	ND	ND	23.13	25100	23.6	ND	7.70			V,S,P,M
08/21/2000	FMETL	ND	ND	4.22	20300	30.9	332	7.93			V,S,P,M
12/11/2000	FMETL	ND	ND	14.27	19200	27.1	108	8.61			V,S,P,M
03/19/2001	FMETL	ND	ND	6.39	31400	26.6	810	7.85			V,S,P,M
06/05/2001	FMETL	ND	ND	33.84	3280	31.1	ND	8.33			V,S,P,M
06/05/2001D	FMETL	ND	ND	33.54	3650	31.6	ND	8.33			V,S,P,M
09/05/2001	FMETL	1.48	ND	3.41	21600	21.1	1300	9.15			V,S,P,M
10/04/2001	FMETL	1.77	ND	3.85	13000	16.5	1270	8.90			V,S,P,M
01/14/2002	FMETL	1.77	ND	8.26	36400	185	1340	9.03			V,S,P,M
04/23/2002	FMETL	3.31	ND	8.97	67900	42.8	5120	8.53			V,S,P,M
08/21/2002	FMETL	ND	ND	15.68	15400	37.6	426	9.33			V,S,P,M
10/28/2002	FMETL	ND	ND	ND	14000	24.3	100	7.72			V,S,P,M
01/22/2003	FMETL	ND	3.97	79.46	137000	49.2	6920	7.75			V,S,P,M
04/21/2003	FMETL	1.37	3.15	17.35	37000	22.2	1060	7.54			V,S,P,M
07/30/2003	FMETL	4.60	2.51	20.45	37800	37.7	255	8.44			V,S,P,M

SOURCE: 00M5MW23

Sampling Dates:
04/14/1999 - 07/30/2003

NOTES:

FORT MONMOUTH

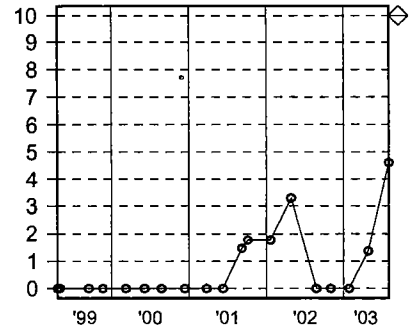
GW MONITORING
Bldg. M-5

Source 13 of 14

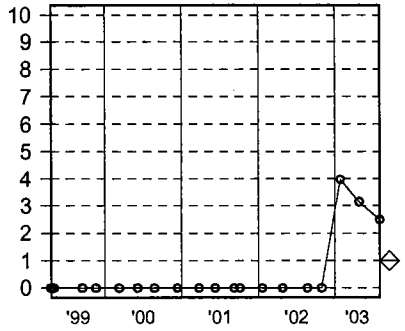
Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

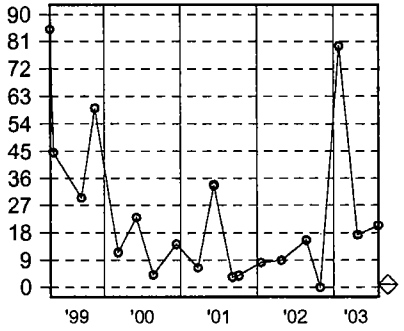
cis-1,2-Dichloroethene
(ug/l)



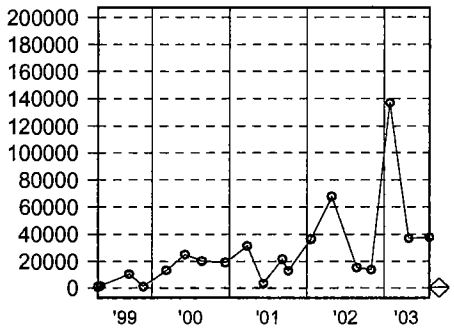
Trichloroethene
(ug/l)



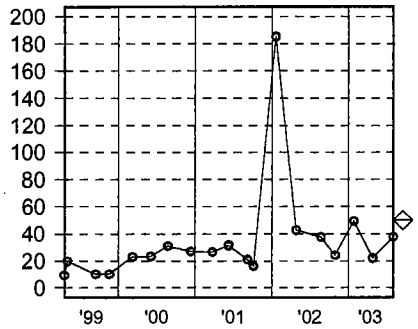
Tetrachlorethene
(ug/l)



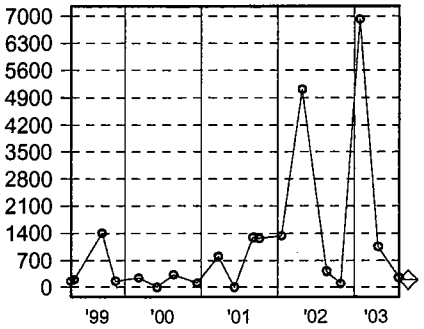
Iron
(ug/l)



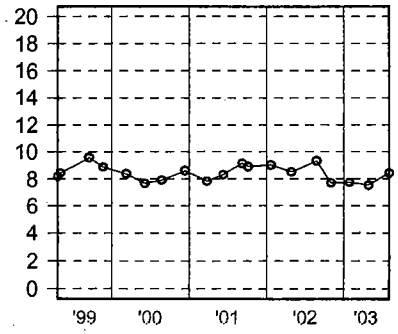
Manganese
(ug/l)



Aluminum
(ug/l)



Depth to Water
(Feet)



SOURCE: 00M5MW23

Sampling Dates:
04/14/1999 - 07/30/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 13 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

08-25-2003 X:\MtechData\M-5\M-5.WSF

	Lab	Iron	Manganese	Aluminum	Lead	Depth to Water					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	Feet					-
NJDEP Criteria:	-	300	50	200	10	-					-
04/14/1999	FMETL	18000	41.9	5640	4.75	11.32					V,S,P,M
04/28/1999	FMETL	12300	48.3	4630	6.35	11.59					V,S,P,M
09/14/1999	FMETL	8930	43.9	151	ND	13.21					V,S,P,M
11/18/1999	FMETL	15400	35.1	3560	ND	12.26					V,S,P,M
03/03/2000	FMETL	783	25.3	220	ND	11.39					V,S,P,M
05/31/2000	FMETL	191	13.8	ND	ND	11.61					V,S,P,M
05/31/2000D	FMETL	712	15.3	98.7	ND	11.61					V,S,P,M
08/21/2000	FMETL	453	46.7	250	1.91	11.05					V,S,P,M
12/11/2000	FMETL	877	18.7	209	ND	12.00					V,S,P,M
03/19/2001	FMETL	10900	43.1	140	ND	10.98					V,S,P,M
06/05/2001	FMETL	295	27.7	ND	ND	11.84					V,S,P,M
09/05/2001	FMETL	21600	21.1	1300	2.41	12.72					V,S,P,M
09/05/2001D	FMETL	476	63.9	ND	ND	12.72					V,S,P,M
10/04/2001	FMETL	26500	56.4	6880	6.17	11.77					V,S,P,M
01/14/2002	FMETL	1570	182	388	11.0	12.97					V,S,P,M
04/23/2002	FMETL	101	27.8	70.2	1.59	11.90					V,S,P,M
08/21/2002	FMETL	836	40.6	262	ND	12.86					V,S,P,M
10/28/2002	FMETL	6510	101	129	ND	10.93					V,S,P,M
01/22/2003	FMETL	12400	41.7	185	ND	10.75					V,S,P,M
04/21/2003	FMETL	2500	24.1	194	ND	10.60					V,S,P,M
07/30/2003	FMETL	2160	46.7	275	ND	11.73					V,S,P,M

SOURCE: 00M5MW25

Sampling Dates:
04/14/1999 - 07/30/2003

NOTES:

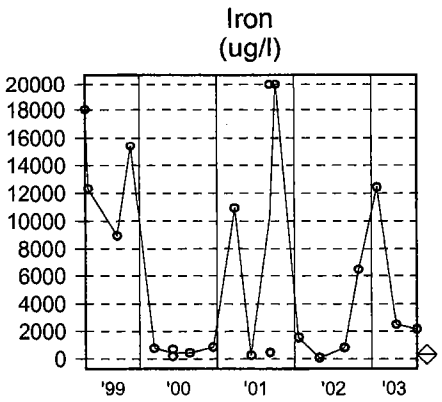
FORT MONMOUTH

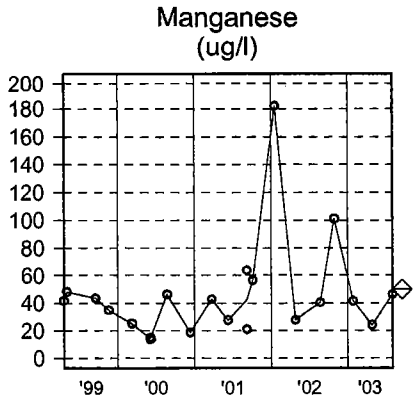
GW MONITORING
Bldg. M-5

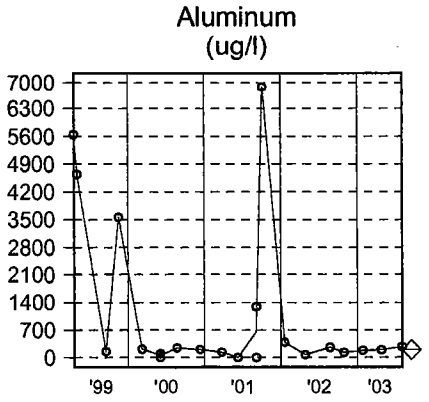
Source 14 of 14

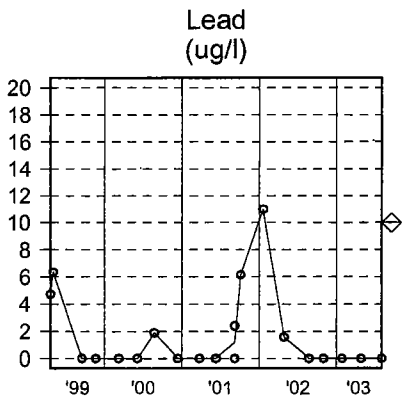
Ag in blank > GW Criteria for 5/8/97.

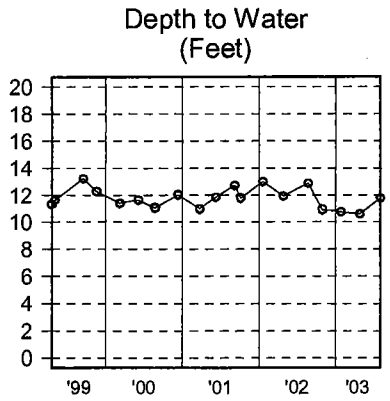
U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV











SOURCE: 00M5MW25

Sampling Dates:
04/14/1999 - 07/30/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

FORT MONMOUTH

GW MONITORING
Bldg. M-5

Source 14 of 14, Graph

Ag in blank > GW Criteria for 5/8/97.

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

08-25-2003 X:\MtechData\M-5\M-5.WSF

Appendix D

Surface Water Laboratory Analytical Data, 4th Quarter 2002 through 3rd Quarter 2003

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS
PHONE: (732) 532-6224 FAX: (732) 532-6263
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING
CERTIFICATIONS: NJDEP #13461, NYSDOH #11699

ANALYTICAL DATA REPORT
Fort Monmouth Environmental Laboratory
ENVIRONMENTAL DIVISION
Fort Monmouth, New Jersey
PROJECT: 4th QTR Streams

Streams

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
Stream Site #22	2078004	Aqueous	04-Nov-02 08:25	11/04/02
Stream Site #21	2078005	Aqueous	04-Nov-02 08:34	11/04/02
Stream Site #20	2078006	Aqueous	04-Nov-02 08:39	11/04/02
Stream Site #09	2078007	Aqueous	04-Nov-02 08:47	11/04/02
Stream Site #19	2078008	Aqueous	04-Nov-02 08:59	11/04/02
Stream Site #27	2078009	Aqueous	04-Nov-02 09:07	11/04/02
Stream Site #07	2078010	Aqueous	04-Nov-02 09:13	11/04/02
Stream Site #28	2078011	Aqueous	04-Nov-02 09:21	11/04/02
Stream Site #04	2078012	Aqueous	04-Nov-02 09:29	11/04/02
Stream Site #25	2078013	Aqueous	04-Nov-02 09:47	11/04/02
Stream Site #05	2078014	Aqueous	04-Nov-02 09:35	11/04/02
Stream Site #17	2078015	Aqueous	04-Nov-02 09:55	11/04/02
Stream Site #26	2078016	Aqueous	04-Nov-02 10:01	11/04/02
Stream Site #12	2078704	Aqueous	05-Nov-02 09:15	11/05/02
Stream Site #18	2078705	Aqueous	05-Nov-02 09:27	11/05/02
Stream Site #11	2078706	Aqueous	05-Nov-02 09:35	11/05/02
Stream Site #15	2078707	Aqueous	05-Nov-02 09:47	11/05/02
Stream Site #23	2078708	Aqueous	05-Nov-02 09:53	11/05/02
Stream Site #24	2078709	Aqueous	05-Nov-02 10:07	11/05/02
Stream Site #16	2078710	Aqueous	05-Nov-02 10:15	11/05/02
Stream Site #03	2078711	Aqueous	05-Nov-02 10:22	11/05/02
Stream Site #14	2078712	Aqueous	05-Nov-02 10:29	11/05/02
Stream Site #13	2078713	Aqueous	05-Nov-02 10:38	11/05/02

ANALYSIS:
FORT MONMOUTH ENVIRONMENTAL LAB
VOA+15, PCB's, WET CHEMISTRY

2-21-03
Daniel Wright/Date
Laboratory Director

METHODOLOGY SUMMARY

PARAMETER	REFERENCE
TARGET ANALYTE LIST METALS	Standard Methods, 18th ed.
Aluminum	3120B
Antimony	3120B
Arsenic	3120B
Barium	3120B
Beryllium	3120B
Cadmium	3120B
Calcium	3120B
Chromium	3120B
Cobalt	3120B
Copper	3120B
Iron	3120B
Lead	3120B
Magnesium	3120B
Manganese	3120B
Mercury	3112B
Nickel	3120B
Potassium	3120B
Selenium	3120B
Silver	3120B
Sodium	3120B
Thallium	3120B
Vanadium	3120B
Zinc	3120B

PARAMETER	REFERENCE
TARGET COMPOUND LIST ORGANICS	Federal Register 40 CFR Part 136 Appendix A
Base/Neutral and Acid Extractables by GC/MS	625
Purgeable Organics by GC/MS	624
Pesticide and PCB by GC	608

CHAIN OF CUSTODY

Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:wrightd@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: J. Fallon
Phone #: 121223
( )DERA ( )OMA ( )Other:_____

Project No:
Location: Streams
4th Qrtr '02 Prt1

Samplers Name / Company: Tony Miernik, TVS

LIMS/Work Order #	Sample Location	Date	Time	Sample Type	# bottles	VOTIS	NH_3 / NO_3	PO_4 / SO_4	T. Coli	PCB	pH (su)	Temp (°C)	Dsslvd O_2	Comments: HCL/H_2SO_4/4°c Remarks / Preservation Method	
20780 01	Trip	11/4/02	0727	AQ	2	✓					1	1	1	Salinity	
02	Field Blank		0815		5	✓	✓	✓		✓	—	—	—	$d\frac{20}{20}$	‰
03	Dupe		—		6	✓	✓	✓	✓	✓	—	—	—	—	—
04	stream site #22 *		0825		6	✓	✓	✓	✓	✓	7.83	19.7	8.31	1.009	16.0
05	" 21		0834			✓	✓	✓	✓	✓	7.89	19.9	8.27	1.007	13.0
06	" 20		0839			✓	✓	✓	✓	✓	7.92	19.6	8.24	1.007	13.0
07	" 09		0847			✓	✓	✓	✓	✓	7.95	18.4	7.74	1.006	2.0
08	" 19		0859			✓	✓	✓	✓	✓	7.57	18.9	7.77	1.000	0.0
09	" 27		0907			✓	✓	✓	✓	✓	7.71	19.2	7.81	1.001	2.0
10	" 07		0913			✓	✓	✓	✓	✓	7.76	19.1	7.76	1.001	2.0
11	" 28		0921			✓	✓	✓	✓	✓	7.81	18.7	7.81	1.001	2.0
12	" 04		0929			✓	✓	✓	✓	✓	7.89	18.9	7.77	1.001	2.0
13	" 25		0947			✓	✓	✓	✓	✓	7.91	19.3	7.61	1.000	0.0
14	" 05		0935			✓	✓	✓	✓	✓	7.93	18.7	7.99	1.000	1.0

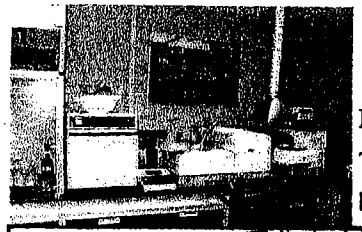
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Tony Miernik	11/4/02 1045				
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: (_)Full, (_)Reduced, (X)Standard, (_)Screen / non-certified, (_)EDD
Turnaround time: (X)Standard 3 wks, (_)Rush ____ Days, (_)ASAP Verbal ____Hrs.

Remarks:
Tide: H → outgoing

print legibly

Coc10/10/02



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:wrightd@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: J. Fallon
Phone #: X26223
( )DERA ( )OMA ( )Other:_____
Project No:
Location: Streams
4th Qtr 02 Part 2
Samplers Name / Company: Corey McCormack, TUS

LIMS/Work Order #	Sample Location	Date	Time	Sample Type	# bottles	Analysis Parameters: Volatiles	NH_3/NO_3	PO_4/SO_4	T. Coli	PCB	pH (su)	Temp (°C)	Dissolved O_2	Comments: Remarks / Preservation Method	
210780 15	Stream Site #17	11/4/02	0955	AQ	6	✓	✓	✓	✓	✓	7.91	12.9	8.27	1.000	1.0
16	Stream Site #26	1	1001	1	1	✓	✓	✓	✓	✓	7.98	18.3	8.21	1.000	0.0
														HCl/H_2SO_4/4°C	

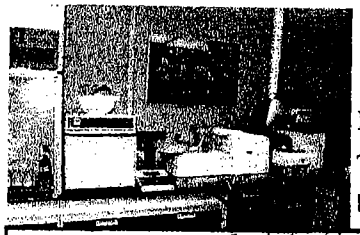
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Corey McCormack	11/4/02 1045				
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: (_)Full, (_)Reduced, (X)Standard, (_)Screen / non-certified, (_)EDD
Turnaround time: (X)Standard 3 wks, (_)Rush ____ Days, (_)ASAP Verbal ____Hrs.

Remarks:
Tide: H -> outgoing

print legibly

Coc10/10/02



Fort Monmouth Environmental Testing Laboratory

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Tel (732)532-4359 Fax (732)532-6263 EMail:wrightd@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: J. FALLON
Phone #: 426223
(X)DERA ( )OMA ( )Other:_____
Project No:
Location: Streams 4th Qtr '02 pt 2
Samplers Name / Company: Corey McCormack, TVS

LIMS/Work Order #	Sample Location	Date	Time	Sample Type	# bottles	VOA's	NH_3 / NO_3	PO_4 / SO_4	T. Coli.	PCB	pH (sw)	Temp (°C)	Dissolved O_2	Comments: HCL/H_2SO_4/ICE°C — Remarks / Preservation Method
20787 01	Trip	11/5/02	0730	AQ	2	✓					—	—	—	Salinity
02	Field Blank		0900		5	✓	✓	✓		✓	—	—	—	$d\frac{20}{20}$ ‰
03	Dupe		—		6	✓	✓	✓	✓	✓	—	—	—	— —
04	Stream Site #12		0915		6	✓	✓	✓	✓	✓	7.80	17.7	8.76	1.000 0
05	#14		0927			✓	✓	✓	✓	✓	7.85	17.9	8.79	1.000 0
06	#11		0935			✓	✓	✓	✓	✓	7.81	17.4	8.91	1.000 0
07	#15		0947			✓	✓	✓	✓	✓	7.71	17.9	8.11	1.004 5
08	#23		0953			✓	✓	✓	✓	✓	7.74	18.1	8.30	1.004 5
09	#24		1007			✓	✓	✓	✓	✓	7.75	18.1	8.23	1.004 5
10	#16		1015			✓	✓	✓	✓	✓	7.79	18.9	8.29	1.005 6
11	#03		1022			✓	✓	✓	✓	✓	7.64	18.7	8.33	1.002 2
12	#14		1029			✓	✓	✓	✓	✓	7.66	17.6	8.77	1.000 0
13	#13		1038			✓	✓	✓	✓	✓	7.62	17.5	8.76	1.000 0

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Corey McCord	11/5/02 1050	J. Wright			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: (_)Full, (_)Reduced, (X)Standard, (_)Screen / non-certified, (_)EDD
Turnaround time: (X)Standard 3 wks, (_)Rush ____ Days, (_)ASAP Verbal ____Hrs.

Remarks:
Tide: H → outgoing

print legibly

Coc10/10/02

VOLATILE ORGANICS

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEP CERTIFICATION # 13461

Definition of Qualifiers

MDL	:	Method Detection Limit
J	:	Compound identified below detection limit
B	:	Compound found in blank
D	:	Results are from a dilution of the sample
U	:	Compound searched for but not detected
E	:	Compound exceeds calibration limit
PQL	:	Practical Quantitation Limit
NLE	:	No limit established
RT	:	Retention time

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008842.D**	Sample Name	**MB 15Nov02**
Operator	**Skelton**	Field ID	**MB 15Nov02**
Date Aquired	**15-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008842.D**	Sample Name	**MB 15Nov02**
Operator	**Skelton**	Field ID	**MB 15Nov02**
Date Aquired	**15-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	0.083	1.06 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	0.388	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **MB 15Nov02**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 20787 Location: 4thQtr SDG No.: Streams

Matrix: (soil/water) WATER Lab Sample ID: MB 15Nov02

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008842.D

Level: (low/med) LOW Date Received: 11/5/02

% Moisture: not dec. _____ Date Analyzed: 11/15/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008843.D**	Sample Name	**2078001**
Operator	**Skelton**	Field ID	**Trip Blank**
Date Aquired	**15-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	
67-66-3	Chloroform	16.88	52362	1.25 ug/L	470	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008843.D**	Sample Name	**2078001**
Operator	**Skelton**	Field ID	**Trip Blank**
Date Aquired	**15-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	0.083	1.06 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	
67-66-3	Chloroform	16.88	52362	1.25 ug/L	5.67	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	0.388	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Trip Blank**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 20780 Location: 4thQtr SDG No.: Streams

Matrix: (soil/water) WATER Lab Sample ID: 2078001

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008843.D

Level: (low/med) LOW Date Received: 11/4/02

% Moisture: not dec. _____ Date Analyzed: 11/15/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008861.D**	Sample Name	**2078701**
Operator	**Skelton**	Field ID	**Trip Blank**
Date Aquired	**15-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	
67-66-3	Chloroform	16.88	57436	1.63 ug/L	470	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008861.D**	Sample Name	**2078701**
Operator	**Skelton**	Field ID	**Trip Blank**
Date Aquired	**15-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	0.083	1.06 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	
67-66-3	Chloroform	16.88	57436	1.63 ug/L	5.67	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	0.388	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Trip Blank**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 20787 Location: 4thQtr SDG No.: Streams

Matrix: (soil/water) WATER Lab Sample ID: 2078701

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008861.D

Level: (low/med) LOW Date Received: 11/5/02

% Moisture: not dec. Date Analyzed: 11/15/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008844.D**	Sample Name	**2078002**
Operator	**Skelton**	Field ID	**Field Blank**
Date Aquired	**15-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	
67-66-3	Chloroform	16.88	51381	1.30 ug/L	470	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008844.D**	Sample Name	**2078002**
Operator	**Skelton**	Field ID	**Field Blank**
Date Aquired	**15-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	0.083	1.06 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	
67-66-3	Chloroform	16.88	51381	1.30 ug/L	5.67	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	0.388	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Field Blank**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 20780 Location: 4thQtr SDG No.: Streams

Matrix: (soil/water) WATER Lab Sample ID: 2078002

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008844.D

Level: (low/med) LOW Date Received: 11/4/02

% Moisture: not dec. _____ Date Analyzed: 11/15/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008862.D**	Sample Name	**2078702**
Operator	**Skelton**	Field ID	**Field Blank**
Date Aquired	**15-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	
67-66-3	Chloroform	16.88	55219	1.58 ug/L	470	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008862.D**	Sample Name	**2078702**
Operator	**Skelton**	Field ID	**Field Blank**
Date Aquired	**15-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	0.083	1.06 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	
67-66-3	Chloroform	16.88	55219	1.58 ug/L	5.67	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	0.388	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Field Blank**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 20787 Location: 4thQtr SDG No.: Streams

Matrix: (soil/water) WATER Lab Sample ID: 2078702

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008862.D

Level: (low/med) LOW Date Received: 11/5/02

% Moisture: not dec. Date Analyzed: 11/15/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008845.D**	Sample Name	**2078003**
Operator	**Skelton**	Field ID	**Dupe**
Date Aquired	**15-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008845.D**	Sample Name	**2078003**
Operator	**Skelton**	Field ID	**Dupe**
Date Aquired	**15-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	0.083	1.06 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	0.388	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Dupe**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 20780 Location: 4thQtr SDG No.: Streams

Matrix: (soil/water) WATER Lab Sample ID: 2078003

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008845.D

Level: (low/med) LOW Date Received: 11/4/02

% Moisture: not dec. _____ Date Analyzed: 11/15/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008863.D**	Sample Name	**2078703**
Operator	**Skelton**	Field ID	**Dupe**
Date Aquired	**16-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene	15.87	129214	4.96 ug/L	nle	0.17 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008863.D**	Sample Name	**2078703**
Operator	**Skelton**	Field ID	**Dupe**
Date Aquired	**16-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	0.083	1.06 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene	15.87	129214	4.96 ug/L	nle	0.17 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	0.388	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Dupe**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 20787 Location: 4thQtr SDG No.: Streams

Matrix: (soil/water) WATER Lab Sample ID: 2078703

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008863.D

Level: (low/med) LOW Date Received: 11/5/02

% Moisture: not dec. Date Analyzed: 11/16/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008871.D**	Sample Name	**2078711**
Operator	**Skelton**	Field ID	**StreamSite#03**
Date Aquired	**16-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	0.083	1.06 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	0.388	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS03**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 20787 Location: 4thQtr SDG No.: Streams

Matrix: (soil/water) WATER Lab Sample ID: 2078711

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008871.D

Level: (low/med) LOW Date Received: 11/5/02

% Moisture: not dec. _____ Date Analyzed: 11/16/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008856.D**	Sample Name	**2078012**
Operator	**Skelton**	Field ID	**StreamSite#04**
Date Aquired	**15-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS04**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 20780 Location: 4thQtr SDG No.: Streams

Matrix: (soil/water) WATER Lab Sample ID: 2078012

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008856.D

Level: (low/med) LOW Date Received: 11/4/02

% Moisture: not dec. _____ Date Analyzed: 11/15/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008858.D**	Sample Name	**2078014**
Operator	**Skelton**	Field ID	**StreamSite#05**
Date Aquired	**15-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS05**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 20780 Location: 4thQtr SDG No.: Streams

Matrix: (soil/water) WATER Lab Sample ID: 2078014

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008858.D

Level: (low/med) LOW Date Received: 11/4/02

% Moisture: not dec. _____ Date Analyzed: 11/15/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008854.D**	Sample Name	**2078010**
Operator	**Skelton**	Field ID	**StreamSite#07**
Date Aquired	**15-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS07**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 20780 Location: 4thQtr SDG No.: Streams

Matrix: (soil/water) WATER Lab Sample ID: 2078010

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008854.D

Level: (low/med) LOW Date Received: 11/4/02

% Moisture: not dec. _____ Date Analyzed: 11/15/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008851.D**	Sample Name	**2078007**
Operator	**Skelton**	Field ID	**StreamSite#09**
Date Aquired	**15-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene	15.86	32758	1.24 ug/L	nle	0.17 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS09**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 20780 Location: 4thQtr SDG No.: Streams

Matrix: (soil/water) WATER Lab Sample ID: 2078007

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008851.D

Level: (low/med) LOW Date Received: 11/4/02

% Moisture: not dec. _____ Date Analyzed: 11/15/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008866.D**	Sample Name	**2078706**
Operator	**Skelton**	Field ID	**StreamSite#11**
Date Aquired	**16-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	
75-01-4	Vinyl Chloride	5.13	52517	1.33 ug/L	0.083	1.06 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene	15.87	192882	7.48 ug/L	nle	0.17 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	0.388	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS11**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 20787 Location: 4thQtr SDG No.: Streams

Matrix: (soil/water) WATER Lab Sample ID: 2078706

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008866.D

Level: (low/med) LOW Date Received: 11/5/02

% Moisture: not dec. _____ Date Analyzed: 11/16/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008864.D**	Sample Name	**2078704**
Operator	**Skelton**	Field ID	**StreamSite#12**
Date Aquired	**16-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	0.083	1.06 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene	15.87	129693	5.16 ug/L	nle	0.17 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	0.388	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS12**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 20787 Location: 4thQtr SDG No.: Streams

Matrix: (soil/water) WATER Lab Sample ID: 2078704

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008864.D

Level: (low/med) LOW Date Received: 11/5/02

% Moisture: not dec. _____ Date Analyzed: 11/16/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008873.D**	Sample Name	**2078713**
Operator	**Skelton**	Field ID	**StreamSite#13**
Date Aquired	**16-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	0.083	1.06 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	
127-18-4	Tetrachloroethene	24.70	22215	1.46 ug/L	0.388	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS13**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 20787 Location: 4thQtr SDG No.: Streams

Matrix: (soil/water) WATER Lab Sample ID: 2078713

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008873.D

Level: (low/med) LOW Date Received: 11/5/02

% Moisture: not dec. Date Analyzed: 11/16/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008872.D**	Sample Name	**2078712**
Operator	**Skelton**	Field ID	**StreamSite#14**
Date Aquired	**16-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	0.083	1.06 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	0.388	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS14**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 20787 Location: 4thQtr SDG No.: Streams

Matrix: (soil/water) WATER Lab Sample ID: 2078712

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008872.D

Level: (low/med) LOW Date Received: 11/5/02

% Moisture: not dec. Date Analyzed: 11/16/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008867.D**	Sample Name	**2078707**
Operator	**Skelton**	Field ID	**StreamSite#15**
Date Aquired	**16-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	0.083	1.06 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	
127-18-4	Tetrachloroethene	24.71	23061	1.52 ug/L	0.388	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS15**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 20787 Location: 4thQtr SDG No.: Streams

Matrix: (soil/water) WATER Lab Sample ID: 2078707

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008867.D

Level: (low/med) LOW Date Received: 11/5/02

% Moisture: not dec. _____ Date Analyzed: 11/16/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008870.D**	Sample Name	**2078710**
Operator	**Skelton**	Field ID	**StreamSite#16**
Date Aquired	**16-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	
127-18-4	Tetrachloroethene	24.70	22645	1.49 ug/L	4.29	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS16**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 20787 Location: 4thQtr SDG No.: Streams

Matrix: (soil/water) WATER Lab Sample ID: 2078710

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008870.D

Level: (low/med) LOW Date Received: 11/5/02

% Moisture: not dec. Date Analyzed: 11/16/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008859.D**	Sample Name	**2078015**
Operator	**Skelton**	Field ID	**StreamSite#17**
Date Aquired	**15-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS17**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 20780 Location: 4thQtr SDG No.: Streams

Matrix: (soil/water) WATER Lab Sample ID: 2078015

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008859.D

Level: (low/med) LOW Date Received: 11/4/02

% Moisture: not dec. Date Analyzed: 11/15/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008865.D**	Sample Name	**2078705**
Operator	**Skelton**	Field ID	**StreamSite#18**
Date Aquired	**16-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	0.083	1.06 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene	15.87	132012	5.14 ug/L	nle	0.17 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	0.388	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS18**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 20787 Location: 4thQtr SDG No.: Streams

Matrix: (soil/water) WATER Lab Sample ID: 2078705

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008865.D

Level: (low/med) LOW Date Received: 11/5/02

% Moisture: not dec. _____ Date Analyzed: 11/16/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008852.D**	Sample Name	**2078008**
Operator	**Skelton**	Field ID	**StreamSite#19**
Date Aquired	**15-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene	15.86	71334	2.69 ug/L	nle	0.17 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS19**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 20780 Location: 4thQtr SDG No.: Streams

Matrix: (soil/water) WATER Lab Sample ID: 2078008

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008852.D

Level: (low/med) LOW Date Received: 11/4/02

% Moisture: not dec. Date Analyzed: 11/15/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008850.D**	Sample Name	**2078006**
Operator	**Skelton**	Field ID	**StreamSite#20**
Date Aquired	**15-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS20**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 20780 Location: 4thQtr SDG No.: Streams

Matrix: (soil/water) WATER Lab Sample ID: 2078006

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008850.D

Level: (low/med) LOW Date Received: 11/4/02

% Moisture: not dec. Date Analyzed: 11/15/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008849.D**	Sample Name	**2078005**
Operator	**Skelton**	Field ID	**StreamSite#21**
Date Aquired	**15-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS21**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 20780 Location: 4thQtr SDG No.: Streams

Matrix: (soil/water) WATER Lab Sample ID: 2078005

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008849.D

Level: (low/med) LOW Date Received: 11/4/02

% Moisture: not dec. _____ Date Analyzed: 11/15/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008846.D**	Sample Name	**2078004**
Operator	**Skelton**	Field ID	**StreamSite#22**
Date Aquired	**15-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS22**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 20780 Location: 4thQtr SDG No.: Streams

Matrix: (soil/water) WATER Lab Sample ID: 2078004

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008846.D

Level: (low/med) LOW Date Received: 11/4/02

% Moisture: not dec. _____ Date Analyzed: 11/15/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008868.D**	Sample Name	**2078708**
Operator	**Skelton**	Field ID	**StreamSite#23**
Date Aquired	**16-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	
127-18-4	Tetrachloroethene	24.71	22365	1.44 ug/L	4.29	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS23**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 20787 Location: 4thQtr SDG No.: Streams

Matrix: (soil/water) WATER Lab Sample ID: 2078708

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008868.D

Level: (low/med) LOW Date Received: 11/5/02

% Moisture: not dec. _____ Date Analyzed: 11/16/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008869.D**	Sample Name	**2078709**
Operator	**Skelton**	Field ID	**StreamSite#24**
Date Aquired	**16-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	
127-18-4	Tetrachloroethene	24.70	24907	1.64 ug/L	4.29	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS24**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 20787 Location: 4thQtr SDG No.: Streams

Matrix: (soil/water) WATER Lab Sample ID: 2078709

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008869.D

Level: (low/med) LOW Date Received: 11/5/02

% Moisture: not dec. Date Analyzed: 11/16/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008857.D**	Sample Name	**2078013**
Operator	**Skelton**	Field ID	**StreamSite#25**
Date Aquired	**15-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS25**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 20780 Location: 4thQtr SDG No.: Streams

Matrix: (soil/water) WATER Lab Sample ID: 2078013

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008857.D

Level: (low/med) LOW Date Received: 11/4/02

% Moisture: not dec. _____ Date Analyzed: 11/15/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008860.D**	Sample Name	**2078016**
Operator	**Skelton**	Field ID	**StreamSite#26**
Date Aquired	**15-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS26**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 20780 Location: 4thQtr SDG No.: Streams

Matrix: (soil/water) WATER Lab Sample ID: 2078016

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008860.D

Level: (low/med) LOW Date Received: 11/4/02

% Moisture: not dec. _____ Date Analyzed: 11/15/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	**VC008853.D**	Sample Name	**2078009**
Operator	**Skelton**	Field ID	**StreamSite#27**
Date Aquired	**15-Nov-02**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS27**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 20780 Location: 4thQtr SDG No.: Streams

Matrix: (soil/water) WATER Lab Sample ID: 2078009

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008853.D

Level: (low/med) LOW Date Received: 11/4/02

% Moisture: not dec. _____ Date Analyzed: 11/15/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461

Data File	VC008855.D	Sample Name	2078011
Operator	Skelton	Field ID	StreamSite#28
Date Aquired	15-Nov-02	Multiplier	1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time

C:\HPCHEM\CUSTRPT\VOLATILE\SALTWATER.CRT

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS28**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 20780 Location: 4thQtr SDG No.: Streams

Matrix: (soil/water) WATER Lab Sample ID: 2078011

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC008855.D

Level: (low/med) LOW Date Received: 11/4/02

% Moisture: not dec. _____ Date Analyzed: 11/15/02

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

PCB's

TABULATED ANALYTICAL REPORT
POLYCHLORINATED BIPHENYLS
EPA METHOD 8082

Project No.: 20787
Lab. ID. No.: MB 08Nov02 Aq
Filename: PCB11355.D

MATRIX: Aqueous
Date Extracted: 11/8/02
Ext. Batch:
Date Analyzed: 11/16/02

Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/Kg)	MDL (ug/Kg)
12674-11-2	Aroclor 1016	ND	1.7
11096-82-5	Aroclor 1260	ND	1.7
11104-28-2	Aroclor 1221	ND	1.7
12672-29-6	Aroclor 1248	ND	1.7
53469-21-9	Aroclor 1242	ND	1.7
11141-16-5	Aroclor 1232	ND	1.7
11097-69-1	Aroclor 1254	ND	1.7

MDL = Method Detection Limit
ND = Not Detected.

Initial Wt.(gms) **30.00**
Final Vol.(ml) **10.00**

COMMENTS:

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 4th Qrtr. '02
Client ID: Field Blank
Lab ID: 2078002s
Filename:
Lab Project No: 20780

MATRIX: Aqueous
Date Extracted: 11/7/02
Ext. Batch:
Date Analyzed: 11/15/02
DILUTION: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0519
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.1593
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0650
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.1047
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0629
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0742
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0782

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol.(ml)) 1000
Final Vol.(ml) 10

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 4th Qrtr. '02
Client ID: Field Blank
Lab ID: 2078702s
Filename:
Lab Project No: 20787

MATRIX: Aqueous
Date Extracted: 11/7/02
Ext. Batch:
Date Analyzed: 11/16/02
DILUTION: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0519
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.1593
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0650
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.1047
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0629
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0742
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0782

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol.(ml)) 1000
Final Vol.(ml) 10

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 4th Qrtr. '02
Client ID: Dupe
Lab ID: 2078003s
Filename:
Lab Project No: 20780

MATRIX: Aqueous
Date Extracted: 11/7/02
Ext. Batch:
Date Analyzed: 11/15/02
DILUTION: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0519
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.1593
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0650
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.1047
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0629
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0742
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0782

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol.(ml)) 1000
Final Vol.(ml) 10

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 4th Qrtr. '02
Client ID: Dupe
Lab ID: 2078703s
Filename:
Lab Project No: 20787

MATRIX: Aqueous
Date Extracted: 11/7/02
Ext. Batch:
Date Analyzed: 11/16/02
DILUTION: 1

Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0519
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.1593
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0650
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.1047
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0629
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0742
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0782

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol.(ml)) 1000
Final Vol.(ml) 10

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 4th Qrtr. '02
Client ID: Stream Site # 03
Lab ID: 2078711s
Filename:
Lab Project No: 20787

MATRIX: Aqueous
Date Extracted: 11/8/02
Ext. Batch:
Date Analyzed: 11/16/02
DILUTION: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0519
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.1593
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0650
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.1047
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0629
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0742
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0782

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol.(ml)) 1000
Final Vol.(ml) 10

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 4th Qrtr. '02
Client ID: Stream Site # 04
Lab ID: 2078012s
Filename:
Lab Project No: 20780

MATRIX: Aqueous
Date Extracted: 11/7/02
Ext. Batch:
Date Analyzed: 11/15/02
DILUTION: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0519
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.1593
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0650
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.1047
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0629
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0742
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0782

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol.(ml)) 1000
Final Vol.(ml) 10

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 4th Qrtr. '02
Client ID: Stream Site # 05
Lab ID: 2078014s
Filename:
Lab Project No: 20780

MATRIX: Aqueous
Date Extracted: 11/7/02
Ext. Batch:
Date Analyzed: 11/15/02
DILUTION: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0519
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.1593
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0650
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.1047
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0629
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0742
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0782

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol.(ml)) 1000
Final Vol.(ml) 10

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
MATRIX: Aqueous

Location: Streams 4th Qrtr. '02
Date Extracted: 11/7/02

Client ID: Stream Site # 07
Ext. Batch:

Lab ID: 2078010s
Date Analyzed: 11/15/02

Filename:
DILUTION: 1

Lab Project No: 20780

Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0519
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.1593
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0650
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.1047
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0629
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0742
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0782

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol.(ml)) 1000
Final Vol.(ml) 10

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 4th Qrtr. '02
Client ID: Stream Site # 09
Lab ID: 2078007s
Filename:
Lab Project No: 20780

MATRIX: Aqueous
Date Extracted: 11/7/02
Ext. Batch:
Date Analyzed: 11/15/02
DILUTION: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0519
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.1593
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0650
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.1047
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0629
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0742
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0782

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol.(ml)) 1000
Final Vol.(ml) 10

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client:	**U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.**		**MATRIX: Aqueous**
Location:	**Streams**	**4th Qrtr. '02**	**Date Extracted: 11/8/02**
Client ID:	**Stream Site # 11**		**Ext. Batch:**
Lab ID:	**2078706s**		**Date Analyzed: 11/16/02**
Filename:			**DILUTION: 1**
Lab Project No:	**20787**		
			Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0519
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.1593
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0650
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.1047
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0629
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0742
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0782

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol.(ml)) 1000
Final Vol.(ml) 10

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 4th Qrtr. '02
Client ID: Stream Site # 12
Lab ID: 2078704s
Filename:
Lab Project No: 20787

MATRIX: Aqueous
Date Extracted: 11/7/02
Ext. Batch:
Date Analyzed: 11/16/02
DILUTION: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0519
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.1593
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0650
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.1047
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0629
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0742
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0782

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol.(ml)) 1000
Final Vol.(ml) 10

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 4th Qrtr. '02
Client ID: Stream Site # 13
Lab ID: 2078713s
Filename:
Lab Project No: 20787

MATRIX: Aqueous
Date Extracted: 11/8/02
Ext. Batch:
Date Analyzed: 11/16/02
DILUTION: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0519
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.1593
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0650
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.1047
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0629
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0742
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0782

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol.(ml)) 1000
Final Vol.(ml) 10

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 4th Qrtr. '02
Client ID: Stream Site # 14
Lab ID: 2078712s
Filename:
Lab Project No: 20787

MATRIX: Aqueous
Date Extracted: 11/8/02
Ext. Batch:
Date Analyzed: 11/16/02
DILUTION: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0519
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.1593
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0650
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.1047
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0629
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0742
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0782

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol.(ml)) 1000
Final Vol.(ml) 10

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 4th Qrtr. '02
Client ID: Stream Site # 15
Lab ID: 2078707s
Filename:
Lab Project No: 20787

MATRIX: Aqueous
Date Extracted: 11/8/02
Ext. Batch:
Date Analyzed: 11/16/02
DILUTION: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0519
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.1593
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0650
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.1047
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0629
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0742
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0782

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol.(ml)) 1000
Final Vol.(ml) 10

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 4th Qrtr. '02
Client ID: Stream Site # 16
Lab ID: 2078710s
Filename:
Lab Project No: 20787

MATRIX: Aqueous
Date Extracted: 11/8/02
Ext. Batch:
Date Analyzed: 11/16/02
DILUTION: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0519
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.1593
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0650
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.1047
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0629
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0742
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0782

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol.(ml)) 1000
Final Vol.(ml) 10

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
MATRIX: Aqueous

Location: Streams 4th Qrtr. '02
Date Extracted: 11/7/02

Client ID: Stream Site # 17
Ext. Batch:

Lab ID: 2078015s
Date Analyzed: 11/15/02

Filename:
DILUTION: 1

Lab Project No: 20780

Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0519
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.1593
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0650
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.1047
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0629
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0742
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0782

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol.(ml)) 1000
Final Vol.(ml) 10

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 4th Qrtr. '02
Client ID: Stream Site # 18
Lab ID: 2078705s
Filename:
Lab Project No: 20787

MATRIX: Aqueous
Date Extracted: 11/8/02
Ext. Batch:
Date Analyzed: 11/16/02
DILUTION: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0519
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.1593
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0650
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.1047
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0629
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0742
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0782

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol.(ml)) 1000
Final Vol.(ml) 10

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 4th Qrtr. '02
Client ID: Stream Site # 19
Lab ID: 2078008s
Filename:
Lab Project No: 20780

MATRIX: Aqueous
Date Extracted: 11/7/02
Ext. Batch:
Date Analyzed: 11/15/02
DILUTION: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0519
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.1593
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0650
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.1047
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0629
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0742
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0782

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol.(ml)) 1000
Final Vol.(ml) 10

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 4th Qrtr. '02
Client ID: Stream Site # 20
Lab ID: 2078006s
Filename:
Lab Project No: 20780

MATRIX: Aqueous
Date Extracted: 11/7/02
Ext. Batch:
Date Analyzed: 11/15/02
DILUTION: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0519
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.1593
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0650
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.1047
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0629
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0742
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0782

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol.(ml)) 1000
Final Vol.(ml) 10

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 4th Qrtr. '02
Client ID: Stream Site # 21
Lab ID: 2078005s
Filename:
Lab Project No: 20780

MATRIX: Aqueous
Date Extracted: 11/7/02
Ext. Batch:
Date Analyzed: 11/15/02
DILUTION: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0519
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.1593
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0650
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.1047
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0629
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0742
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0782

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol.(ml)) 1000
Final Vol.(ml) 10

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 4th Qrtr. '02
Client ID: Stream Site # 22
Lab ID: 2078004s
Filename:
Lab Project No: 20780

MATRIX: Aqueous
Date Extracted: 11/7/02
Ext. Batch:
Date Analyzed: 11/15/02
DILUTION: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0519
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.1593
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0650
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.1047
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0629
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0742
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0782

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol.(ml)) 1000
Final Vol.(ml) 10

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 4th Qrtr. '02
Client ID: Stream Site # 23
Lab ID: 2078708s
Filename:
Lab Project No: 20787

MATRIX: Aqueous
Date Extracted: 11/8/02
Ext. Batch:
Date Analyzed: 11/16/02
DILUTION: 1

Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0519
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.1593
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0650
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.1047
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0629
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0742
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0782

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol.(ml)) 1000
Final Vol.(ml) 10

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 4th Qrtr. '02
Client ID: Stream Site # 24
Lab ID: 2078709s
Filename:
Lab Project No: 20787

MATRIX: Aqueous
Date Extracted: 11/8/02
Ext. Batch:
Date Analyzed: 11/16/02
DILUTION: 1

Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0519
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.1593
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0650
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.1047
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0629
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0742
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0782

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol.(ml)) 1000
Final Vol.(ml) 10

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 4th Qrtr. '02
Client ID: Stream Site # 25
Lab ID: 2078013s
Filename:
Lab Project No: 20780

MATRIX: Aqueous
Date Extracted: 11/7/02
Ext. Batch:
Date Analyzed: 11/15/02
DILUTION: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0519
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.1593
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0650
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.1047
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0629
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0742
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0782

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol.(ml)) 1000
Final Vol.(ml) 10

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 4th Qrtr. '02
Client ID: Stream Site # 26
Lab ID: 2078016s
Filename:
Lab Project No: 20780

MATRIX: Aqueous
Date Extracted: 11/7/02
Ext. Batch:
Date Analyzed: 11/15/02
DILUTION: 1

Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0519
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.1593
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0650
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.1047
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0629
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0742
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0782

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol.(ml)) 1000
Final Vol.(ml) 10

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 4th Qrtr. '02
Client ID: Stream Site # 27
Lab ID: 2078009s
Filename:
Lab Project No: 20780

MATRIX: Aqueous
Date Extracted: 11/7/02
Ext. Batch:
Date Analyzed: 11/15/02
DILUTION: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0519
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.1593
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0650
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.1047
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0629
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0742
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0782

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol.(ml)) 1000
Final Vol.(ml) 10

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 4th Qrtr. '02
Client ID: Stream Site # 28
Lab ID: 2078011s
Filename:
Lab Project No: 20780

MATRIX: Aqueous
Date Extracted: 11/7/02
Ext. Batch:
Date Analyzed: 11/15/02
DILUTION: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0519
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.1593
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0650
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.1047
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0629
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0742
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0782

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol.(ml)) 1000
Final Vol.(ml) 10

WET CHEMISTRY

Stream Water Analysis

4th Quarter 2002

Sample ID	Date Sampled	Stream Site#	pH	Ammonia (mg/L)	Nitrates (mg/L)	Phosphate (mg/L)	Sulfate (mg/L)	DO (mg/L)	T.Coliform (cfu/100ml)	F.Coliform (cfu/100ml)	% Salinity
2078704	11/05/02	12	7.80	ND	1.26	0.23	18.6	8.76	1920	60	0
2078705	11/05/02	18	7.85	ND	1.19	0.13	19.1	8.79	1090	100	0
2078706	11/05/02	11	7.81	ND	1.27	0.21	19.1	8.91	1760	60	0
2078707	11/05/02	15	7.71	ND	0.50	0.23	36.4	8.11	1700	30	5
2078708	11/05/02	23	7.74	ND	0.52	0.21	37.9	8.30	1800	100	5
2078709	11/05/02	24	7.75	ND	0.51	0.17	37.5	8.23	960	110	5
2078710	11/05/02	16	7.79	ND	0.62	0.23	34.8	8.29	1540	60	6
2078711	11/05/02	03	7.64	ND	0.21	0.17	303	8.33	2900	100	2
2078712	11/05/02	14	7.66	ND	0.23	0.15	322	8.77	4500	400	0
2078713	11/05/02	13	7.62	ND	0.64	0.16	37.8	8.76	4500	200	0
2078004	11/04/02	22	7.83	ND	ND	0.15	1578	8.31	80	30	16
2078005	11/04/02	21	7.89	ND	ND	0.25	1544	8.27	80	20	13
2078006	11/04/02	20	7.92	ND	ND	0.14	1508	8.24	70	70	13
2078007	11/04/02	09	7.95	ND	1.52	0.15	71.7	7.74	1130	210	2
2078008	11/04/02	19	7.97	ND	1.84	0.08	17.8	7.77	360	180	0
2078009	11/04/02	27	7.71	ND	0.28	0.19	1130	7.81	610	100	2
2078010	11/04/02	07	7.76	ND	0.20	0.02	1161	7.76	900	300	2
2078011	11/04/02	28	7.81	ND	0.16	0.06	561	7.81	340	120	2
2078012	11/04/02	04	7.89	ND	0.18	0.19	1106	7.77	520	40	2
2078013	11/04/02	25	7.91	ND	0.14	0.19	798	7.61	1480	250	0
2078014	11/04/02	05	7.93	ND	0.11	0.17	1089	7.99	890	200	1
2078015	11/04/02	17	7.91	ND	0.24	0.22	938	8.27	1980	240	1
2078016	11/04/02	26	7.98	ND	0.21	0.23	942	8.21	2680	120	0

mg/L = Parts Per Million
cfu = Colony Forming Units
ND = Not detected
TNTC = Too Numerous to Count

Completed: 9/25/02
Reviewed: 9/26/02

Daniel K. Wright
Laboratory Director

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Acetone	Methyl-tert Butyl ether	Chloro benzene	Vinyl Chloride			Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l			-
NJDEP Criteria:	-	-	1.09	0.388	-	-	21000	0.083			-
07/17/1997	FMETL	ND	ND	ND	ND	ND	ND				
10/30/1997	FMETL	ND	ND	ND	ND	ND	ND				
02/10/1998	FMETL	ND	ND	ND	ND	ND	ND				
04/21/1998	FMETL	ND	ND	ND	ND	ND	ND				
08/19/1998	FMETL	ND	ND	ND	ND	ND	ND				
11/18/1998	FMETL	ND	ND	1.09	ND	ND	ND				
02/25/1999	FMETL	ND	ND	ND	ND	ND	ND				
06/29/1999	FMETL	ND	ND	ND	ND	ND	ND				
09/22/1999	FMETL	ND	ND	ND	ND	ND	ND				
12/09/1999	FMETL	ND	ND	ND	ND	ND	ND				
03/01/2000	FMETL	ND	ND	ND	ND	ND	ND				
06/12/2000	FMETL	ND	ND	ND	ND	ND	ND				
08/24/2000	FMETL	ND	ND	ND	ND	ND	ND				
11/20/2000	FMETL	ND	ND	ND	ND	ND	ND				
03/08/2001	FMETL	ND	ND	ND	ND	ND	ND				-
05/16/2001	FMETL	ND	ND	ND	ND	ND	ND				-
09/25/2001	FMETL	ND	ND	ND	ND	ND	ND				-
11/14/2001	FMETL	ND	ND	ND	ND	ND	ND				-
02/11/2002	FMETL	ND	ND	ND	ND	ND	ND				V
06/18/2002	FMETL	ND	ND	ND	ND	ND	ND				V,P
09/18/2002	FMETL	ND	ND	ND	ND	ND	ND				V,P
11/05/2002	FMETL	ND	ND	ND	ND	ND	ND				V,P

SOURCE: 3

Sampling Dates:
07/17/1997 - 11/05/2002

NOTES:

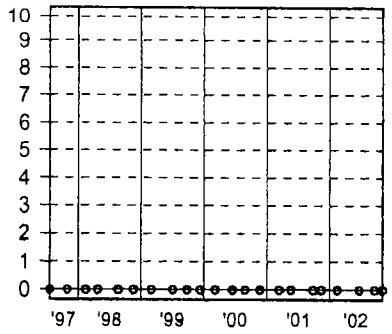
Stream 3 is Fresh-Water.
MeCl limit is 2.49 ug/L.
PCE limit is 0.388 ug/L.

Fort Monmouth

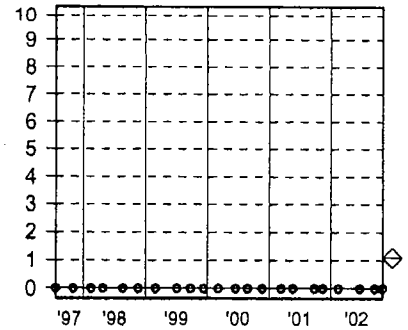
GW Monitoring
Streams

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

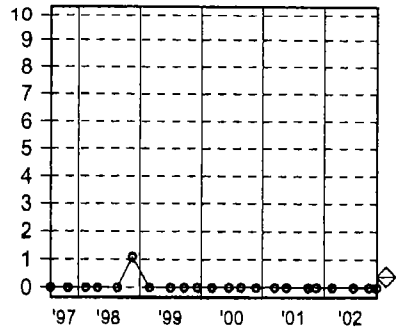
cis-1,2-Dichloroethene
(ug/l)



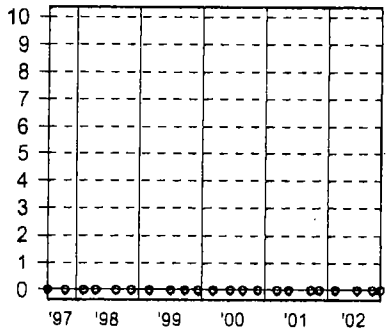
Trichloroethene
(ug/l)



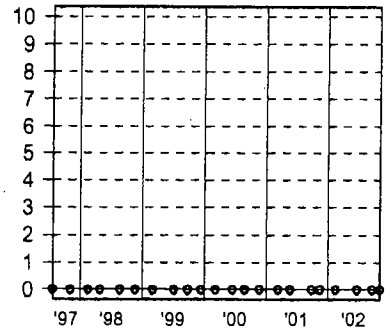
Tetrachloroethene
(ug/l)



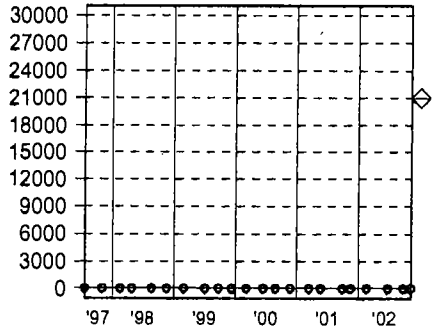
Acetone
(ug/l)



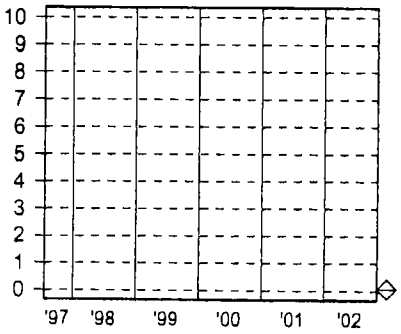
Methyl-tert-Butyl Ether
(ug/l)



Chlorobenzene
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 3

Sampling Dates:
07/17/1997 - 11/05/2002

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 1 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

02-12-2003 X:\MtechData\Streams\STREAMS.WSF

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Acetone	Methyl-tert Butyl ether	Chloro benzene	Vinyl Chloride			Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l			-
NJDEP Criteria:	-	-	1.09	0.388	-	-	21000	0.083			-
04/08/1997	FMETL	2.18	ND	ND	ND	ND	ND				
07/17/1997	FMETL	1.63	ND	1.61	ND	ND	ND				
10/30/1997	FMETL	ND	ND	1.24	ND	ND	ND				
02/10/1998	FMETL	ND	ND	6.61	ND	ND	ND				
04/21/1998	FMETL	ND	ND	4.42	ND	ND	ND				
08/19/1998	FMETL	1.92	1.10	2.85	ND	ND	ND				
11/17/1998	FMETL	1.19	ND	1.62	ND	ND	ND				
02/25/1999	FMETL	ND	ND	5.61	ND	ND	ND				
06/29/1999	FMETL	2.41	1.56	5.27	ND	ND	ND				
09/22/1999	FMETL	2.02	ND	1.85	ND	ND	ND				
12/09/1999	FMETL	ND	ND	ND	ND	ND	ND				
03/01/2000	FMETL	1.23	1.26	6.18	ND	2.18	ND				
06/12/2000	FMETL	ND	ND	4.37	ND	ND	ND				
08/24/2000	FMETL	1.19	1.19	3.19	ND	ND	ND				
11/20/2000	FMETL	ND	ND	3.70	ND	ND	ND				-
03/08/2001	FMETL	ND	ND	2.52	ND	ND	ND				-
05/16/2001	FMETL	ND	ND	2.95	ND	ND	ND				-
09/25/2001	FMETL	ND	ND	ND	ND	ND	ND				-
11/14/2001	FMETL	ND	ND	ND	ND	ND	ND				-
02/11/2002	FMETL	ND	ND	1.64	ND	ND	ND				V
06/18/2002	FMETL	ND	ND	1.97	ND	ND	ND				V,P
09/18/2002	FMETL	ND	ND	ND	ND	ND	ND				V,P
11/04/2002	FMETL	ND	ND	ND	ND	ND	ND				V,P

SOURCE: 4

Sampling Dates:
04/08/1997 - 11/04/2002

NOTES:

PAGE 1 OF 1
Stream 4 is Salt-Water.
MTBE limit is NLE
cis-1,2-Di limit is NLE
TCE limit is 81
PCE limit is 4.29

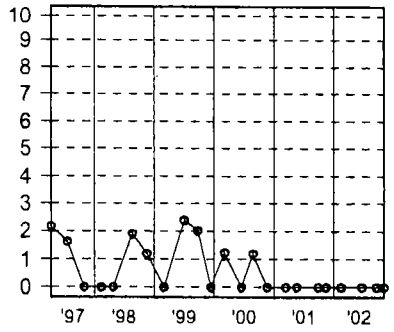
Fort Monmouth

GW Monitoring
Streams

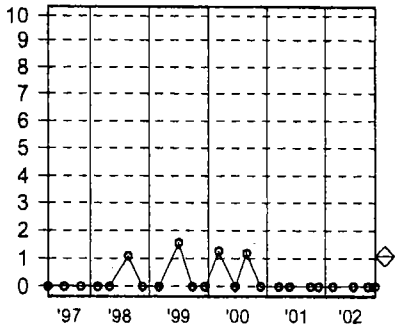
Source 2 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

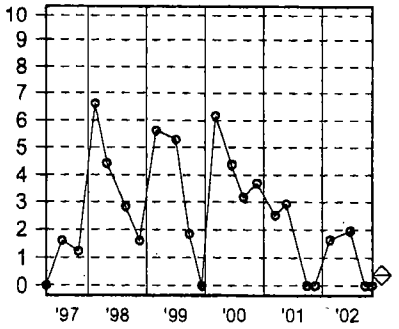
cis-1,2-Dichloroethene
(ug/l)



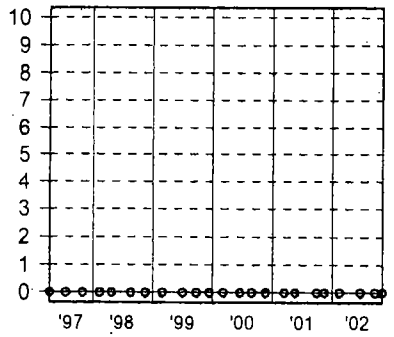
Trichloroethene
(ug/l)



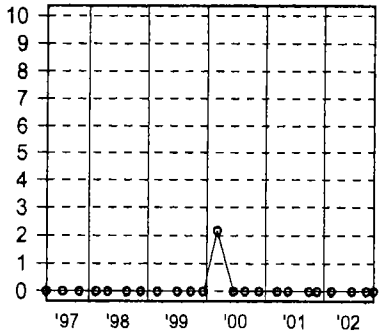
Tetrachloroethene
(ug/l)



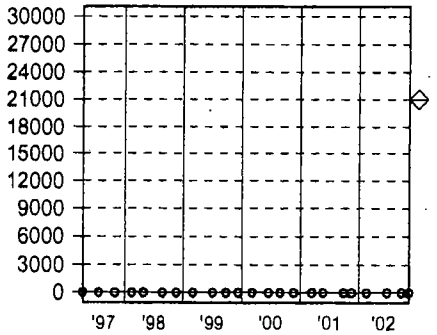
Acetone
(ug/l)



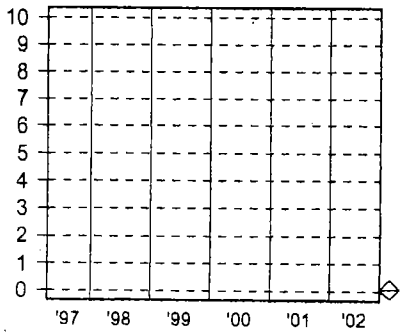
Methyl-tert-Butyl Ether
(ug/l)



Chlorobenzene
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 4

Sampling Dates:
04/08/1997 - 11/04/2002

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 2 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Acetone	Methyl-tert Butyl ether	Chloro benzene	Vinyl Chloride			Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l			-
NJDEP Criteria:	-	-	1.09	0.388	-	-	21000	0.083			-
04/08/1997	FMETL	1.80	ND	2.28	ND	ND	ND				
07/17/1997	FMETL	3.66	ND	3.54	ND	ND	ND				
10/30/1997	FMETL	1.83	ND	1.70	ND	ND	ND				
02/10/1998	FMETL	ND	ND	6.34	ND	ND	ND				
04/21/1998	FMETL	ND	ND	4.48	ND	ND	ND				
08/19/1998	FMETL	2.28	1.27	3.39	ND	ND	ND				
11/17/1998	FMETL	1.67	ND	2.17	ND	ND	ND				
02/25/1999	FMETL	ND	ND	5.45	ND	ND	ND				
06/29/1999	FMETL	2.74	1.74	6.04	ND	ND	ND				
09/22/1999	FMETL	1.96	ND	1.82	ND	ND	ND				
12/09/1999	FMETL	1.60	ND	3.82	ND	ND	ND				
03/01/2000	FMETL	1.27	1.36	6.62	ND	2.34	ND				
06/12/2000	FMETL	ND	ND	4.38	ND	ND	ND				
08/24/2000	FMETL	1.19	ND	3.44	ND	ND	ND				
11/20/2000	FMETL	ND	ND	3.58	ND	ND	ND				-
03/08/2001	FMETL	ND	ND	ND	ND	ND	ND				-
05/16/2001	FMETL	0.97	ND	4.09	ND	ND	ND				-
09/25/2001	FMETL	ND	ND	ND	ND	ND	ND				-
11/14/2001	FMETL	1.51	ND	1.99	ND	ND	ND				-
02/11/2002	FMETL	ND	ND	2.44	ND	ND	ND				V
06/18/2002	FMETL	ND	ND	2.39	ND	ND	ND				V,P
09/18/2002	FMETL	ND	ND	ND	ND	ND	ND				V,P
11/04/2002	FMETL	ND	ND	ND	ND	ND	ND				V,P

SOURCE: 5

Sampling Dates:
04/08/1997 - 11/04/2002

NOTES:

Page 1 of 1
Stream 5 is Salt-Water.
MeCl limit is 1600 ug/L.
cis-1,2-Di limit is NLE.
TCE limit is 81 ug/L.
PCE limit is 4.29 ug/L.
MTBE limit is NLE.

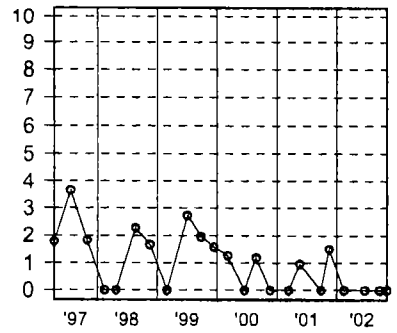
Fort Monmouth

GW Monitoring
Streams

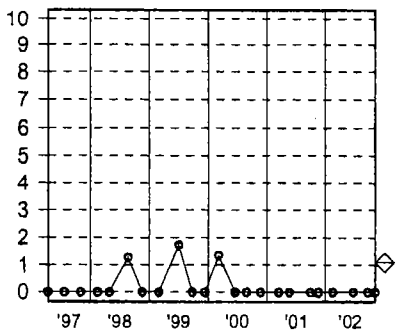
Source 3 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

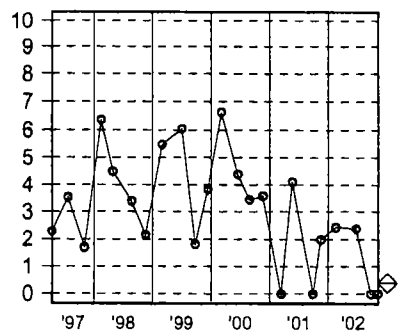
cis-1,2-Dichloroethene
(ug/l)



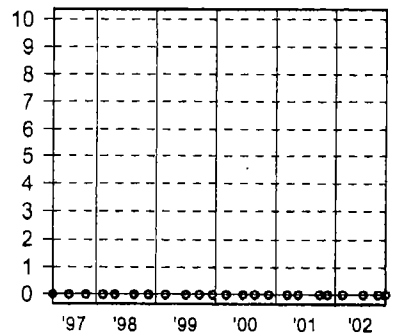
Trichloroethene
(ug/l)



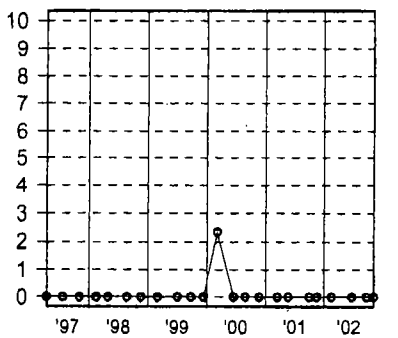
Tetrachloroethene
(ug/l)



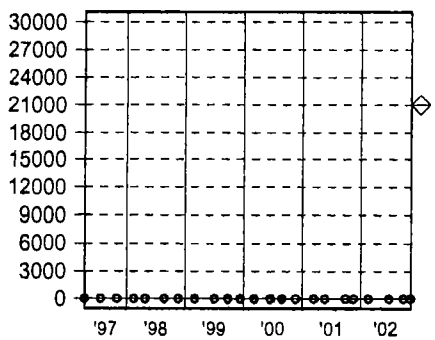
Acetone
(ug/l)



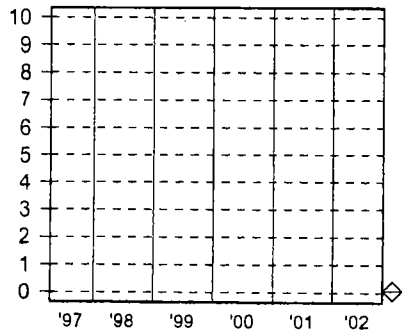
Methyl-tert-Butyl Ether
(ug/l)



Chlorobenzene
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 5

Sampling Dates:
04/08/1997 - 11/04/2002

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 3 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Acetone	Methyl-tert Butyl ether	Chloro benzene	Vinyl Chloride			Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l			-
NJDEP Criteria:	-	-	1.09	0.388	-	-	21000	0.083			-
04/08/1997	FMETL	ND	ND	ND	ND	ND	ND				
07/17/1997	FMETL	1.14	ND	1.08	ND	ND	ND				
10/30/1997	FMETL	ND	ND	ND	ND	ND	ND				
02/10/1998	FMETL	ND	ND	2.04	ND	ND	ND				
04/21/1998	FMETL	ND	ND	2.40	ND	ND	ND				
08/19/1998	FMETL	ND	ND	ND	ND	ND	ND				
11/17/1998	FMETL	ND	ND	ND	ND	ND	ND				
02/25/1999	FMETL	ND	ND	2.85	ND	ND	ND				
06/29/1999	FMETL	ND	ND	1.42	2.94	2.00	ND				
09/22/1999	FMETL	ND	ND	ND	ND	ND	ND				
12/09/1999	FMETL	ND	ND	ND	ND	ND	ND				
03/01/2000	FMETL	1.19	1.30	6.47	ND	2.14	ND				
06/12/2000	FMETL	ND	ND	ND	ND	ND	ND				
08/24/2000	FMETL	ND	ND	1.77	ND	ND	ND				
11/20/2000	FMETL	ND	ND	1.94	ND	ND	ND				-
03/08/2001	FMETL	ND	ND	ND	ND	ND	ND				-
05/16/2001	FMETL	ND	ND	ND	ND	ND	ND				-
09/25/2001	FMETL	ND	ND	ND	ND	ND	ND				-
11/14/2001	FMETL	ND	ND	ND	ND	ND	ND				-
02/11/2002	FMETL	ND	ND	ND	ND	ND	ND				V
06/18/2002	FMETL	ND	ND	ND	ND	ND	ND				V,P
09/18/2002	FMETL	ND	ND	ND	ND	ND	ND				V,P
11/04/2002	FMETL	ND	ND	ND	ND	ND	ND				V,P

SOURCE: 7

Sampling Dates:
04/08/1997 - 11/04/2002

NOTES:

Page 1 of 1
Stream 7 is Salt-Water.
cis-1,2-Di limit is NLE.
TCE limit is 81 ug/L.
PCE limit is 4.29 ug/L.
MTBE limit is NLE.
Acetone limit is NLE.

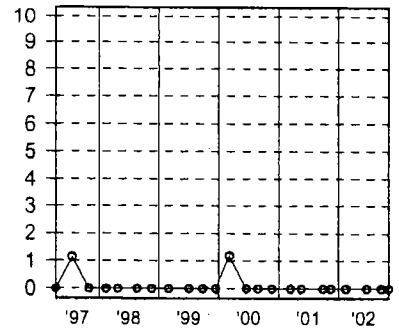
Fort Monmouth

GW Monitoring
Streams

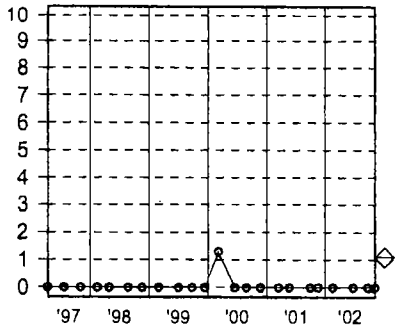
Source 4 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

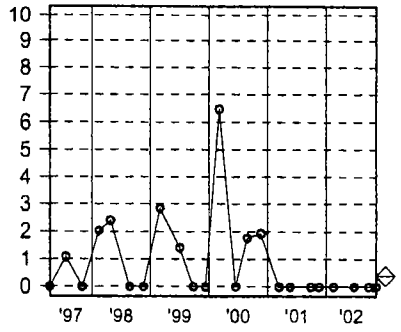
cis-1,2-Dichloroethene
(ug/l)



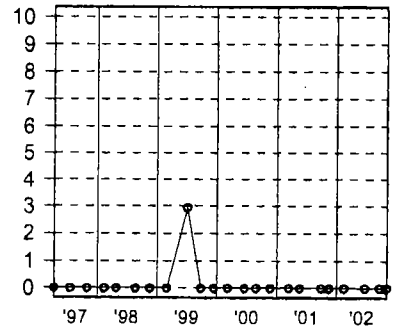
Trichloroethene
(ug/l)



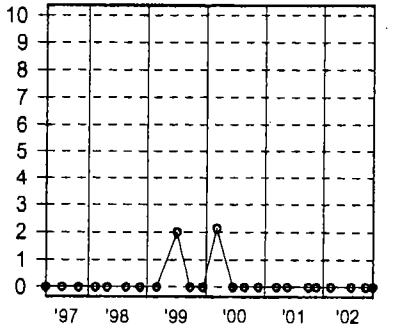
Tetrachloroethene
(ug/l)



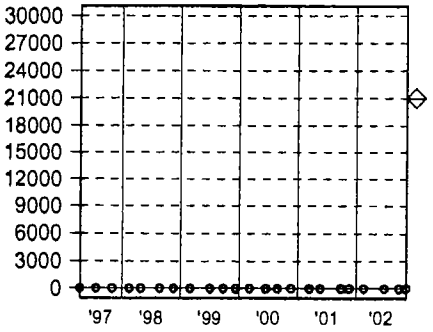
Acetone
(ug/l)



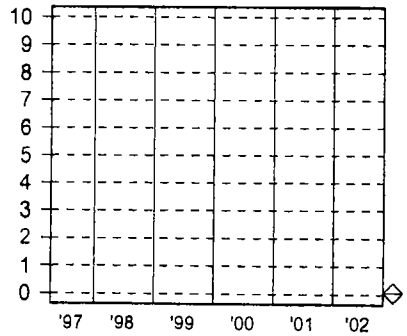
Methyl-tert-Butyl Ether
(ug/l)



Chlorobenzene
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 7

Sampling Dates:
04/08/1997 - 11/04/2002

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 4 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Acetone	Methyl-tert Butyl ether	Chloro benzene	Vinyl Chloride			Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l			-
NJDEP Criteria:	-	-	1.09	0.388	-	-	21000	0.083			-
04/08/1997	FMETL	2.78	ND	ND	ND	ND	ND				
07/17/1997	FMETL	ND	ND	ND	ND	ND	ND				
10/30/1997	FMETL	2.14	ND	ND	ND	ND	ND				
02/10/1998	FMETL	6.00	ND	ND	ND	ND	ND				
04/21/1998	FMETL	4.73	ND	ND	ND	ND	ND				
08/19/1998	FMETL	1.69	ND	ND	ND	ND	ND				
11/17/1998	FMETL	ND	ND	ND	ND	ND	ND				
02/25/1999	FMETL	1.78	ND	ND	ND	ND	ND				
06/29/1999	FMETL	ND	ND	ND	2.50	ND	ND				
09/21/1999	FMETL	1.91	ND	ND	ND	ND	ND				
12/09/1999	FMETL	ND	ND	ND	25.08	ND	ND				
03/01/2000	FMETL	2.17	ND	ND	ND	ND	ND				
06/12/2000	FMETL	ND	ND	ND	ND	ND	ND				
08/24/2000	FMETL	1.11	ND	ND	ND	ND	ND				
11/20/2000	FMETL	ND	ND	ND	ND	ND	ND				-
11/20/2000D	FMETL	ND	ND	ND	ND	ND	ND				-
02/21/2001	FMETL	1.72	ND	ND	ND	ND	ND				-
05/16/2001	FMETL	ND	ND	ND	ND	ND	ND				-
09/11/2001	FMETL	ND	ND	ND	ND	ND	ND				-
11/14/2001	FMETL	ND	ND	ND	ND	ND	ND				-
02/11/2002	FMETL	ND	ND	ND	ND	ND	ND				V
06/18/2002	FMETL	ND	ND	ND	ND	ND	ND				V,P
09/18/2002	FMETL	ND	ND	ND	ND	ND	ND				V,P
11/04/2002	FMETL	1.24	ND	ND	ND	ND	ND				V,P

SOURCE: 9

Sampling Dates:
04/08/1997 - 11/04/2002

NOTES:

PAGE 1 OF 1
Stream 9 is Salt-Water.
MeCl limit is 1600 ug/L.
cis-1,2-Di limit is NLE.
Acetone limit is NLE.

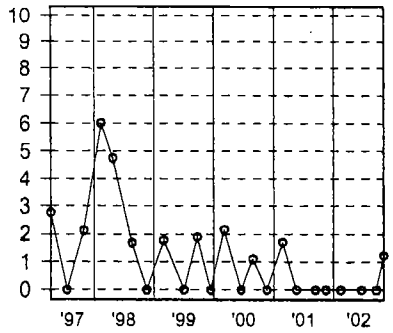
Fort Monmouth

GW Monitoring
Streams

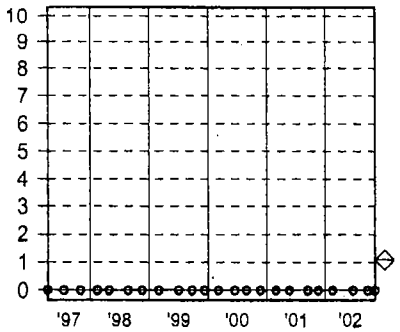
Source 5 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

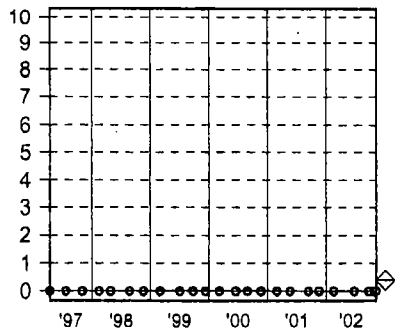
cis-1,2-Dichloroethene
(ug/l)



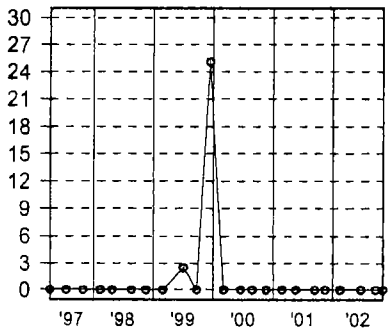
Trichloroethene
(ug/l)



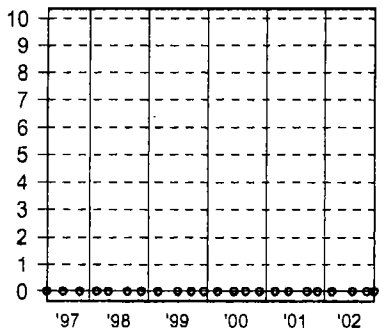
Tetrachloroethene
(ug/l)



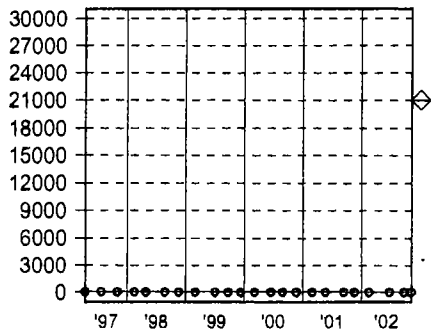
Acetone
(ug/l)



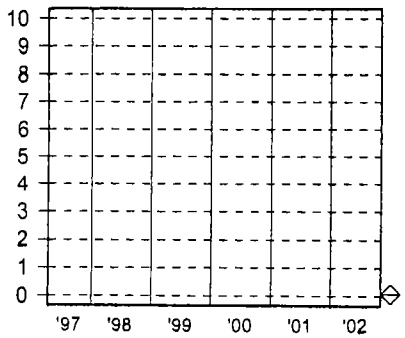
Methyl-tert-Butyl Ether
(ug/l)



Chlorobenzene
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 9

Sampling Dates:
04/08/1997 - 11/04/2002

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 5 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Acetone	Methyl-tert Butyl ether	Chloro benzene	Vinyl Chloride			Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l			-
NJDEP Criteria:	-	-	1.09	0.388	-	-	21000	0.083			-
04/08/1997	FMETL	18.72	1.58	ND	ND	ND	ND				
07/17/1997	FMETL	14.13	ND	ND	ND	ND	ND				
10/30/1997	FMETL	18.23	ND	ND	ND	ND	ND				
02/10/1998	FMETL	24.71	2.14	ND	ND	ND	ND				
04/21/1998	FMETL	21.66	1.82	ND	ND	ND	ND				
08/19/1998	FMETL	11.73	ND	ND	ND	ND	ND				
11/18/1998	FMETL	8.82	ND	ND	ND	ND	ND				
02/25/1999	FMETL	9.11	ND	ND	ND	ND	ND				
06/29/1999	FMETL	5.77	ND	ND	ND	ND	ND				
09/21/1999	FMETL	15.62	ND	ND	ND	ND	ND				
12/09/1999	FMETL	11.90	ND	ND	ND	ND	ND				
03/01/2000	FMETL	11.01	ND	ND	ND	1.64	ND				
06/12/2000	FMETL	8.03	ND	ND	ND	ND	ND				
08/24/2000	FMETL	9.08	ND	ND	ND	ND	ND				
08/24/2000D	FMETL	8.70	ND	ND	6.22	ND	ND				
11/20/2000	FMETL	5.34	ND	ND	ND	ND	ND				-
02/21/2001	FMETL	8.26	ND	ND	ND	ND	ND				-
05/16/2001	FMETL	5.21	ND	ND	ND	ND	ND				-
09/25/2001	FMETL	ND	ND	ND	ND	ND	ND				-
11/14/2001	FMETL	1.93	ND	ND	ND	ND	ND				-
02/11/2002	FMETL	1.05	ND	ND	ND	ND	ND				V
06/18/2002	FMETL	3.08	ND	ND	ND	ND	ND				V,P
09/18/2002	FMETL	4.17	ND	ND	ND	ND	ND				V,P
11/05/2002	FMETL	7.48	ND	ND	ND	ND	ND	1.33			V,P

SOURCE: 11

Sampling Dates:
04/08/1997 - 11/05/2002

NOTES:

Page 1 of1
Stream 11 is Fresh-Water.
cis-1,2-Di limit is NLE.
TCE limit is 1.09 ug/L.
MTBE limit is NLE.

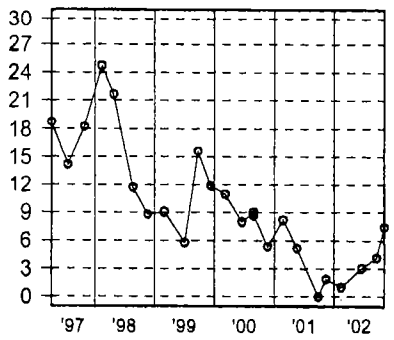
Fort Monmouth

GW Monitoring
Streams

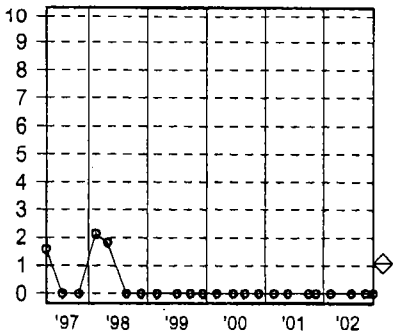
Source 6 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

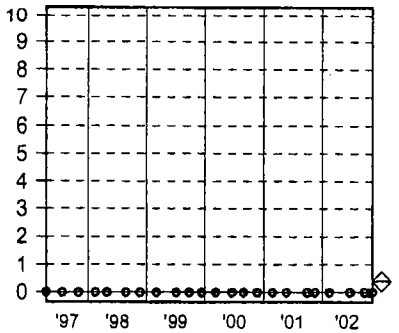
cis-1,2-Dichloroethene
(ug/l)



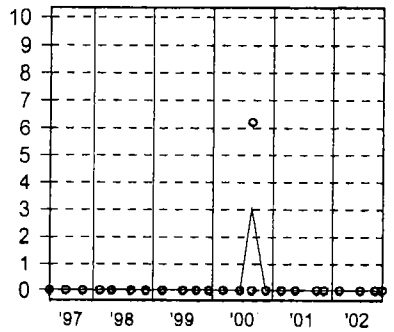
Trichloroethene
(ug/l)



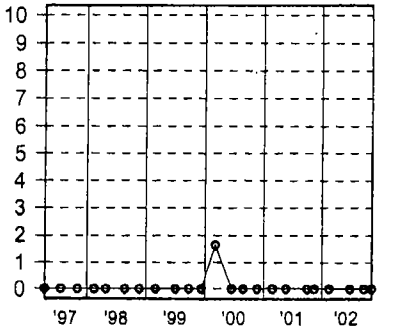
Tetrachloroethene
(ug/l)



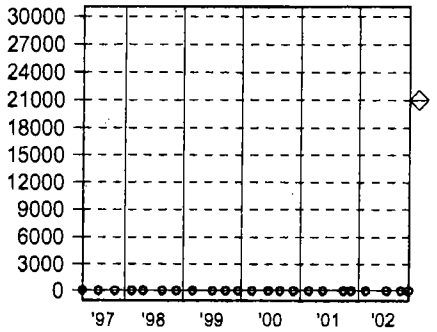
Acetone
(ug/l)



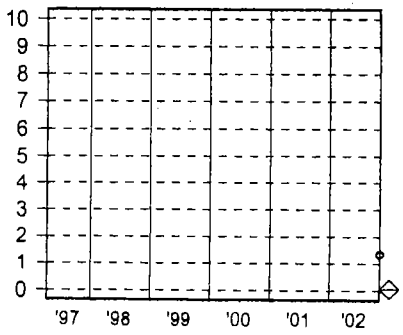
Methyl-tert-Butyl Ether
(ug/l)



Chlorobenzene
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 11

Sampling Dates:
04/08/1997 - 11/05/2002

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 6 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

02-12-2003 X:\MtechData\Streams\STREAMS.WSF

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Acetone	Methyl-tert Butyl ether	Chloro benzene	Vinyl Chloride			Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l			-
NJDEP Criteria:	-	-	1.09	0.388	-	-	21000	0.083			-
04/08/1997	FMETL	6.63	ND	ND	ND	ND	ND				
07/17/1997	FMETL	ND	ND	ND	ND	ND	ND				
10/30/1997	FMETL	5.67	ND	ND	ND	ND	ND				
02/10/1998	FMETL	6.54	ND	ND	ND	ND	ND				
04/21/1998	FMETL	ND	ND	ND	ND	ND	ND				
08/19/1998	FMETL	4.58	ND	ND	ND	ND	ND				
11/18/1998	FMETL	2.48	ND	ND	ND	ND	ND				
02/25/1999	FMETL	1.80	ND	ND	ND	ND	ND				
06/29/1999	FMETL	1.39	ND	ND	ND	ND	ND				
09/21/1999	FMETL	3.67	ND	ND	9.54	ND	ND				
12/09/1999	FMETL	2.74	ND	ND	ND	ND	ND				
03/01/2000	FMETL	3.13	ND	ND	ND	ND	ND				
06/12/2000	FMETL	ND	ND	ND	ND	ND	ND				
08/24/2000	FMETL	2.00	ND	ND	ND	ND	ND				
11/20/2000	FMETL	1.87	ND	ND	ND	ND	ND				-
02/21/2001	FMETL	1.89	ND	ND	ND	ND	ND				-
05/16/2001	FMETL	1.66	ND	ND	ND	ND	ND				-
05/16/2001D	FMETL	1.72	ND	ND	ND	ND	ND				-
09/11/2001	FMETL	ND	ND	ND	ND	ND	ND				-
11/14/2001	FMETL	ND	ND	ND	ND	ND	ND				-
02/11/2002	FMETL	ND	ND	ND	ND	ND	ND				V
06/18/2002	FMETL	ND	ND	ND	ND	ND	ND				V,P
09/18/2002	FMETL	ND	ND	ND	ND	ND	ND				V,P
11/05/2003	FMETL	5.16	ND	ND	ND	ND	ND	ND			V,P

SOURCE: 12

Sampling Dates:
04/08/1997 - 11/05/2003

NOTES:

Page 1 of 1
Stream 12 is Fresh-Water.
cis-1,2-Di limit is NLE.
Acetone limit is NLE.

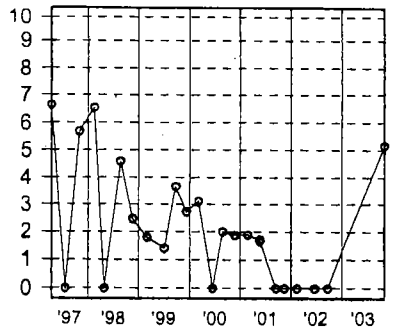
Fort Monmouth

GW Monitoring
Streams

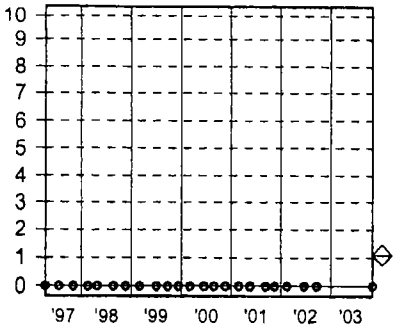
Source 7 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

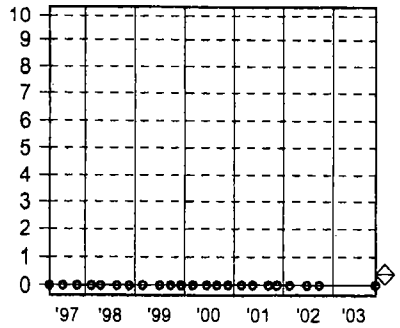
cis-1,2-Dichloroethene
(ug/l)



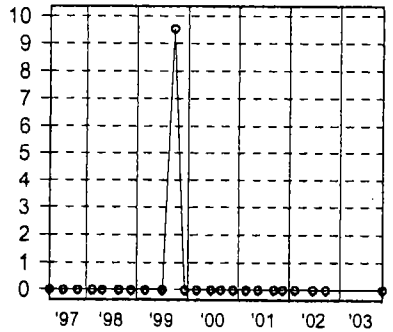
Trichloroethene
(ug/l)



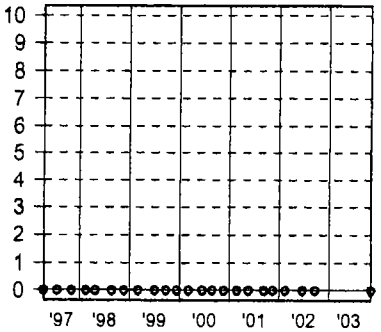
Tetrachloroethene
(ug/l)



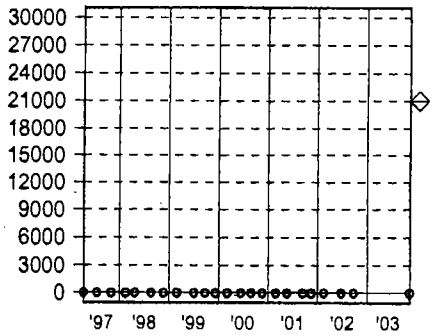
Acetone
(ug/l)



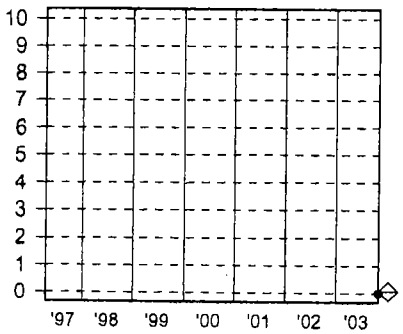
Methyl-tert-Butyl Ether
(ug/l)



Chlorobenzene
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 12

Sampling Dates:
04/08/1997 - 11/05/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 7 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

02-12-2003 X:\MtechData\Streams\STREAMS.WSF

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Acetone	Methyl-tert Butyl ether	Chloro benzene	Vinyl Chloride			Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l			-
NJDEP Criteria:	-	-	1.09	0.388	-	-	21000	0.083			-
04/08/1997	FMETL	ND	ND	ND	2.81	ND	ND				
07/17/1997	FMETL	ND	ND	ND	ND	ND	ND				
10/30/1997	FMETL	ND	ND	ND	ND	ND	ND				
02/10/1998	FMETL	ND	ND	ND	ND	ND	ND				
04/21/1998	FMETL	ND	ND	ND	ND	ND	ND				
08/19/1998	FMETL	ND	ND	ND	ND	ND	ND				
11/18/1998	FMETL	ND	ND	ND	ND	ND	ND				
02/25/1999	FMETL	ND	ND	ND	ND	ND	ND				
06/29/1999	FMETL	ND	ND	ND	ND	ND	ND				
09/22/1999	FMETL	ND	ND	ND	ND	ND	ND				
12/09/1999	FMETL	ND	ND	3.94	ND	ND	ND				
03/01/2000	FMETL	1.35	1.40	6.92	ND	2.40	ND				
06/12/2000	FMETL	ND	ND	5.56	ND	ND	ND				
08/24/2000	FMETL	2.17	1.78	5.40	ND	ND	ND				
11/20/2000	FMETL	ND	ND	6.58	ND	ND	ND				-
02/21/2001	FMETL	ND	ND	ND	ND	ND	ND				-
05/16/2001	FMETL	ND	ND	ND	ND	ND	ND				-
09/25/2001	FMETL	ND	ND	ND	ND	ND	ND				-
11/14/2001	FMETL	ND	ND	ND	ND	ND	ND				-
02/11/2002	FMETL	ND	ND	ND	ND	ND	ND				V
06/18/2002	FMETL	ND	ND	ND	ND	ND	ND				V,P
09/18/2002	FMETL	ND	ND	ND	ND	ND	ND				V,P
11/05/2002	FMETL	ND	ND	1.46	ND	ND	ND	ND			V,P

SOURCE: 13

Sampling Dates:
04/08/1997 - 11/05/2002

NOTES:

Page 1 of 1
Stream 13 is Fresh-Water.
MeCl limit is 2.49 ug/L.
cis-1,2-Di limit is NLE.
TCE limit is 1.09.
PCE limit is 0.388 ug/L.
Acetone limit is NLE.
MTBE limit is NLE.

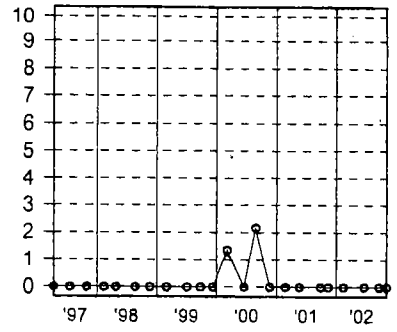
Fort Monmouth

GW Monitoring
Streams

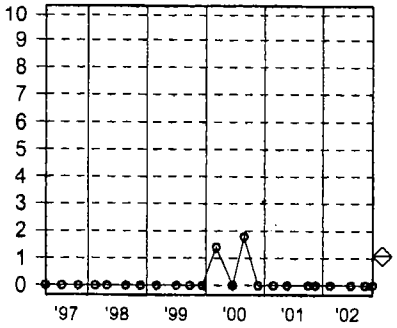
Source 8 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

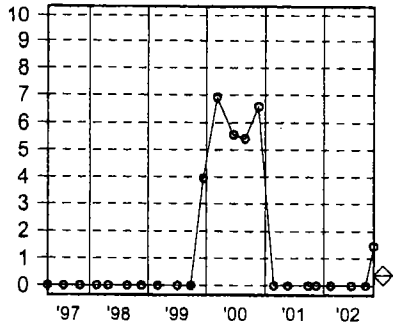
cis-1,2-Dichloroethene
(ug/l)



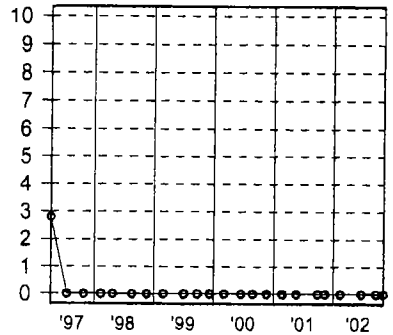
Trichloroethene
(ug/l)



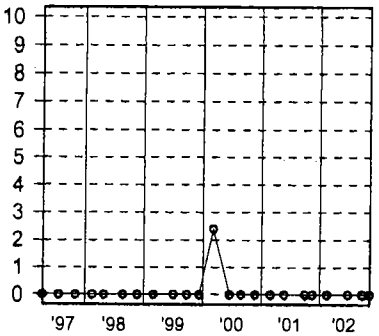
Tetrachloroethene
(ug/l)



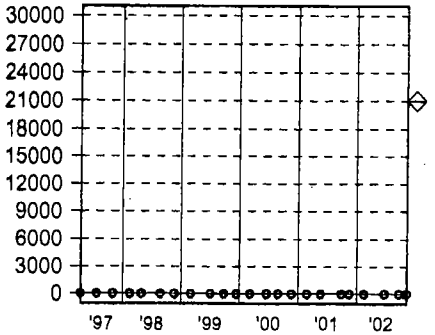
Acetone
(ug/l)



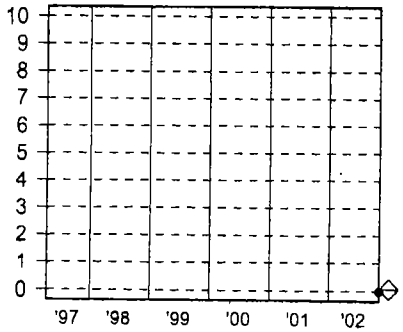
Methyl-tert-Butyl Ether
(ug/l)



Chlorobenzene
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 13

Sampling Dates:
04/08/1997 - 11/05/2002

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 8 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

02-12-2003 X:\MtechData\Streams\STREAMS.WSF

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Acetone	Methyl-tert Butyl ether	Chloro benzene	Vinyl Chloride			Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l			-
NJDEP Criteria:	-	-	1.09	0.388	-	-	21000	0.083			-
04/08/1997	FMETL	ND	ND	ND	3.94	ND	ND				
07/17/1997	FMETL	ND	ND	ND	ND	ND	ND				
10/30/1997	FMETL	1.59	1.75	ND	ND	ND	ND				
02/10/1998	FMETL	ND	ND	ND	ND	ND	ND				
04/21/1998	FMETL	ND	ND	ND	ND	ND	ND				
08/19/1998	FMETL	ND	ND	ND	ND	ND	ND				
11/18/1998	FMETL	ND	ND	ND	3.32	ND	ND				
02/25/1999	FMETL	ND	ND	ND	ND	ND	ND				
06/29/1999	FMETL	ND	ND	ND	ND	ND	ND				
09/22/1999	FMETL	ND	ND	ND	ND	ND	ND				
12/09/1999	FMETL	11.26	ND	ND	ND	ND	ND				
03/01/2000	FMETL	ND	ND	ND	ND	ND	ND				
06/12/2000	FMETL	ND	ND	ND	ND	ND	ND				
08/24/2000	FMETL	ND	ND	ND	ND	ND	ND				
11/20/2000	FMETL	ND	ND	ND	ND	ND	ND				-
03/08/2001	FMETL	ND	ND	ND	ND	ND	ND				-
03/08/2001D	FMETL	ND	ND	ND	ND	ND	ND				-
05/16/2001	FMETL	ND	ND	ND	ND	ND	ND				-
09/25/2001	FMETL	ND	ND	ND	ND	ND	ND				-
11/14/2001	FMETL	ND	ND	ND	ND	ND	ND				-
02/11/2002	FMETL	ND	ND	ND	ND	ND	ND				V
06/18/2002	FMETL	ND	ND	ND	ND	ND	ND				V,P
09/18/2002	FMETL	ND	ND	ND	ND	ND	ND				V,P
11/05/2002	FMETL	ND	ND	ND	ND	ND	ND	ND			V,P

SOURCE: 14

Sampling Dates:
04/08/1997 - 11/05/2002

NOTES:

Page 1 of 1
Stream 14 is Fresh-Water.
cis-1,2-Di limit is NLE.
TCE limit is 1.09.
Acetone limit is NLE.

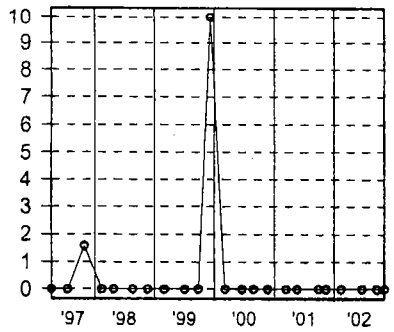
Fort Monmouth

GW Monitoring
Streams

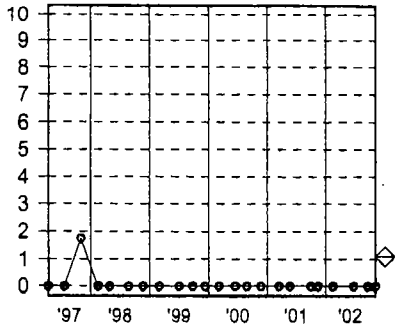
Source 9 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

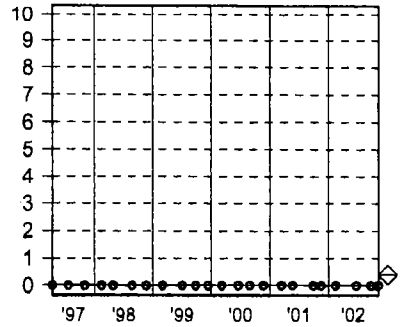
cis-1,2-Dichloroethene
(ug/l)



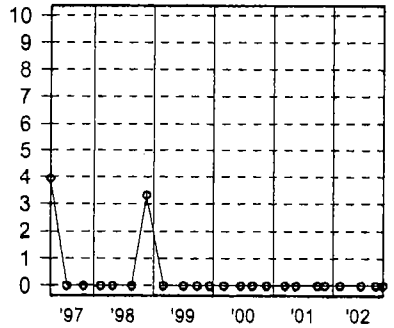
Trichloroethene
(ug/l)



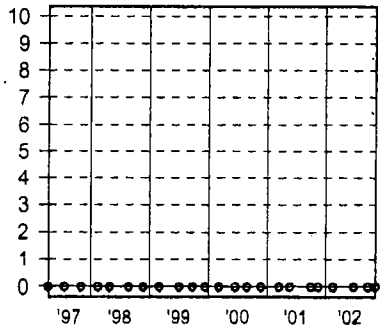
Tetrachloroethene
(ug/l)



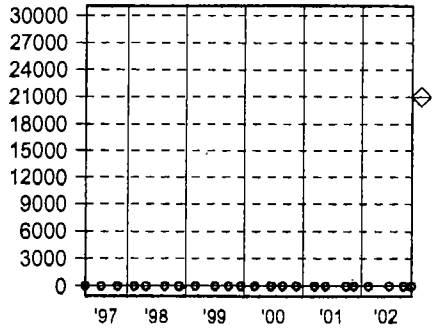
Acetone
(ug/l)



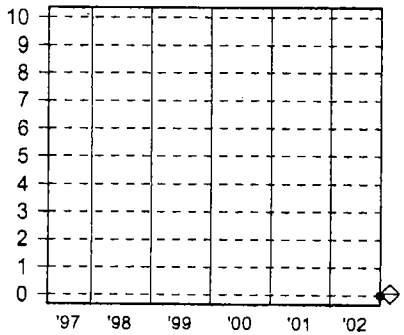
Methyl-tert-Butyl Ether
(ug/l)



Chlorobenzene
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 14

Sampling Dates:
04/08/1997 - 11/05/2002

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 9 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Acetone	Methyl-tert Butyl ether	Chloro benzene	Vinyl Chloride			Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l			-
NJDEP Criteria:	-	-	1.09	0.388	-	-	21000	0.083			-
04/08/1997	FMETL	2.69	1.60	6.00	ND	ND	ND				
07/17/1997	FMETL	5.53	2.50	7.12	ND	ND	ND				
10/30/1997	FMETL	2.57	ND	2.72	ND	ND	ND				
02/10/1998	FMETL	ND	1.03	6.90	ND	ND	ND				
04/21/1998	FMETL	1.22	1.21	5.72	ND	ND	ND				
08/19/1998	FMETL	3.89	2.06	5.39	ND	ND	ND				
11/18/1998	FMETL	ND	ND	ND	ND	ND	ND				
02/25/1999	FMETL	ND	ND	7.33	ND	ND	ND				
06/29/1999	FMETL	4.17	2.40	7.86	ND	ND	ND				
09/21/1999	FMETL	3.59	1.37	2.61	ND	ND	ND				
12/09/1999	FMETL	ND	ND	4.08	ND	ND	ND				
03/01/2000	FMETL	1.39	1.39	6.95	ND	2.38	ND				
06/12/2000	FMETL	ND	ND	5.94	ND	ND	ND				
08/24/2000	FMETL	2.02	1.09	5.20	ND	ND	ND				
11/20/2000	FMETL	ND	ND	6.29	ND	ND	ND				-
02/21/2001	FMETL	ND	ND	7.19	ND	ND	ND				-
05/16/2001	FMETL	1.50	ND	6.64	ND	ND	ND				-
09/25/2001	FMETL	ND	ND	ND	ND	ND	ND				-
09/25/2001D	FMETL	ND	ND	ND	ND	ND	ND				-
11/14/2001	FMETL	3.09	ND	3.49	ND	ND	ND				-
02/11/2002	FMETL	ND	ND	2.65	ND	ND	ND				V
06/18/2002	FMETL	1.63	ND	2.67	ND	ND	ND				V,P
09/18/2002	FMETL	2.39	ND	2.55	ND	ND	ND				V,P
11/05/2002	FMETL	ND	ND	1.52	ND	ND	ND	ND			V,P

SOURCE: 15

Sampling Dates:
04/08/1997 - 11/05/2002

NOTES:

Page 1 of 1
Stream 15 is Fresh-Water.
cis-1,2-Di limit is NLE.
TCE limit is 1.09 ug/L.
PCE limit is 0.388 ug/L.
MTBE limit is NLE.

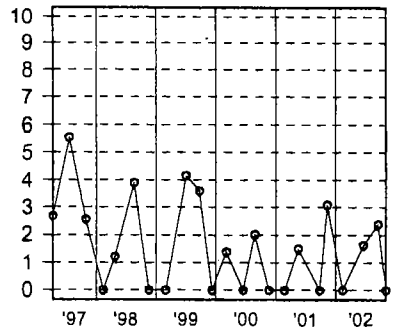
Fort Monmouth

GW Monitoring
Streams

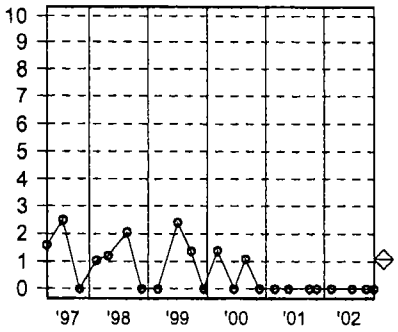
Source 10 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

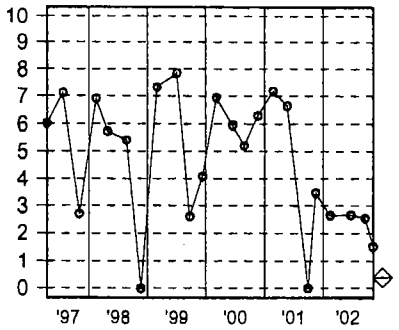
cis-1,2-Dichloroethene (ug/l)



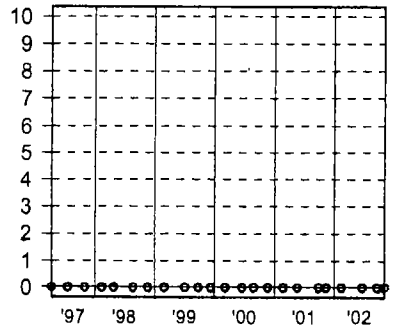
Trichloroethene (ug/l)



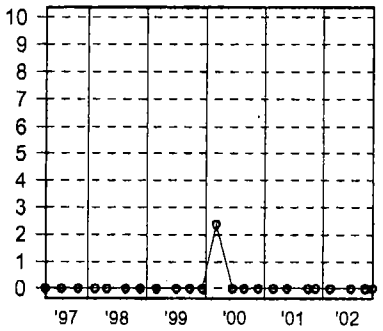
Tetrachloroethene (ug/l)



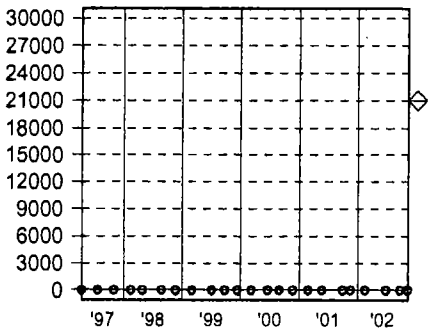
Acetone (ug/l)



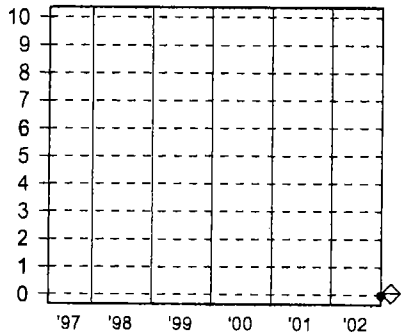
Methyl-tert-Butyl Ether (ug/l)



Chlorobenzene (ug/l)



Vinyl Chloride (ug/l)



SOURCE: 15

Sampling Dates:
04/08/1997 - 11/05/2002

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 10 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

02-12-2003 X:\MtechData\Streams\STREAMS.WSF

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Acetone	Methyl-tert Butyl ether	Chloro benzene	Vinyl Chloride			Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l			-
NJDEP Criteria:	-	-	1.09	0.388	-	-	21000	0.083			-
04/08/1997	FMETL	2.05	1.26	4.47	ND	ND	ND				
07/17/1997	FMETL	2.55	ND	4.72	ND	ND	ND				
10/30/1997	FMETL	1.76	ND	1.86	ND	ND	ND				
02/10/1998	FMETL	ND	ND	6.23	ND	ND	ND				
04/21/1998	FMETL	ND	ND	4.58	ND	ND	ND				
08/19/1998	FMETL	2.94	1.63	4.33	ND	ND	ND				
11/18/1998	FMETL	ND	ND	1.48	ND	ND	ND				
02/25/1999	FMETL	ND	ND	6.06	ND	ND	ND				
06/29/1999	FMETL	3.56	2.25	7.70	ND	ND	ND				
09/22/1999	FMETL	2.74	ND	2.63	ND	ND	ND				
12/09/1999	FMETL	1.79	ND	4.13	ND	ND	ND				
03/01/2000	FMETL	1.28	1.27	6.47	ND	2.33	ND				
06/12/2000	FMETL	ND	ND	3.74	ND	ND	ND				
08/24/2000	FMETL	1.68	1.28	4.47	ND	ND	ND				
11/20/2000	FMETL	ND	ND	4.49	ND	ND	ND				-
02/21/2001	FMETL	ND	ND	6.25	ND	ND	ND				-
05/16/2001	FMETL	1.23	ND	4.91	ND	ND	ND				-
09/25/2001	FMETL	ND	ND	ND	ND	ND	ND				-
11/14/2001	FMETL	1.41	ND	2.00	ND	ND	ND				-
02/11/2002	FMETL	ND	ND	2.47	ND	ND	ND				V
06/18/2002	FMETL	1.35	ND	2.46	ND	ND	ND				V,P
09/18/2002	FMETL	ND	ND	ND	ND	ND	ND				V,P
11/05/2002	FMETL	ND	ND	1.49	ND	ND	ND	ND			V,P

SOURCE: 16

Sampling Dates:
04/08/1997 - 11/05/2002

NOTES:

Page 1 of 1
Stream 16 is Salt-Water.
cis-1,2-di limit is NLE.
TCE limit is 81 ug/L.
PCE limit is 4.29 ug/L.
MTBE limit is NLE.

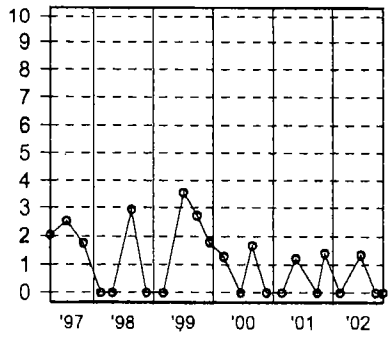
Fort Monmouth

GW Monitoring
Streams

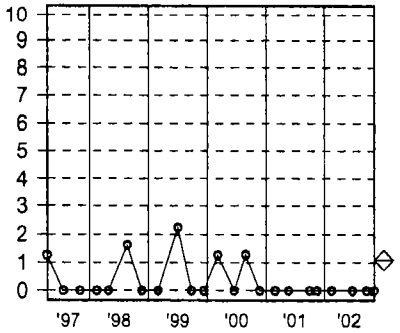
Source 11 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

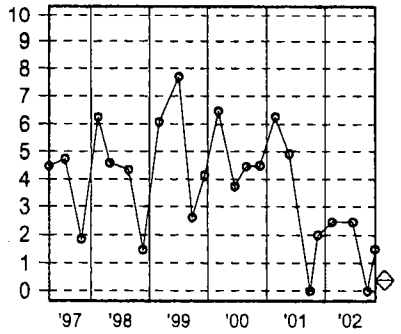
cis-1,2-Dichloroethene
(ug/l)



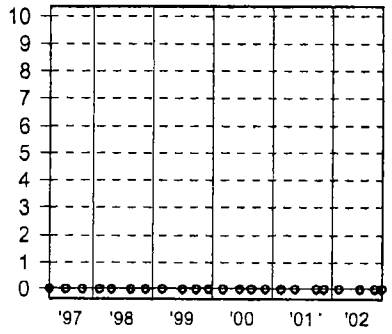
Trichloroethene
(ug/l)



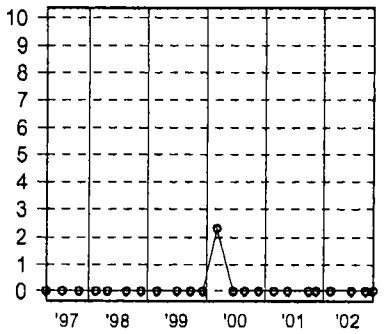
Tetrachloroethene
(ug/l)



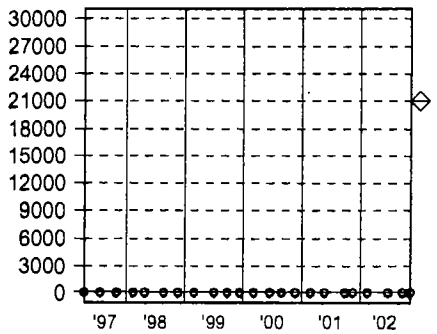
Acetone
(ug/l)



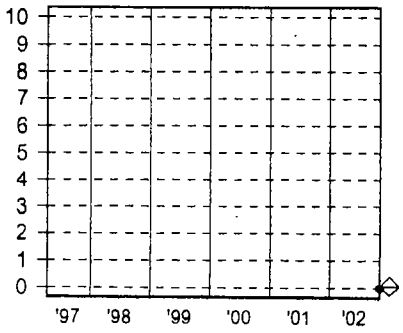
Methyl-tert-Butyl Ether
(ug/l)



Chlorobenzene
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 16

Sampling Dates:
04/08/1997 - 11/05/2002

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 11 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

02-12-2003 X:\MtechData\Streams\STREAMS.WSF

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Acetone	Methyl-tert Butyl ether	Chloro benzene	Vinyl Chloride			Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l			-
NJDEP Criteria:	-	-	1.09	0.388	-	-	21000	0.083			-
04/08/1997	FMETL	ND	ND	ND	1.97	ND	ND				
07/17/1997	FMETL	ND	ND	ND	ND	ND	ND				
10/30/1997	FMETL	ND	ND	ND	ND	ND	ND				
02/10/1998	FMETL	ND	ND	ND	ND	ND	1.59				
04/21/1998	FMETL	ND	ND	ND	ND	ND	ND				
08/19/1998	FMETL	ND	ND	ND	ND	ND	ND				
11/18/1998	FMETL	4.43	2.12	5.09	ND	ND	ND				
02/25/1999	FMETL	ND	ND	ND	ND	ND	ND				
06/29/1999	FMETL	ND	ND	ND	ND	ND	ND				
09/22/1999	FMETL	1.09	ND	ND	ND	ND	ND				
12/09/1999	FMETL	ND	ND	ND	ND	ND	ND				
03/01/2000	FMETL	ND	ND	ND	ND	ND	ND				
06/12/2000	FMETL	ND	ND	ND	ND	ND	ND				
08/24/2000	FMETL	ND	ND	ND	ND	ND	ND				
11/20/2000	FMETL	ND	ND	ND	ND	ND	ND				-
03/08/2001	FMETL	ND	ND	ND	ND	ND	ND				-
05/16/2001	FMETL	ND	ND	ND	ND	ND	ND				-
09/25/2001	FMETL	ND	ND	ND	ND	ND	ND				-
11/14/2001	FMETL	ND	ND	ND	ND	ND	ND				-
02/11/2002	FMETL	ND	ND	ND	ND	ND	ND				V
06/18/2002	FMETL	ND	ND	ND	ND	ND	1.48				V,P
09/18/2002	FMETL	ND	ND	ND	ND	ND	ND				V,P
11/04/2002	FMETL	ND	ND	ND	ND	ND	ND	ND			V,P

SOURCE: 17

Sampling Dates:
04/08/1997 - 11/04/2002

NOTES:

Page 1 of 1
stream 17 is Salt-Water.
cis-1,2-Di limit is NLE.
TCE limit is 81 ug/L.
PCE limit is 4.29 ug/L.
Acetone limit is NLE.
Chlorobenzene limit is 21000 ug/L.

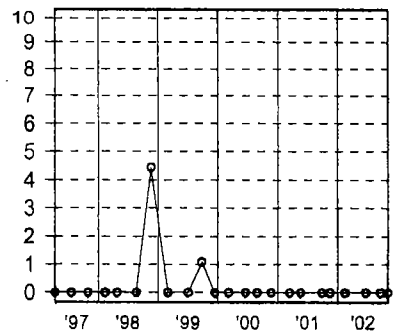
Fort Monmouth

GW Monitoring
Streams

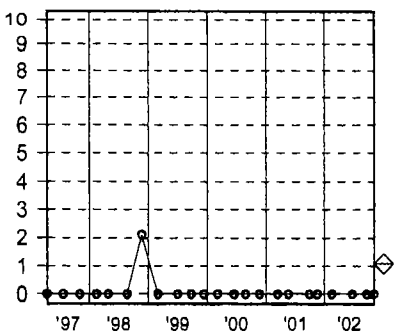
Source 12 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

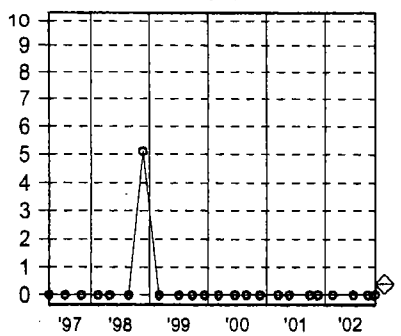
cis-1,2-Dichloroethene
(ug/l)



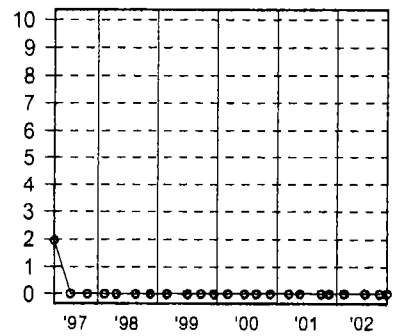
Trichloroethene
(ug/l)



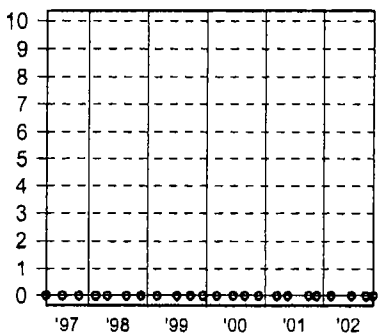
Tetrachloroethene
(ug/l)



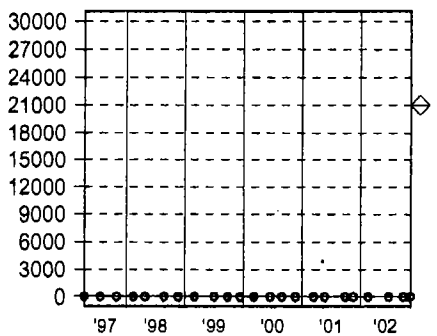
Acetone
(ug/l)



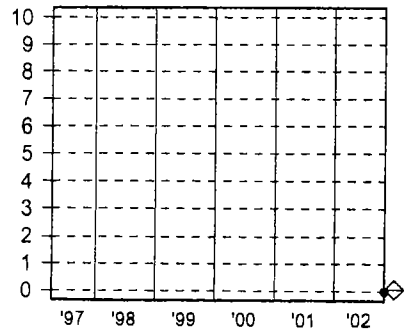
Methyl-tert-Butyl Ether
(ug/l)



Chlorobenzene
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 17

Sampling Dates:
04/08/1997 - 11/04/2002

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 12 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

02-12-2003 X:\MtechData\Streams\STREAMS.WSF

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Acetone	Methyl-tert Butyl ether	Chloro benzene	Vinyl Chloride			Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l			-
NJDEP Criteria:	-	-	1.09	0.388	-	-	21000	0.083			-
04/08/1997	FMETL	ND	ND	ND	ND	ND	ND				
07/17/1997	FMETL	1.06	ND	ND	ND	ND	ND				
10/30/1997	FMETL	5.87	ND	ND	ND	ND	ND				
02/10/1998	FMETL	14.36	ND	ND	ND	ND	ND				
04/21/1998	FMETL	ND	ND	ND	ND	ND	ND				
08/19/1998	FMETL	4.65	ND	ND	ND	ND	ND				
11/18/1998	FMETL	3.18	ND	ND	ND	ND	ND				
02/25/1999	FMETL	3.95	ND	ND	ND	ND	ND				
06/29/1999	FMETL	1.47	ND	ND	ND	ND	ND				
09/21/1999	FMETL	4.67	ND	ND	ND	ND	ND				
12/09/1999	FMETL	4.90	ND	ND	ND	ND	ND				
03/01/2000	FMETL	5.57	ND	ND	ND	ND	ND				
06/12/2000	FMETL	ND	ND	ND	ND	ND	ND				
08/24/2000	FMETL	2.46	ND	ND	15.24	ND	ND				
11/20/2000	FMETL	1.80	ND	ND	ND	ND	ND				-
02/21/2001	FMETL	4.10	ND	ND	ND	ND	ND				-
05/16/2001	FMETL	1.45	ND	ND	ND	ND	ND				-
09/11/2001	FMETL	ND	ND	ND	ND	ND	ND				-
09/11/2001D	FMETL	ND	ND	ND	ND	ND	ND				-
11/14/2001	FMETL	ND	ND	ND	ND	ND	ND				-
02/11/2002	FMETL	ND	ND	ND	ND	ND	ND				V
06/18/2002	FMETL	ND	ND	ND	ND	ND	ND				V,P
09/18/2002	FMETL	ND	ND	ND	ND	ND	ND				V,P
11/05/2002	FMETL	5.14	ND	ND	ND	ND	ND	ND			V,P

SOURCE: 18

Sampling Dates:
04/08/1997 - 11/05/2002

NOTES:

Page 1 of 1
Stream 18 is Fresh-Water.
cis-1,2-Di limit is NLE.

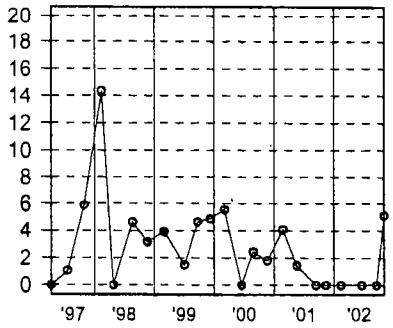
Fort Monmouth

GW Monitoring
Streams

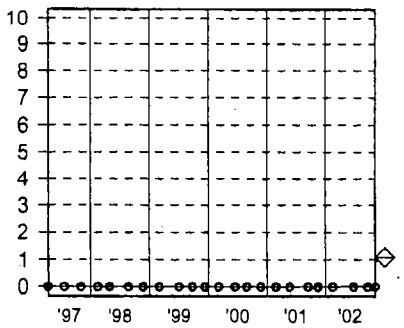
Source 13 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

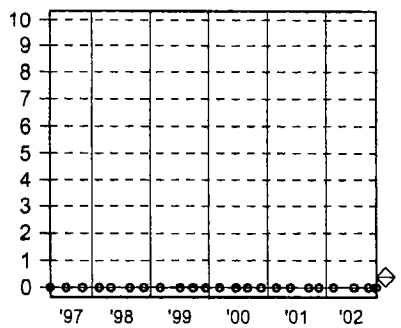
cis-1,2-Dichloroethene
(ug/l)



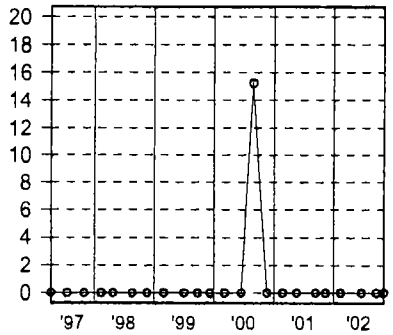
Trichloroethene
(ug/l)



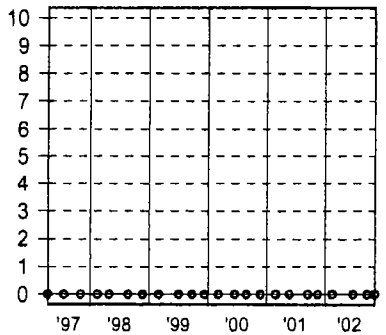
Tetrachloroethene
(ug/l)



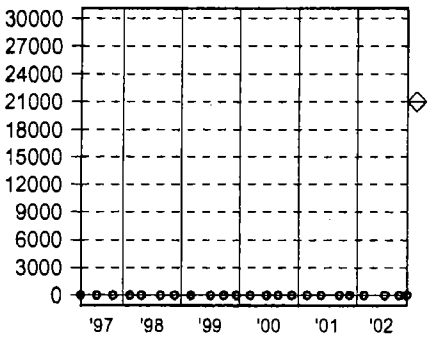
Acetone
(ug/l)



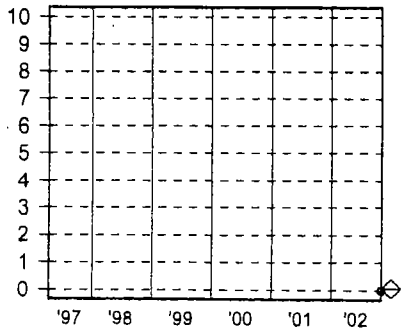
Methyl-tert-Butyl Ether
(ug/l)



Chlorobenzene
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 18

Sampling Dates:
04/08/1997 - 11/05/2002

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 13 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Acetone	Methyl-tert Butyl ether	Chloro benzene	Vinyl Chloride			Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l			-
NJDEP Criteria:	-	-	1.09	0.388	-	-	21000	0.083			-
04/08/1997	FMETL	6.44	ND	ND	ND	ND	ND				
07/17/1997	FMETL	ND	ND	ND	ND	ND	ND				
10/30/1997	FMETL	4.69	ND	ND	ND	ND	ND				
02/10/1998	FMETL	8.22	ND	ND	ND	ND	ND				
04/21/1998	FMETL	6.86	ND	ND	ND	ND	ND				
08/19/1998	FMETL	2.95	ND	ND	ND	ND	ND				
11/17/1998	FMETL	2.3	ND	ND	ND	ND	ND				
02/25/1999	FMETL	2.30	ND	ND	ND	ND	ND				
06/29/1999	FMETL	ND	ND	ND	ND	ND	ND				
09/21/1999	FMETL	3.53	ND	ND	ND	ND	ND				
12/09/1999	FMETL	2.60	ND	ND	ND	ND	ND				
03/01/2000	FMETL	2.92	ND	ND	ND	ND	ND				
06/12/2000	FMETL	ND	ND	ND	ND	ND	ND				
08/24/2000	FMETL	2.07	ND	ND	ND	ND	ND				
11/20/2000	FMETL	ND	ND	ND	ND	ND	ND				-
02/21/2001	FMETL	2.99	ND	ND	ND	ND	ND				-
02/21/2001D	FMETL	3.87	ND	ND	ND	ND	ND				-
05/16/2001	FMETL	1.57	ND	ND	ND	ND	ND				-
09/11/2001	FMETL	ND	ND	ND	ND	ND	ND				-
11/14/2001	FMETL	ND	ND	ND	ND	ND	ND				-
02/11/2002	FMETL	ND	ND	ND	ND	ND	ND				V
06/18/2002	FMETL	ND	ND	ND	ND	ND	ND				V,P
09/18/2002	FMETL	ND	ND	ND	ND	ND	ND				V,P
11/04/2002	FMETL	2.69	ND	ND	ND	ND	ND	ND			V,P

SOURCE: 19

Sampling Dates:
04/08/1997 - 11/04/2002

NOTES:

Page 1 of 1
Stream 19 is Salt-Water.
cis-1,2-Di limit is NLE.

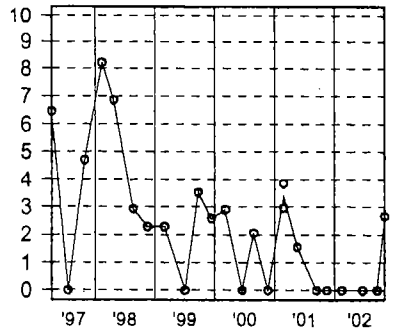
Fort Monmouth

GW Monitoring
Streams

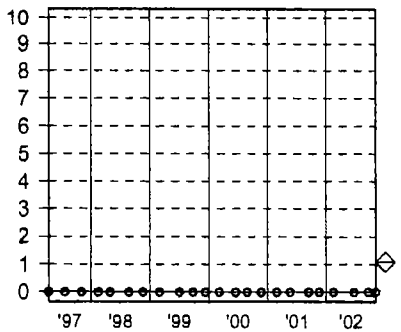
Source 14 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

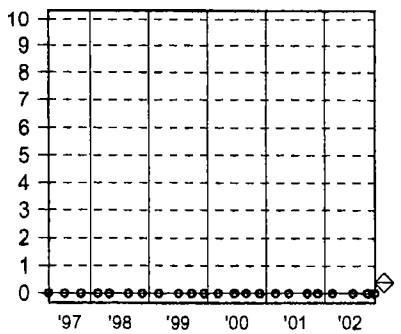
cis-1,2-Dichloroethene
(ug/l)



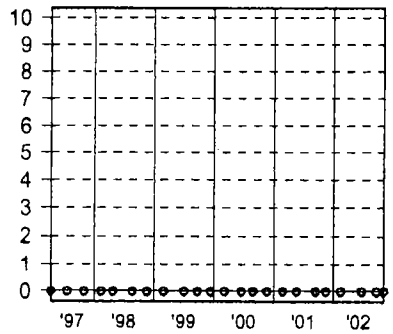
Trichloroethene
(ug/l)



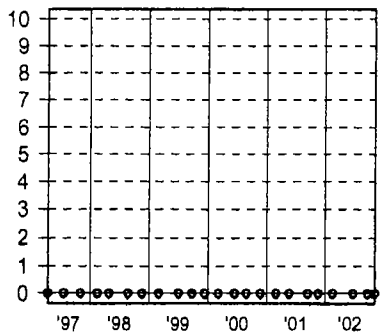
Tetrachloroethene
(ug/l)



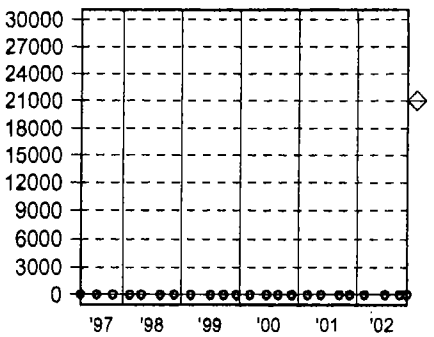
Acetone
(ug/l)



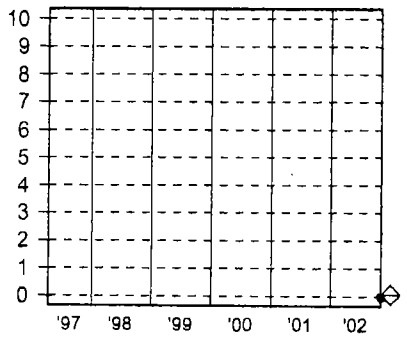
Methyl-tert-Butyl Ether
(ug/l)



Chlorobenzene
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 19

Sampling Dates:
04/08/1997 - 11/04/2002

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 14 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Acetone	Methyl-tert Butyl ether	Chloro benzene	Vinyl Chloride			Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l			-
NJDEP Criteria:	-	-	1.09	0.388	-	-	21000	0.083			-
04/08/1997	FMETL	ND	ND	ND	ND	ND	ND				
07/17/1997	FMETL	ND	ND	ND	ND	2.63	ND				
10/30/1997	FMETL	ND	ND	ND	ND	ND	ND				
02/10/1998	FMETL	ND	ND	ND	ND	ND	ND				
04/21/1998	FMETL	ND	ND	ND	ND	ND	ND				
08/19/1998	FMETL	ND	ND	ND	ND	4.85	ND				
11/17/1998	FMETL	ND	ND	ND	ND	ND	ND				
02/25/1999	FMETL	ND	ND	ND	ND	ND	ND				
06/29/1999	FMETL	ND	ND	ND	ND	5.70	ND				
09/21/1999	FMETL	ND	ND	ND	ND	2.10	ND				
12/09/1999	FMETL	ND	ND	ND	ND	ND	ND				
03/01/2000	FMETL	ND	ND	ND	ND	ND	ND				
06/12/2000	FMETL	ND	ND	ND	ND	6.38	ND				
08/24/2000	FMETL	ND	ND	ND	ND	2.58	ND				
11/20/2000	FMETL	ND	ND	ND	ND	ND	ND				-
02/21/2001	FMETL	ND	ND	ND	ND	ND	ND				-
05/16/2001	FMETL	ND	ND	ND	ND	ND	ND				-
09/25/2001	FMETL	ND	ND	ND	ND	ND	ND				-
11/14/2001	FMETL	ND	ND	ND	ND	ND	ND				-
02/11/2002	FMETL	ND	ND	ND	ND	ND	ND				V
06/18/2002	FMETL	ND	ND	ND	ND	1.26	ND				V,P
09/18/2002	FMETL	ND	ND	ND	ND	ND	ND				V,P
11/04/2002	FMETL	ND	ND	ND	ND	ND	ND	ND			V,P

SOURCE: 20

Sampling Dates:
04/08/1997 - 11/04/2002

NOTES:

Page 1 of 1
Stream20 is Salt-Water.
Ethylben limit is 27900 ug/L.
MTBE limit is NLE.

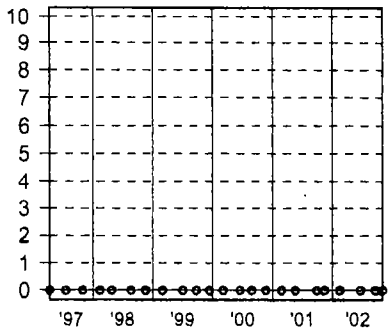
Fort Monmouth

GW Monitoring
Streams

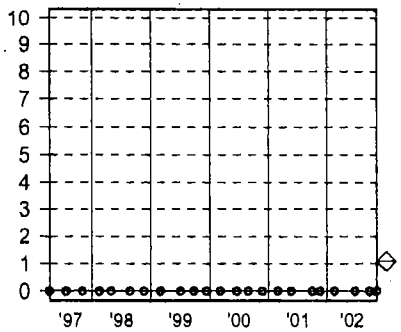
Source 15 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

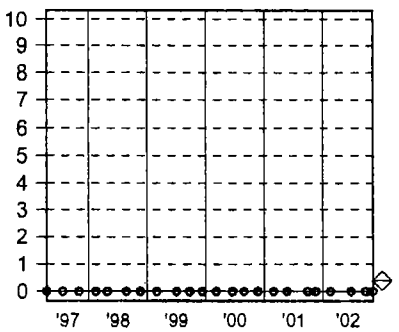
cis-1,2-Dichloroethene
(ug/l)



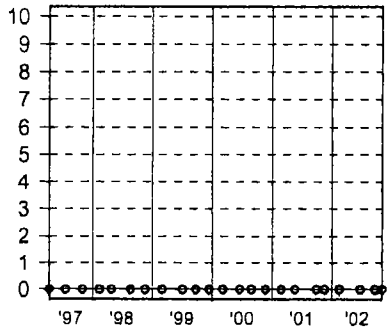
Trichloroethene
(ug/l)



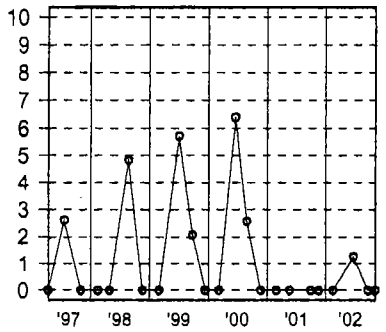
Tetrachloroethene
(ug/l)



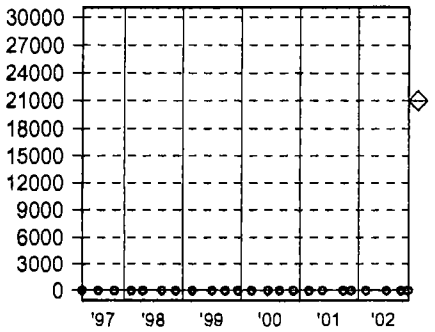
Acetone
(ug/l)



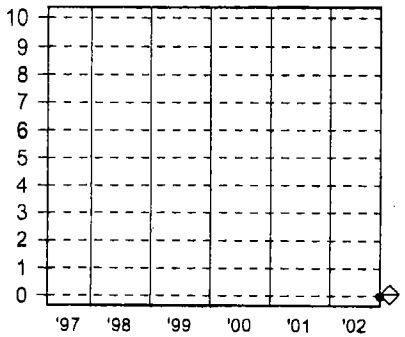
Methyl-tert-Butyl Ether
(ug/l)



Chlorobenzene
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 20

Sampling Dates:
04/08/1997 - 11/04/2002

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 15 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

02-12-2003 X:\MtechData\Streams\STREAMS.WSF

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Acetone	Methyl-tert Butyl ether	Chloro benzene	Vinyl Chloride			Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l			-
NJDEP Criteria:	-	-	1.09	0.388	-	-	21000	0.083			-
04/08/1997	FMETL	ND	ND	ND	ND	ND	ND				
07/17/1997	FMETL	ND	ND	ND	ND	2.90	ND				
10/30/1997	FMETL	ND	ND	ND	ND	ND	ND				
02/10/1998	FMETL	ND	ND	ND	ND	ND	ND				
04/21/1998	FMETL	ND	ND	ND	ND	ND	ND				
08/19/1998	FMETL	ND	ND	ND	ND	4.71	ND				
11/17/1998	FMETL	ND	ND	ND	ND	ND	ND				
02/25/1999	FMETL	ND	ND	ND	ND	ND	ND				
06/29/1999	FMETL	ND	ND	ND	ND	7.40	ND				
09/21/1999	FMETL	1.17	ND	ND	ND	2.24	ND				
12/09/1999	FMETL	ND	ND	ND	27.52	ND	ND				
03/01/2000	FMETL	ND	ND	ND	ND	ND	ND				
06/12/2000	FMETL	ND	ND	ND	ND	ND	ND				
08/24/2000	FMETL	ND	ND	ND	4.56	2.67	ND				
11/20/2000	FMETL	ND	ND	ND	ND	ND	ND				-
02/21/2001	FMETL	ND	ND	ND	ND	ND	ND				-
05/16/2001	FMETL	ND	ND	ND	ND	ND	ND				-
09/11/2001	FMETL	ND	ND	ND	ND	1.76	ND				-
11/14/2001	FMETL	ND	ND	ND	ND	ND	ND				-
02/11/2002	FMETL	ND	ND	ND	ND	ND	ND				V
06/18/2002	FMETL	ND	ND	ND	ND	ND	ND				V,P
09/18/2002	FMETL	ND	ND	ND	ND	ND	ND				V,P
11/04/2002	FMETL	ND	ND	ND	ND	ND	ND	ND			V,P

SOURCE: 21

Sampling Dates:
04/08/1997 - 11/04/2002

NOTES:

Page 1 of 1
Sream 21 is Salt-Water.
cis-1,2-Di limit is NLE.
Acetone limit is NLE.
MTBE limit is NLE.

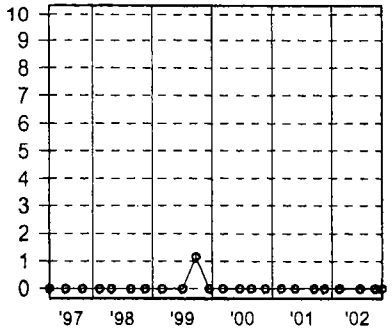
Fort Monmouth

GW Monitoring
Streams

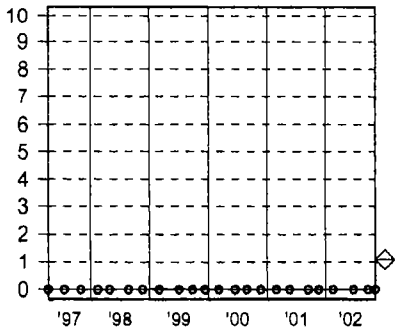
Source 16 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

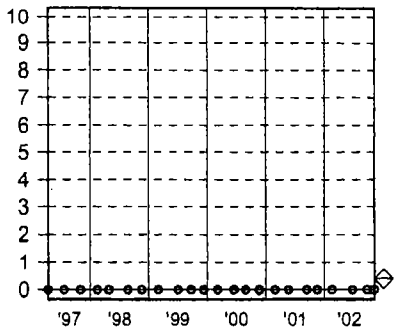
cis-1,2-Dichloroethene
(ug/l)



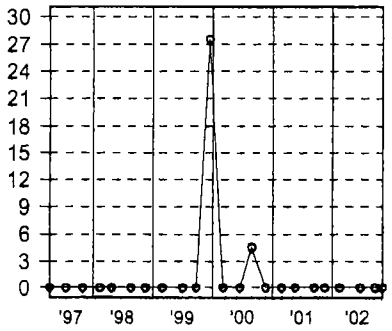
Trichloroethene
(ug/l)



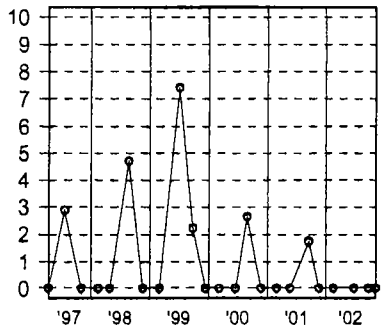
Tetrachloroethene
(ug/l)



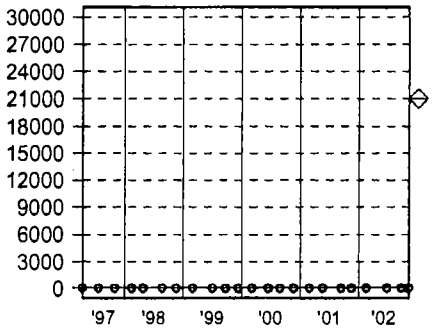
Acetone
(ug/l)



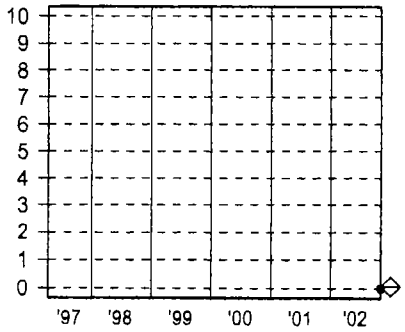
Methyl-tert-Butyl Ether
(ug/l)



Chlorobenzene
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 21

Sampling Dates:
04/08/1997 - 11/04/2002

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 16 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

02-12-2003 X:\MtechData\Streams\STREAMS.WSF

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Acetone	Methyl-tert Butyl ether	Chloro benzene	Vinyl Chloride			Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l			-
NJDEP Criteria:	-	-	1.09	0.388	-	-	21000	0.083			-
04/08/1997	FMETL	ND	ND	ND	ND	ND	ND				
07/17/1997	FMETL	ND	ND	ND	ND	4.26	ND				
10/30/1997	FMETL	ND	ND	ND	ND	ND	ND				
02/10/1998	FMETL	ND	ND	ND	ND	ND	ND				
04/21/1998	FMETL	ND	ND	ND	ND	ND	ND				
08/19/1998	FMETL	ND	ND	ND	ND	4.50	ND				
11/17/1998	FMETL	ND	ND	ND	ND	ND	ND				
02/25/1999	FMETL	ND	ND	ND	ND	ND	ND				
06/29/1999	FMETL	ND	ND	ND	ND	8.30	ND				
09/21/1999	FMETL	ND	ND	ND	ND	0.82	ND				
12/09/1999	FMETL	ND	ND	ND	32.77	ND	ND				
03/01/2000	FMETL	ND	ND	ND	ND	ND	ND				
06/12/2000	FMETL	ND	ND	ND	ND	10.26	ND				
06/12/2000D	FMETL	ND	ND	ND	ND	10.66	ND				
08/24/2000	FMETL	ND	ND	ND	5.53	ND	ND				
11/20/2000	FMETL	ND	ND	ND	ND	ND	ND				-
02/21/2001	FMETL	ND	ND	ND	ND	ND	ND				-
05/16/2001	FMETL	ND	ND	ND	ND	ND	ND				V
09/11/2001	FMETL	ND	ND	ND	ND	3.53	ND				-
11/14/2001	FMETL	ND	ND	ND	ND	ND	ND				-
02/11/2002	FMETL	ND	ND	ND	ND	ND	ND				V
06/18/2002	FMETL	ND	ND	ND	ND	2.12	ND				V,P
09/18/2002	FMETL	ND	ND	ND	ND	ND	ND				V,P
11/04/2002	FMETL	ND	ND	ND	ND	ND	ND	ND			V,P

SOURCE: 22

Sampling Dates:
04/08/1997 - 11/04/2002

NOTES:

Page 1 of 1
Stream 22 is Salt-Water.
Acetone limit is NLE.
MTBE limit is NLE.

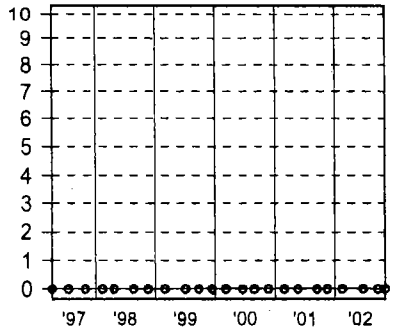
Fort Monmouth

GW Monitoring
Streams

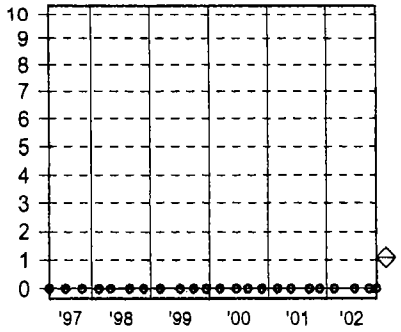
Source 17 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

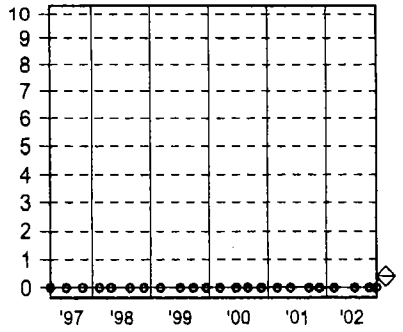
cis-1,2-Dichloroethene
(ug/l)



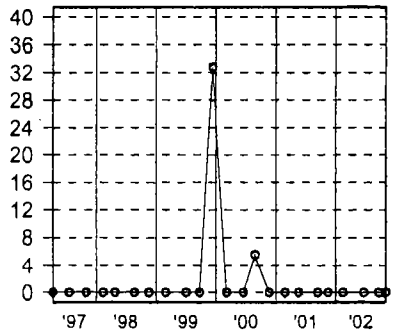
Trichloroethene
(ug/l)



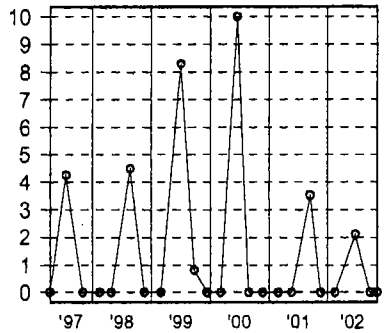
Tetrachloroethene
(ug/l)



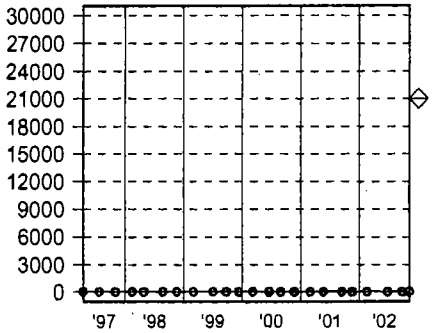
Acetone
(ug/l)



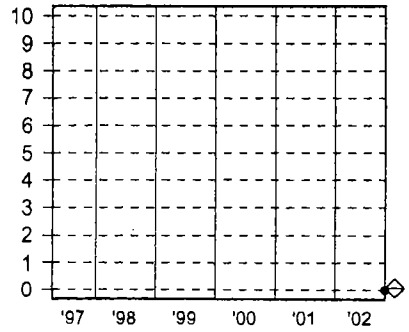
Methyl-tert-Butyl Ether
(ug/l)



Chlorobenzene
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 22

Sampling Dates:
04/08/1997 - 11/04/2002

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 17 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Acetone	Methyl-tert Butyl ether	Chloro benzene	Vinyl Chloride			Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l			-
NJDEP Criteria:	-	-	1.09	0.388	-	-	21000	0.083			-
06/12/2000	FMETL	ND	ND	5.60	ND	ND	ND				
08/24/2000	FMETL	2.24	1.82	5.18	ND	ND	ND				
11/20/2000	FMETL	ND	ND	6.29	ND	ND	ND				-
03/08/2001	FMETL	ND	ND	4.78	ND	ND	ND				-
05/16/2001	FMETL	1.73	ND	6.41	ND	ND	ND				-
09/25/2001	FMETL	ND	ND	ND	ND	ND	ND				-
11/14/2001	FMETL	3.23	ND	3.64	ND	ND	ND				-
02/11/2002	FMETL	ND	ND	2.85	ND	ND	ND				V
06/18/2002	FMETL	1.58	ND	2.88	ND	ND	ND				V,P
09/18/2002	FMETL	2.49	ND	ND	ND	ND	ND				V,P
11/05/2002	FMETL	ND	ND	1.44	ND	ND	ND	ND			V,P

SOURCE: 23

Sampling Dates:
06/12/2000 - 11/05/2002

NOTES:

Page 1 of 1
Stream 23 is Fresh-Water

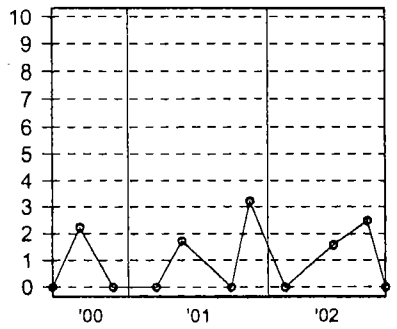
Fort Monmouth

GW Monitoring
Streams

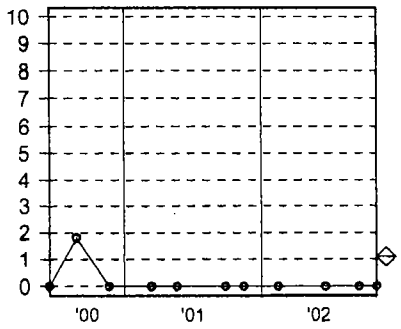
Source 18 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

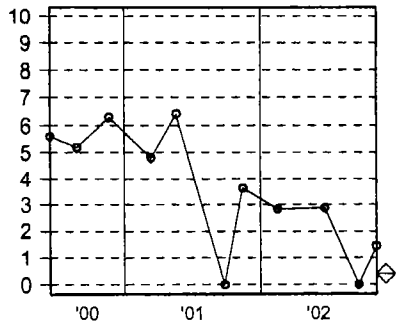
cis-1,2-Dichloroethene
(ug/l)



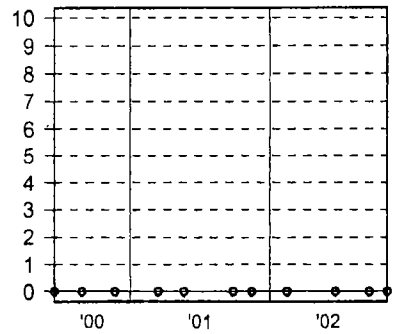
Trichloroethene
(ug/l)



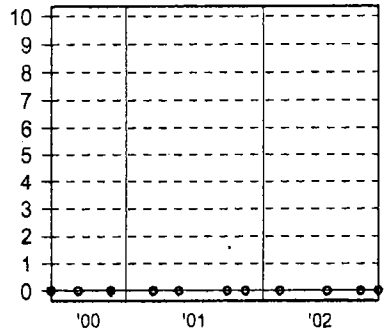
Tetrachloroethene
(ug/l)



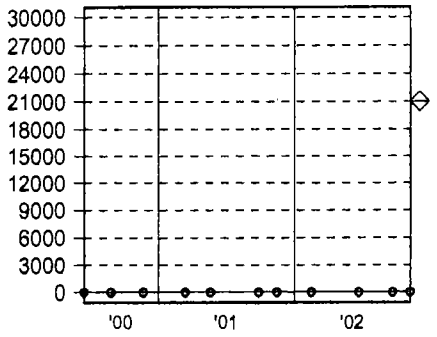
Acetone
(ug/l)



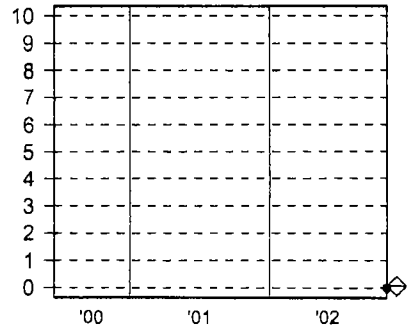
Methyl-tert-Butyl Ether
(ug/l)



Chlorobenzene
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 23

Sampling Dates:
06/12/2000 - 11/05/2002

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 18 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

02-12-2003 X:\MtechData\Streams\STREAMS.WSF

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Acetone	Methyl-tert Butyl ether	Chloro benzene	Vinyl Chloride			Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l			-
NJDEP Criteria:	-	-	1.09	0.388	-	-	21000	0.083			-
06/12/2000	FMETL	ND	ND	4.72	ND	ND	ND				
08/24/2000	FMETL	1.54	1.41	4.33	ND	ND	ND				
11/20/2000	FMETL	ND	ND	4.41	ND	ND	ND				-
03/08/2001	FMETL	ND	ND	4.76	ND	ND	ND				-
05/16/2001	FMETL	1.37	ND	5.12	ND	ND	ND				-
09/25/2001	FMETL	ND	ND	ND	ND	ND	ND				-
11/14/2001	FMETL	3.11	ND	3.28	ND	ND	ND				-
02/11/2002	FMETL	ND	ND	2.69	ND	ND	ND				V
06/18/2002	FMETL	1.60	ND	2.74	ND	ND	ND				V,P
09/18/2002	FMETL	ND	ND	ND	ND	ND	ND				V,P
11/05/2002	FMETL	ND	ND	1.64	ND	ND	ND	ND			V,P

SOURCE: 24

Sampling Dates:
06/12/2000 - 11/05/2002

NOTES:

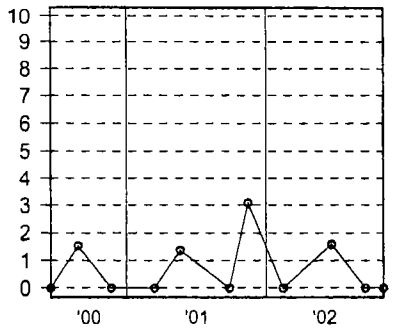
Page 1 of 2
Stream 24 is Fresh-Water

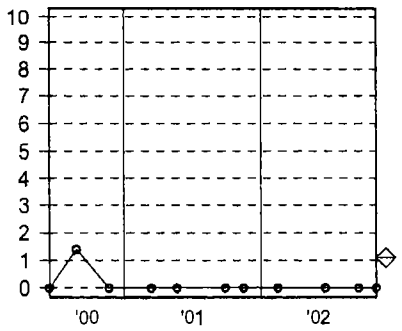
Fort Monmouth

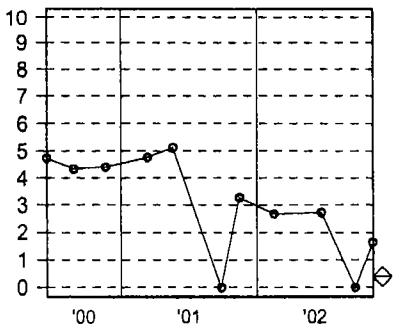
GW Monitoring
Streams

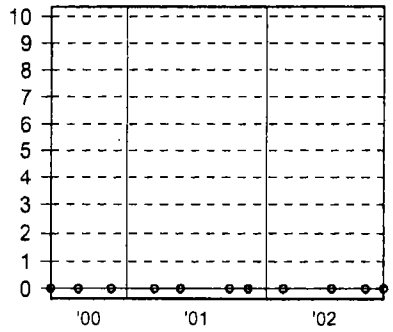
Source 19 of 23

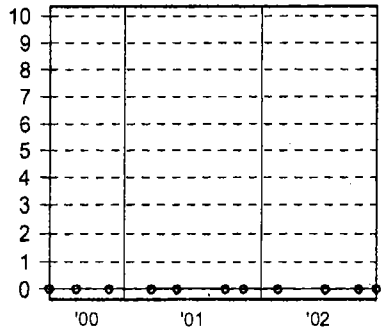
U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

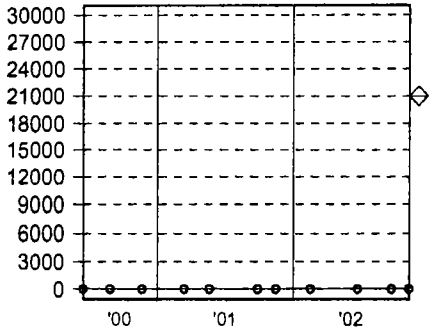


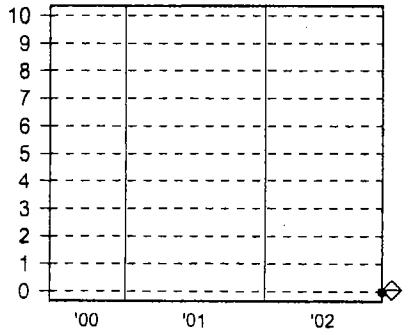












SOURCE: 24

Sampling Dates:
06/12/2000 - 11/05/2002

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 19 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

02-12-2003 X:\MtechData\Streams\STREAMS.WSF

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Acetone	Methyl-tert Butyl ether	Chloro benzene	Vinyl Chloride			Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l			-
NJDEP Criteria:	-	-	1.09	0.388	-	-	21000	0.083			-
06/12/2000	FMETL	ND	ND	ND	ND	ND	ND				
08/24/2000	FMETL	ND	ND	ND	ND	ND	ND				
11/20/2000	FMETL	ND	ND	ND	ND	ND	ND				-
03/08/2001	FMETL	ND	ND	ND	ND	ND	ND				-
05/16/2001	FMETL	ND	ND	ND	ND	ND	ND				-
09/25/2001	FMETL	ND	ND	ND	ND	ND	ND				-
11/14/2001	FMETL	ND	ND	ND	ND	ND	ND				-
02/11/2002	FMETL	ND	ND	ND	ND	ND	ND				V
06/18/2002	FMETL	ND	ND	ND	ND	ND	1.50				V,P
09/18/2002	FMETL	ND	ND	ND	ND	ND	ND				V,P
11/04/2002	FMETL	ND	ND	ND	ND	ND	ND	ND			V,P

SOURCE: 25

Sampling Dates:
06/12/2000 - 11/04/2002

NOTES:

Page 1 of 1
Stream 25 is Salt-Water.

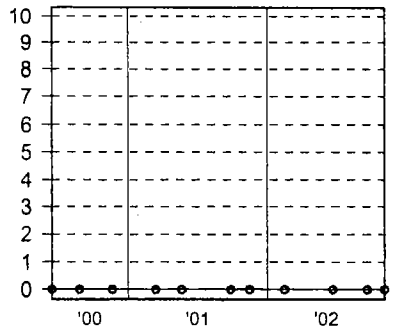
Fort Monmouth

GW Monitoring
Streams

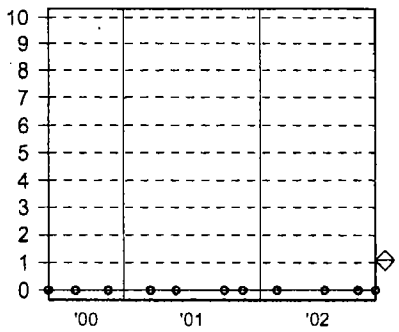
Source 20 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

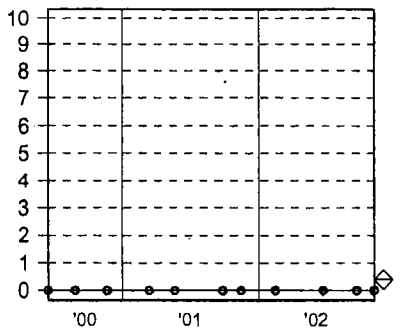
cis-1,2-Dichloroethene
(ug/l)



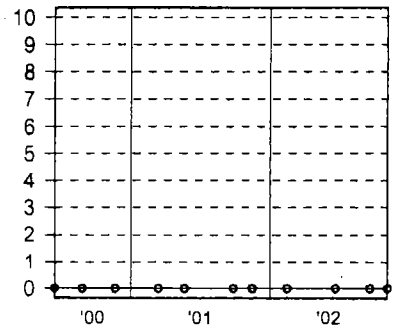
Trichloroethene
(ug/l)



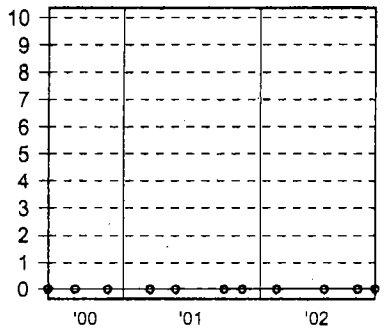
Tetrachloroethene
(ug/l)



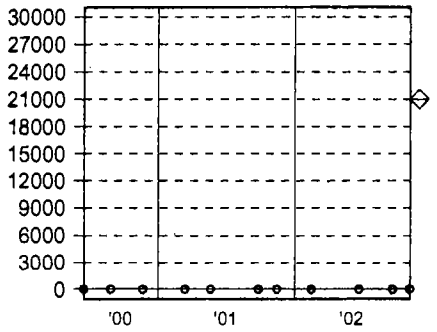
Acetone
(ug/l)



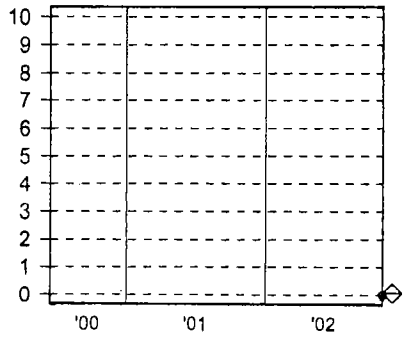
Methyl-tert-Butyl Ether
(ug/l)



Chlorobenzene
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 25

Sampling Dates:
06/12/2000 - 11/04/2002

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 20 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

02-12-2003 X:\MtechData\Streams\STREAMS.WSF

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Acetone	Methyl-tert Butyl ether	Chloro benzene	Vinyl Chloride			Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l			-
NJDEP Criteria:	-	-	1.09	0.388	-	-	21000	0.083			-
06/12/2000	FMETL	ND	ND	ND	ND	ND	ND				
08/24/2000	FMETL	ND	ND	ND	ND	ND	ND				
11/20/2000	FMETL	ND	ND	ND	ND	ND	ND				-
03/08/2001	FMETL	ND	ND	ND	ND	ND	ND				-
05/16/2001	FMETL	ND	ND	ND	ND	ND	ND				-
09/25/2001	FMETL	ND	ND	ND	ND	ND	ND				-
11/14/2001	FMETL	ND	ND	ND	ND	ND	ND				-
02/11/2002	FMETL	ND	ND	ND	ND	ND	ND				V
06/18/2002	FMETL	ND	ND	ND	ND	ND	1.47				V,P
09/18/2002	FMETL	ND	ND	ND	ND	ND	ND				V,P
11/04/2002	FMETL	ND	ND	ND	ND	ND	ND	ND			V,P

SOURCE: 26

Sampling Dates:
06/12/2000 - 11/04/2002

NOTES:

Page 1 of 1
Stream 26 is Fresh-Water

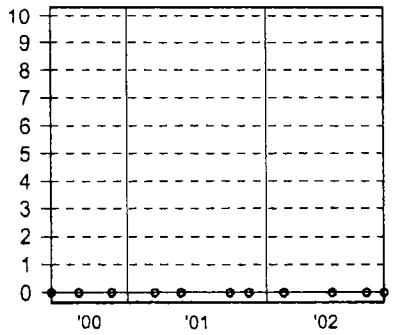
Fort Monmouth

GW Monitoring
Streams

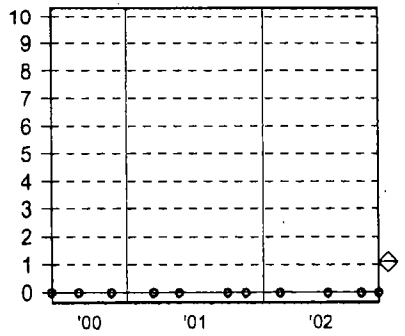
Source 21 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

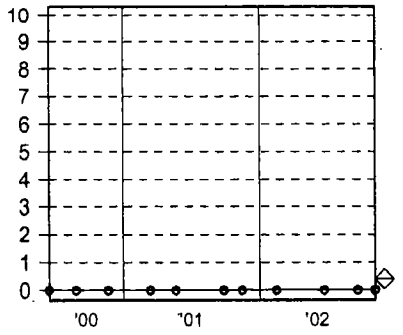
cis-1,2-Dichloroethene
(ug/l)



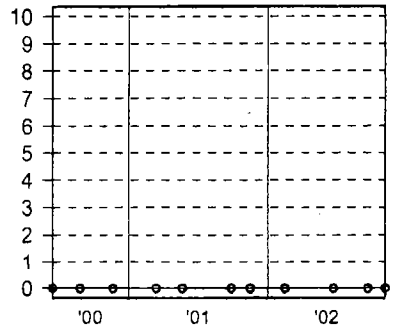
Trichloroethene
(ug/l)



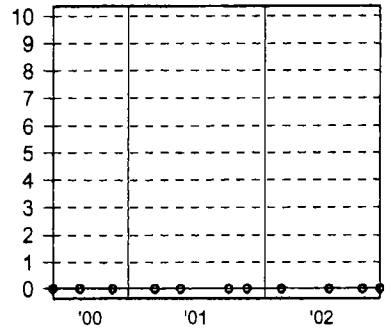
Tetrachloroethene
(ug/l)



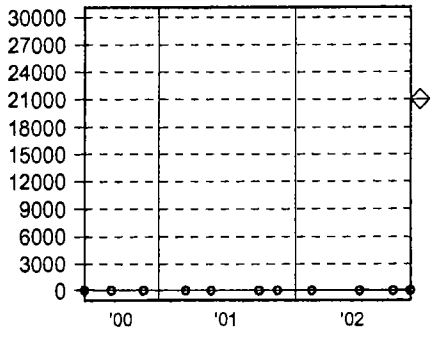
Acetone
(ug/l)



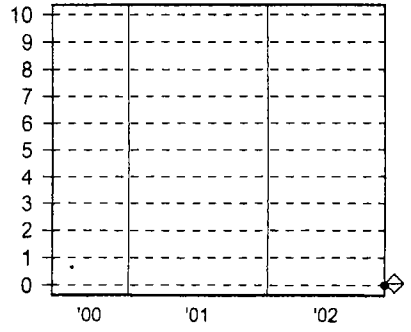
Methyl-tert-Butyl Ether
(ug/l)



Chlorobenzene
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 26

Sampling Dates:
06/12/2000 - 11/04/2002

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 21 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Acetone	Methyl-tert Butyl ether	Chloro benzene	Vinyl Chloride			Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l			-
NJDEP Criteria:	-	-	1.09	0.388	-	-	21000	0.083			-
06/12/2000	FMETL	ND	ND	ND	ND	ND	ND				
08/24/2000	FMETL	ND	ND	1.72	ND	ND	ND				
11/20/2000	FMETL	ND	ND	1.87	ND	ND	ND				-
03/08/2001	FMETL	ND	ND	ND	ND	ND	ND				-
05/16/2001	FMETL	ND	ND	ND	ND	ND	ND				-
09/25/2001	FMETL	ND	ND	ND	ND	ND	ND				-
11/14/2001	FMETL	ND	ND	ND	ND	ND	ND				-
02/11/2002	FMETL	ND	ND	ND	ND	ND	ND				V
06/18/2002	FMETL	ND	ND	ND	ND	ND	ND				V,P
09/18/2002	FMETL	ND	ND	ND	ND	ND	ND				V,P
11/04/2002	FMETL	ND	ND	ND	ND	ND	ND	ND			V,P

SOURCE: 27

Sampling Dates:
06/12/2000 - 11/04/2002

NOTES:

Page 1 of 1
Stream 27 is Salt Water.

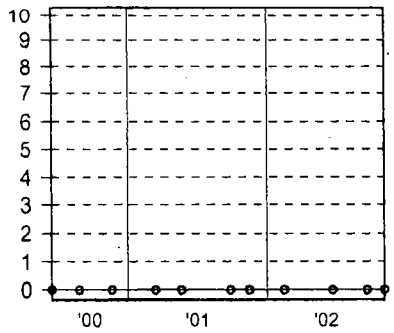
Fort Monmouth

GW Monitoring
Streams

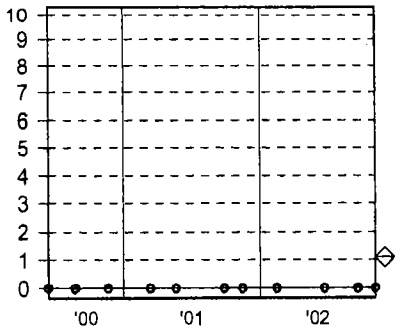
Source 22 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

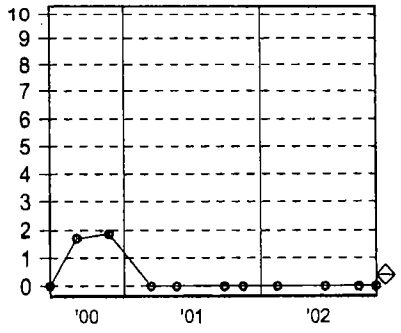
cis-1,2-Dichloroethene
(ug/l)



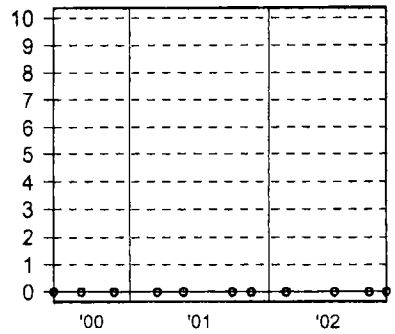
Trichloroethene
(ug/l)



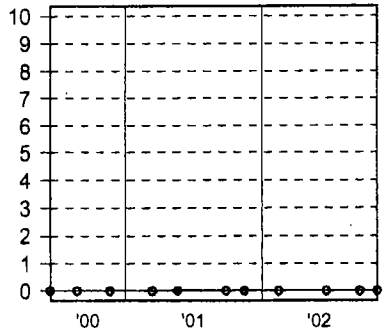
Tetrachloroethene
(ug/l)



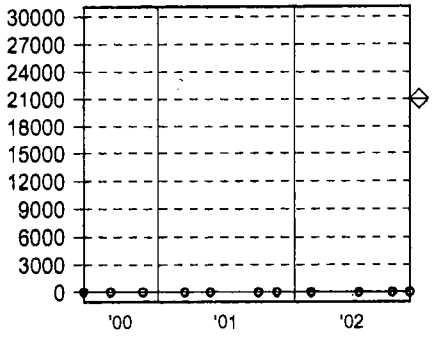
Acetone
(ug/l)



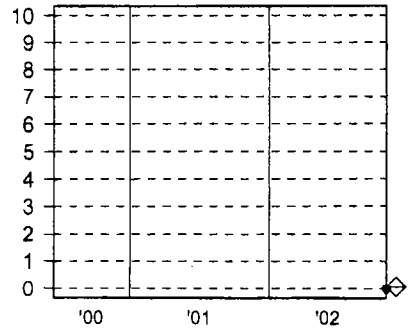
Methyl-tert-Butyl Ether
(ug/l)



Chlorobenzene
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 27

Sampling Dates:
06/12/2000 - 11/04/2002

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 22 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Acetone	Methyl-tert Butyl ether	Chloro benzene	Vinyl Chloride			Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l			-
NJDEP Criteria:	-	-	1.09	0.388	-	-	21000	0.083			-
06/12/2000	FMETL	ND	ND	ND	ND	ND	ND				
08/24/2000	FMETL	1.28	1.07	3.67	ND	ND	ND				
11/20/2000	FMETL	ND	ND	3.60	ND	ND	ND				-
03/08/2001	FMETL	ND	ND	2.56	ND	ND	ND				-
05/16/2001	FMETL	ND	ND	2.77	ND	ND	ND				-
09/25/2001	FMETL	ND	ND	ND	ND	ND	ND				-
11/14/2001	FMETL	ND	ND	ND	ND	ND	ND				-
02/11/2002	FMETL	ND	ND	1.55	ND	ND	ND				V
06/18/2002	FMETL	ND	ND	1.99	ND	ND	ND				V,P
09/18/2002	FMETL	ND	ND	ND	ND	ND	ND				V,P
11/04/2002	FMETL	ND	ND	ND	ND	ND	ND	ND			V,P

SOURCE: 28

Sampling Dates:
06/12/2000 - 11/04/2002

NOTES:

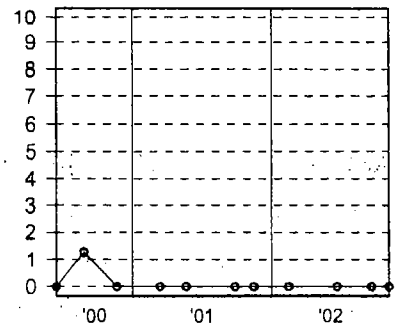
Page 1 of 1
Stream 28 is Salt-Water
cis-1,2-Dichloroethene limit is NLE
TCE limit is 81
PCE limit is 4.29

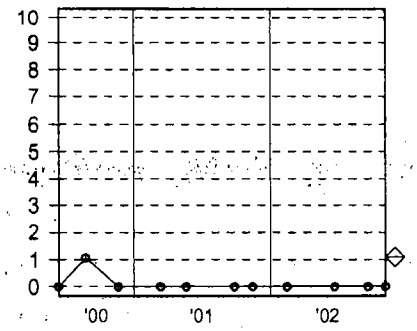
Fort Monmouth

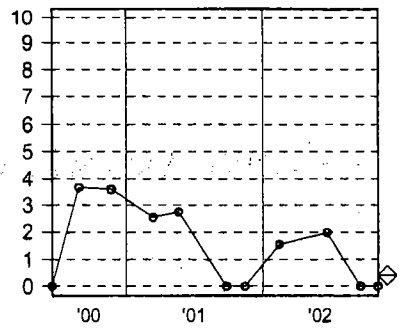
GW Monitoring
Streams

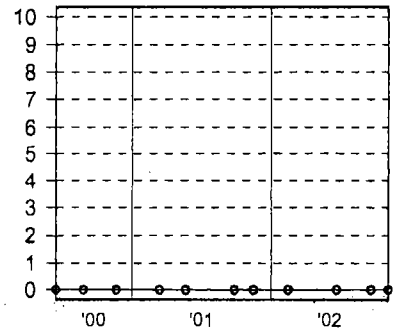
Source 23 of 23

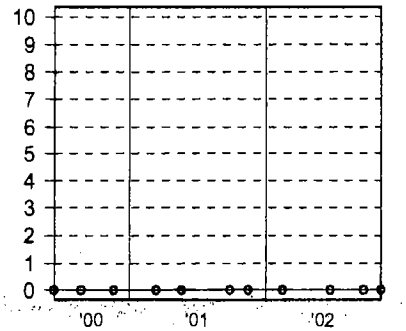
U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

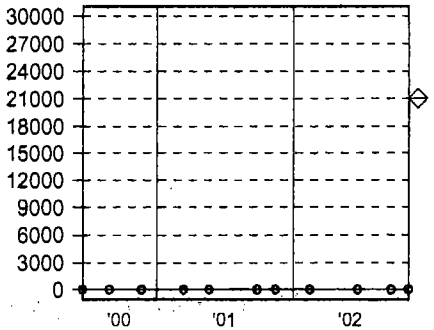


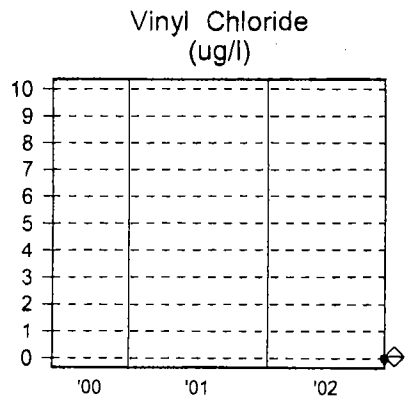












SOURCE: 28

Sampling Dates:
06/12/2000 - 11/04/2002

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 23 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS
PHONE: (732) 532-6224 FAX: (732) 532-6263
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING
CERTIFICATIONS: NJDEP #13461, NYSDOH #11699

ANALYTICAL DATA REPORT
Fort Monmouth Environmental Laboratory
ENVIRONMENTAL DIVISION
Fort Monmouth, New Jersey
PROJECT: 1st QTR/03 Streams

Streams

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
Stream Site #22	3011804	Aqueous	13-Mar-03 08:16	03/13/03
Stream Site #21	3011805	Aqueous	13-Mar-03 08:25	03/13/03
Stream Site #20	3011806	Aqueous	13-Mar-03 08:33	03/13/03
Stream Site #09	3011807	Aqueous	13-Mar-03 08:48	03/13/03
Stream Site #19	3011808	Aqueous	13-Mar-03 08:57	03/13/03
Stream Site #12	3011809	Aqueous	13-Mar-03 09:10	03/13/03
Stream Site #18	3011810	Aqueous	13-Mar-03 09:17	03/13/03
Stream Site #11	3011811	Aqueous	13-Mar-03 09:23	03/13/03
Stream Site #24	3011812	Aqueous	13-Mar-03 09:40	03/13/03
Stream Site #16	3011813	Aqueous	13-Mar-03 09:53	03/13/03
Stream Site #27	3011814	Aqueous	13-Mar-03 10:07	03/13/03
Stream Site #07	3011815	Aqueous	13-Mar-03 10:24	03/13/03
Stream Site #28	3011816	Aqueous	13-Mar-03 10:52	03/13/03
Stream Site #04	3011817	Aqueous	13-Mar-03 10:31	03/13/03
Stream Site #05	3011818	Aqueous	13-Mar-03 11:03	03/13/03
Stream Site #15	3013404	Aqueous	24-Mar-03 08:15	03/24/03
Stream Site #23	3013405	Aqueous	24-Mar-03 08:34	03/24/03
Stream Site #25	3013406	Aqueous	24-Mar-03 08:50	03/24/03
Stream Site #17	3013407	Aqueous	24-Mar-03 09:06	03/24/03
Stream Site #26	3013408	Aqueous	24-Mar-03 09:27	03/24/03
Stream Site #03	3013409	Aqueous	24-Mar-03 09:39	03/24/03
Stream Site #14	3013410	Aqueous	24-Mar-03 09:46	03/24/03
Stream Site #13	3013411	Aqueous	24-Mar-03 09:55	03/24/03

ANALYSIS:
FORT MONMOUTH ENVIRONMENTAL LAB
VOA+15, PCB's, WET CHEMISTRY

5-5-03
Daniel Wright/Date
Laboratory Director

METHODOLOGY SUMMARY

PARAMETER	REFERENCE
TARGET ANALYTE LIST METALS	Standard Methods, 18th ed.
Aluminum	3120B
Antimony	3120B
Arsenic	3120B
Barium	3120B
Beryllium	3120B
Cadmium	3120B
Calcium	3120B
Chromium	3120B
Cobalt	3120B
Copper	3120B
Iron	3120B
Lead	3120B
Magnesium	3120B
Manganese	3120B
Mercury	3112B
Nickel	3120B
Potassium	3120B
Selenium	3120B
Silver	3120B
Sodium	3120B
Thallium	3120B
Vanadium	3120B
Zinc	3120B

PARAMETER	REFERENCE
TARGET COMPOUND LIST ORGANICS	Federal Register 40 CFR Part 136 Appendix A
Base/Neutral and Acid Extractables by GC/MS	625
Purgeable Organics by GC/MS	624
Pesticide and PCB by GC	608

Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:wrightd@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: J. FALLON
Phone #: 426223
( )DERA ( )OMA ( )Other:

Project No:
Location: Streams
3rd Qrtr '03

Samplers Name / Company: Corey McCormick, TIS

LIMS/Work Order #	Sample Location	Date	Time	Sample Type	# bottles	Volatiles	NH_3 / NO_3	PO_4 / SO_4	T. Coli	PCB	pH (su)	Temp (°C)	Dissolved O_2	Comments: Remarks / Preservation Method	
30418 01	Trip	3/13/03	0759	AQ	2	✓					—	—	—	Salinity	
02	Field Blank		0800		5	✓	✓	✓		✓	—	—	—	ppt	‰
03	Dupe		—		6	✓	✓	✓	✓	✓	—	—	—	—	—
04	Stream site #22*		0816		6	✓	✓	✓	✓	✓	7.87	9.71	8.91	1.008	12
05	#21		0827								7.76	8.63	9.71	1.009	13
06	#20		0833								7.79	8.57	9.80	1.009	13
07	#09		0848								5.74	6.41	1.47	1.003	3
08	#19		0857								6.32	5.76	9.28	1.002	2
09	#12		0910								6.12	6.52	19.68	1.001	1
10	#18		0917								6.21	7.18	22.71	1.002	2
11	#11		0923								6.40	8.33	30.62	1.002	2
12	#24 #15		0940								6.10	7.14	19.62	1.002	3
13	#16 #23		0953								6.18	7.37	21.93	1.002	2
14	#17		1007								6.33	6.90	15.80	1.002	2

HCl/HNO_3/4°C
H_2SO_4

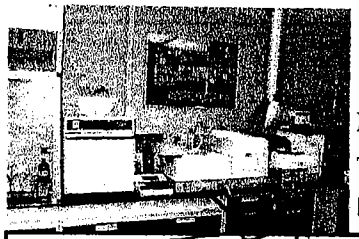
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Corey McCormick	3/13/03 1430	J. Vellone			

Report Type: (_)Full, (_)Reduced, (X)Standard, (_)Screen / non-certified, (_)EDD
Turnaround time: (X)Standard 3 wks, (_)Rush ___ Days, (_)ASAP Verbal ___ Hrs.

Remarks:
Tide: H -> outgoing

print legibly

Coc1/10/03



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:wrightd@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: J. Fallon
Phone #: X216223
( )DERA ( )OMA ( )Other:_____

Project No:
Location: Streams
1st Qtr '03

Samplers Name / Company: Corey McCormack, TVS

LIMS/Work Order #	Sample Location	Date	Time	Sample Type	# bottles	Volts	NH_3 / NO_3	Poly / SO_4	T. Coli	PCBs	pH (su)	Temp (°C)	Dsolvd O_2	Comments: Remarks / Preservation Method
30118 #5	Stream #7	3/13/03	1024	AQ	6	✓	✓	✓	✓	✓	6.30	7.02	19.34	1.002 / ~~6.50~~ 2
#6	#28		1052								6.46	8.30	17.05	1.003 / 3
#7	#4		1031								6.18	7.34	11.06	1.002 / 2
#8	#5		1103								6.44	~~7.34~~ 7.79	~~11.06~~ 9.12	SIC 3/13/03 1.002 / 2

Comments: HCl/HNO_3/H_2SO_4 <4°C

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
	3-13-03 1430	J. Vellucci			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: (_)Full, (_)Reduced, (X)Standard, (_)Screen / non-certified, (_)EDD
Turnaround time: (X)Standard 3 wks, (_)Rush ____ Days, (_)ASAP Verbal ____ Hrs.

Remarks:

print legibly

Coc1/10/03

Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:wrightd@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: J. Fallon
Phone #: x26223
( )DERA ( )OMA ( )Other:_____

Project No:
Location: Streams 1st Qrtr 03 Pt II

Samplers Name / Company: Corey McCormack, TUS

LIMS/Work Order #		Sample Location	Date	Time	Sample Type	# bottles	Analysis Parameters: Volatiles	NH_3/NO_3	PO_4/SO_4	PCB	T. Coli	pH (su)	Temp (°C)	Dissolved O_2	Comments: Remarks / Preservation Method	
30134	01	Trip	3/24/03	0730	AQ	2	✓					—	—	—	Salinity	
	02	Field Blank		0735		5	✓	✓	✓	✓		—	—	—	—	—
	03	Dye		—		6	✓	✓	✓	✓	✓	—	—	—	d 20/20	% 0
	04	Stream site #15		0815		6	✓	✓	✓	✓	✓	5.66	10.48	3.71	1.002	2
	05	#23		0834			✓	✓	✓	✓	✓	6.08	10.57	3.63	1.002	3
	06	#25		0850			✓	✓	✓	✓	✓	6.16	11.00	7.91	1.002	3
	07	#17		0906			✓	✓	✓	✓	✓	6.42	9.05	2.93	1.002	2
	08	#26		0927			✓	✓	✓	✓	✓	6.75	9.45	5.44	1.000	0
	09	#03		0939			✓	✓	✓	✓	✓	6.75	9.45	5.44	1.000	0
	10	#14		0948			✓	✓	✓	✓	✓	6.63	8.37	2.89	1.002	2
	11	#13		0955			✓	✓	✓	✓	✓	6.65	10.77	3.44	1.002	2

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Corey McCormack	3/24/03 1115	J. Wright			
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: (_)Full, (_)Reduced, (X)Standard, (_)Screen / non-certified, (_)EDD
Turnaround time: (X)Standard 3 wks, (_)Rush ____ Days, (_)ASAP Verbal ____ Hrs.

Remarks:
Tide: High -> outgoing

print legibly

Rev1/10/02

VOLATILE ORGANICS

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEP CERTIFICATION # 13461

Definition of Qualifiers

MDL	:	**Method Detection Limit**
J	:	**Compound identified below detection limit**
B	:	**Compound found in blank**
D	:	**Results are from a dilution of the sample**
U	:	**Compound searched for but not detected**
E	:	**Compound exceeds calibration limit**
PQL	:	**Practical Quantitation Limit**
NLE	:	**No limit established**
RT	:	**Retention time**

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013378.D**	Sample Name	**MB 02Apr03**
Operator	**Skelton**	Field ID	**MB 02Apr03**
Date Acquired	**2 Apr 2003 4:41 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.67	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9-6 2Sept-97

Qualifiers

B = Compound found in related blank

E = Value above linear range

D = Value from dilution

PQL = Practical Quantitation Limit

MDL = Method Detection Limit

NLE = No Limit Established

R.T. = Retention Time

R.L. = Reporting Limit

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013378.D**	Sample Name	**MB 02Apr03**
Operator	**Skelton**	Field ID	**MB 02Apr03**
Date Acquired	**2 Apr 2003 4:41 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.06	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.70	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	0.08	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.40	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.36	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.29	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	0.27	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.19	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.50	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	0.39	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	72.60	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9B-1.14 18-May-98

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **MB 02Apr03**

Lab Name: FMETL Project: Streams

NJDEP#: 13461 Case No.: 30134 Location: 1stQtr' SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: MB 02Apr03

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013378.D

Level: (low/med) LOW Date Received: 3/24/2003

% Moisture: not dec. Date Analyzed: 4/2/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013233.D**	Sample Name	**MB 19Mar03**
Operator	**Skelton**	Field ID	**MB 19Mar03**
Date Acquired	**19 Mar 2003 12:39 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.06	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.70	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	0.08	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.40	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.36	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.29	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	0.27	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.19	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.50	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	0.39	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	72.60	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9B-1.14 18-May-98

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013233.D**	Sample Name	**MB 19Mar03**
Operator	**Skelton**	Field ID	**MB 19Mar03**
Date Acquired	**19 Mar 2003 12:39 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.67	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9-6 2Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **MB 19Mar03**

Lab Name: FMETL Project: Streams

NJDEP#: 13461 Case No.: 30118 Location: 1stQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: MB 19Mar03

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013233.D

Level: (low/med) LOW Date Received: 3/13/2003

% Moisture: not dec. Date Analyzed: 3/19/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013238.D**	Sample Name	**3011801**
Operator	**Skelton**	Field ID	**Trip Blank**
Date Acquired	**19 Mar 2003 4:03 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.06	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.70	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	0.08	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.40	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform	16.60	272328	3.22 ug/L	5.67	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.36	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.29	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	0.27	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.19	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.50	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	0.39	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	72.60	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9B-1.14 18-May-98

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013238.D**	Sample Name	**3011801**
Operator	**Skelton**	Field ID	**Trip Blank**
Date Acquired	**19 Mar 2003 4:03 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.67	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform	16.60	272328	3.22 ug/L	470	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9-6 2Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

Trip Blank

Lab Name: FMETL Project: Streams

NJDEP#: 13461 Case No.: 30118 Location: 1stQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3011801

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013238.D

Level: (low/med) LOW Date Received: 3/13/2003

% Moisture: not dec. Date Analyzed: 3/19/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013383.D**	Sample Name	**3013401**
Operator	**Skelton**	Field ID	**Trip Blank**
Date Acquired	**2 Apr 2003 8:02 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.67	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform	16.61	170098	3.35 ug/L	470	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9-6 2Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013383.D**	Sample Name	**3013401**
Operator	**Skelton**	Field ID	**Trip Blank**
Date Acquired	**2 Apr 2003 8:02 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.06	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.70	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	0.08	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.40	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform	16.61	170098	3.35 ug/L	5.67	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.36	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.29	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	0.27	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.19	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.50	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	0.39	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	72.60	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9B-1.14 18-May-98

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

Trip Blank

Lab Name: FMETL Project: Streams

NJDEP#: 13461 Case No.: 30134 Location: 1stQtr' SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3013401

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013383.D

Level: (low/med) LOW Date Received: 3/24/2003

% Moisture: not dec. Date Analyzed: 4/2/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013239.D**	Sample Name	**3011802**
Operator	**Skelton**	Field ID	**Field Blank**
Date Acquired	**19 Mar 2003 4:43 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.06	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.70	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	0.08	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.40	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride	11.06	215113	4.91 ug/L	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform	16.59	347091	4.11 ug/L	5.67	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.36	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.29	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	0.27	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.19	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.50	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	0.39	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	72.60	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9B-1.14 18-May-98

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013239.D**	Sample Name	**3011802**
Operator	**Skelton**	Field ID	**Field Blank**
Date Acquired	**19 Mar 2003 4:43 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.67	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride	11.06	215113	4.91 ug/L	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform	16.59	347091	4.11 ug/L	470	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9-6 2Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

Field Blank

Lab Name: FMETL Project: Streams

NJDEP#: 13461 Case No.: 30118 Location: 1stQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3011802

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013239.D

Level: (low/med) LOW Date Received: 3/13/2003

% Moisture: not dec. Date Analyzed: 3/19/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013384.D**	Sample Name	**3013402**
Operator	**Skelton**	Field ID	**Field Blank**
Date Acquired	**2 Apr 2003 8:42 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.67	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform	16.60	175431	3.38 ug/L	470	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9-6 2Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013384.D**	Sample Name	**3013402**
Operator	**Skelton**	Field ID	**Field Blank**
Date Acquired	**2 Apr 2003 8:42 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.06	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.70	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	0.08	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.40	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform	16.60	175431	3.38 ug/L	5.67	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.36	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.29	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	0.27	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.19	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.50	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	0.39	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	72.60	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9B-1.14 18-May-98

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

Field Blank

Lab Name: FMETL Project: Streams

NJDEP#: 13461 Case No.: 30134 Location: 1stQtr' SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3013402

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013384.D

Level: (low/med) LOW Date Received: 3/24/2003

% Moisture: not dec. Date Analyzed: 4/2/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013240.D**	Sample Name	**3011803**
Operator	**Skelton**	Field ID	**Dupe**
Date Acquired	**19 Mar 2003 5:23 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.06	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.70	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	0.08	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.40	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone	9.34	44865	2.42 ug/L	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	15.58	87445	1.52 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.36	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.29	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	0.27	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.19	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.50	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	0.39	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	72.60	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9B-1.14 18-May-98

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013240.D**	Sample Name	**3011803**
Operator	**Skelton**	Field ID	**Dupe**
Date Acquired	**19 Mar 2003 5:23 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.67	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone	9.34	44865	2.42 ug/L	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	15.58	87445	1.52 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9-6 2Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

Dupe

Lab Name: FMETL Project: Streams

NJDEP#: 13461 Case No.: 30118 Location: 1stQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3011803

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013240.D

Level: (low/med) LOW Date Received: 3/13/2003

% Moisture: not dec. Date Analyzed: 3/19/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013385.D**	Sample Name	**3013403**
Operator	**Skelton**	Field ID	**Dupe**
Date Acquired	**2 Apr 2003 9:23 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.67	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9-6 2Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013385.D**	Sample Name	**3013403**
Operator	**Skelton**	Field ID	**Dupe**
Date Acquired	**2 Apr 2003 9:23 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.06	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.70	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	0.08	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.40	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.36	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.29	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	0.27	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.19	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.50	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	0.39	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	72.60	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9B-1.14 18-May-98

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **Dupe**

Lab Name: FMETL Project: Streams

NJDEP#: 13461 Case No.: 30134 Location: 1stQtr' SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3013403

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013385.D

Level: (low/med) LOW Date Received: 3/24/2003

% Moisture: not dec. Date Analyzed: 4/2/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013391.D**	Sample Name	**3013409**
Operator	**Skelton**	Field ID	**StreamSite#03**
Date Acquired	**3 Apr 2003 1:23 am**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.06	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.70	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	0.08	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.40	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.36	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.29	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	0.27	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.19	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.50	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	0.39	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	72.60	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9B-1.14 18-May-98

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **StreamSite#03**

Lab Name: FMETL Project: Streams

NJDEP#: 13461 Case No.: 30134 Location: 1stQtr' SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3013409

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013391.D

Level: (low/med) LOW Date Received: 3/24/2003

% Moisture: not dec. Date Analyzed: 4/3/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013254.D**	Sample Name	**3011817**
Operator	**Skelton**	Field ID	**StreamSite#04**
Date Acquired	**20 Mar 2003 2:42 am**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.67	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	15.57	26299	0.57 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene	19.82	18660	0.51 ug/L	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	24.46	85634	2.33 ug/L	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9-6 2Sept-97

Qualifiers

B = Compound found in related blank

E = Value above linear range

D = Value from dilution

PQL = Practical Quantitation Limit

MDL = Method Detection Limit

NLE = No Limit Established

R.T. = Retention Time

R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

StreamSite#04

Lab Name: FMETL Project: Streams

NJDEP#: 13461 Case No.: 30118 Location: 1stQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3011817

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013254.D

Level: (low/med) LOW Date Received: 3/13/2003

% Moisture: not dec. Date Analyzed: 3/20/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013255.D**	Sample Name	**3011818**
Operator	**Skelton**	Field ID	**StreamSite#05**
Date Acquired	**20 Mar 2003 3:21 am**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.67	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	15.57	36932	0.81 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene	19.83	25426	0.71 ug/L	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	24.46	113759	3.08 ug/L	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9-6 2Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **StreamSite#05**

Lab Name: FMETL Project: Streams

NJDEP#: 13461 Case No.: 30118 Location: 1stQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3011818

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013255.D

Level: (low/med) LOW Date Received: 3/13/2003

% Moisture: not dec. Date Analyzed: 3/20/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013252.D**	Sample Name	**3011815**
Operator	**Skelton**	Field ID	**StreamSite#07**
Date Acquired	**20 Mar 2003 1:22 am**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.67	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	24.46	61445	1.61 ug/L	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9-6 2Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **StreamSite#07**

Lab Name: FMETL Project: Streams

NJDEP#: 13461 Case No.: 30118 Location: 1stQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3011815

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013252.D

Level: (low/med) LOW Date Received: 3/13/2003

% Moisture: not dec. Date Analyzed: 3/20/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013244.D**	Sample Name	**3011807**
Operator	**Skelton**	Field ID	**StreamSite#09**
Date Acquired	**19 Mar 2003 8:03 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.67	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	15.57	489889	9.40 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9-6 2Sept-97

Qualifiers

B = Compound found in related blank

E = Value above linear range

D = Value from dilution

PQL = Practical Quantitation Limit

MDL = Method Detection Limit

NLE = No Limit Established

R.T. = Retention Time

R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **StreamSite#09**

Lab Name: FMETL Project: Streams

NJDEP#: 13461 Case No.: 30118 Location: 1stQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3011807

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013244.D

Level: (low/med) LOW Date Received: 3/13/2003

% Moisture: not dec. Date Analyzed: 3/19/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013248.D**	Sample Name	**3011811**
Operator	**Skelton**	Field ID	**StreamSite#11**
Date Acquired	**19 Mar 2003 10:43 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.06	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether	12.04	65247	0.79 ug/L	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.70	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride	4.81	146976	3.37 ug/L	0.08	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.40	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	15.57	1239705	24.28 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.36	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.29	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene	19.81	26355	0.67 ug/L	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	0.27	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.19	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.50	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	0.39	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	72.60	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9B-1.14 18-May-98

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **StreamSite#11**

Lab Name: FMETL Project: Streams

NJDEP#: 13461 Case No.: 30118 Location: 1stQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3011811

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013248.D

Level: (low/med) LOW Date Received: 3/13/2003

% Moisture: not dec. Date Analyzed: 3/19/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013246.D**	Sample Name	**3011809**
Operator	**Skelton**	Field ID	**StreamSite#12**
Date Acquired	**19 Mar 2003 9:23 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.06	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether	12.02	96643	1.18 ug/L	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.70	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride	4.82	56058	1.30 ug/L	0.08	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.40	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	15.56	477646	9.43 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.36	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.29	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	0.27	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.19	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.50	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	0.39	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	72.60	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9B-1.14 18-May-98

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **StreamSite#12**

Lab Name: FMETL Project: Streams

NJDEP#: 13461 Case No.: 30118 Location: 1stQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3011809

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013246.D

Level: (low/med) LOW Date Received: 3/13/2003

% Moisture: not dec. Date Analyzed: 3/19/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013393.D**	Sample Name	**3013411**
Operator	**Skelton**	Field ID	**StreamSite#13**
Date Acquired	**3 Apr 2003 2:44 am**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.06	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.70	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	0.08	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.40	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.36	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.29	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	0.27	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.19	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.50	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	0.39	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	72.60	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9B-1.14 18-May-98

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

StreamSite#13

Lab Name: FMETL Project: Streams

NJDEP#: 13461 Case No.: 30134 Location: 1stQtr' SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3013411

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013393.D

Level: (low/med) LOW Date Received: 3/24/2003

% Moisture: not dec. Date Analyzed: 4/3/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013392.D**	Sample Name	**3013410**
Operator	**Skelton**	Field ID	**StreamSite#14**
Date Acquired	**3 Apr 2003 2:03 am**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.06	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.70	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	0.08	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.40	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.36	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.29	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	0.27	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.19	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.50	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	0.39	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	72.60	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9B-1.14 18-May-98

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

StreamSite#14

Lab Name: FMETL Project: Streams

NJDEP#: 13461 Case No.: 30134 Location: 1stQtr' SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3013410

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013392.D

Level: (low/med) LOW Date Received: 3/24/2003

% Moisture: not dec. Date Analyzed: 4/3/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013386.D**	Sample Name	**3013404**
Operator	**Skelton**	Field ID	**StreamSite#15**
Date Acquired	**2 Apr 2003 10:03 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.06	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.70	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	0.08	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.40	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	15.56	51178	1.44 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.36	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.29	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene	19.83	31491	1.11 ug/L	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	0.27	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.19	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.50	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	24.46	119363	3.96 ug/L	0.39	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	72.60	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9B-1.14 18-May-98

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **StreamSite#15**

Lab Name: FMETL Project: Streams

NJDEP#: 13461 Case No.: 30134 Location: 1stQtr' SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3013404

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013386.D

Level: (low/med) LOW Date Received: 3/24/2003

% Moisture: not dec. Date Analyzed: 4/2/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013250.D**	Sample Name	**3011813**
Operator	**Skelton**	Field ID	**StreamSite#16**
Date Acquired	**20 Mar 2003 12:03 am**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.67	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	15.56	43662	0.90 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene	19.83	28352	0.74 ug/L	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	24.46	125930	3.21 ug/L	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9-6 2Sept-97

Qualifiers

B = Compound found in related blank

E = Value above linear range

D = Value from dilution

PQL = Practical Quantitation Limit

MDL = Method Detection Limit

NLE = No Limit Established

R.T. = Retention Time

R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **StreamSite#16**

Lab Name: FMETL Project: Streams

NJDEP#: 13461 Case No.: 30118 Location: 1stQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3011813

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013250.D

Level: (low/med) LOW Date Received: 3/13/2003

% Moisture: not dec. Date Analyzed: 3/20/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013389.D**	Sample Name	**3013407**
Operator	**Skelton**	Field ID	**StreamSite#17**
Date Acquired	**3 Apr 2003 12:03 am**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.67	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9-6 2Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **StreamSite#17**

Lab Name: FMETL Project: Streams

NJDEP#: 13461 Case No.: 30134 Location: 1stQtr' SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3013407

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013389.D

Level: (low/med) LOW Date Received: 3/24/2003

% Moisture: not dec. Date Analyzed: 4/3/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013247.D**	Sample Name	**3011810**
Operator	**Skelton**	Field ID	**StreamSite#18**
Date Acquired	**19 Mar 2003 10:03 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.06	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether	12.04	56208	0.67 ug/L	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.70	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride	4.81	102888	2.33 ug/L	0.08	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.40	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	15.57	915527	17.75 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.36	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.29	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene	19.82	20702	0.52 ug/L	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	0.27	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.19	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.50	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	0.39	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	72.60	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9B-1.14 18-May-98

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **StreamSite#18**

Lab Name: FMETL Project: Streams

NJDEP#: 13461 Case No.: 30118 Location: 1stQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3011810

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013247.D

Level: (low/med) LOW Date Received: 3/13/2003

% Moisture: not dec. Date Analyzed: 3/19/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013245.D**	Sample Name	**3011808**
Operator	**Skelton**	Field ID	**StreamSite#19**
Date Acquired	**19 Mar 2003 8:44 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.67	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride	4.80	71594	1.61 ug/L	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	15.57	699827	13.43 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene	19.82	18362	0.44 ug/L	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9-6 2Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **StreamSite#19**

Lab Name: FMETL Project: Streams

NJDEP#: 13461 Case No.: 30118 Location: 1stQtr SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 3011808

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013245.D

Level: (low/med) LOW Date Received: 3/13/2003

% Moisture: not dec. _____ Date Analyzed: 3/19/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013243.D**	Sample Name	**3011806**
Operator	**Skelton**	Field ID	**StreamSite#20**
Date Acquired	**19 Mar 2003 7:24 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.67	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	24.46	26204	0.64 ug/L	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9-6 2Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **StreamSite#20**

Lab Name: FMETL Project: Streams

NJDEP#: 13461 Case No.: 30118 Location: 1stQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3011806

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013243.D

Level: (low/med) LOW Date Received: 3/13/2003

% Moisture: not dec. Date Analyzed: 3/19/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013242.D**	Sample Name	**3011805**
Operator	**Skelton**	Field ID	**StreamSite#21**
Date Acquired	**19 Mar 2003 6:43 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.67	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	24.47	25875	0.63 ug/L	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9-6 2Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

StreamSite#21

Lab Name: FMETL Project: Streams

NJDEP#: 13461 Case No.: 30118 Location: 1stQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3011805

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013242.D

Level: (low/med) LOW Date Received: 3/13/2003

% Moisture: not dec. Date Analyzed: 3/19/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013241.D**	Sample Name	**3011804**
Operator	**Skelton**	Field ID	**StreamSite#22**
Date Acquired	**19 Mar 2003 6:03 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.67	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	15.57	81874	1.57 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9-6 2Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **StreamSite#22**

Lab Name: FMETL Project: Streams

NJDEP#: 13461 Case No.: 30118 Location: 1stQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3011804

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013241.D

Level: (low/med) LOW Date Received: 3/13/2003

% Moisture: not dec. Date Analyzed: 3/19/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013387.D**	Sample Name	**3013405**
Operator	**Skelton**	Field ID	**StreamSite#23**
Date Acquired	**2 Apr 2003 10:43 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.67	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	15.57	49814	1.41 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene	19.84	30070	1.05 ug/L	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	24.46	121665	4.01 ug/L	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9-6 2Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **StreamSite#23**

Lab Name: FMETL Project: Streams

NJDEP#: 13461 Case No.: 30134 Location: 1stQtr' SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3013405

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013387.D

Level: (low/med) LOW Date Received: 3/24/2003

% Moisture: not dec. Date Analyzed: 4/2/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013249.D**	Sample Name	**3011812**
Operator	**Skelton**	Field ID	**StreamSite#24**
Date Acquired	**19 Mar 2003 11:23 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.67	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	15.56	48174	0.99 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene	19.82	31677	0.83 ug/L	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	24.46	137763	3.50 ug/L	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9-6 2Sept-97

Qualifiers

B = Compound found in related blank

E = Value above linear range

D = Value from dilution

PQL = Practical Quantitation Limit

MDL = Method Detection Limit

NLE = No Limit Established

R.T. = Retention Time

R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **StreamSite#24**

Lab Name: FMETL Project: Streams

NJDEP#: 13461 Case No.: 30118 Location: 1stQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3011812

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013249.D

Level: (low/med) LOW Date Received: 3/13/2003

% Moisture: not dec. Date Analyzed: 3/19/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013388.D**	Sample Name	**3013406**
Operator	**Skelton**	Field ID	**StreamSite#25**
Date Acquired	**2 Apr 2003 11:23 pm**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.67	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	24.46	63938	2.22 ug/L	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9-6 2Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID.

StreamSite#25

Lab Name: FMETL Project: Streams

NJDEP#: 13461 Case No.: 30134 Location: 1stQtr' SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3013406

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013388.D

Level: (low/med) LOW Date Received: 3/24/2003

% Moisture: not dec. Date Analyzed: 4/2/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013390.D**	Sample Name	**3013408**
Operator	**Skelton**	Field ID	**StreamSite#26**
Date Acquired	**3 Apr 2003 12:43 am**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.67	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9-6 2Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **StreamSite#26**

Lab Name: FMETL Project: Streams

NJDEP#: 13461 Case No.: 30134 Location: 1stQtr' SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3013408

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013390.D

Level: (low/med) LOW Date Received: 3/24/2003

% Moisture: not dec. Date Analyzed: 4/3/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013251.D**	Sample Name	**3011814**
Operator	**Skelton**	Field ID	**StreamSite#27**
Date Acquired	**20 Mar 2003 12:42 am**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.67	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	24.45	66771	1.71 ug/L	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9-6 2Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **StreamSite#27**

Lab Name: FMETL Project: Streams

NJDEP#: 13461 Case No.: 30118 Location: 1stQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3011814

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013251.D

Level: (low/med) LOW Date Received: 3/13/2003

% Moisture: not dec. Date Analyzed: 3/20/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification #13461

Data File	**VB013253.D**	Sample Name	**3011816**
Operator	**Skelton**	Field ID	**StreamSite#28**
Date Acquired	**20 Mar 2003 2:02 am**	Sample Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/l)*	MDL	RL	Qualifiers
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.67	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-34-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	15.57	33949	0.73 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
71-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene	19.82	22276	0.60 ug/L	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
124-48-1	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	24.46	103491	2.78 ug/L	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
124-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
95-47-6	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Results between MDL and RL are estimated values

*Water Quality Criteria as per NJAC 7:9-6 2Sept-97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Reporting Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab ID. **StreamSite#28**

Lab Name: FMETL Project: Streams

NJDEP#: 13461 Case No.: 30118 Location: 1stQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3011816

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VB013253.D

Level: (low/med) LOW Date Received: 3/13/2003

% Moisture: not dec. Date Analyzed: 3/20/2003

GC Column: RTX502. ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

PCBs

TABULATED ANALYTICAL REPORT
POLYCHLORINATED BIPHENYLS
EPA METHOD 8082

mb 031903

MATRIX: Aqueous
Date Extracted: 3/19/03
Ext. Batch: 031903
Filename: PCB10967.D
Date Analyzed: 3/27/03

Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (mg/L)	MDL (mg/L)
12674-11-2	Aroclor 1016	ND	0.0112
11104-28-2	Aroclor 1221	ND	0.0206
12672-29-6	Aroclor 1248	ND	0.0140
53469-21-9	Aroclor 1242	ND	0.0160
11141-16-5	Aroclor 1232	ND	0.0064
11097-69-1	Aroclor 1254	ND	0.0040
11096-82-5	Aroclor 1260	ND	0.0036

MDL - Method Detection Limit
ND = Not detected at or above MDL

Initial Vol..(ml)) 1000
Final Vol.(ml) 10

COMMENTS:

TABULATED ANALYTICAL REPORT
POLYCHLORINATED BIPHENYLS
EPA METHOD 8082

mb 032003

MATRIX: Aqueous
Date Extracted: 3/20/03
Ext. Batch: 032003
Filename: PCB10985.D
Date Analyzed: 3/28/03
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (mg/L)	MDL (mg/L)
12674-11-2	Aroclor 1016	ND	0.0112
11104-28-2	Aroclor 1221	ND	0.0206
12672-29-6	Aroclor 1248	ND	0.0140
53469-21-9	Aroclor 1242	ND	0.0160
11141-16-5	Aroclor 1232	ND	0.0064
11097-69-1	Aroclor 1254	ND	0.0040
11096-82-5	Aroclor 1260	ND	0.0036

MDL - Method Detection Limit
ND = Not detected at or above MDL

Initial Vol..(ml)) 1000
Final Vol.(ml) 10

COMMENTS:

TABULATED ANALYTICAL REPORT
POLYCHLORINATED BIPHENYLS
EPA METHOD 8082

mb 032803

MATRIX: Aqueous
Date Extracted: 3/28/03
Ext. Batch: 032803
Filename: PCB11012.D
Date Analyzed: 3/31/03

Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (mg/L)	MDL (mg/L)
12674-11-2	Aroclor 1016	ND	0.0112
11104-28-2	Aroclor 1221	ND	0.0206
12672-29-6	Aroclor 1248	ND	0.0140
53469-21-9	Aroclor 1242	ND	0.0160
11141-16-5	Aroclor 1232	ND	0.0064
11097-69-1	Aroclor 1254	ND	0.0040
11096-82-5	Aroclor 1260	ND	0.0036

MDL - Method Detection Limit
ND = Not detected at or above MDL

Initial Vol..(ml)) **1000**
Final Vol.(ml) **10**

COMMENTS:

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 1st Qrtr. '
Client ID: Field Blank
Lab ID: 3011802
Filename: PCB10969.D
Lab Project No: 30118

MATRIX: Aqueous
Date Extracted: 3/19/03
Ext. Batch: 031903
Date Analyzed: 3/27/03
DILUTION: 1

Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0683
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.0666
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0648
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.0485
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0544
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0608
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0732

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 1st. Qrtr.
Client ID: Field Blank
Lab ID: 3013402
Filename: PCB11014.D
Lab Project No: 30134

MATRIX: Aqueous
Date Extracted: 3/28/03
Ext. Batch: 032803
Date Analyzed: 3/31/03
DILUTION: 1
QC Batch: 32803
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0683
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.0666
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0648
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.0485
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0544
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0608
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0732

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 1st Qrtr. '
Client ID: Dupe
Lab ID: 3011803
Filename: PCB10970.D
Lab Project No: 30118

MATRIX: Aqueous
Date Extracted: 3/19/03
Ext. Batch: 031903
Date Analyzed: 3/27/03
DILUTION: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0683
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.0666
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0648
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.0485
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0544
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0608
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0732

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 1st. Qrtr.
Client ID: Dupe
Lab ID: 3013403
Filename: PCB11015.D
Lab Project No: 30134

MATRIX: Aqueous
Date Extracted: 3/28/03
Ext. Batch: 032803
Date Analyzed: 3/31/03
DILUTION: 1
QC Batch: 32803
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0683
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.0666
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0648
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.0485
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0544
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0608
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0732

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client:	**U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.**	**MATRIX:**	**Aqueous**
Location:	**Streams 1st. Qrtr.**	**Date Extracted:**	**3/28/03**
Client ID:	**Stream Site # 03**	**Ext. Batch:**	**032803**
Lab ID:	**3013409**	**Date Analyzed:**	**3/31/03**
Filename:	**PCB11021.D**	**DILUTION:**	**1**
Lab Project No:	**30134**	**QC Batch:**	**32803**
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	**AROCLOR 1016**	**ND**	0.05	NA		0.0683
11104-28-2	**AROCLOR 1221**	**ND**	0.05	NA		0.0666
11141-16-5	**AROCLOR 1232**	**ND**	0.05	NA		0.0648
53469-21-9	**AROCLOR 1242**	**ND**	0.05	NA		0.0485
12672-29-6	**AROCLOR 1248**	**ND**	0.05	NA		0.0544
11097-69-1	**AROCLOR 1254**	**ND**	0.05	NA		0.0608
11096-82-5	**AROCLOR 1260**	**ND**	0.05	NA		0.0732

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client:	**U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.**	**MATRIX:**	**Aqueous**
Location:	**Streams 1st Qrtr. '**	**Date Extracted:**	**3/20/03**
Client ID:	**Stream Site # 4**	**Ext. Batch:**	**032003**
Lab ID:	**3011817**	**Date Analyzed:**	**3/28/03**
Filename:	**PCB10989.D**	**DILUTION:**	**1**
Lab Project No:	**30118**		
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	**AROCLOR 1016**	**ND**	0.05	NA		0.0683
11104-28-2	**AROCLOR 1221**	**ND**	0.05	NA		0.0666
11141-16-5	**AROCLOR 1232**	**ND**	0.05	NA		0.0648
53469-21-9	**AROCLOR 1242**	**ND**	0.05	NA		0.0485
12672-29-6	**AROCLOR 1248**	**ND**	0.05	NA		0.0544
11097-69-1	**AROCLOR 1254**	**ND**	0.05	NA		0.0608
11096-82-5	**AROCLOR 1260**	**ND**	0.05	NA		0.0732

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) **1000.00**
Final Vol.(ml) **10.00**

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 1st Qrtr. '
Client ID: Stream Site # 5
Lab ID: 3011818
Filename: PCB10990.D
Lab Project No: 30118

MATRIX: Aqueous
Date Extracted: 3/20/03
Ext. Batch: 032003
Date Analyzed: 3/28/03
DILUTION: 1

Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0683
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.0666
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0648
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.0485
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0544
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0608
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0732

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 1st Qrtr. '
Client ID: Stream Site # 7
Lab ID: 3011815
Filename: PCB10987.D
Lab Project No: 30118

MATRIX: Aqueous
Date Extracted: 3/20/03
Ext. Batch: 032003
Date Analyzed: 3/28/03
DILUTION: 1

Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0683
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.0666
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0648
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.0485
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0544
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0608
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0732

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 1st Qrtr. '
Client ID: Stream Site # 11
Lab ID: 3011811
Filename: PCB10978.D
Lab Project No: 30118

MATRIX: Aqueous
Date Extracted: 3/19/03
Ext. Batch: 031903
Date Analyzed: 3/27/03
DILUTION: 1

Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0683
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.0666
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0648
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.0485
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0544
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0608
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0732

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client:	**U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.**	**MATRIX:**	**Aqueous**
Location:	**Streams 1st Qrtr. '**	**Date Extracted:**	**3/19/03**
Client ID:	**Stream Site # 12**	**Ext. Batch:**	**031903**
Lab ID:	**3011809**	**Date Analyzed:**	**3/27/03**
Filename:	**PCB10976.D**	**DILUTION:**	**1**
Lab Project No:	**30118**		
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	**AROCLOR 1016**	**ND**	0.05	NA		0.0683
11104-28-2	**AROCLOR 1221**	**ND**	0.05	NA		0.0666
11141-16-5	**AROCLOR 1232**	**ND**	0.05	NA		0.0648
53469-21-9	**AROCLOR 1242**	**ND**	0.05	NA		0.0485
12672-29-6	**AROCLOR 1248**	**ND**	0.05	NA		0.0544
11097-69-1	**AROCLOR 1254**	**ND**	0.05	NA		0.0608
11096-82-5	**AROCLOR 1260**	**ND**	0.05	NA		0.0732

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 1st. Qrtr.
Client ID: Stream Site # 13
Lab ID: 3013411
Filename: PCB11023.D
Lab Project No: 30134

MATRIX: Aqueous
Date Extracted: 3/28/03
Ext. Batch: 032803
Date Analyzed: 3/31/03
DILUTION: 1
QC Batch: 32803
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0683
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.0666
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0648
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.0485
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0544
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0608
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0732

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client:	**U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.**	**MATRIX:**	**Aqueous**
Location:	**Streams 1st. Qrtr.**	**Date Extracted:**	**3/28/03**
Client ID:	**Stream Site # 14**	**Ext. Batch:**	**032803**
Lab ID:	**3013410**	**Date Analyzed:**	**3/31/03**
Filename:	**PCB11022.D**	**DILUTION:**	**1**
Lab Project No:	**30134**	**QC Batch:**	**32803**
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	**AROCLOR 1016**	**ND**	0.05	NA		0.0683
11104-28-2	**AROCLOR 1221**	**ND**	0.05	NA		0.0666
11141-16-5	**AROCLOR 1232**	**ND**	0.05	NA		0.0648
53469-21-9	**AROCLOR 1242**	**ND**	0.05	NA		0.0485
12672-29-6	**AROCLOR 1248**	**ND**	0.05	NA		0.0544
11097-69-1	**AROCLOR 1254**	**ND**	0.05	NA		0.0608
11096-82-5	**AROCLOR 1260**	**ND**	0.05	NA		0.0732

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client:	**U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.**	**MATRIX:**	**Aqueous**
Location:	**Streams 1st. Qrtr.**	**Date Extracted:**	**3/28/03**
Client ID:	**Stream Site 15**	**Ext. Batch:**	**032803**
Lab ID:	**3013404**	**Date Analyzed:**	**3/31/03**
Filename:	**PCB11016.D**	**DILUTION:**	**1**
Lab Project No:	**30134**	**QC Batch:**	**32803**
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	**AROCLOR 1016**	**ND**	0.05	NA		0.0683
11104-28-2	**AROCLOR 1221**	**ND**	0.05	NA		0.0666
11141-16-5	**AROCLOR 1232**	**ND**	0.05	NA		0.0648
53469-21-9	**AROCLOR 1242**	**ND**	0.05	NA		0.0485
12672-29-6	**AROCLOR 1248**	**ND**	0.05	NA		0.0544
11097-69-1	**AROCLOR 1254**	**ND**	0.05	NA		0.0608
11096-82-5	**AROCLOR 1260**	**ND**	0.05	NA		0.0732

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) **1000.00**
Final Vol.(ml) **10.00**

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 1st Qrtr. '
Client ID: Stream Site # 16
Lab ID: 3011813
Filename: PCB10980.D
Lab Project No: 30118

MATRIX: Aqueous
Date Extracted: 3/19/03
Ext. Batch: 031903
Date Analyzed: 3/27/03
DILUTION: 1

Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	**AROCLOR 1016**	**ND**	0.05	NA		0.0683
11104-28-2	**AROCLOR 1221**	**ND**	0.05	NA		0.0666
11141-16-5	**AROCLOR 1232**	**ND**	0.05	NA		0.0648
53469-21-9	**AROCLOR 1242**	**ND**	0.05	NA		0.0485
12672-29-6	**AROCLOR 1248**	**ND**	0.05	NA		0.0544
11097-69-1	**AROCLOR 1254**	**ND**	0.05	NA		0.0608
11096-82-5	**AROCLOR 1260**	**ND**	0.05	NA		0.0732

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) **1000.00**
Final Vol.(ml) **10.00**

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client:	**U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.**	**MATRIX:**	**Aqueous**
Location:	**Streams 1st. Qrtr.**	**Date Extracted:**	**3/28/03**
Client ID:	**Stream Site # 17**	**Ext. Batch:**	**032803**
Lab ID:	**3013407**	**Date Analyzed:**	**3/31/03**
Filename:	**PCB11019.D**	**DILUTION:**	**1**
Lab Project No:	**30134**	**QC Batch:**	**32803**
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	**AROCLOR 1016**	**ND**	0.05	NA		0.0683
11104-28-2	**AROCLOR 1221**	**ND**	0.05	NA		0.0666
11141-16-5	**AROCLOR 1232**	**ND**	0.05	NA		0.0648
53469-21-9	**AROCLOR 1242**	**ND**	0.05	NA		0.0485
12672-29-6	**AROCLOR 1248**	**ND**	0.05	NA		0.0544
11097-69-1	**AROCLOR 1254**	**ND**	0.05	NA		0.0608
11096-82-5	**AROCLOR 1260**	**ND**	0.05	NA		0.0732

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) **1000.00**
Final Vol.(ml) **10.00**

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client:	**U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.**	**MATRIX:**	**Aqueous**
Location:	**Streams 1st Qrtr. '**	**Date Extracted:**	**3/19/03**
Client ID:	**Stream Site # 18**	**Ext. Batch:**	**031903**
Lab ID:	**3011810**	**Date Analyzed:**	**3/27/03**
Filename:	**PCB10977.D**	**DILUTION:**	**1**
Lab Project No:	**30118**		
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	**AROCLOR 1016**	**ND**	0.05	NA		0.0683
11104-28-2	**AROCLOR 1221**	**ND**	0.05	NA		0.0666
11141-16-5	**AROCLOR 1232**	**ND**	0.05	NA		0.0648
53469-21-9	**AROCLOR 1242**	**ND**	0.05	NA		0.0485
12672-29-6	**AROCLOR 1248**	**ND**	0.05	NA		0.0544
11097-69-1	**AROCLOR 1254**	**ND**	0.05	NA		0.0608
11096-82-5	**AROCLOR 1260**	**ND**	0.05	NA		0.0732

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) **1000.00**
Final Vol.(ml) **10.00**

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 1st Qrtr. '
Clicnt ID: Stream Site # 19
Lab ID: 3011808
Filename: PCB10975.D
Lab Project No: 30118

MATRIX: Aqueous
Date Extracted: 3/19/03
Ext. Batch: 031903
Date Analyzed: 3/27/03
DILUTION: 1

Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0683
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.0666
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0648
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.0485
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0544
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0608
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0732

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client:	**U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.**	**MATRIX:**	**Aqueous**
Location:	**Streams 1st Qrtr. '**	**Date Extracted:**	**3/19/03**
Client ID:	**Stream Site # 20**	**Ext. Batch:**	**031903**
Lab ID:	**3011806**	**Date Analyzed:**	**3/27/03**
Filename:	**PCB10973.D**	**DILUTION:**	**1**
Lab Project No:	**30118**		
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	**AROCLOR 1016**	**ND**	0.05	NA		0.0683
11104-28-2	**AROCLOR 1221**	**ND**	0.05	NA		0.0666
11141-16-5	**AROCLOR 1232**	**ND**	0.05	NA		0.0648
53469-21-9	**AROCLOR 1242**	**ND**	0.05	NA		0.0485
12672-29-6	**AROCLOR 1248**	**ND**	0.05	NA		0.0544
11097-69-1	**AROCLOR 1254**	**ND**	0.05	NA		0.0608
11096-82-5	**AROCLOR 1260**	**ND**	0.05	NA		0.0732

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) **1000.00**
Final Vol.(ml) **10.00**

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 1st Qrtr. '
Client ID: Stream Site # 21
Lab ID: 3011805
Filename: PCB10972.D
Lab Project No: 30118

MATRIX: Aqueous
Date Extracted: 3/19/03
Ext. Batch: 031903
Date Analyzed: 3/27/03
DILUTION: 1

Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0683
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.0666
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0648
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.0485
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0544
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0608
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0732

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 1st Qrtr. '
Client ID: Stream Site # 22
Lab ID: 3011804
Filename: PCB10971.D
Lab Project No: 30118

MATRIX: Aqueous
Date Extracted: 3/19/03
Ext. Batch: 031903
Date Analyzed: 3/27/03
DILUTION: 1

Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0683
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.0666
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0648
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.0485
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0544
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0608
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0732

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 1st. Qrtr.
Client ID: Stream Site # 23
Lab ID: 3013405
Filename: PCB11017.D
Lab Project No: 30134

MATRIX: Aqueous
Date Extracted: 3/28/03
Ext. Batch: 032803
Date Analyzed: 3/31/03
DILUTION: 1
QC Batch: 32803
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0683
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.0666
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0648
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.0485
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0544
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0608
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0732

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 1st Qrtr. '
Client ID: Stream Site # 24
Lab ID: 3011812
Filename: PCB10979.D
Lab Project No: 30118

MATRIX: Aqueous
Date Extracted: 3/19/03
Ext. Batch: 031903
Date Analyzed: 3/27/03
DILUTION: 1

Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0683
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.0666
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0648
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.0485
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0544
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0608
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0732

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 1st. Qrtr.
Client ID: Stream Site # 25
Lab ID: 3013406
Filename: PCB11018.D
Lab Project No: 30134

MATRIX: Aqueous
Date Extracted: 3/28/03
Ext. Batch: 032803
Date Analyzed: 3/31/03
DILUTION: 1
QC Batch: 32803
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0683
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.0666
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0648
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.0485
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0544
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0608
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0732

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client:	**U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.**	**MATRIX:**	**Aqueous**
Location:	**Streams 1st. Qrtr.**	**Date Extracted:**	**3/28/03**
Client ID:	**Stream Site # 26**	**Ext. Batch:**	**032803**
Lab ID:	**3013408**	**Date Analyzed:**	**3/31/03**
Filename:	**PCB11020.D**	**DILUTION:**	**1**
Lab Project No:	**30134**	**QC Batch:**	**32803**
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	**AROCLOR 1016**	**ND**	0.05	NA		0.0683
11104-28-2	**AROCLOR 1221**	**ND**	0.05	NA		0.0666
11141-16-5	**AROCLOR 1232**	**ND**	0.05	NA		0.0648
53469-21-9	**AROCLOR 1242**	**ND**	0.05	NA		0.0485
12672-29-6	**AROCLOR 1248**	**ND**	0.05	NA		0.0544
11097-69-1	**AROCLOR 1254**	**ND**	0.05	NA		0.0608
11096-82-5	**AROCLOR 1260**	**ND**	0.05	NA		0.0732

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 1st Qrtr. '
Client ID: Stream Site # 27
Lab ID: 3011814
Filename: PCB10981.D
Lab Project No: 30118

MATRIX: Aqueous
Date Extracted: 3/19/03
Ext. Batch: 031903
Date Analyzed: 3/27/03
DILUTION: 1

Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	**AROCLOR 1016**	**ND**	0.05	NA		0.0683
11104-28-2	**AROCLOR 1221**	**ND**	0.05	NA		0.0666
11141-16-5	**AROCLOR 1232**	**ND**	0.05	NA		0.0648
53469-21-9	**AROCLOR 1242**	**ND**	0.05	NA		0.0485
12672-29-6	**AROCLOR 1248**	**ND**	0.05	NA		0.0544
11097-69-1	**AROCLOR 1254**	**ND**	0.05	NA		0.0608
11096-82-5	**AROCLOR 1260**	**ND**	0.05	NA		0.0732

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 1st Qrtr. '
Client ID: Stream Site # 28
Lab ID: 3011816
Filename: PCB10988.D
Lab Project No: 30118

MATRIX: Aqueous
Date Extracted: 3/20/03
Ext. Batch: 032003
Date Analyzed: 3/28/03
DILUTION: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0683
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.0666
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0648
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.0485
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0544
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0608
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0732

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 1st Qrtr. '
Client ID: Stream Site # 29
Lab ID: 3011807
Filename: PCB10974.D
Lab Project No: 30118

MATRIX: Aqueous
Date Extracted: 3/19/03
Ext. Batch: 031903
Date Analyzed: 3/27/03
DILUTION: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0683
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.0666
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0648
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.0485
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0544
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0608
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0732

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

WET CHEMISTRY

Stream Water Analysis
1st Quarter 2003

Sample ID	Date Sampled	Stream Site#	pH	Ammonia (mg/L)	Nitrates (mg/L)	Phosphate (mg/L)	Sulfate (mg/L)	DO (mg/L)	T.Coliform (cfu/100ml)	F.Coliform (cfu/100ml)	% Salinity
3011804	03/13/03	22	7.87	ND	0.35	0.06	807	8.91	40	20	12
3011805	03/13/03	21	7.76	0.280	0.82	0.13	228	9.71	420	20	13
3011806	03/13/03	20	7.79	0.283	0.60	0.14	238	9.80	220	60	13
3011807	03/13/03	09	5.74	0.198	2.04	0.14	50.0	1.47	180	20	3
3011808	03/13/03	19	6.32	0.133	2.23	0.14	18.2	8.28	160	60	2
3011809	03/13/03	12	6.12	ND	2.59	0.10	23.2	19.68	140	20	1
3011810	03/13/03	18	6.21	0.107	2.40	0.08	19.4	22.71	200	60	2
3011811	03/13/03	11	6.40	ND	2.61	0.13	18.1	30.62	160	60	2
3011812	03/13/03	24	6.10	0.583	1.20	0.12	27.1	19.62	240	20	3
3011813	03/13/03	16	6.18	0.441	1.17	0.15	27.5	21.93	340	0	2
3011814	03/13/03	27	6.33	0.303	1.24	0.11	26.7	15.87	260	20	2
3011815	03/13/03	07	6.30	0.267	1.26	0.12	25.9	19.34	160	0	2
3011816	03/13/03	28	6.46	0.428	1.20	0.10	30.1	17.05	240	0	3
3011817	03/13/03	04	6.18	0.350	1.44	0.16	33.6	11.06	200	0	2
3011818	03/13/03	05	6.44	0.383	1.21	0.10	26.9	9.12	320	40	2
3013404	03/24/03	15	5.66	ND	ND	0.11	401	3.71	960	140	2
3013405	03/24/03	23	6.08	ND	1.67	0.11	28.7	3.63	1160	40	3
3013406	03/24/03	25	6.16	ND	1.80	0.14	39.5	7.91	920	40	3
3013407	03/24/03	17	6.42	ND	0.90	0.15	25.7	2.93	700	60	2
3013408	03/24/03	26	6.75	ND	0.90	0.10	26.3	5.44	520	40	0
3013409	03/24/03	03	6.75	ND	0.96	0.10	24.4	5.44	300	20	0
3013410	03/24/03	14	6.63	ND	1.12	0.16	25.3	2.89	220	40	2
3013411	03/24/03	13	6.65	ND	1.35	0.16	28.9	3.44	700	0	2

mg/L = Parts Per Million
cfu = Colony Forming Units
ND = Not detected
TNTC = Too Numerous to Count

Completed: 04/21/03
Reviewed: 04/21/03

Daniel K. Wright
Laboratory Director

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
07/17/1997	FMETL	ND	ND	ND	ND						
10/30/1997	FMETL	ND	ND	ND	ND						
02/10/1998	FMETL	ND	ND	ND	ND						
04/21/1998	FMETL	ND	ND	ND	ND						
08/19/1998	FMETL	ND	ND	ND	ND						
11/18/1998	FMETL	ND	ND	1.09	ND						
02/25/1999	FMETL	ND	ND	ND	ND						
06/29/1999	FMETL	ND	ND	ND	ND						
09/22/1999	FMETL	ND	ND	ND	ND						
12/09/1999	FMETL	ND	ND	ND	ND						
03/01/2000	FMETL	ND	ND	ND	ND						
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	ND	ND	ND	ND						
11/20/2000	FMETL	ND	ND	ND	ND						
03/08/2001	FMETL	ND	ND	ND	ND						-
05/16/2001	FMETL	ND	ND	ND	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/05/2002	FMETL	ND	ND	ND	ND						V,P
03/24/2003	FMETL	ND	ND	ND	ND	ND					V,P

SOURCE: 3

Sampling Dates:
07/17/1997 - 03/24/2003

NOTES:

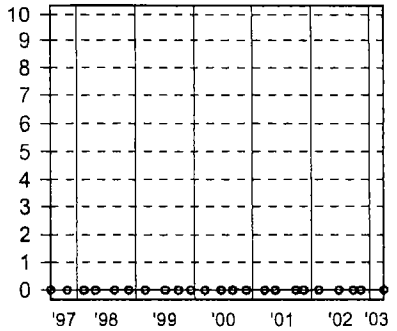
Stream 3 is Fresh-Water.
MeCl limit is 2.49 ug/L.
PCE limit is 0.388 ug/L.

Fort Monmouth

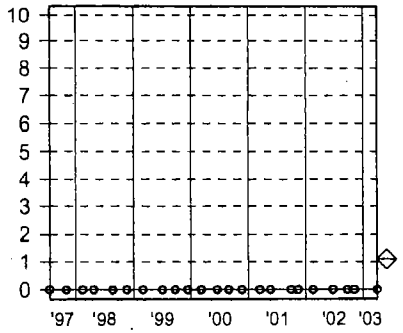
GW Monitoring
Streams

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

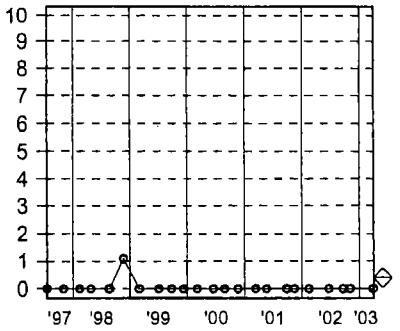
cis-1,2-Dichloroethene
(ug/l)



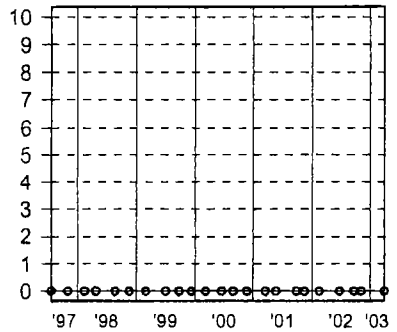
Trichloroethene
(ug/l)



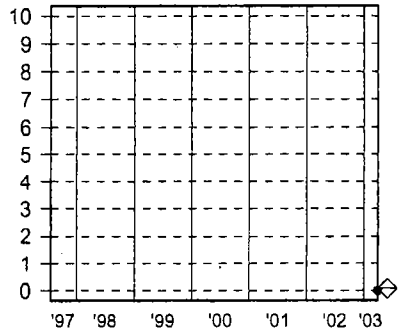
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 3

Sampling Dates:
07/17/1997 - 03/24/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 1 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	2.18	ND	ND	ND						
07/17/1997	FMETL	1.63	ND	1.61	ND						
10/30/1997	FMETL	ND	ND	1.24	ND						
02/10/1998	FMETL	ND	ND	6.61	ND						
04/21/1998	FMETL	ND	ND	4.42	ND						
08/19/1998	FMETL	1.92	1.10	2.85	ND						
11/17/1998	FMETL	1.19	ND	1.62	ND						
02/25/1999	FMETL	ND	ND	5.61	ND						
06/29/1999	FMETL	2.41	1.56	5.27	ND						
09/22/1999	FMETL	2.02	ND	1.85	ND						
12/09/1999	FMETL	ND	ND	ND	ND						
03/01/2000	FMETL	1.23	1.26	6.18	2.18						
06/12/2000	FMETL	ND	ND	4.37	ND						
08/24/2000	FMETL	1.19	1.19	3.19	ND						
11/20/2000	FMETL	ND	ND	3.70	ND						-
03/08/2001	FMETL	ND	ND	2.52	ND						-
05/16/2001	FMETL	ND	ND	2.95	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	1.64	ND						V
06/18/2002	FMETL	ND	ND	1.97	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	ND	ND	ND	ND						V,P
03/13/2003	FMETL	0.57	0.51	2.33	ND	ND					V,P

SOURCE: 4

Sampling Dates:
04/08/1997 - 03/13/2003

NOTES:

PAGE 1 OF 1
Stream 4 is Salt-Water.
MTBE limit is NLE
cis-1,2-Di limit is NLE
TCE limit is 81
PCE limit is 4.29

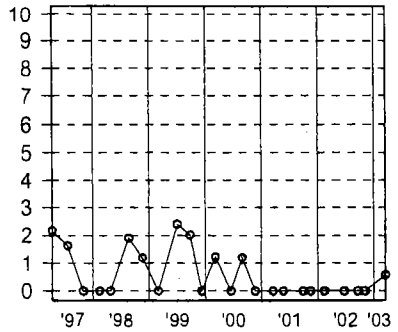
Fort Monmouth

GW Monitoring
Streams

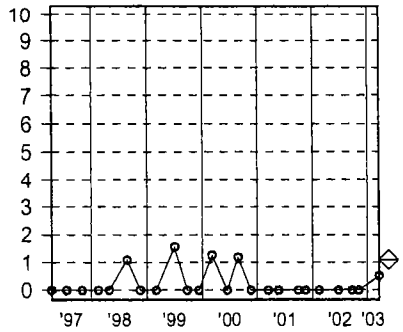
Source 2 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

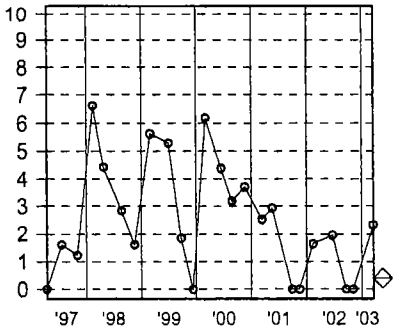
cis-1,2-Dichloroethene
(ug/l)



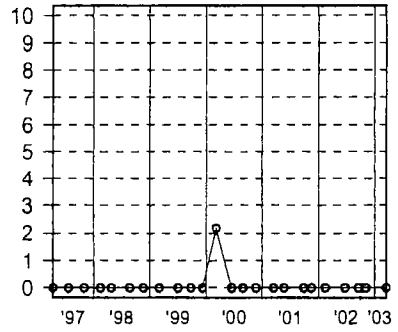
Trichloroethene
(ug/l)



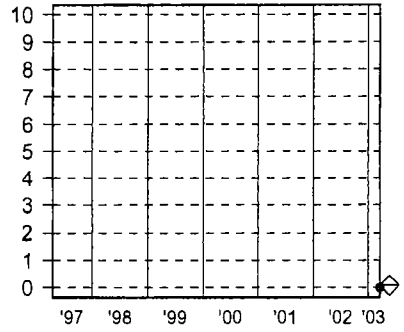
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 4

Sampling Dates:
04/08/1997 - 03/13/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 2 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	1.80	ND	2.28	ND						
07/17/1997	FMETL	3.66	ND	3.54	ND						
10/30/1997	FMETL	1.83	ND	1.70	ND						
02/10/1998	FMETL	ND	ND	6.34	ND						
04/21/1998	FMETL	ND	ND	4.48	ND						
08/19/1998	FMETL	2.28	1.27	3.39	ND						
11/17/1998	FMETL	1.67	ND	2.17	ND						
02/25/1999	FMETL	ND	ND	5.45	ND						
06/29/1999	FMETL	2.74	1.74	6.04	ND						
09/22/1999	FMETL	1.96	ND	1.82	ND						
12/09/1999	FMETL	1.60	ND	3.82	ND						
03/01/2000	FMETL	1.27	1.36	6.62	2.34						
06/12/2000	FMETL	ND	ND	4.38	ND						
08/24/2000	FMETL	1.19	ND	3.44	ND						
11/20/2000	FMETL	ND	ND	3.58	ND						-
03/08/2001	FMETL	ND	ND	ND	ND						-
05/16/2001	FMETL	0.97	ND	4.09	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	1.51	ND	1.99	ND						-
02/11/2002	FMETL	ND	ND	2.44	ND						V
06/18/2002	FMETL	ND	ND	2.39	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	ND	ND	ND	ND						V,P
03/13/2003	FMETL	0.81	0.71	3.08	ND	ND					V,P

SOURCE: 5

Sampling Dates:
04/08/1997 - 03/13/2003

NOTES:

Page 1 of 1
Stream 5 is Salt-Water.
MeCl limit is 1600 ug/L.
cis-1,2-Di limit is NLE.
TCE limit is 81 ug/L.
PCE limit is 4.29 ug/L.
MTBE limit is NLE.

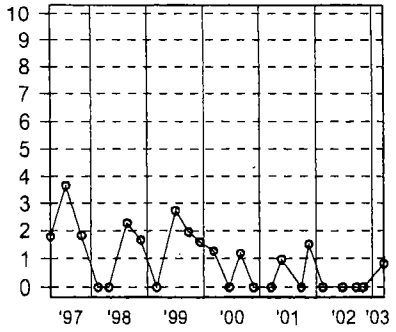
Fort Monmouth

GW Monitoring
Streams

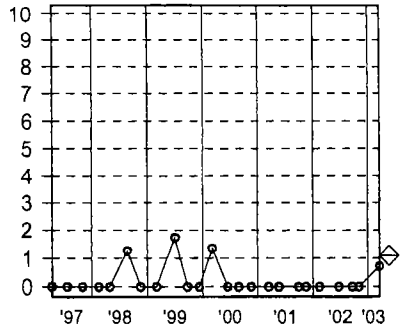
Source 3 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

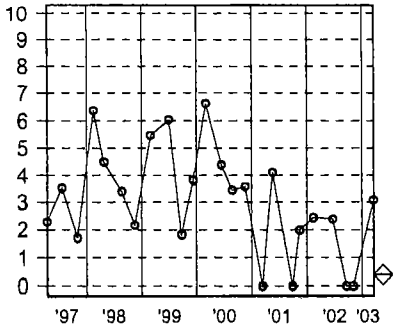
cis-1,2-Dichloroethene
(ug/l)



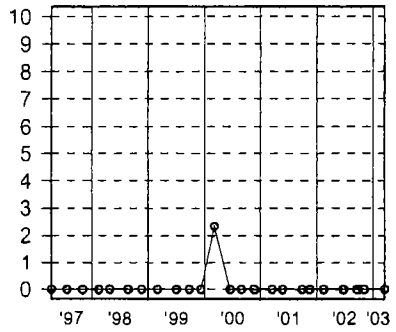
Trichloroethene
(ug/l)



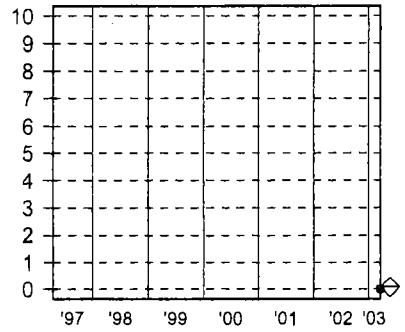
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 5

Sampling Dates:
04/08/1997 - 03/13/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 3 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	ND	ND	ND	ND						
07/17/1997	FMETL	1.14	ND	1.08	ND						
10/30/1997	FMETL	ND	ND	ND	ND						
02/10/1998	FMETL	ND	ND	2.04	ND						
04/21/1998	FMETL	ND	ND	2.40	ND						
08/19/1998	FMETL	ND	ND	ND	ND						
11/17/1998	FMETL	ND	ND	ND	ND						
02/25/1999	FMETL	ND	ND	2.85	ND						
06/29/1999	FMETL	ND	ND	1.42	2.00						
09/22/1999	FMETL	ND	ND	ND	ND						
12/09/1999	FMETL	ND	ND	ND	ND						
03/01/2000	FMETL	1.19	1.30	6.47	2.14						
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	ND	ND	1.77	ND						
11/20/2000	FMETL	ND	ND	1.94	ND						-
03/08/2001	FMETL	ND	ND	ND	ND						-
05/16/2001	FMETL	ND	ND	ND	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	ND	ND	ND	ND						V,P
03/13/2003	FMETL	ND	ND	1.61	ND	ND					V,P

SOURCE: 7

Sampling Dates:
04/08/1997 - 03/13/2003

NOTES:

Page 1 of 1
Stream 7 is Salt-Water.
cis-1,2-Di limit is NLE.
TCE limit is 81 ug/L.
PCE limit is 4.29 ug/L.
MTBE limit is NLE.
Acetone limit is NLE.

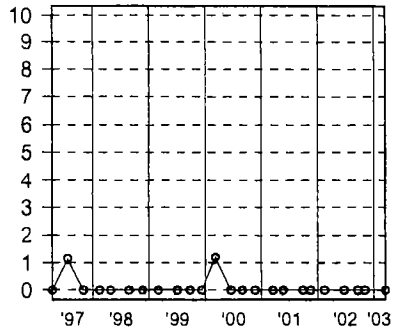
Fort Monmouth

GW Monitoring
Streams

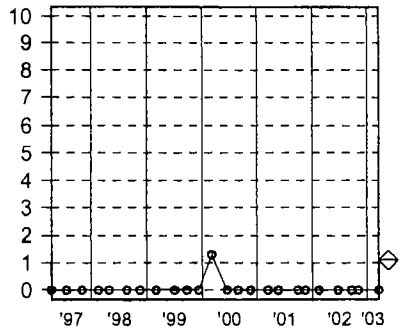
Source 4 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

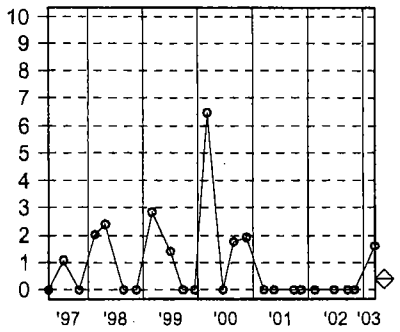
cis-1,2-Dichloroethene
(ug/l)



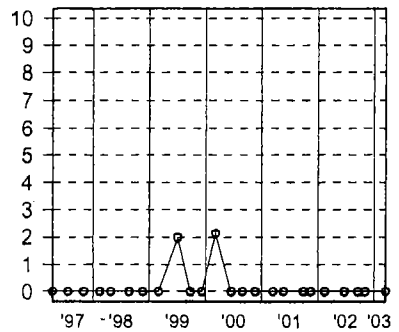
Trichloroethene
(ug/l)



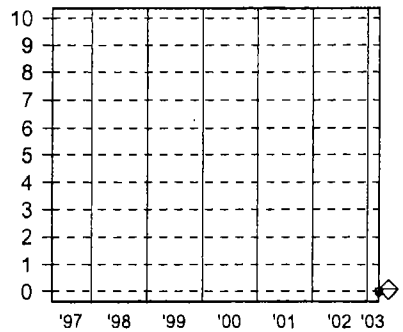
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 7

Sampling Dates:
04/08/1997 - 03/13/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 4 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	2.78	ND	ND	ND						
07/17/1997	FMETL	ND	ND	ND	ND						
10/30/1997	FMETL	2.14	ND	ND	ND						
02/10/1998	FMETL	6.00	ND	ND	ND						
04/21/1998	FMETL	4.73	ND	ND	ND						
08/19/1998	FMETL	1.69	ND	ND	ND						
11/17/1998	FMETL	ND	ND	ND	ND						
02/25/1999	FMETL	1.78	ND	ND	ND						
06/29/1999	FMETL	ND	ND	ND	ND						
09/21/1999	FMETL	1.91	ND	ND	ND						
12/09/1999	FMETL	ND	ND	ND	ND						
03/01/2000	FMETL	2.17	ND	ND	ND						
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	1.11	ND	ND	ND						
11/20/2000	FMETL	ND	ND	ND	ND						-
11/20/2000D	FMETL	ND	ND	ND	ND						-
02/21/2001	FMETL	1.72	ND	ND	ND						-
05/16/2001	FMETL	ND	ND	ND	ND						-
09/11/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	1.24	ND	ND	ND						V,P
03/13/2003	FMETL	9.40	ND	ND	ND	ND					V,P

SOURCE: 9

Sampling Dates:
04/08/1997 - 03/13/2003

NOTES:

PAGE 1 OF 1
Stream 9 is Salt-Water.
MeCl limit is 1600 ug/L.
cis-1,2-Di limit is NLE.
Acetone limit is NLE.

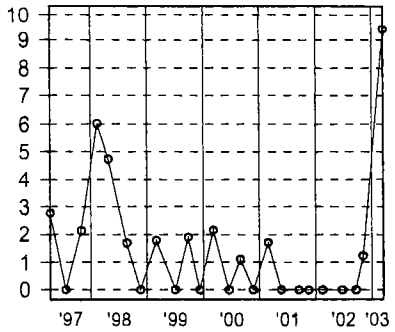
Fort Monmouth

GW Monitoring
Streams

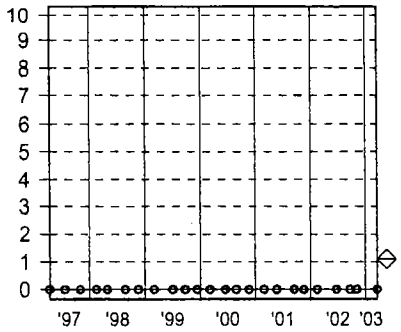
Source 5 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

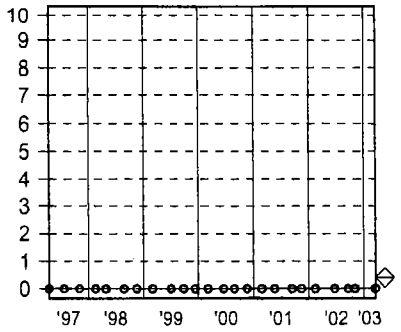
cis-1,2-Dichloroethene
(ug/l)



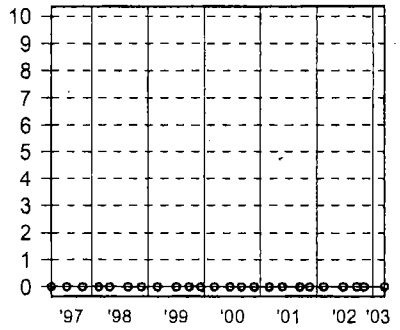
Trichloroethene
(ug/l)



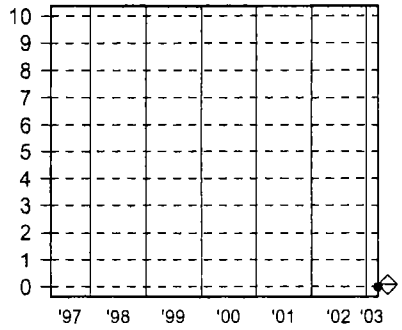
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 9

Sampling Dates:
04/08/1997 - 03/13/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 5 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	18.72	1.58	ND	ND						
07/17/1997	FMETL	14.13	ND	ND	ND						
10/30/1997	FMETL	18.23	ND	ND	ND						
02/10/1998	FMETL	24.71	2.14	ND	ND						
04/21/1998	FMETL	21.66	1.82	ND	ND						
08/19/1998	FMETL	11.73	ND	ND	ND						
11/18/1998	FMETL	8.82	ND	ND	ND						
02/25/1999	FMETL	9.11	ND	ND	ND						
06/29/1999	FMETL	5.77	ND	ND	ND						
09/21/1999	FMETL	15.62	ND	ND	ND						
12/09/1999	FMETL	11.90	ND	ND	ND						
03/01/2000	FMETL	11.01	ND	ND	1.64						
06/12/2000	FMETL	8.03	ND	ND	ND						
08/24/2000	FMETL	9.08	ND	ND	ND						
08/24/2000D	FMETL	8.70	ND	ND	ND						
11/20/2000	FMETL	5.34	ND	ND	ND						-
02/21/2001	FMETL	8.26	ND	ND	ND						-
05/16/2001	FMETL	5.21	ND	ND	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	1.93	ND	ND	ND						-
02/11/2002	FMETL	1.05	ND	ND	ND						V
06/18/2002	FMETL	3.08	ND	ND	ND						V,P
09/18/2002	FMETL	4.17	ND	ND	ND						V,P
11/05/2002	FMETL	7.48	ND	ND	ND	1.33					V,P
03/13/2003	FMETL	24.28	0.67	ND	0.79	3.37					V,P

SOURCE: 11

Sampling Dates:
04/08/1997 - 03/13/2003

NOTES:

Page 1 of1
Stream 11 is Fresh-Water.
cis-1,2-Di limit is NLE.
TCE limit is 1.09 ug/L.
MTBE limit is NLE.

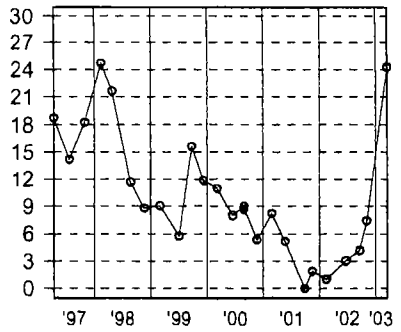
Fort Monmouth

GW Monitoring
Streams

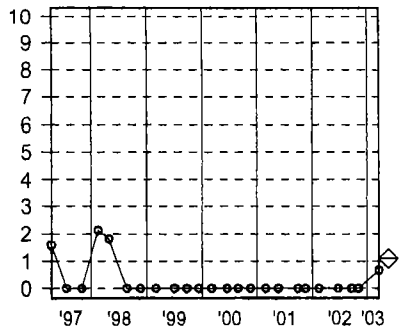
Source 6 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

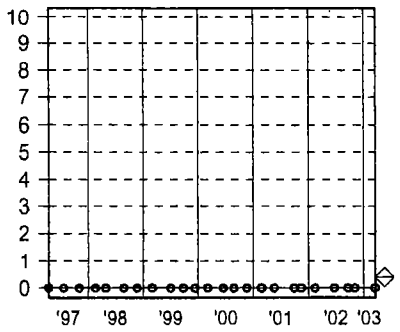
cis-1,2-Dichloroethene
(ug/l)



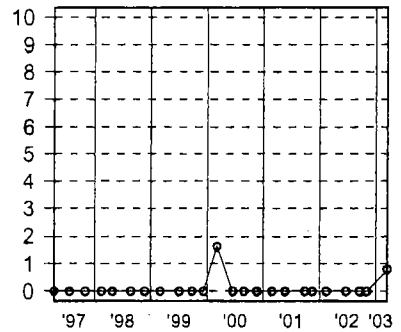
Trichloroethene
(ug/l)



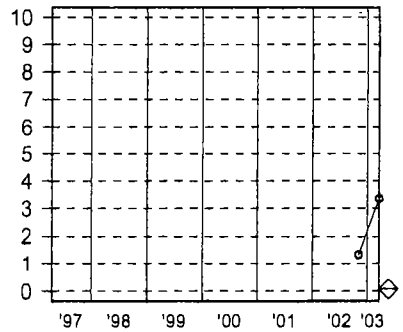
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 11

Sampling Dates:
04/08/1997 - 03/13/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 6 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	6.63	ND	ND	ND						
07/17/1997	FMETL	ND	ND	ND	ND						
10/30/1997	FMETL	5.67	ND	ND	ND						
02/10/1998	FMETL	6.54	ND	ND	ND						
04/21/1998	FMETL	ND	ND	ND	ND						
08/19/1998	FMETL	4.58	ND	ND	ND						
11/18/1998	FMETL	2.48	ND	ND	ND						
02/25/1999	FMETL	1.80	ND	ND	ND						
06/29/1999	FMETL	1.39	ND	ND	ND						
09/21/1999	FMETL	3.67	ND	ND	ND						
12/09/1999	FMETL	2.74	ND	ND	ND						
03/01/2000	FMETL	3.13	ND	ND	ND						
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	2.00	ND	ND	ND						
11/20/2000	FMETL	1.87	ND	ND	ND						-
02/21/2001	FMETL	1.89	ND	ND	ND						-
05/16/2001	FMETL	1.66	ND	ND	ND						-
05/16/2001D	FMETL	1.72	ND	ND	ND						-
09/11/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/05/2002	FMETL	5.16	ND	ND	ND	ND					V,P
03/13/2003	FMETL	9.43	ND	ND	1.18	1.30					V,P

SOURCE: 12

Sampling Dates:
04/08/1997 - 03/13/2003

NOTES:

Page 1 of 1
Stream 12 is Fresh-Water.
cis-1,2-Di limit is NLE.
Acetone limit is NLE.

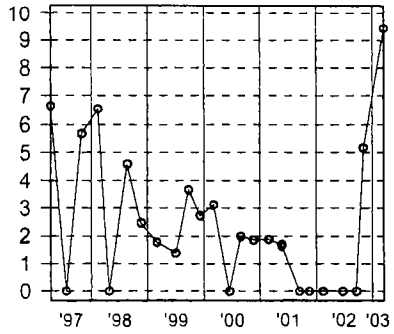
Fort Monmouth

GW Monitoring
Streams

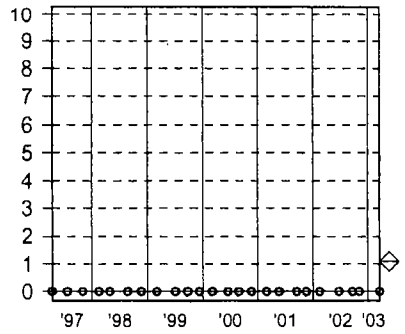
Source 7 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

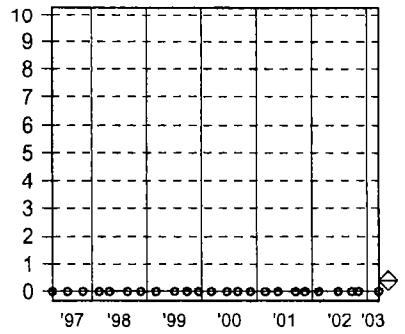
cis-1,2-Dichloroethene
(ug/l)



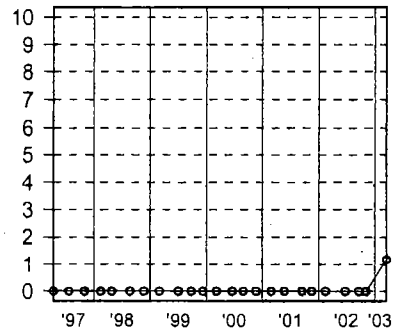
Trichloroethene
(ug/l)



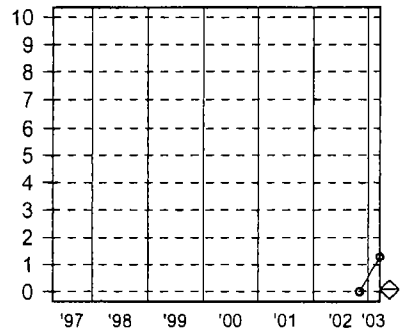
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 12

Sampling Dates:
04/08/1997 - 03/13/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 7 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	ND	ND	ND	ND						
07/17/1997	FMETL	ND	ND	ND	ND						
10/30/1997	FMETL	ND	ND	ND	ND						
02/10/1998	FMETL	ND	ND	ND	ND						
04/21/1998	FMETL	ND	ND	ND	ND						
08/19/1998	FMETL	ND	ND	ND	ND						
11/18/1998	FMETL	ND	ND	ND	ND						
02/25/1999	FMETL	ND	ND	ND	ND						
06/29/1999	FMETL	ND	ND	ND	ND						
09/22/1999	FMETL	ND	ND	ND	ND						
12/09/1999	FMETL	ND	ND	3.94	ND						
03/01/2000	FMETL	1.35	1.40	6.92	2.40						
06/12/2000	FMETL	ND	ND	5.56	ND						
08/24/2000	FMETL	2.17	1.78	5.40	ND						
11/20/2000	FMETL	ND	ND	6.58	ND						-
02/21/2001	FMETL	ND	ND	ND	ND						-
05/16/2001	FMETL	ND	ND	ND	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/05/2002	FMETL	ND	ND	1.46	ND	ND					V,P
03/24/2003	FMETL	ND	ND	ND	ND	ND					V,P

SOURCE: 13

Sampling Dates:
04/08/1997 - 03/24/2003

NOTES:

Page 1 of 1
Stream 13 is Fresh-Water.
MeCl limit is 2.49 ug/L.
cis-1,2-Di limit is NLE.
TCE limit is 1.09.
PCE limit is 0.388 ug/L.
Acetone limit is NLE.
MTBE limit is NLE.

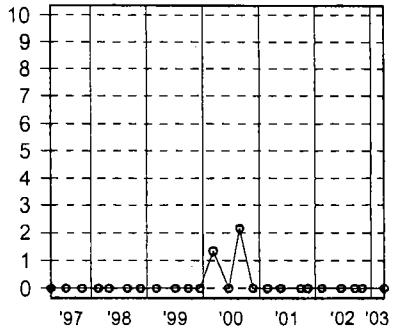
Fort Monmouth

GW Monitoring
Streams

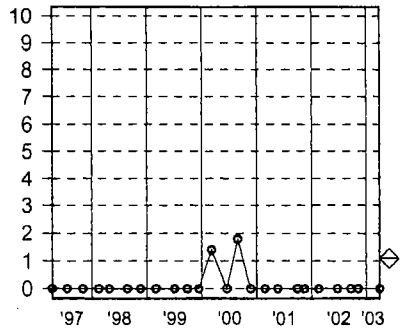
Source 8 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

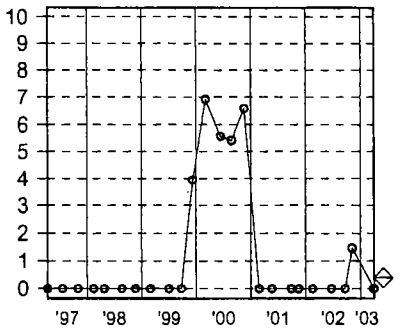
cis-1,2-Dichloroethene
(ug/l)



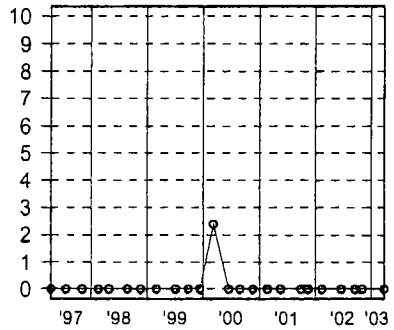
Trichloroethene
(ug/l)



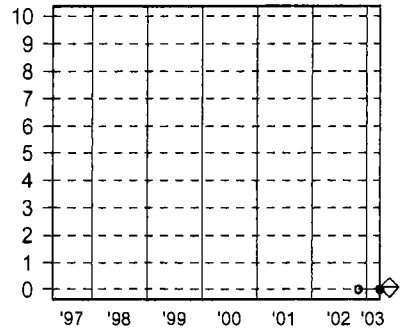
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 13

Sampling Dates:
04/08/1997 - 03/24/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 8 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	ND	ND	ND	ND						
07/17/1997	FMETL	ND	ND	ND	ND						
10/30/1997	FMETL	1.59	1.75	ND	ND						
02/10/1998	FMETL	ND	ND	ND	ND						
04/21/1998	FMETL	ND	ND	ND	ND						
08/19/1998	FMETL	ND	ND	ND	ND						
11/18/1998	FMETL	ND	ND	ND	ND						
02/25/1999	FMETL	ND	ND	ND	ND						
06/29/1999	FMETL	ND	ND	ND	ND						
09/22/1999	FMETL	ND	ND	ND	ND						
12/09/1999	FMETL	11.26	ND	ND	ND						
03/01/2000	FMETL	ND	ND	ND	ND						
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	ND	ND	ND	ND						
11/20/2000	FMETL	ND	ND	ND	ND						-
03/08/2001	FMETL	ND	ND	ND	ND						-
03/08/2001D	FMETL	ND	ND	ND	ND						-
05/16/2001	FMETL	ND	ND	ND	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/05/2002	FMETL	ND	ND	ND	ND	ND					V,P
03/24/2003	FMETL	ND	ND	ND	ND	ND					V,P

SOURCE: 14

Sampling Dates:
04/08/1997 - 03/24/2003

NOTES:

Page 1 of 1
Stream 14 is Fresh-Water.
cis-1,2-Di limit is NLE.
TCE limit is 1.09.
Acetone limit is NLE.

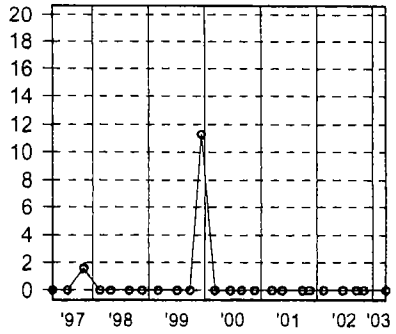
Fort Monmouth

GW Monitoring
Streams

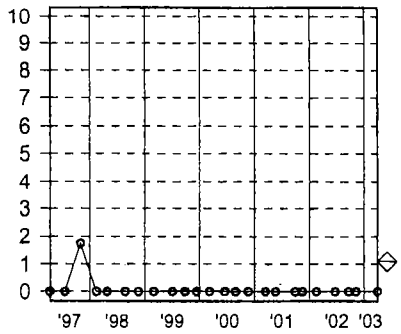
Source 9 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

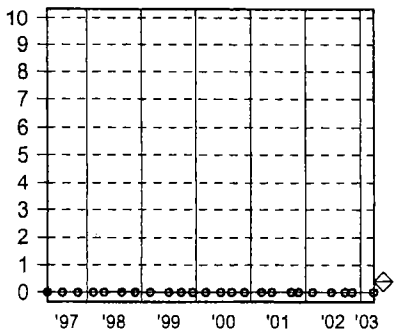
cis-1,2-Dichloroethene
(ug/l)



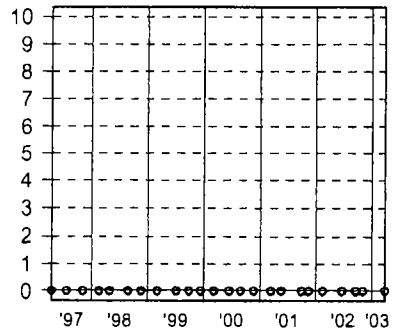
Trichloroethene
(ug/l)



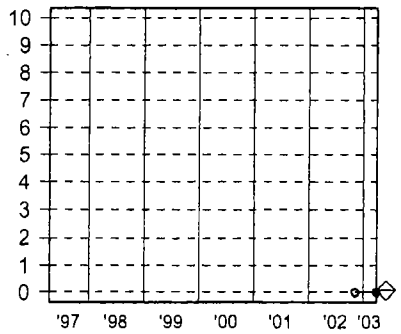
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 14

Sampling Dates:
04/08/1997 - 03/24/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 9 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	2.69	1.60	6.00	ND						
07/17/1997	FMETL	5.53	2.50	7.12	ND						
10/30/1997	FMETL	2.57	ND	2.72	ND						
02/10/1998	FMETL	ND	1.03	6.90	ND						
04/21/1998	FMETL	1.22	1.21	5.72	ND						
08/19/1998	FMETL	3.89	2.06	5.39	ND						
11/18/1998	FMETL	ND	ND	ND	ND						
02/25/1999	FMETL	ND	ND	7.33	ND						
06/29/1999	FMETL	4.17	2.40	7.86	ND						
09/21/1999	FMETL	3.59	1.37	2.61	ND						
12/09/1999	FMETL	ND	ND	4.08	ND						
03/01/2000	FMETL	1.39	1.39	6.95	2.38						
06/12/2000	FMETL	ND	ND	5.94	ND						
08/24/2000	FMETL	2.02	1.09	5.20	ND						
11/20/2000	FMETL	ND	ND	6.29	ND						-
02/21/2001	FMETL	ND	ND	7.19	ND						-
05/16/2001	FMETL	1.50	ND	6.64	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
09/25/2001D	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	3.09	ND	3.49	ND						-
02/11/2002	FMETL	ND	ND	2.65	ND						V
06/18/2002	FMETL	1.63	ND	2.67	ND						V,P
09/18/2002	FMETL	2.39	ND	2.55	ND						V,P
11/05/2002	FMETL	ND	ND	1.52	ND	ND					V,P
03/24/2003	FMETL	1.44	1.11	3.96	ND	ND					V,P

SOURCE: 15

Sampling Dates:
04/08/1997 - 03/24/2003

NOTES:

Page 1 of 1
Stream 15 is Fresh-Water.
cis-1,2-Di limit is NLE.
TCE limit is 1.09 ug/L.
PCE limit is 0.388 ug/L.
MTBE limit is NLE.

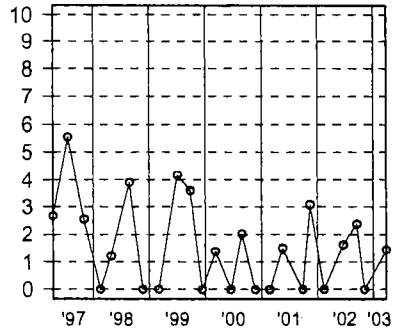
Fort Monmouth

GW Monitoring
Streams

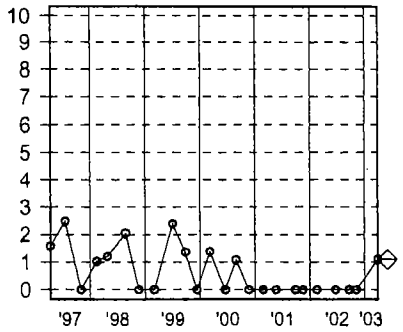
Source 10 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

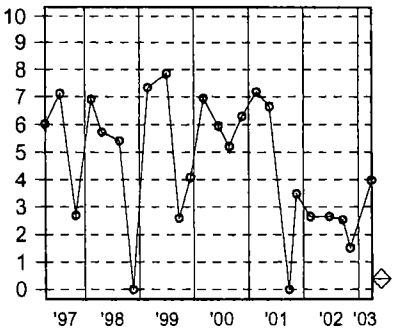
cis-1,2-Dichloroethene
(ug/l)



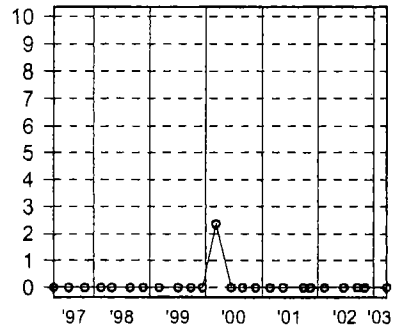
Trichloroethene
(ug/l)



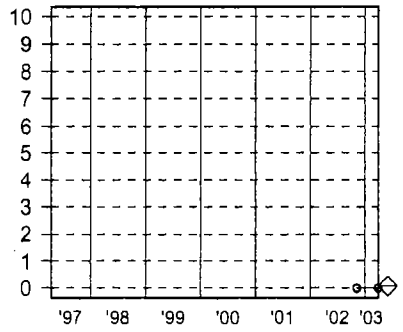
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 15

Sampling Dates:
04/08/1997 - 03/24/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 10 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	2.05	1.26	4.47	ND						
07/17/1997	FMETL	2.55	ND	4.72	ND						
10/30/1997	FMETL	1.76	ND	1.86	ND						
02/10/1998	FMETL	ND	ND	6.23	ND						
04/21/1998	FMETL	ND	ND	4.58	ND						
08/19/1998	FMETL	2.94	1.63	4.33	ND						
11/18/1998	FMETL	ND	ND	1.48	ND						
02/25/1999	FMETL	ND	ND	6.06	ND						
06/29/1999	FMETL	3.56	2.25	7.70	ND						
09/22/1999	FMETL	2.74	ND	2.63	ND						
12/09/1999	FMETL	1.79	ND	4.13	ND						
03/01/2000	FMETL	1.28	1.27	6.47	2.33						
06/12/2000	FMETL	ND	ND	3.74	ND						
08/24/2000	FMETL	1.68	1.28	4.47	ND						
11/20/2000	FMETL	ND	ND	4.49	ND						-
02/21/2001	FMETL	ND	ND	6.25	ND						-
05/16/2001	FMETL	1.23	ND	4.91	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	1.41	ND	2.00	ND						-
02/11/2002	FMETL	ND	ND	2.47	ND						V
06/18/2002	FMETL	1.35	ND	2.46	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/05/2002	FMETL	ND	ND	1.49	ND	ND					V,P
03/13/2003	FMETL	0.90	0.74	3.21	ND	ND					V,P

SOURCE: 16

Sampling Dates:
04/08/1997 - 03/13/2003

NOTES:

Page 1 of 1
Stream 16 is Salt-Water.
cis-1,2-di limit is NLE.
TCE limit is 81 ug/L.
PCE limit is 4.29 ug/L.
MTBE limit is NLE.

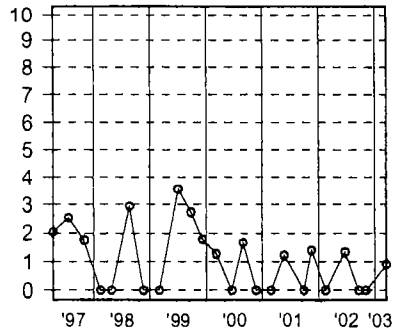
Fort Monmouth

GW Monitoring
Streams

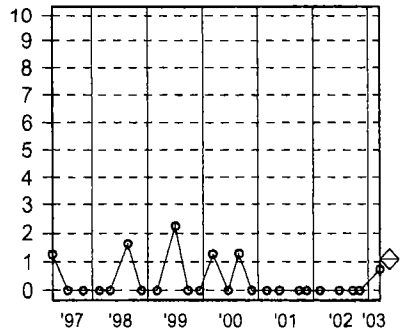
Source 11 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

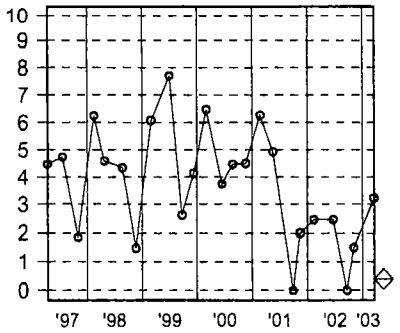
cis-1,2-Dichloroethene
(ug/l)



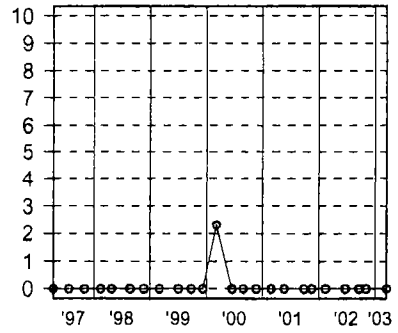
Trichloroethene
(ug/l)



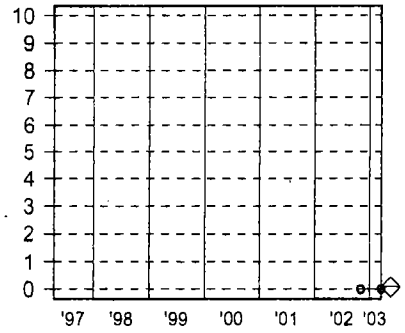
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 16

Sampling Dates:
04/08/1997 - 03/13/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 11 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

05-02-2003 X:\MtechData\Streams\STREAMS.WSF

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	ND	ND	ND	ND						
07/17/1997	FMETL	ND	ND	ND	ND						
10/30/1997	FMETL	ND	ND	ND	ND						
02/10/1998	FMETL	ND	ND	ND	ND						
04/21/1998	FMETL	ND	ND	ND	ND						
08/19/1998	FMETL	ND	ND	ND	ND						
11/18/1998	FMETL	4.43	2.12	5.09	ND						
02/25/1999	FMETL	ND	ND	ND	ND						
06/29/1999	FMETL	ND	ND	ND	ND						
09/22/1999	FMETL	1.09	ND	ND	ND						
12/09/1999	FMETL	ND	ND	ND	ND						
03/01/2000	FMETL	ND	ND	ND	ND						
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	ND	ND	ND	ND						
11/20/2000	FMETL	ND	ND	ND	ND						-
03/08/2001	FMETL	ND	ND	ND	ND						-
05/16/2001	FMETL	ND	ND	ND	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	ND	ND	ND	ND	ND					V,P
03/24/2003	FMETL	ND	ND	ND	ND	ND					V,P

SOURCE: 17

Sampling Dates:
04/08/1997 - 03/24/2003

NOTES:

Page 1 of 1
stream 17 is Salt-Water.
cis-1,2-Di limit is NLE.
TCE limit is 81 ug/L.
PCE limit is 4.29 ug/L.
Acetone limit is NLE.
Chlorobenzene limit is 21000 ug/L.

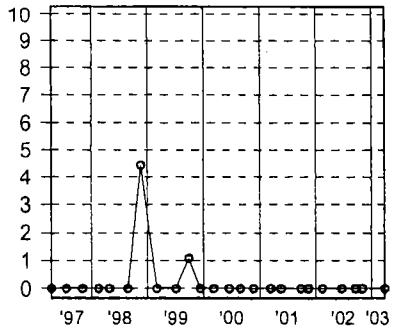
Fort Monmouth

GW Monitoring
Streams

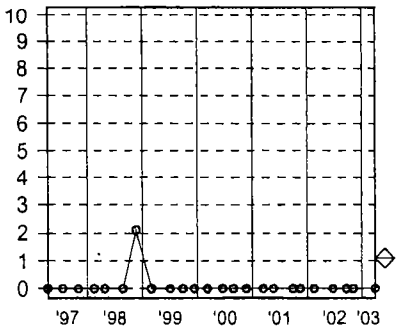
Source 12 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

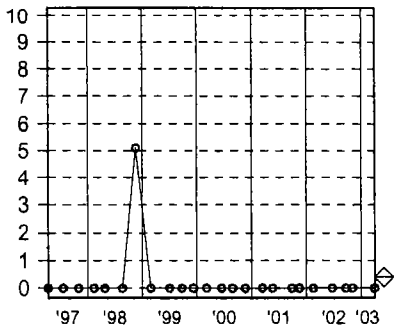
cis-1,2-Dichloroethene
(ug/l)



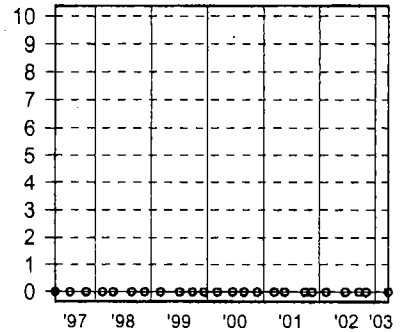
Trichloroethene
(ug/l)



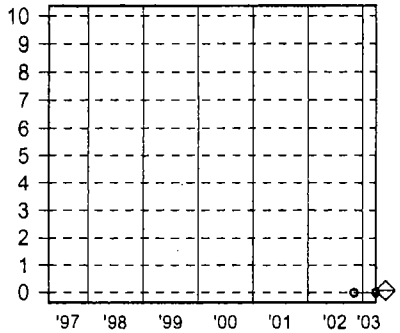
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 17

Sampling Dates:
04/08/1997 - 03/24/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 12 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

05-02-2003 X:\MtechData\Streams\STREAMS.WSF

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	ND	ND	ND	ND						
07/17/1997	FMETL	1.06	ND	ND	ND						
10/30/1997	FMETL	5.87	ND	ND	ND						
02/10/1998	FMETL	14.36	ND	ND	ND						
04/21/1998	FMETL	ND	ND	ND	ND						
08/19/1998	FMETL	4.65	ND	ND	ND						
11/18/1998	FMETL	3.18	ND	ND	ND						
02/25/1999	FMETL	3.95	ND	ND	ND						
06/29/1999	FMETL	1.47	ND	ND	ND						
09/21/1999	FMETL	4.67	ND	ND	ND						
12/09/1999	FMETL	4.90	ND	ND	ND						
03/01/2000	FMETL	5.57	ND	ND	ND						
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	2.46	ND	ND	ND						
11/20/2000	FMETL	1.80	ND	ND	ND						-
02/21/2001	FMETL	4.10	ND	ND	ND						-
05/16/2001	FMETL	1.45	ND	ND	ND						-
09/11/2001	FMETL	ND	ND	ND	ND						-
09/11/2001D	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/05/2002	FMETL	5.14	ND	ND	ND	ND					V,P
03/13/2003	FMETL	17.75	0.52	ND	0.67	2.33					V,P

SOURCE: 18

Sampling Dates:
04/08/1997 - 03/13/2003

NOTES:

Page 1 of 1
Stream 18 is Fresh-Water.
cis-1,2-Di limit is NLE.

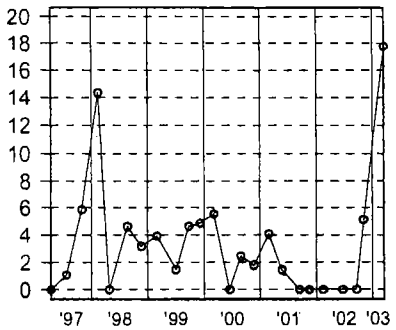
Fort Monmouth

GW Monitoring
Streams

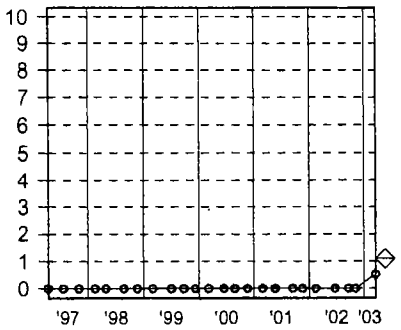
Source 13 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

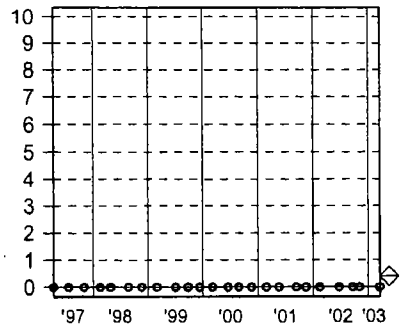
cis-1,2-Dichloroethene
(ug/l)



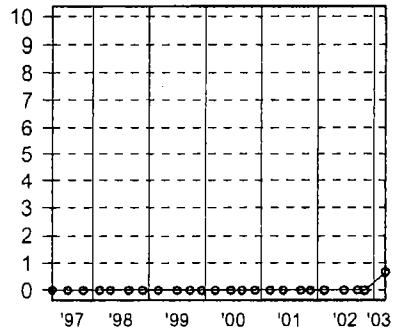
Trichloroethene
(ug/l)



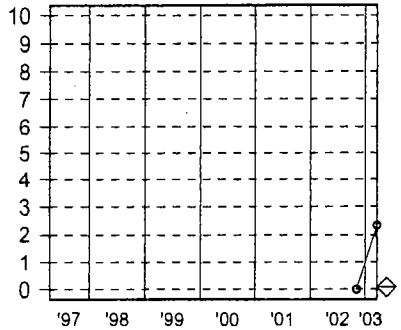
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 18

Sampling Dates:
04/08/1997 - 03/13/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 13 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	6.44	ND	ND	ND						
07/17/1997	FMETL	ND	ND	ND	ND						
10/30/1997	FMETL	4.69	ND	ND	ND						
02/10/1998	FMETL	8.22	ND	ND	ND						
04/21/1998	FMETL	6.86	ND	ND	ND						
08/19/1998	FMETL	2.95	ND	ND	ND						
11/17/1998	FMETL	2.3	ND	ND	ND						
02/25/1999	FMETL	2.30	ND	ND	ND						
06/29/1999	FMETL	ND	ND	ND	ND						
09/21/1999	FMETL	3.53	ND	ND	ND						
12/09/1999	FMETL	2.60	ND	ND	ND						
03/01/2000	FMETL	2.92	ND	ND	ND						
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	2.07	ND	ND	ND						
11/20/2000	FMETL	ND	ND	ND	ND						-
02/21/2001	FMETL	2.99	ND	ND	ND						-
02/21/2001D	FMETL	3.87	ND	ND	ND						-
05/16/2001	FMETL	1.57	ND	ND	ND						-
09/11/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	2.69	ND	ND	ND	ND					V,P
03/13/2003	FMETL	13.43	0.44	ND	ND	1.61					V,P

SOURCE: 19

Sampling Dates:
04/08/1997 - 03/13/2003

NOTES:

Page 1 of 1
Stream 19 is Salt-Water.
cis-1,2-Di limit is NLE.

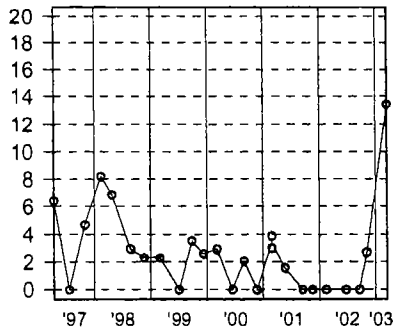
Fort Monmouth

GW Monitoring
Streams

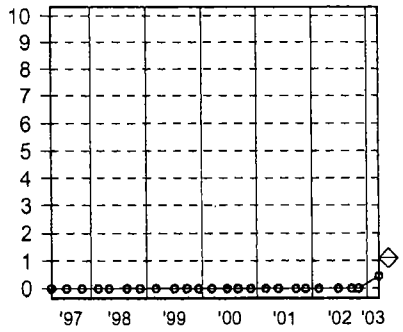
Source 14 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

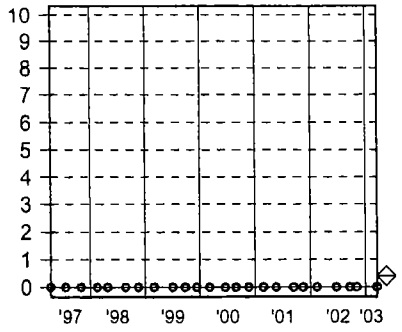
cis-1,2-Dichloroethene
(ug/l)



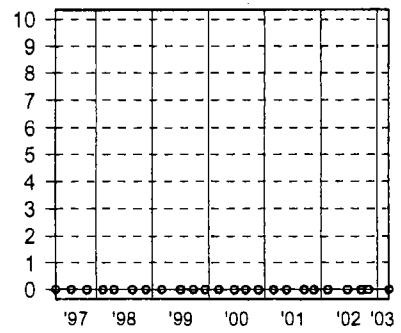
Trichloroethene
(ug/l)



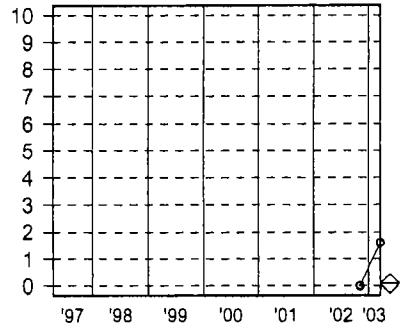
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 19

Sampling Dates:
04/08/1997 - 03/13/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 14 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	ND	ND	ND	ND						
07/17/1997	FMETL	ND	ND	ND	2.63						
10/30/1997	FMETL	ND	ND	ND	ND						
02/10/1998	FMETL	ND	ND	ND	ND						
04/21/1998	FMETL	ND	ND	ND	ND						
08/19/1998	FMETL	ND	ND	ND	4.85						
11/17/1998	FMETL	ND	ND	ND	ND						
02/25/1999	FMETL	ND	ND	ND	ND						
06/29/1999	FMETL	ND	ND	ND	5.70						
09/21/1999	FMETL	ND	ND	ND	2.10						
12/09/1999	FMETL	ND	ND	ND	ND						
03/01/2000	FMETL	ND	ND	ND	ND						
06/12/2000	FMETL	ND	ND	ND	6.38						
08/24/2000	FMETL	ND	ND	ND	2.58						
11/20/2000	FMETL	ND	ND	ND	ND						-
02/21/2001	FMETL	ND	ND	ND	ND						-
05/16/2001	FMETL	ND	ND	ND	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	1.26						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	ND	ND	ND	ND	ND					V,P
03/13/2003	FMETL	ND	ND	0.64	ND	ND					V,P

SOURCE: 20

Sampling Dates:
04/08/1997 - 03/13/2003

NOTES:

Page 1 of 1
Stream20 is Salt-Water.
Ethylben limit is 27900 ug/L.
MTBE limit is NLE.

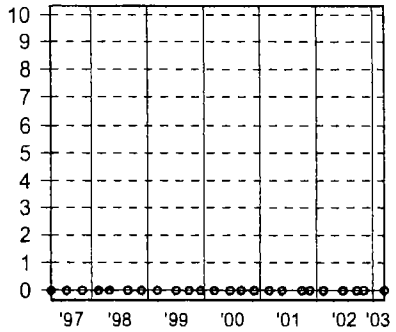
Fort Monmouth

GW Monitoring
Streams

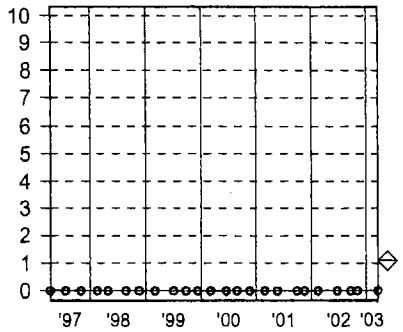
Source 15 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

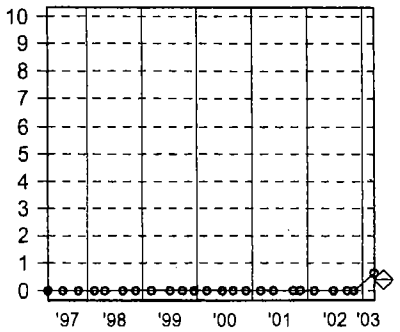
cis-1,2-Dichloroethene
(ug/l)



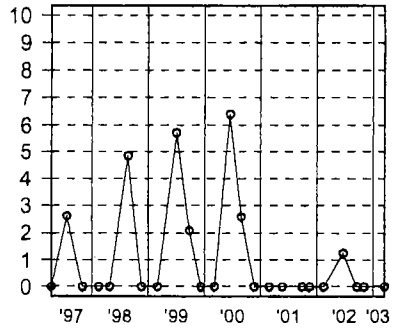
Trichloroethene
(ug/l)



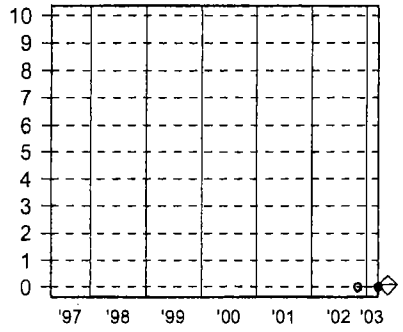
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 20

Sampling Dates:
04/08/1997 - 03/13/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 15 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	ND	ND	ND	ND						
07/17/1997	FMETL	ND	ND	ND	2.90						
10/30/1997	FMETL	ND	ND	ND	ND						
02/10/1998	FMETL	ND	ND	ND	ND						
04/21/1998	FMETL	ND	ND	ND	ND						
08/19/1998	FMETL	ND	ND	ND	4.71						
11/17/1998	FMETL	ND	ND	ND	ND						
02/25/1999	FMETL	ND	ND	ND	ND						
06/29/1999	FMETL	ND	ND	ND	7.40						
09/21/1999	FMETL	1.17	ND	ND	2.24						
12/09/1999	FMETL	ND	ND	ND	ND						
03/01/2000	FMETL	ND	ND	ND	ND						
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	ND	ND	ND	2.67						
11/20/2000	FMETL	ND	ND	ND	ND						-
02/21/2001	FMETL	ND	ND	ND	ND						-
05/16/2001	FMETL	ND	ND	ND	ND						-
09/11/2001	FMETL	ND	ND	ND	1.76						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	ND	ND	ND	ND	ND					V,P
03/13/2003	FMETL	ND	ND	0.63	ND	ND					V,P

SOURCE: 21

Sampling Dates:
04/08/1997 - 03/13/2003

NOTES:

Page 1 of 1
Sream 21 is Salt-Water.
cis-1,2-Di limit is NLE.
Acetone limit is NLE.
MTBE limit is NLE.

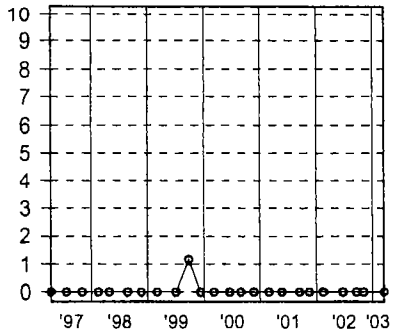
Fort Monmouth

GW Monitoring
Streams

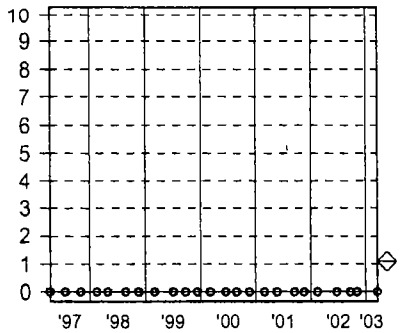
Source 16 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

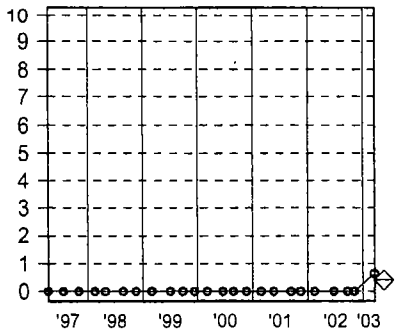
cis-1,2-Dichloroethene
(ug/l)



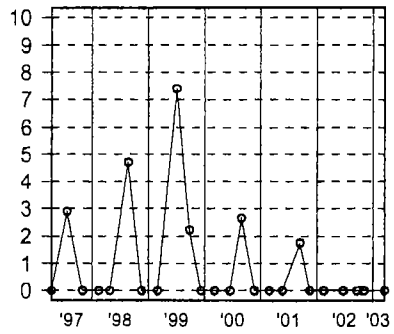
Trichloroethene
(ug/l)



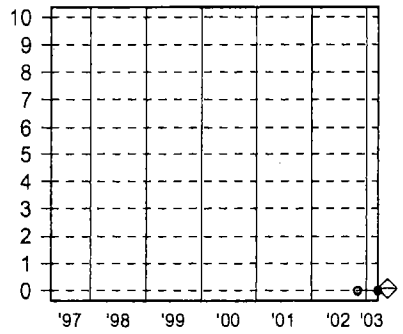
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 21

Sampling Dates:
04/08/1997 - 03/13/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 16 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	ND	ND	ND	ND						
07/17/1997	FMETL	ND	ND	ND	4.26						
10/30/1997	FMETL	ND	ND	ND	ND						
02/10/1998	FMETL	ND	ND	ND	ND						
04/21/1998	FMETL	ND	ND	ND	ND						
08/19/1998	FMETL	ND	ND	ND	4.50						
11/17/1998	FMETL	ND	ND	ND	ND						
02/25/1999	FMETL	ND	ND	ND	ND						
06/29/1999	FMETL	ND	ND	ND	8.30						
09/21/1999	FMETL	ND	ND	ND	0.82						
12/09/1999	FMETL	ND	ND	ND	ND						
03/01/2000	FMETL	ND	ND	ND	ND						
06/12/2000	FMETL	ND	ND	ND	10.26						
06/12/2000D	FMETL	ND	ND	ND	10.66						
08/24/2000	FMETL	ND	ND	ND	ND						
11/20/2000	FMETL	ND	ND	ND	ND						-
02/21/2001	FMETL	ND	ND	ND	ND						-
05/16/2001	FMETL	ND	ND	ND	ND						V
09/11/2001	FMETL	ND	ND	ND	3.53						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	2.12						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	ND	ND	ND	ND	ND					V,P
03/13/2003	FMETL	1.57	ND	ND	ND	ND					V,P

SOURCE: 22

Sampling Dates:
04/08/1997 - 03/13/2003

NOTES:

Page 1 of 1
Stream 22 is Salt-Water.
Acetone limit is NLE.
MTBE limit is NLE.

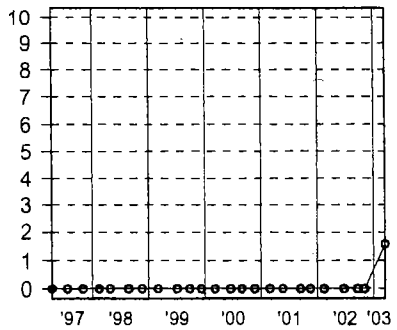
Fort Monmouth

GW Monitoring
Streams

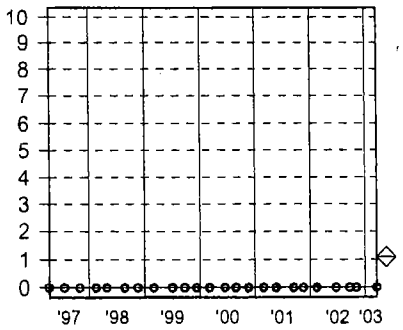
Source 17 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

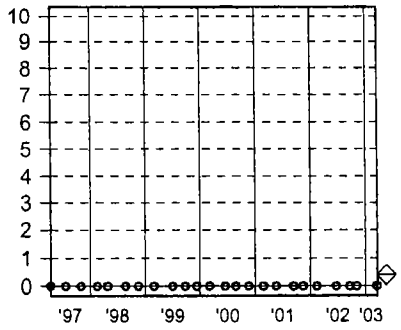
cis-1,2-Dichloroethene
(ug/l)



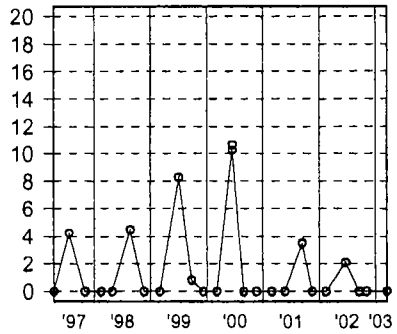
Trichloroethene
(ug/l)



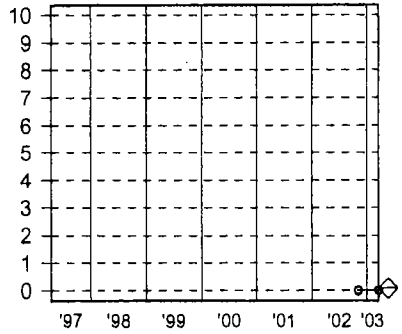
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 22

Sampling Dates:
04/08/1997 - 03/13/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 17 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
06/12/2000	FMETL	ND	ND	5.60	ND						
08/24/2000	FMETL	2.24	1.82	5.18	ND						
11/20/2000	FMETL	ND	ND	6.29	ND						-
03/08/2001	FMETL	ND	ND	4.78	ND						-
05/16/2001	FMETL	1.73	ND	6.41	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	3.23	ND	3.64	ND						-
02/11/2002	FMETL	ND	ND	2.85	ND						V
06/18/2002	FMETL	1.58	ND	2.88	ND						V,P
09/18/2002	FMETL	2.49	ND	ND	ND						V,P
11/05/2002	FMETL	ND	ND	1.44	ND	ND					V,P
03/24/2003	FMETL	1.41	1.05	4.01	ND	ND					V,P

SOURCE: 23

Sampling Dates:
06/12/2000 - 03/24/2003

NOTES:

Page 1 of 1
Stream 23 is Fresh-Water

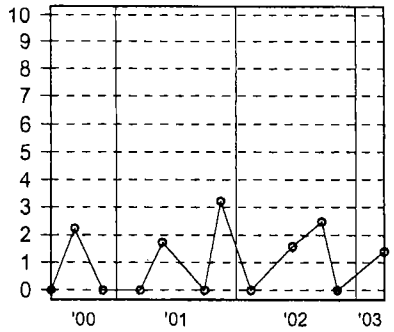
Fort Monmouth

GW Monitoring
Streams

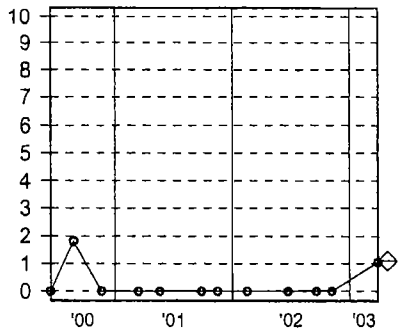
Source 18 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

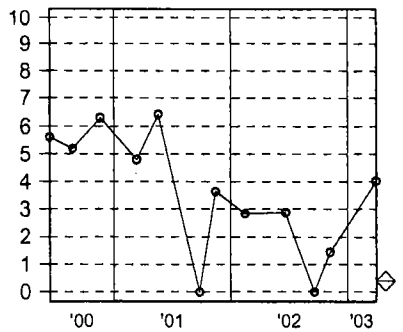
cis-1,2-Dichloroethene
(ug/l)



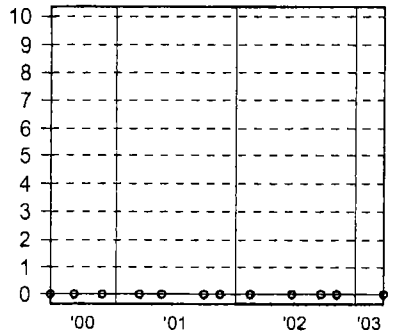
Trichloroethene
(ug/l)



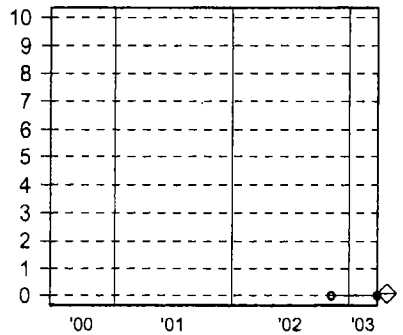
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 23

Sampling Dates:
06/12/2000 - 03/24/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 18 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
06/12/2000	FMETL	ND	ND	4.72	ND						
08/24/2000	FMETL	1.54	1.41	4.33	ND						
11/20/2000	FMETL	ND	ND	4.41	ND						-
03/08/2001	FMETL	ND	ND	4.76	ND						-
05/16/2001	FMETL	1.37	ND	5.12	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	3.11	ND	3.28	ND						-
02/11/2002	FMETL	ND	ND	2.69	ND						V
06/18/2002	FMETL	1.60	ND	2.74	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/05/2002	FMETL	ND	ND	1.64	ND	ND					V,P
03/13/2003	FMETL	0.99	0.83	3.50	ND	ND					V,P

SOURCE: 24

Sampling Dates:
06/12/2000 - 03/13/2003

NOTES:

Page 1 of 2
Stream 24 is Fresh-Water

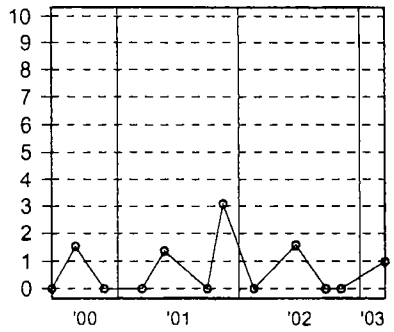
Fort Monmouth

GW Monitoring
Streams

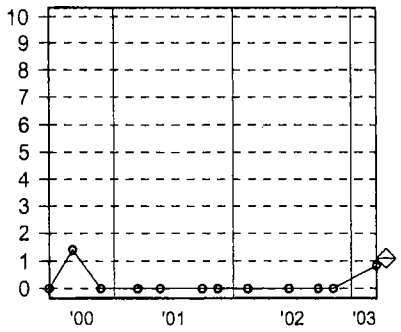
Source 19 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

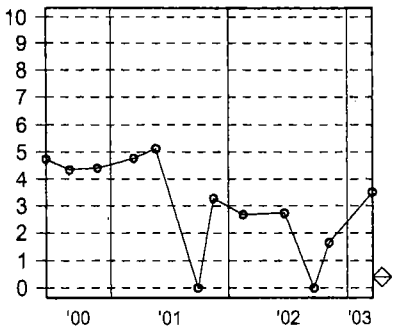
cis-1,2-Dichloroethene
(ug/l)



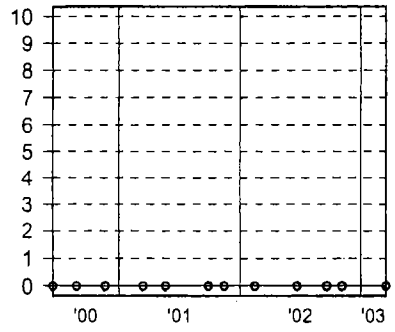
Trichloroethene
(ug/l)



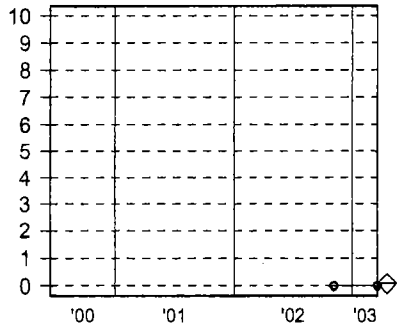
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



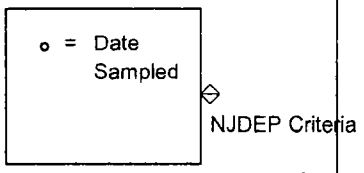
Vinyl Chloride
(ug/l)



SOURCE: 24

Sampling Dates:
06/12/2000 - 03/13/2003

LEGEND:



Fort Monmouth

GW Monitoring
Streams

Source 19 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	ND	ND	ND	ND						
11/20/2000	FMETL	ND	ND	ND	ND						-
03/08/2001	FMETL	ND	ND	ND	ND						-
05/16/2001	FMETL	ND	ND	ND	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	ND	ND	ND	ND	ND					V,P
03/24/2003	FMETL	ND	ND	2.22	ND	ND					V,P

SOURCE: 25

Sampling Dates:
06/12/2000 - 03/24/2003

NOTES:

Page 1 of 1
Stream 25 is Salt-Water.

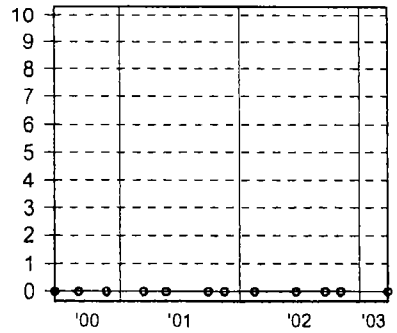
Fort Monmouth

GW Monitoring
Streams

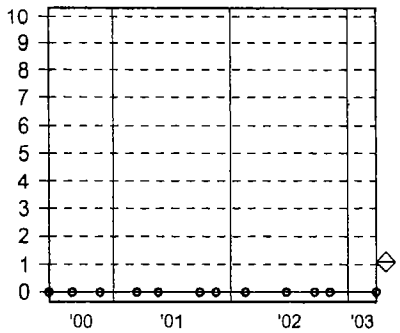
Source 20 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

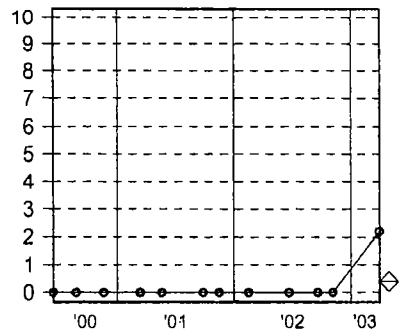
cis-1,2-Dichloroethene
(ug/l)



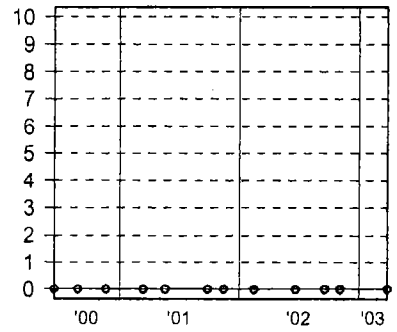
Trichloroethene
(ug/l)



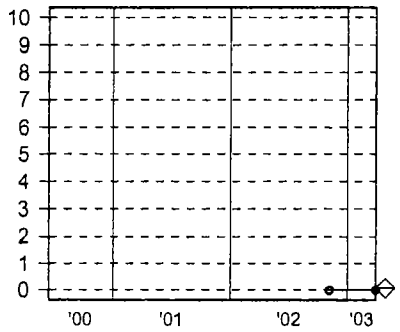
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 25

Sampling Dates:
06/12/2000 - 03/24/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 20 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-dichloroethene	Trichloroethene	Tetrachloroethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	ND	ND	ND	ND						
11/20/2000	FMETL	ND	ND	ND	ND						-
03/08/2001	FMETL	ND	ND	ND	ND						-
05/16/2001	FMETL	ND	ND	ND	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	ND	ND	ND	ND	ND					V,P
03/24/2003	FMETL	ND	ND	ND	ND	ND					V,P

SOURCE: 26

Sampling Dates:
06/12/2000 - 03/24/2003

NOTES:

Page 1 of 1
Stream 26 is Fresh-Water

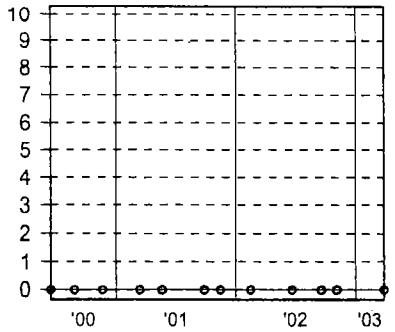
Fort Monmouth

GW Monitoring
Streams

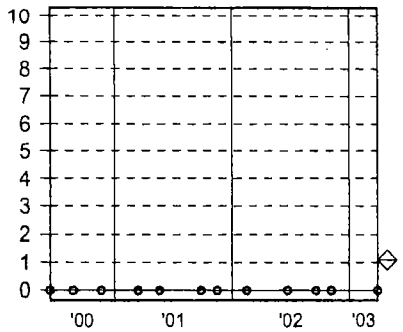
Source 21 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

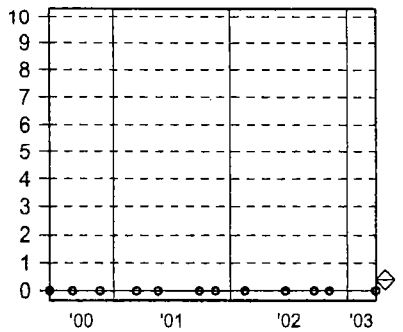
cis-1,2-Dichloroethene
(ug/l)



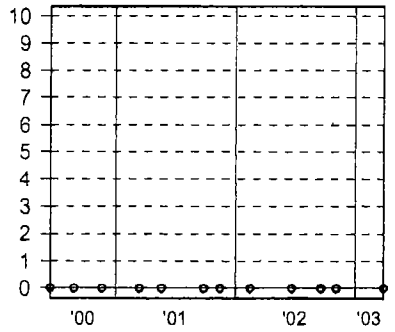
Trichloroethene
(ug/l)



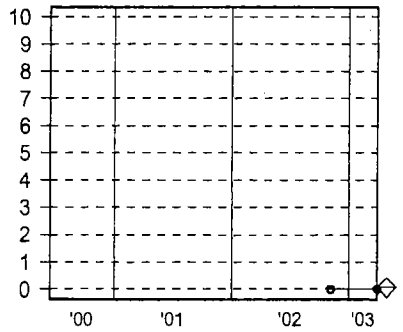
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 26

Sampling Dates:
06/12/2000 - 03/24/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 21 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	ND	ND	1.72	ND						
11/20/2000	FMETL	ND	ND	1.87	ND						-
03/08/2001	FMETL	ND	ND	ND	ND						-
05/16/2001	FMETL	ND	ND	ND	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	ND	ND	ND	ND	ND					V,P
03/13/2003	FMETL	ND	ND	1.71	ND	ND					V,P

SOURCE: 27

Sampling Dates:
06/12/2000 - 03/13/2003

NOTES:

Page 1 of 1
Stream 27 is Salt Water.

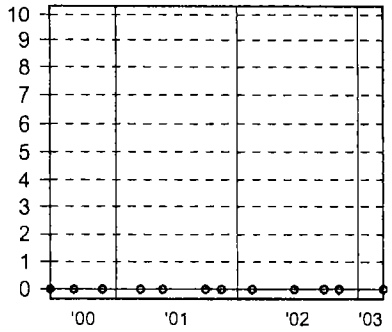
Fort Monmouth

GW Monitoring
Streams

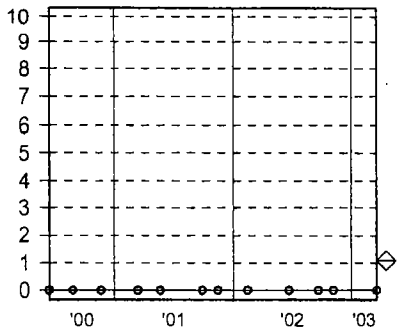
Source 22 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

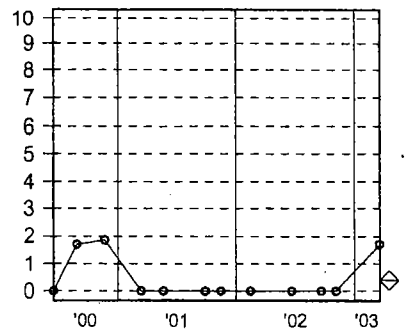
cis-1,2-Dichloroethene
(ug/l)



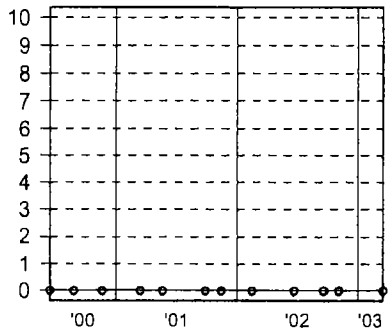
Trichloroethene
(ug/l)



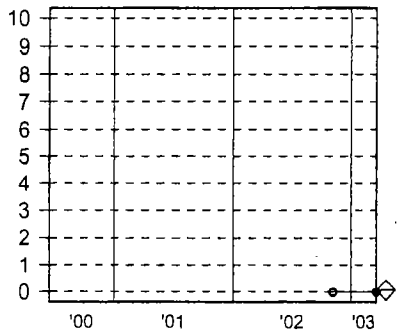
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 27

Sampling Dates:
06/12/2000 - 03/13/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 22 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-dichloroethene	Trichloroethene	Tetrachloroethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	1.28	1.07	3.67	ND						
11/20/2000	FMETL	ND	ND	3.60	ND						-
03/08/2001	FMETL	ND	ND	2.56	ND						-
05/16/2001	FMETL	ND	ND	2.77	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	1.55	ND						V
06/18/2002	FMETL	ND	ND	1.99	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	ND	ND	ND	ND	ND					V,P
03/13/2003	FMETL	0.73	0.60	2.78	ND	ND					V,P

SOURCE: 28

Sampling Dates:
06/12/2000 - 03/13/2003

NOTES:

Page 1 of 1
Stream 28 is Salt-Water
cis-1,2-Dichloroethene limit is NLE
TCE limit is 81
PCE limit is 4.29

Fort Monmouth

GW Monitoring
Streams

Source 23 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	1.28	1.07	3.67	ND						
11/20/2000	FMETL	ND	ND	3.60	ND						-
03/08/2001	FMETL	ND	ND	2.56	ND						-
05/16/2001	FMETL	ND	ND	2.77	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	1.55	ND						V
06/18/2002	FMETL	ND	ND	1.99	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	ND	ND	ND	ND	ND					V,P
03/13/2003	FMETL	0.73	0.60	2.78	ND	ND					V,P

SOURCE: 28

Sampling Dates:
06/12/2000 - 03/13/2003

NOTES:

Page 1 of 1
Stream 28 is Salt-Water
cis-1,2-Dichloroethene limit is NLE
TCE limit is 81
PCE limit is 4.29

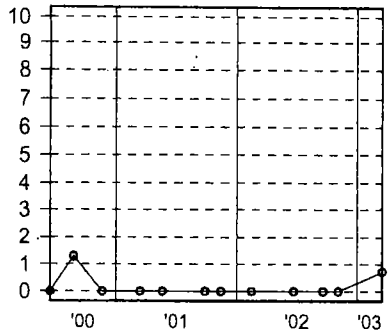
Fort Monmouth

GW Monitoring
Streams

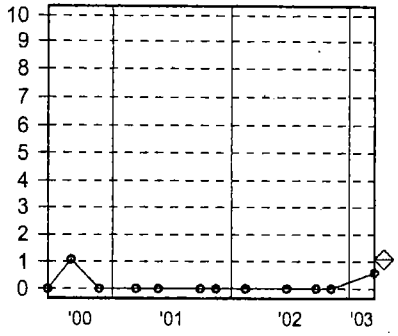
Source 23 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

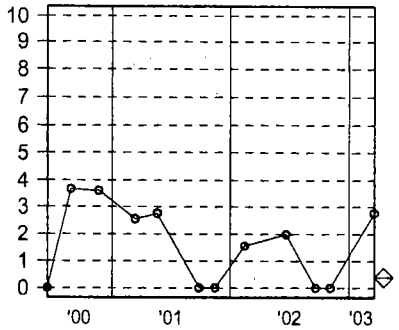
cis-1,2-Dichloroethene
(ug/l)



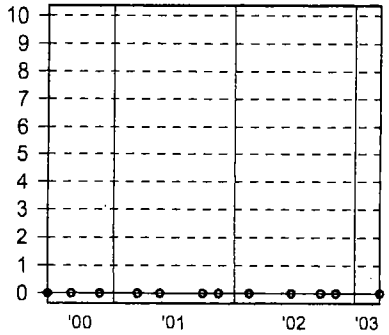
Trichloroethene
(ug/l)



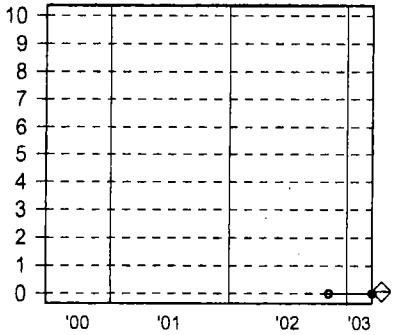
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 28

Sampling Dates:
06/12/2000 - 03/13/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

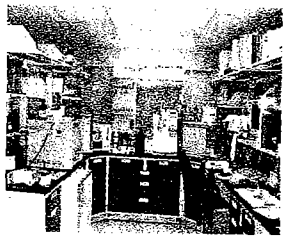
GW Monitoring
Streams

Source 23 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS
PHONE: (732) 532-6224 FAX: (732) 532-6263
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING
CERTIFICATIONS: NJDEP #13461, NYSDOH #11699



ANALYTICAL DATA REPORT
Fort Monmouth Environmental Laboratory
ENVIRONMENTAL DIVISION
Fort Monmouth, New Jersey
PROJECT: 2nd QTR/03 Streams

Streams

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
Stream Site #22	3024704	Aqueous	21-May-03 09:30	05/21/03
Stream Site #21	3024705	Aqueous	21-May-03 09:37	05/21/03
Stream Site #20	3024706	Aqueous	21-May-03 09:42	05/21/03
Stream Site #09	3024707	Aqueous	21-May-03 09:54	05/21/03
Stream Site #19	3024708	Aqueous	21-May-03 10:06	05/21/03
Stream Site #12	3024709	Aqueous	21-May-03 10:14	05/21/03
Stream Site #18	3024710	Aqueous	21-May-03 10:21	05/21/03
Stream Site #11	3024711	Aqueous	21-May-03 10:29	05/21/03
Stream Site #24	3024722	Aqueous	21-May-03 10:37	05/21/03
Stream Site #16	3024714	Aqueous	21-May-03 12:27	05/21/03
Stream Site #27	3024725	Aqueous	21-May-03 10:59	05/21/03
Stream Site #07	3024717	Aqueous	21-May-03 11:39	05/21/03
Stream Site #28	3024726	Aqueous	21-May-03 11:31	05/21/03
Stream Site #04	3024716	Aqueous	21-May-03 11:17	05/21/03
Stream Site #05	3024715	Aqueous	21-May-03 11:53	05/21/03
Stream Site #15	3024712	Aqueous	21-May-03 12:08	05/21/03
Stream Site #23	3024721	Aqueous	21-May-03 12:18	05/21/03
Stream Site #25	3024723	Aqueous	21-May-03 10:45	05/21/03
Stream Site #17	3024718	Aqueous	21-May-03 10:52	05/21/03
Stream Site #26	3024724	Aqueous	21-May-03 11:45	05/21/03
Stream Site #03	3024719	Aqueous	21-May-03 11:59	05/21/03
Stream Site #14	3024713	Aqueous	21-May-03 11:10	05/21/03
Stream Site #13	3024704	Aqueous	21-May-03 11:24	05/21/03

ANALYSIS:
FORT MONMOUTH ENVIRONMENTAL LAB
VOA+15, PCB's, WET CHEMISTRY

6-16-03
Daniel Wright/Date
Laboratory Director

METHODOLOGY SUMMARY

PARAMETER	REFERENCE
TARGET ANALYTE LIST METALS	Standard Methods, 18th ed.
Aluminum	3120B
Antimony	3120B
Arsenic	3120B
Barium	3120B
Beryllium	3120B
Cadmium	3120B
Calcium	3120B
Chromium	3120B
Cobalt	3120B
Copper	3120B
Iron	3120B
Lead	3120B
Magnesium	3120B
Manganese	3120B
Mercury	3112B
Nickel	3120B
Potassium	3120B
Selenium	3120B
Silver	3120B
Sodium	3120B
Thallium	3120B
Vanadium	3120B
Zinc	3120B

PARAMETER	REFERENCE
TARGET COMPOUND LIST ORGANICS	Federal Register 40 CFR Part 136 Appendix A
Base/Neutral and Acid Extractables by GC/MS	625
Purgeable Organics by GC/MS	624
Pesticide and PCB by GC	608

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEP CERTIFICATION # 13461

Definition of Qualifiers

MDL	:	**Method Detection Limit**
J	:	**Compound identified below detection limit**
B	:	**Compound found in blank**
D	:	**Results are from a dilution of the sample**
U	:	**Compound searched for but not detected**
E	:	**Compound exceeds calibration limit**
PQL	:	**Practical Quantitation Limit**
NLE	:	**No limit established**
RT	:	**Retention time**

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
Freshwater Results

Data File	**VC009516.D**	Sample Name	**MB 30May03**
Operator	**Skelton**	Field ID	**MB 30May03**
Date Aquired	**30-May-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	0.083	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	0.388	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Recovery Limit

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Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC009516.D**	Sample Name	**MB 30May03**
Operator	**Skelton**	Field ID	**MB 30May03**
Date Aquired	**30-May-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **MB 30May03**

Lab Name: FMETL NJDEP#: 13461

Project: 2ndQtr Case No.: 30247 Location: Stream SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: MB 30May03

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC009516.D

Level: (low/med) LOW Date Received: 5/21/2003

% Moisture: not dec. Date Analyzed: 5/30/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC009553.D**	Sample Name	**MB 02Jun03**
Operator	**Skelton**	Field ID	**MB 02Jun03**
Date Aquired	**2-Jun-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

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Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
Freshwater Results

Data File	**VC009553.D**	Sample Name	**MB 02Jun03**
Operator	**Skelton**	Field ID	**MB 02Jun03**
Date Aquired	**2-Jun-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	0.083	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	0.388	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Recovery Limit

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **MB 02Jun03**

Lab Name: FMETL NJDEP#: 13461

Project: 2ndQtr Case No.: 30247 Location: Stream SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: MB 02Jun03

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC009553.D

Level: (low/med) LOW Date Received: 5/21/2003

% Moisture: not dec. Date Analyzed: 6/2/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC009522.D**	Sample Name	**3024701**
Operator	**Skelton**	Field ID	**Trip Blank**
Date Aquired	**30-May-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

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Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
Freshwater Results

Data File	**VC009522.D**	Sample Name	**3024701**
Operator	**Skelton**	Field ID	**Trip Blank**
Date Aquired	**30-May-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	0.083	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	0.388	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Recovery Limit

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Trip Blank**

Lab Name: FMETL NJDEP#: 13461

Project: 2ndQtr Case No.: 30247 Location: Stream SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3024701

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC009522.D

Level: (low/med) LOW Date Received: 5/21/2003

% Moisture: not dec. Date Analyzed: 5/30/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
Freshwater Results

Data File	**VC009523.D**	Sample Name	**3024702**
Operator	**Skelton**	Field ID	**Field Blank**
Date Aquired	**30-May-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	0.083	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	0.388	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Recovery Limit

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Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC009523.D**	Sample Name	**3024702**
Operator	**Skelton**	Field ID	**Field Blank**
Date Aquired	**30-May-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Field Blank**

Lab Name: FMETL NJDEP#: 13461

Project: 2ndQtr Case No.: 30247 Location: Stream SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3024702

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC009523.D

Level: (low/med) LOW Date Received: 5/21/2003

% Moisture: not dec. Date Analyzed: 5/30/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
Freshwater Results

Data File	**VC009524.D**	Sample Name	**3024703**
Operator	**Skelton**	Field ID	**Dupe**
Date Aquired	**30-May-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	0.083	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	0.388	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Recovery Limit

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Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC009524.D**	Sample Name	**3024703**
Operator	**Skelton**	Field ID	**Dupe**
Date Aquired	**30-May-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Dupe**

Lab Name: FMETL NJDEP#: 13461

Project: 2ndQtr Case No.: 30247 Location: Stream SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3024703

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC009524.D

Level: (low/med) LOW Date Received: 5/21/2003

% Moisture: not dec. Date Analyzed: 5/30/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC009539.D**	Sample Name	**3024716**
Operator	**Skelton**	Field ID	**SS#04**
Date Aquired	**31-May-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS#04**

Lab Name: FMETL NJDEP#: 13461

Project: 2ndQtr Case No.: 30247 Location: Stream SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 3024716

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC009539.D

Level: (low/med) LOW Date Received: 5/21/2003

% Moisture: not dec. _____ Date Analyzed: 5/31/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC009538.D**	Sample Name	**3024715**
Operator	**Skelton**	Field ID	**SS#05**
Date Aquired	**31-May-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	22.88	42667	3.54 ug/L	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS#05**

Lab Name: FMETL NJDEP#: 13461

Project: 2ndQtr Case No.: 30247 Location: Stream SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3024715

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC009538.D

Level: (low/med) LOW Date Received: 5/21/2003

% Moisture: not dec. Date Analyzed: 5/31/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
Freshwater Results

Data File	VC009536.D	Sample Name	3024713
Operator	Skelton	Field ID	SS#13
Date Aquired	31-May-03	Multiplier	1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	0.083	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	0.388	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Recovery Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS#13**

Lab Name: FMETL NJDEP#: 13461

Project: 2ndQtr Case No.: 30247 Location: Stream SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 3024713

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC009536.D

Level: (low/med) LOW Date Received: 5/21/2003

% Moisture: not dec. _____ Date Analyzed: 5/31/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
Freshwater Results

Data File	**VC009535.D**	Sample Name	**3024712**
Operator	**Skelton**	Field ID	**SS#15**
Date Aquired	**31-May-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	0.083	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	14.70	37077	1.89 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	22.89	48877	3.84 ug/L	0.388	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Recovery Limit

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS#15**

Lab Name: FMETL NJDEP#: 13461

Project: 2ndQtr Case No.: 30247 Location: Stream SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3024712

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC009535.D

Level: (low/med) LOW Date Received: 5/21/2003

% Moisture: not dec. Date Analyzed: 5/31/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC009537.D**	Sample Name	**3024714**
Operator	**Skelton**	Field ID	**SS#16**
Date Aquired	**31-May-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	14.70	36274	1.85 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	22.88	47063	3.68 ug/L	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS#16**

Lab Name: FMETL NJDEP#: 13461

Project: 2ndQtr Case No.: 30247 Location: Stream SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3024714

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC009537.D

Level: (low/med) LOW Date Received: 5/21/2003

% Moisture: not dec. Date Analyzed: 5/31/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC009525.D**	Sample Name	**3024704**
Operator	**Skelton**	Field ID	**SS#22**
Date Aquired	**30-May-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS#22**

Lab Name: FMETL NJDEP#: 13461

Project: 2ndQtr Case No.: 30247 Location: Stream SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3024704

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC009525.D

Level: (low/med) LOW Date Received: 5/21/2003

% Moisture: not dec. Date Analyzed: 5/30/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC009528.D**	Sample Name	**3024705**
Operator	**Skelton**	Field ID	**SS#21**
Date Aquired	**30-May-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether	11.78	45868	1.34 ug/L	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS#21**

Lab Name: FMETL NJDEP#: 13461

Project: 2ndQtr Case No.: 30247 Location: Stream SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3024705

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC009528.D

Level: (low/med) LOW Date Received: 5/21/2003

% Moisture: not dec. Date Analyzed: 5/30/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC009529.D**	Sample Name	**3024706**
Operator	**Skelton**	Field ID	**SS#20**
Date Aquired	**30-May-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether	11.76	46326	1.37 ug/L	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS#20**

Lab Name: FMETL NJDEP#: 13461

Project: 2ndQtr Case No.: 30247 Location: Stream SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 3024706

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC009529.D

Level: (low/med) LOW Date Received: 5/21/2003

% Moisture: not dec. _____ Date Analyzed: 5/30/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC009530.D**	Sample Name	**3024707**
Operator	**Skelton**	Field ID	**SS#09**
Date Aquired	**31-May-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	14.70	28820	1.48 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS#09**

Lab Name: FMETL NJDEP#: 13461

Project: 2ndQtr Case No.: 30247 Location: Stream SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 3024707

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC009530.D

Level: (low/med) LOW Date Received: 5/21/2003

% Moisture: not dec. _____ Date Analyzed: 5/31/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC009531.D**	Sample Name	**3024708**
Operator	**Skelton**	Field ID	**SS#19**
Date Aquired	**31-May-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	14.71	59154	3.07 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS#19**

Lab Name: FMETL NJDEP#: 13461

Project: 2ndQtr Case No.: 30247 Location: Stream SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3024708

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC009531.D

Level: (low/med) LOW Date Received: 5/21/2003

% Moisture: not dec. Date Analyzed: 5/31/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
Freshwater Results

Data File	**VC009532.D**	Sample Name	**3024709**
Operator	**Skelton**	Field ID	**SS#12**
Date Aquired	**31-May-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	0.083	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	14.70	72817	3.90 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform	15.59	33569	1.31 ug/L	5.67	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	0.388	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Recovery Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS#12**

Lab Name: FMETL NJDEP#: 13461

Project: 2ndQtr Case No.: 30247 Location: Stream SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3024709

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC009532.D

Level: (low/med) LOW Date Received: 5/21/2003

% Moisture: not dec. Date Analyzed: 5/31/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
Freshwater Results

Data File	**VC009533.D**	Sample Name	**3024710**
Operator	**Skelton**	Field ID	**SS#18**
Date Aquired	**31-May-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	0.083	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	14.70	73904	3.92 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform	15.58	33816	1.31 ug/L	5.67	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	0.388	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Recovery Limit

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS#18**

Lab Name: FMETL NJDEP#: 13461

Project: 2ndQtr Case No.: 30247 Location: Stream SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3024710

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC009533.D

Level: (low/med) LOW Date Received: 5/21/2003

% Moisture: not dec. Date Analyzed: 5/31/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
Freshwater Results

Data File	**VC009534.D**	Sample Name	**3024711**
Operator	**Skelton**	Field ID	**SS#11**
Date Aquired	**31-May-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride	5.16	24686	1.41 ug/L	0.083	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	14.71	281273	14.79 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	0.388	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Recovery Limit

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS#11**

Lab Name: FMETL NJDEP#: 13461

Project: 2ndQtr Case No.: 30247 Location: Stream SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 3024711

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC009534.D

Level: (low/med) LOW Date Received: 5/21/2003

% Moisture: not dec. _____ Date Analyzed: 5/31/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC009540.D**	Sample Name	**3024717**
Operator	**Skelton**	Field ID	**SS#07**
Date Aquired	**31-May-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	22.89	31503	2.67 ug/L	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS#07**

Lab Name: FMETL NJDEP#: 13461

Project: 2ndQtr Case No.: 30247 Location: Stream SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3024717

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC009540.D

Level: (low/med) LOW Date Received: 5/21/2003

% Moisture: not dec. Date Analyzed: 5/31/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC009541.D**	Sample Name	**3024718**
Operator	**Skelton**	Field ID	**SS#17**
Date Aquired	**31-May-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS#17**

Lab Name: FMETL NJDEP#: 13461

Project: 2ndQtr Case No.: 30247 Location: Stream SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3024718

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC009541.D

Level: (low/med) LOW Date Received: 5/21/2003

% Moisture: not dec. Date Analyzed: 5/31/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
Freshwater Results

Data File	VC009542.D	Sample Name	3024719
Operator	Skelton	Field ID	SS#03
Date Aquired	31-May-03	Multiplier	1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	0.083	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	0.388	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Recovery Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS#03**

Lab Name: FMETL NJDEP#: 13461

Project: 2ndQtr Case No.: 30247 Location: Stream SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3024719

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC009542.D

Level: (low/med) LOW Date Received: 5/21/2003

% Moisture: not dec. Date Analyzed: 5/31/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
Freshwater Results

Data File	**VC009543.D**	Sample Name	**3024720**
Operator	**Skelton**	Field ID	**SS#14**
Date Aquired	**31-May-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	0.083	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	0.388	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Recovery Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS#14**

Lab Name: FMETL NJDEP#: 13461

Project: 2ndQtr Case No.: 30247 Location: Stream SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3024720

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC009543.D

Level: (low/med) LOW Date Received: 5/21/2003

% Moisture: not dec. Date Analyzed: 5/31/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC009544.D**	Sample Name	**3024721**
Operator	**Skelton**	Field ID	**SS#23**
Date Aquired	**31-May-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	14.71	35640	2.03 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	22.88	47702	4.06 ug/L	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS#23**

Lab Name: FMETL NJDEP#: 13461

Project: 2ndQtr Case No.: 30247 Location: Stream SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3024721

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC009544.D

Level: (low/med) LOW Date Received: 5/21/2003

% Moisture: not dec. Date Analyzed: 5/31/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC009545.D**	Sample Name	**3024722**
Operator	**Skelton**	Field ID	**SS#24**
Date Aquired	**31-May-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	14.71	35504	1.98 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	22.89	45493	3.94 ug/L	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS#24**

Lab Name: FMETL NJDEP#: 13461

Project: 2ndQtr Case No.: 30247 Location: Stream SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 3024722

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC009545.D

Level: (low/med) LOW Date Received: 5/21/2003

% Moisture: not dec. _____ Date Analyzed: 5/31/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	VC009546.D	Sample Name	3024723
Operator	Skelton	Field ID	SS#25
Date Aquired	31-May-03	Multiplier	1

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS#25**

Lab Name: FMETL NJDEP#: 13461

Project: 2ndQtr Case No.: 30247 Location: Stream SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3024723

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC009546.D

Level: (low/med) LOW Date Received: 5/21/2003

% Moisture: not dec. Date Analyzed: 5/31/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC009557.D**	Sample Name	**3024724**
Operator	**Skelton**	Field ID	**SS#26**
Date Aquired	**2-Jun-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS#26**

Lab Name: FMETL NJDEP#: 13461

Project: 2ndQtr Case No.: 30247 Location: Stream SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3024724

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC009557.D

Level: (low/med) LOW Date Received: 5/21/2003

% Moisture: not dec. Date Analyzed: 6/2/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1. 005989-54-8	Cyclohexene, 1-methyl-4-(1-meth	30.18	5	JN

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC009558.D**	Sample Name	**3024725**
Operator	**Skelton**	Field ID	**SS#27**
Date Aquired	**2-Jun-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	14.71	26314	1.38 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	22.88	35730	2.68 ug/L	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS#27**

Lab Name: FMETL NJDEP#: 13461

Project: 2ndQtr Case No.: 30247 Location: Stream SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3024725

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC009558.D

Level: (low/med) LOW Date Received: 5/21/2003

% Moisture: not dec. Date Analyzed: 6/2/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC009559.D**	Sample Name	**3024726**
Operator	**Skelton**	Field ID	**SS#28**
Date Aquired	**2-Jun-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	14.70	27095	1.50 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	22.89	32594	2.58 ug/L	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **SS#28**

Lab Name: FMETL NJDEP#: 13461

Project: 2ndQtr Case No.: 30247 Location: Stream SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3024726

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC009559.D

Level: (low/med) LOW Date Received: 5/21/2003

% Moisture: not dec. Date Analyzed: 6/2/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

U.S. Army, Fort Monmouth Environmental Laboratory.
173 Riverside Avenue, NJ 07703.

TABULATED ANALYTICAL REPORT
SW 846 608
Pesticides/PCB

mb 052303

Matrix: Aqueous
Date Extracted: 5/23/2003
Ext. Batch: 052303
Filename: 01341.D
Date Analysed: 5/30/2003

Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.0011
319-85-7	beta-BHC	ND	0.0050
58-89-9	gamma-BHC	ND	0.0013
319-86-8	delta-BHC	ND	0.0016
76-44-8	Heptachlor	ND	0.0035
309-00-2	Aldrin	ND	0.0026
1024-57-3	Heptachlor epoxide	ND	0.0020
5103-71-9	gamma-Chlordane	ND	0.0007
5103-74-2	alpha-Chlordane	ND	0.0036
959-98-8	Endosulfan I	ND	0.0016
72-55-9	4,4'-DDE	ND	0.0021
60-57-1	Dieldrin	ND	0.0020
72-20-8	Endrin	ND	0.0032
33213-65-9	Endosulfan II	ND	0.0022
72-54-8	4,4'-DDD	ND	0.0020
7421-93-4	Endrin aldehyde	ND	0.0100
50-29-3	4,4'-DDT	ND	0.0052
1031-07-8	Endosulfan sulfate	ND	0.0026
53494-70-5	Endrin ketone	ND	0.0026
72-43-5	Methoxychlor	ND	0.0100
8001-35-2	Toxaphene	ND	0.0157
12674-11-2	Arochlor 1016	ND	0.0683
11104-28-2	Arochlor 1221	ND	0.0666
11141-16-5	Arochlor 1232	ND	0.0648
53469-21-9	Arochlor 1242	ND	0.0485
12672-29-6	Arochlor 1248	ND	0.0544
11097-69-1	Arochlor 1254	ND	0.0608
11096-82-5	Arochlor 1260	ND	0.0732

MDL = METHOD DETECTION LIMIT
ND =NOT DETECTED, BELOW MDL

Initial vol. (ml): 1000.00
Final vol. (ml): 10

U.S. Army, Fort Monmouth Environmental Laboratory.
173 Riverside Avenue, NJ 07703.

TABULATED ANALYTICAL REPORT
SW 846 608
Pesticides/PCB

mb 052703

Matrix: Aqueous
Date Extracted: 5/27/2003
Ext. Batch: 052703
Filename: 01361.D
Date Analysed: 6/2/2003

Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.0011
319-85-7	beta-BHC	ND	0.0050
58-89-9	gamma-BHC	ND	0.0013
319-86-8	delta-BHC	ND	0.0016
76-44-8	Heptachlor	ND	0.0035
309-00-2	Aldrin	ND	0.0026
1024-57-3	Heptachlor epoxide	ND	0.0020
5103-71-9	gamma-Chlordane	ND	0.0007
5103-74-2	alpha-Chlordane	ND	0.0036
959-98-8	Endosulfan I	ND	0.0016
72-55-9	4,4'-DDE	ND	0.0021
60-57-1	Dieldrin	ND	0.0020
72-20-8	Endrin	ND	0.0032
33213-65-9	Endosulfan II	ND	0.0022
72-54-8	4,4'-DDD	ND	0.0020
7421-93-4	Endrin aldehyde	ND	0.0100
50-29-3	4,4'-DDT	ND	0.0052
1031-07-8	Endosulfan sulfate	ND	0.0026
53494-70-5	Endrin ketone	ND	0.0026
72-43-5	Methoxychlor	ND	0.0100
8001-35-2	Toxaphene	ND	0.0157
12674-11-2	Arochlor 1016	ND	0.0683
11104-28-2	Arochlor 1221	ND	0.0666
11141-16-5	Arochlor 1232	ND	0.0648
53469-21-9	Arochlor 1242	ND	0.0485
12672-29-6	Arochlor 1248	ND	0.0544
11097-69-1	Arochlor 1254	ND	0.0608
11096-82-5	Arochlor 1260	ND	0.0732

MDL = METHOD DETECTION LIMIT
ND =NOT DETECTED, BELOW MDL

Initial vol. (ml): 1000.00
Final vol. (ml): 10

U. S. Army, Fort Monmouth Environmental Laboratory.
173 Riverside Avenue, NJ 07703.

Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: Streams, 2nd Qrtr. '03
Field ID: FIELDBLANK
Lab ID: 3024702
Filename: 01349.D
Lab Project : 30247

Location: Streams, 2nd Qrtr. '03
MATRIX: Aqueous
Ext. Batch: 052303
Date Extracted: 5/23/2003
Date Analyzed: 30-May-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

U. S. Army, Fort Monmouth Environmental Laboratory.
173 Riverside Avenue, NJ 07703.

Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client:	U.S. Army, DPW, SELFM-PW-EV	**Location:**	Streams, 2nd Qrtr. '03
Project Name:	Streams, 2nd Qrtr. '03	**MATRIX:**	Aqueous
Field ID:	Dupe	**Ext. Batch:**	052303
Lab ID:	3024703	**Date Extracted:**	5/23/2003
Filename:	01350.D	**Date Analyzed:**	30-May-03
Lab Project :	30247	**Dilution:**	1
		Analyst:	A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

U. S. Army, Fort Monmouth Environmental Laboratory.
173 Riverside Avenue, NJ 07703.

Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: Streams, 2nd Qrtr. '03
Field ID: SS# 04
Lab ID: 3024716
Filename: 01402B.D
Lab Project : 30247

Location: Streams, 2nd Qrtr. '03
MATRIX: Aqueous
Ext. Batch: 052703
Date Extracted: 5/27/2003
Date Analyzed: 03-Jun-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

U. S. Army, Fort Monmouth Environmental Laboratory.
173 Riverside Avenue, NJ 07703.

Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: Streams, 2nd Qrtr. '03
Field ID: SS# 05
Lab ID: 3024715
Filename: 01401B.D
Lab Project : 30247

Location: Streams, 2nd Qrtr. '03
MATRIX: Aqueous
Ext. Batch: 052703
Date Extracted: 5/27/2003
Date Analyzed: 03-Jun-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: Streams, 2nd Qrtr. '03
Field ID: SS# 13
Lab ID: 3024713
Filename: 01399B.D
Lab Project : 30247

Location: Streams, 2nd Qrtr. '03
MATRIX: Aqueous
Ext. Batch: 052703
Date Extracted: 5/27/2003
Date Analyzed: 03-Jun-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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173 Riverside Avenue, NJ 07703.

Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: Streams, 2nd Qrtr. '03
Field ID: SS# 15
Lab ID: 3024712
Filename: 01398B.D
Lab Project : 30247

Location: Streams, 2nd Qrtr. '03
MATRIX: Aqueous
Ext. Batch: 052703
Date Extracted: 5/27/2003
Date Analyzed: 03-Jun-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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173 Riverside Avenue, NJ 07703.

Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: Streams, 2nd Qrtr. '03
Field ID: SS# 16
Lab ID: 3024714
Filename: 01400B.D
Lab Project : 30247

Location: Streams, 2nd Qrtr. '03
MATRIX: Aqueous
Ext. Batch: 052703
Date Extracted: 5/27/2003
Date Analyzed: 03-Jun-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: Streams, 2nd Qrtr. '03
Field ID: SS# 22
Lab ID: 3024704
Filename: 01351.D
Lab Project : 30247

Location: Streams, 2nd Qrtr. '03
MATRIX: Aqueous
Ext. Batch: 052303
Date Extracted: 5/23/2003
Date Analyzed: 30-May-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client:	**U.S. Army, DPW, SELFM-PW-EV**	**Location:**	**Streams, 2nd Qrtr. '03**
Project Name:	**Streams, 2nd Qrtr. '03**	**MATRIX:**	**Aqueous**
Field ID:	**SS# 21**	**Ext. Batch:**	**052303**
Lab ID:	**3024705**	**Date Extracted:**	**5/23/2003**
Filename:	**01352.D**	**Date Analyzed:**	**30-May-03**
Lab Project :	**30247**	**Dilution:**	**1**
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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173 Riverside Avenue, NJ 07703.

Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client:	**U.S. Army, DPW, SELFM-PW-EV**	**Location:**	**Streams, 2nd Qrtr. '03**
Project Name:	**Streams, 2nd Qrtr. '03**	**MATRIX:**	**Aqueous**
Field ID:	**SS# 20**	**Ext. Batch:**	**052303**
Lab ID:	**3024706**	**Date Extracted:**	**5/23/2003**
Filename:	**01353.D**	**Date Analyzed:**	**31-May-03**
Lab Project :	**30247**	**Dilution:**	**1**
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: Streams, 2nd Qrtr. '03
Field ID: SS# 09
Lab ID: 3024707
Filename: 01354.D
Lab Project : 30247

Location: Streams, 2nd Qrtr. '03
MATRIX: Aqueous
Ext. Batch: 052303
Date Extracted: 5/23/2003
Date Analyzed: 31-May-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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173 Riverside Avenue, NJ 07703.

Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: Streams, 2nd Qrtr. '03
Field ID: SS# 19
Lab ID: 3024708
Filename: 01363.D
Lab Project : 30247

Location: Streams, 2nd Qrtr. '03
MATRIX: Aqueous
Ext. Batch: 052703
Date Extracted: 5/27/2003
Date Analyzed: 02-Jun-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: Streams, 2nd Qrtr. '03
Field ID: SS# 12
Lab ID: 3024709
Filename: 01364.D
Lab Project : 30247

Location: Streams, 2nd Qrtr. '03
MATRIX: Aqueous
Ext. Batch: 052703
Date Extracted: 5/27/2003
Date Analyzed: 02-Jun-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: Streams, 2nd Qrtr. '03
Field ID: SS# 18
Lab ID: 3024710
Filename: 01365.D
Lab Project : 30247

Location: Streams, 2nd Qrtr. '03
MATRIX: Aqueous
Ext. Batch: 052703
Date Extracted: 5/27/2003
Date Analyzed: 02-Jun-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client:	**U.S. Army, DPW, SELFM-PW-EV**	**Location:**	**Streams, 2nd Qrtr. '03**
Project Name:	**Streams, 2nd Qrtr. '03**	**MATRIX:**	**Aqueous**
Field ID:	**SS# 11**	**Ext. Batch:**	**052703**
Lab ID:	**3024711**	**Date Extracted:**	**5/27/2003**
Filename:	**01366.D**	**Date Analyzed:**	**02-Jun-03**
Lab Project :	**30247**	**Dilution:**	**1**
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	**alpha-BHC**	ND	0.01	0.02		0.0011
319-85-7	**beta-BHC**	ND	0.01	0.20		0.0050
58-89-9	**gamma-BHC**	ND	0.01	0.20		0.0013
319-86-8	**delta-BHC**	ND	0.01	NLE		0.0016
76-44-8	**Heptachlor**	ND	0.01	0.40		0.0035
309-00-2	**Aldrin**	ND	0.01	0.04		0.0026
1024-57-3	**Heptachlor epoxide**	ND	0.01	0.20		0.0020
5103-71-9	**gamma-Chlordane**	ND	0.01	0.50		0.0007
5103-74-2	**alpha-Chlordane**	ND	0.01	0.50		0.0036
959-98-8	**Endosulfan I**	ND	0.01	0.40		0.0016
72-55-9	**4,4'-DDE**	ND	0.01	0.10		0.0021
60-57-1	**Dieldrin**	ND	0.01	0.03		0.0020
72-20-8	**Endrin**	ND	0.01	2.00		0.0032
33213-65-9	**Endosulfan II**	ND	0.01	0.40		0.0022
72-54-8	**4,4'-DDD**	ND	0.01	0.10		0.0020
7421-93-4	**Endrin aldehyde**	ND	0.01	NLE		0.0100
50-29-3	**4,4'-DDT**	ND	0.01	0.10		0.0052
1031-07-8	**Endosulfan sulfate**	ND	0.50	0.40		0.0026
53494-70-5	**Endrin ketone**	ND	0.50	0.01		0.0026
72-43-5	**Methoxychlor**	ND	0.50	40.00		0.0100
8001-35-2	**Toxaphene**	ND	0.50	3.00		0.0157
12674-11-2	**Arochlor 1016**	ND	0.50	0.50		0.0683
11104-28-2	**Arochlor 1221**	ND	0.50	0.5		0.0666
11141-16-5	**Arochlor 1232**	ND	0.50	0.50		0.0648
53469-21-9	**Arochlor 1242**	ND	0.50	0.50		0.0485
12672-29-6	**Arochlor 1248**	ND	0.50	0.50		0.0544
11097-69-1	**Arochlor 1254**	ND	0.50	0.50		0.0608
11096-82-5	**Arochlor 1260**	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) **1000.0**
Final Vol.(ml) **10.0**

***Higher of PQL's and ground water criteria as per NJAC 7:9-6**
***Results between MDL and RL are estimated.**
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: Streams, 2nd Qrtr. '03
Field ID: SS# 07
Lab ID: 3024717
Filename: 01403B.D
Lab Project : 30247

Location: Streams, 2nd Qrtr. '03
MATRIX: Aqueous
Ext. Batch: 052703
Date Extracted: 5/27/2003
Date Analyzed: 03-Jun-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: Streams, 2nd Qrtr. '03
Field ID: SS# 17
Lab ID: 3024718
Filename: 01404B.D
Lab Project : 30247

Location: Streams, 2nd Qrtr. '03
MATRIX: Aqueous
Ext. Batch: 052703
Date Extracted: 5/27/2003
Date Analyzed: 03-Jun-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

U. S. Army, Fort Monmouth Environmental Laboratory.
173 Riverside Avenue, NJ 07703.

Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: Streams, 2nd Qrtr. '03
Field ID: SS# 03
Lab ID: 3024719
Filename: 01405B.D
Lab Project : 30247

Location: Streams, 2nd Qrtr. '03
MATRIX: Aqueous
Ext. Batch: 052703
Date Extracted: 5/27/2003
Date Analyzed: 03-Jun-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

U. S. Army, Fort Monmouth Environmental Laboratory.
173 Riverside Avenue, NJ 07703.

Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: Streams, 2nd Qrtr. '03
Field ID: SS# 14
Lab ID: 3024720
Filename: 01406B.D
Lab Project : 30247

Location: Streams, 2nd Qrtr. '03
MATRIX: Aqueous
Ext. Batch: 052703
Date Extracted: 5/27/2003
Date Analyzed: 03-Jun-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

U. S. Army, Fort Monmouth Environmental Laboratory.
173 Riverside Avenue, NJ 07703.

Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: Streams, 2nd Qrtr. '03
Field ID: SS# 23
Lab ID: 3024721
Filename: 01407B.D
Lab Project : 30247

Location: Streams, 2nd Qrtr. '03
MATRIX: Aqueous
Ext. Batch: 052703
Date Extracted: 5/27/2003
Date Analyzed: 03-Jun-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

U. S. Army, Fort Monmouth Environmental Laboratory.
173 Riverside Avenue, NJ 07703.

Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: Streams, 2nd Qrtr. '03
Field ID: SS# 24
Lab ID: 3024722
Filename: 01408B.D
Lab Project : 30247

Location: Streams, 2nd Qrtr. '03
MATRIX: Aqueous
Ext. Batch: 052703
Date Extracted: 5/27/2003
Date Analyzed: 03-Jun-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Establisbed.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

U. S. Army, Fort Monmouth Environmental Laboratory.
173 Riverside Avenue, NJ 07703.

Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: Streams, 2nd Qrtr. '03
Field ID: SS# 25
Lab ID: 3024723
Filename: 01409B.D
Lab Project : 30247

Location: Streams, 2nd Qrtr. '03
MATRIX: Aqueous
Ext. Batch: 052703
Date Extracted: 5/27/2003
Date Analyzed: 03-Jun-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

U. S. Army, Fort Monmouth Environmental Laboratory.
173 Riverside Avenue, NJ 07703.

Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: Streams, 2nd Qrtr. '03
Field ID: SS# 26
Lab ID: 3024724
Filename: 01410B.D
Lab Project : 30247

Location: Streams, 2nd Qrtr. '03
MATRIX: Aqueous
Ext. Batch: 052703
Date Extracted: 5/27/2003
Date Analyzed: 03-Jun-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

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173 Riverside Avenue, NJ 07703.

Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: Streams, 2nd Qrtr. '03
Field ID: SS# 27
Lab ID: 3024725
Filename: 01411B.D
Lab Project : 30247

Location: Streams, 2nd Qrtr. '03
MATRIX: Aqueous
Ext. Batch: 052703
Date Extracted: 5/27/2003
Date Analyzed: 03-Jun-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

U. S. Army, Fort Monmouth Environmental Laboratory.
173 Riverside Avenue, NJ 07703.

Report of Analysis
NJDEP Certification # 13461
EPA Method 608
PESTICIDES/PCB

Client: U.S. Army, DPW, SELFM-PW-EV
Project Name: Streams, 2nd Qrtr. '03
Field ID: SS# 28
Lab ID: 3024726
Filename: 01412B.D
Lab Project : 30247

Location: Streams, 2nd Qrtr. '03
MATRIX: Aqueous
Ext. Batch: 052703
Date Extracted: 5/27/2003
Date Analyzed: 03-Jun-03
Dilution: 1
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	Reporting Limit (ug/L)	Regulatory Level (ug/L)	Qualifier	MDL (ug/L)
319-84-6	alpha-BHC	ND	0.01	0.02		0.0011
319-85-7	beta-BHC	ND	0.01	0.20		0.0050
58-89-9	gamma-BHC	ND	0.01	0.20		0.0013
319-86-8	delta-BHC	ND	0.01	NLE		0.0016
76-44-8	Heptachlor	ND	0.01	0.40		0.0035
309-00-2	Aldrin	ND	0.01	0.04		0.0026
1024-57-3	Heptachlor epoxide	ND	0.01	0.20		0.0020
5103-71-9	gamma-Chlordane	ND	0.01	0.50		0.0007
5103-74-2	alpha-Chlordane	ND	0.01	0.50		0.0036
959-98-8	Endosulfan I	ND	0.01	0.40		0.0016
72-55-9	4,4'-DDE	ND	0.01	0.10		0.0021
60-57-1	Dieldrin	ND	0.01	0.03		0.0020
72-20-8	Endrin	ND	0.01	2.00		0.0032
33213-65-9	Endosulfan II	ND	0.01	0.40		0.0022
72-54-8	4,4'-DDD	ND	0.01	0.10		0.0020
7421-93-4	Endrin aldehyde	ND	0.01	NLE		0.0100
50-29-3	4,4'-DDT	ND	0.01	0.10		0.0052
1031-07-8	Endosulfan sulfate	ND	0.50	0.40		0.0026
53494-70-5	Endrin ketone	ND	0.50	0.01		0.0026
72-43-5	Methoxychlor	ND	0.50	40.00		0.0100
8001-35-2	Toxaphene	ND	0.50	3.00		0.0157
12674-11-2	Arochlor 1016	ND	0.50	0.50		0.0683
11104-28-2	Arochlor 1221	ND	0.50	0.5		0.0666
11141-16-5	Arochlor 1232	ND	0.50	0.50		0.0648
53469-21-9	Arochlor 1242	ND	0.50	0.50		0.0485
12672-29-6	Arochlor 1248	ND	0.50	0.50		0.0544
11097-69-1	Arochlor 1254	ND	0.50	0.50		0.0608
11096-82-5	Arochlor 1260	ND	0.50	0.50		0.0732

MDL = Method Detection Limit.
ND =Not Decteded / Below MDL.
B = Present in the associated Blank.
E = Exceeded Calibration Range, Dilution to follow.
D = Dilution.
NLE = No Limit Established.
RL = Reporting Limit.
PQL = Practical Quantitation Limit.

Initial Vol.(ml) 1000.0
Final Vol.(ml) 10.0

*Higher of PQL's and ground water criteria as per NJAC 7:9-6
*Results between MDL and RL are estimated.
Column-Primary: Rtx-CLPesticides 30/.32mm ID/.25um.
Column-Confirmation: Rtx-CLPesticides2 30m/.32mm ID/.5um.

Stream Water Analysis
1st Quarter 2003

Sample ID	Date Sampled	Stream Site#	pH	Ammonia (mg/L)	Nitrates (mg/L)	Phosphate (mg/L)	Sulfate (mg/L)	DO (mg/L)	T.Coliform (cfu/100ml)	F.Coliform (cfu/100ml)	% Salinity
3024704	05/21/03	22	7.80	0.10	ND	0.19	495	8.31	60	0	24
3024705	05/21/03	21	7.80	0.22	0.27	0.23	860	8.36	120	0	25
3024706	05/21/03	20	7.77	0.23	ND	0.21	940	8.40	120	60	24
3024707	05/21/03	09	7.63	0.18	0.83	0.29	75.0	8.56	440	20	16
3024708	05/21/03	19	7.59	ND	0.81	0.08	20.4	8.62	100	0	0
3024709	05/21/03	12	7.60	ND	0.85	0.06	21.4	8.10	460	0	0
3024710	05/21/03	18	7.62	ND	0.96	0.08	21.9	8.09	260	20	0
3024711	05/21/03	11	7.67	0.18	1.17	0.13	20.4	8.71	1120	0	0
3024712	05/21/03	15	7.81	0.42	0.85	0.41	27.3	8.63	760	100	0
3024713	05/21/03	13	7.79	0.46	0.90	0.18	30.8	8.69	240	0	0
3024714	05/21/03	16	7.83	0.47	0.81	0.36	30.5	8.63	680	60	7
3024715	05/21/03	05	7.76	0.39	0.91	0.31	29.6	8.47	1540	40	11
3024716	05/21/03	04	7.78	0.47	0.74	0.46	31.4	8.51	480	40	12
3024717	05/21/03	07	7.74	0.56	0.88	0.50	29.8	8.60	780	60	10
3024718	05/21/03	17	7.65	0.34	0.79	0.41	25.3	8.63	13200	0	6
3024719	05/21/03	03	7.50	0.31	0.94	0.54	24.6	8.79	13200	100	0
3024720	05/21/03	14	7.49	0.21	1.01	0.31	23.7	8.79	2420	140	0
3024721	05/21/03	23	7.81	0.44	0.45	0.32	29.2	8.70	1880	100	0
3024722	05/21/03	24	7.83	0.48	0.60	0.30	29.4	8.60	2580	60	0
324723	05/21/03	25	7.66	0.38	0.87	0.51	23.5	8.62	3200	40	10
3024724	05/21/03	26	7.68	0.37	0.78	0.50	23.9	8.66	2960	0	12
3024725	05/21/03	27	7.69	0.43	0.98	0.39	34.4	8.54	320	20	15
3024726	05/21/03	28	7.76	0.44	0.47	0.35	31.7	8.63	480	0	14

mg/L = Parts Per Million
cfu = Colony Forming Units
ND = Not detected
TNTC = Too Numerous to Count

Completed: 04/21/03
Reviewed: 04/21/03

6-16-03

Daniel K. Wright
Laboratory Director

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
07/17/1997	FMETL	ND	ND	ND	ND						
10/30/1997	FMETL	ND	ND	ND	ND						
02/10/1998	FMETL	ND	ND	ND	ND						
04/21/1998	FMETL	ND	ND	ND	ND						
08/19/1998	FMETL	ND	ND	ND	ND						
11/18/1998	FMETL	ND	ND	1.09	ND						
02/25/1999	FMETL	ND	ND	ND	ND						
06/29/1999	FMETL	ND	ND	ND	ND						
09/22/1999	FMETL	ND	ND	ND	ND						
12/09/1999	FMETL	ND	ND	ND	ND						
03/01/2000	FMETL	ND	ND	ND	ND						
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	ND	ND	ND	ND						
11/20/2000	FMETL	ND	ND	ND	ND						
03/08/2001	FMETL	ND	ND	ND	ND						-
05/16/2001	FMETL	ND	ND	ND	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/05/2002	FMETL	ND	ND	ND	ND						V,P
03/24/2003	FMETL	ND	ND	ND	ND	ND					V,P
05/21/2003	FMETL	ND	ND	ND	ND	ND					V,P

SOURCE: 3

Sampling Dates:
07/17/1997 - 05/21/2003

NOTES:

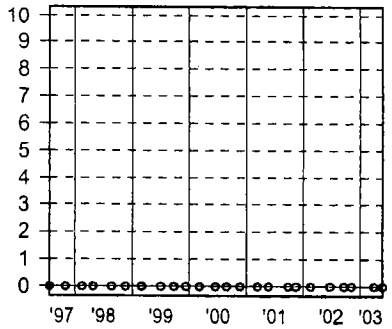
Stream 3 is Fresh-Water.
MeCl limit is 2.49 ug/L.
PCE limit is 0.388 ug/L.

Fort Monmouth

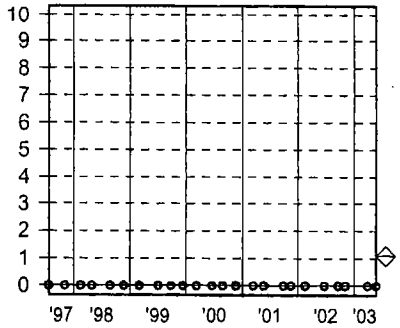
GW Monitoring
Streams

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

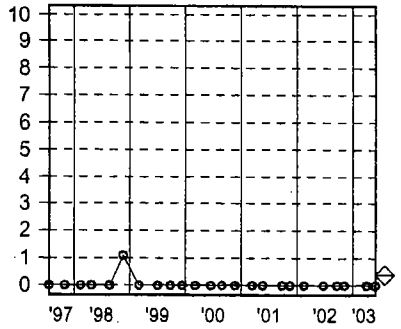
cis-1,2-Dichloroethene
(ug/l)



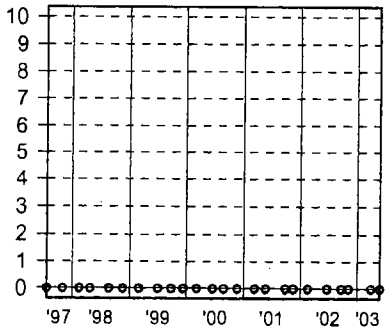
Trichloroethene
(ug/l)



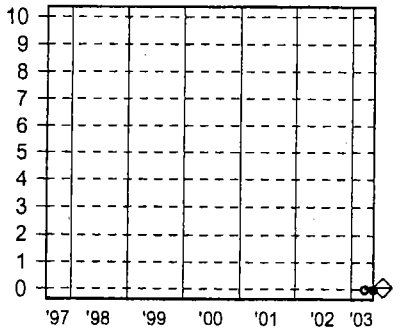
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 3

Sampling Dates:
07/17/1997 - 05/21/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 1 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	2.18	ND	ND	ND						
07/17/1997	FMETL	1.63	ND	1.61	ND						
10/30/1997	FMETL	ND	ND	1.24	ND						
02/10/1998	FMETL	ND	ND	6.61	ND						
04/21/1998	FMETL	ND	ND	4.42	ND						
08/19/1998	FMETL	1.92	1.10	2.85	ND						
11/17/1998	FMETL	1.19	ND	1.62	ND						
02/25/1999	FMETL	ND	ND	5.61	ND						
06/29/1999	FMETL	2.41	1.56	5.27	ND						
09/22/1999	FMETL	2.02	ND	1.85	ND						
12/09/1999	FMETL	ND	ND	ND	ND						
03/01/2000	FMETL	1.23	1.26	6.18	2.18						
06/12/2000	FMETL	ND	ND	4.37	ND						
08/24/2000	FMETL	1.19	1.19	3.19	ND						
11/20/2000	FMETL	ND	ND	3.70	ND						-
03/08/2001	FMETL	ND	ND	2.52	ND						-
05/16/2001	FMETL	ND	ND	2.95	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	1.64	ND						V
06/18/2002	FMETL	ND	ND	1.97	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	ND	ND	ND	ND						V,P
03/13/2003	FMETL	0.57	0.51	2.33	ND	ND					V,P
05/21/2003	FMETL	ND	ND	ND	ND	ND					V,P

SOURCE: 4

Sampling Dates:
04/08/1997 - 05/21/2003

NOTES:

PAGE 1 OF 1
Stream 4 is Salt-Water.
MTBE limit is NLE
cis-1,2-Di limit is NLE
TCE limit is 81
PCE limit is 4.29

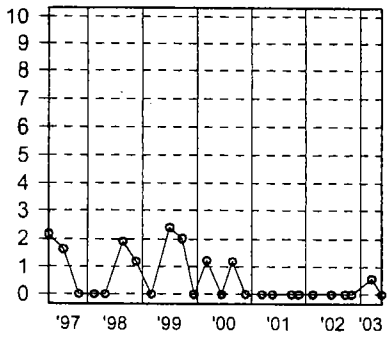
Fort Monmouth

GW Monitoring
Streams

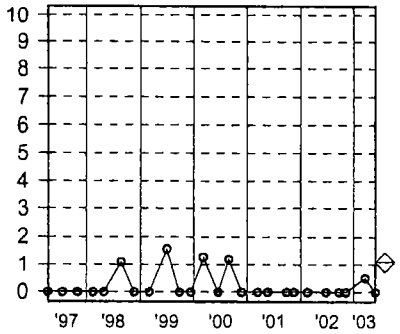
Source 2 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

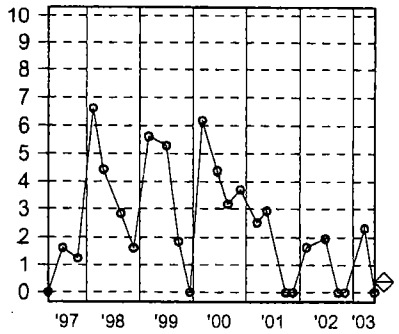
cis-1,2-Dichloroethene
(ug/l)



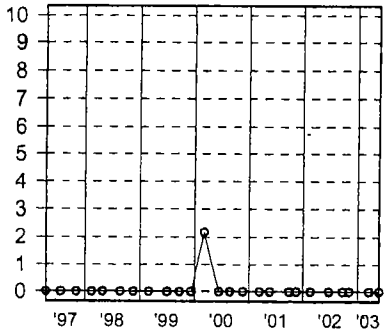
Trichloroethene
(ug/l)



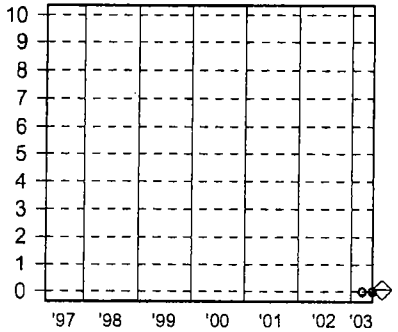
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 4

Sampling Dates:
04/08/1997 - 05/21/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 2 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	1.80	ND	2.28	ND						
07/17/1997	FMETL	3.66	ND	3.54	ND						
10/30/1997	FMETL	1.83	ND	1.70	ND						
02/10/1998	FMETL	ND	ND	6.34	ND						
04/21/1998	FMETL	ND	ND	4.48	ND						
08/19/1998	FMETL	2.28	1.27	3.39	ND						
11/17/1998	FMETL	1.67	ND	2.17	ND						
02/25/1999	FMETL	ND	ND	5.45	ND						
06/29/1999	FMETL	2.74	1.74	6.04	ND						
09/22/1999	FMETL	1.96	ND	1.82	ND						
12/09/1999	FMETL	1.60	ND	3.82	ND						
03/01/2000	FMETL	1.27	1.36	6.62	2.34						
06/12/2000	FMETL	ND	ND	4.38	ND						
08/24/2000	FMETL	1.19	ND	3.44	ND						
11/20/2000	FMETL	ND	ND	3.58	ND						-
03/08/2001	FMETL	ND	ND	ND	ND						-
05/16/2001	FMETL	0.97	ND	4.09	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	1.51	ND	1.99	ND						-
02/11/2002	FMETL	ND	ND	2.44	ND						V
06/18/2002	FMETL	ND	ND	2.39	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	ND	ND	ND	ND						V,P
03/13/2003	FMETL	0.81	0.71	3.08	ND	ND					V,P
05/21/2003	FMETL	ND	ND	3.54	ND	ND					V,P

SOURCE: 5

Sampling Dates:
04/08/1997 - 05/21/2003

NOTES:

Page 1 of 1
Stream 5 is Salt-Water.
MeCl limit is 1600 ug/L.
cis-1,2-Di limit is NLE.
TCE limit is 81 ug/L.
PCE limit is 4.29 ug/L.
MTBE limit is NLE.

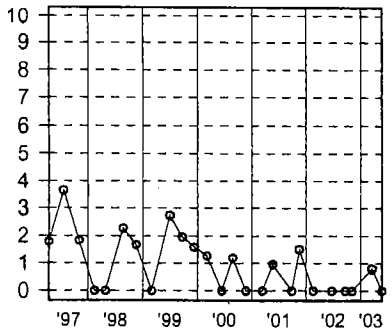
Fort Monmouth

GW Monitoring
Streams

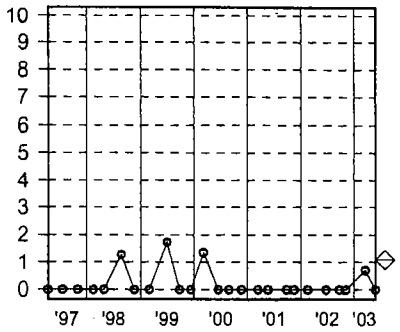
Source 3 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

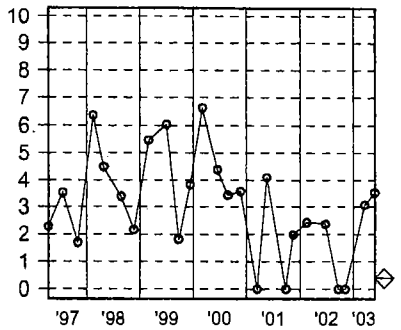
cis-1,2-Dichloroethene
(ug/l)



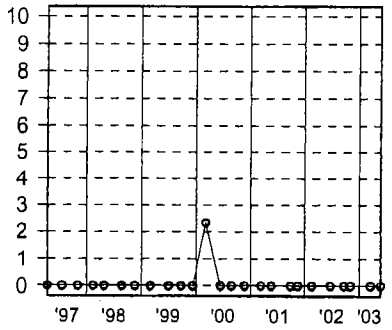
Trichloroethene
(ug/l)



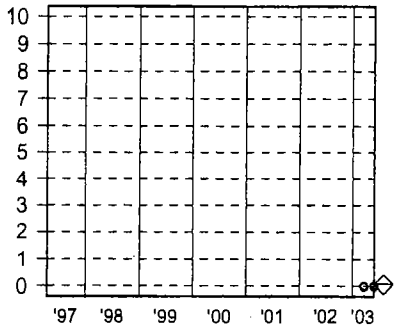
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 5

Sampling Dates:
04/08/1997 - 05/21/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 3 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	ND	ND	ND	ND						
07/17/1997	FMETL	1.14	ND	1.08	ND						
10/30/1997	FMETL	ND	ND	ND	ND						
02/10/1998	FMETL	ND	ND	2.04	ND						
04/21/1998	FMETL	ND	ND	2.40	ND						
08/19/1998	FMETL	ND	ND	ND	ND						
11/17/1998	FMETL	ND	ND	ND	ND						
02/25/1999	FMETL	ND	ND	2.85	ND						
06/29/1999	FMETL	ND	ND	1.42	2.00						
09/22/1999	FMETL	ND	ND	ND	ND						
12/09/1999	FMETL	ND	ND	ND	ND						
03/01/2000	FMETL	1.19	1.30	6.47	2.14						
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	ND	ND	1.77	ND						
11/20/2000	FMETL	ND	ND	1.94	ND						-
03/08/2001	FMETL	ND	ND	ND	ND						-
05/16/2001	FMETL	ND	ND	ND	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	ND	ND	ND	ND						V,P
03/13/2003	FMETL	ND	ND	1.61	ND	ND					V,P
05/21/2003	FMETL	ND	ND	2.67	ND	ND					V,P

SOURCE: 7

Sampling Dates:
04/08/1997 - 05/21/2003

NOTES:

Page 1 of 1
Stream 7 is Salt-Water.
cis-1,2-Di limit is NLE.
TCE limit is 81 ug/L.
PCE limit is 4.29 ug/L.
MTBE limit is NLE.
Acetone limit is NLE.

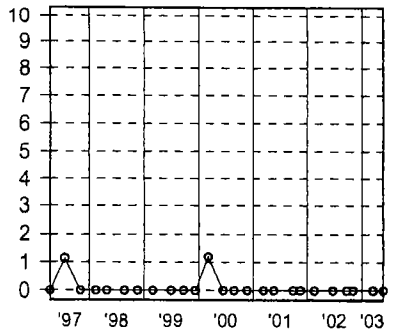
Fort Monmouth

GW Monitoring
Streams

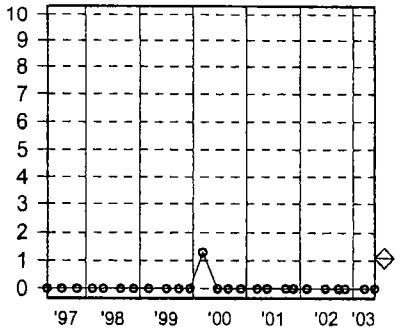
Source 4 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

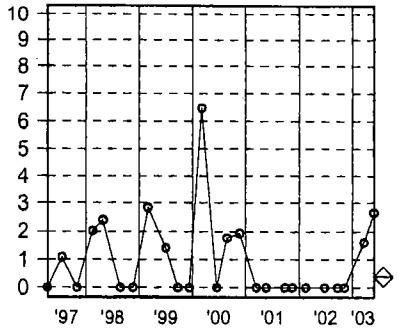
cis-1,2-Dichloroethene
(ug/l)



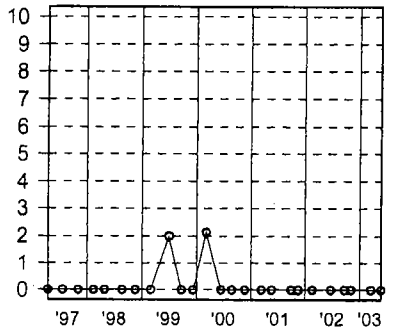
Trichloroethene
(ug/l)



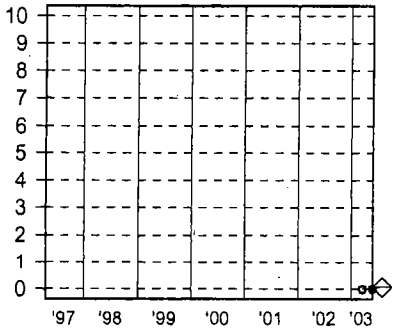
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 7

Sampling Dates:
04/08/1997 - 05/21/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 4 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	2.78	ND	ND	ND						
07/17/1997	FMETL	ND	ND	ND	ND						
10/30/1997	FMETL	2.14	ND	ND	ND						
02/10/1998	FMETL	6.00	ND	ND	ND						
04/21/1998	FMETL	4.73	ND	ND	ND						
08/19/1998	FMETL	1.69	ND	ND	ND						
11/17/1998	FMETL	ND	ND	ND	ND						
02/25/1999	FMETL	1.78	ND	ND	ND						
06/29/1999	FMETL	ND	ND	ND	ND						
09/21/1999	FMETL	1.91	ND	ND	ND						
12/09/1999	FMETL	ND	ND	ND	ND						
03/01/2000	FMETL	2.17	ND	ND	ND						
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	1.11	ND	ND	ND						
11/20/2000	FMETL	ND	ND	ND	ND						-
11/20/2000D	FMETL	ND	ND	ND	ND						-
02/21/2001	FMETL	1.72	ND	ND	ND						-
05/16/2001	FMETL	ND	ND	ND	ND						-
09/11/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	1.24	ND	ND	ND						V,P
03/13/2003	FMETL	9.40	ND	ND	ND	ND					V,P
05/21/2003	FMETL	1.48	ND	ND	ND	ND					V,P

SOURCE: 9

Sampling Dates:
04/08/1997 - 05/21/2003

NOTES:

PAGE 1 OF 1
Stream 9 is Salt-Water.
MeCl limit is 1600 ug/L.
cis-1,2-Di limit is NLE.
Acetone limit is NLE.

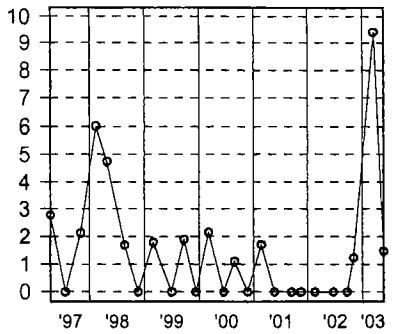
Fort Monmouth

GW Monitoring
Streams

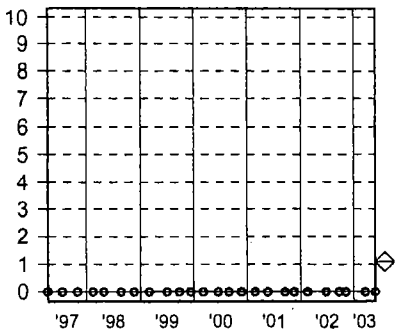
Source 5 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

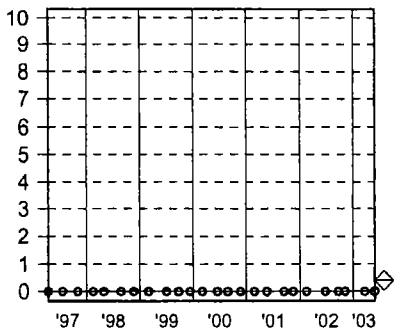
cis-1,2-Dichloroethene
(ug/l)



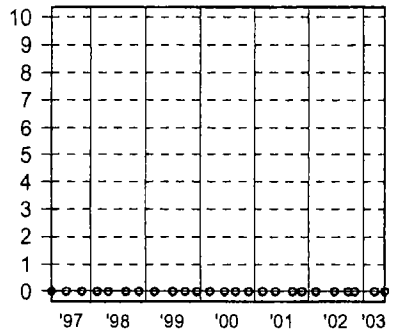
Trichloroethene
(ug/l)



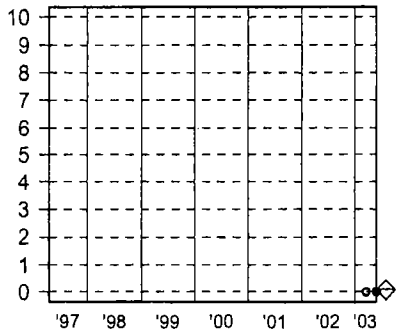
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 9

Sampling Dates:
04/08/1997 - 05/21/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 5 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	18.72	1.58	ND	ND						
07/17/1997	FMETL	14.13	ND	ND	ND						
10/30/1997	FMETL	18.23	ND	ND	ND						
02/10/1998	FMETL	24.71	2.14	ND	ND						
04/21/1998	FMETL	21.66	1.82	ND	ND						
08/19/1998	FMETL	11.73	ND	ND	ND						
11/18/1998	FMETL	8.82	ND	ND	ND						
02/25/1999	FMETL	9.11	ND	ND	ND						
06/29/1999	FMETL	5.77	ND	ND	ND						
09/21/1999	FMETL	15.62	ND	ND	ND						
12/09/1999	FMETL	11.90	ND	ND	ND						
03/01/2000	FMETL	11.01	ND	ND	1.64						
06/12/2000	FMETL	8.03	ND	ND	ND						
08/24/2000	FMETL	9.08	ND	ND	ND						
08/24/2000D	FMETL	8.70	ND	ND	ND						
11/20/2000	FMETL	5.34	ND	ND	ND						-
02/21/2001	FMETL	8.26	ND	ND	ND						-
05/16/2001	FMETL	5.21	ND	ND	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	1.93	ND	ND	ND						-
02/11/2002	FMETL	1.05	ND	ND	ND						V
06/18/2002	FMETL	3.08	ND	ND	ND						V,P
09/18/2002	FMETL	4.17	ND	ND	ND						V,P
11/05/2002	FMETL	7.48	ND	ND	ND	1.33					V,P
03/13/2003	FMETL	24.28	0.67	ND	0.79	3.37					V,P
05/21/2003	FMETL	14.79	ND	ND	ND	1.41					V,P

SOURCE: 11

Sampling Dates:
04/08/1997 - 05/21/2003

NOTES:

Page 1 of1
Stream 11 is Fresh-Water.
cis-1,2-Di limit is NLE.
TCE limit is 1.09 ug/L.
MTBE limit is NLE.

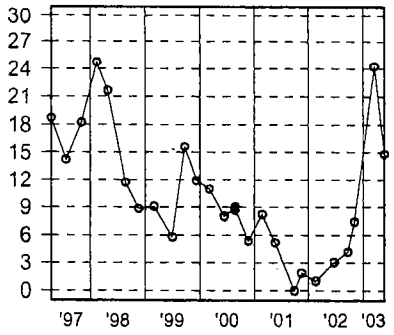
Fort Monmouth

GW Monitoring
Streams

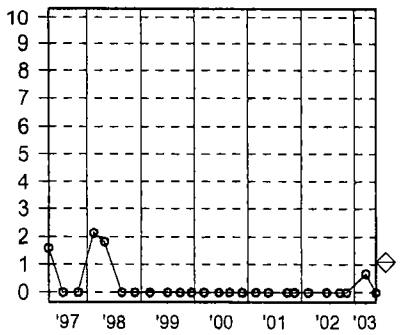
Source 6 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

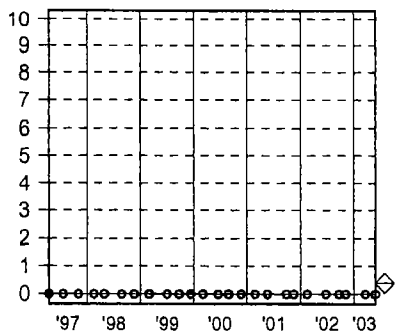
cis-1,2-Dichloroethene
(ug/l)



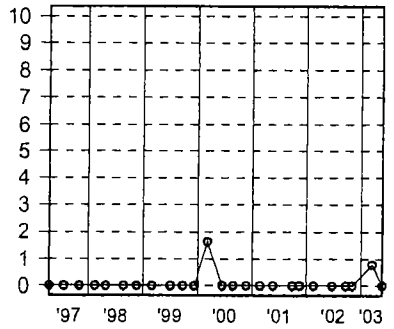
Trichloroethene
(ug/l)



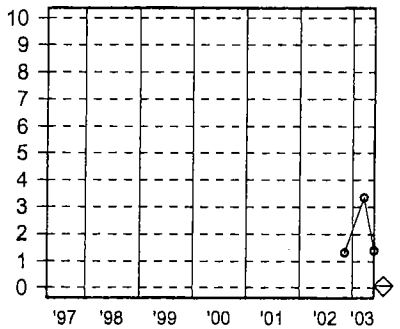
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 11

Sampling Dates:
04/08/1997 - 05/21/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 6 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	6.63	ND	ND	ND						
07/17/1997	FMETL	ND	ND	ND	ND						
10/30/1997	FMETL	5.67	ND	ND	ND						
02/10/1998	FMETL	6.54	ND	ND	ND						
04/21/1998	FMETL	ND	ND	ND	ND						
08/19/1998	FMETL	4.58	ND	ND	ND						
11/18/1998	FMETL	2.48	ND	ND	ND						
02/25/1999	FMETL	1.80	ND	ND	ND						
06/29/1999	FMETL	1.39	ND	ND	ND						
09/21/1999	FMETL	3.67	ND	ND	ND						
12/09/1999	FMETL	2.74	ND	ND	ND						
03/01/2000	FMETL	3.13	ND	ND	ND						
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	2.00	ND	ND	ND						
11/20/2000	FMETL	1.87	ND	ND	ND						-
02/21/2001	FMETL	1.89	ND	ND	ND						-
05/16/2001	FMETL	1.66	ND	ND	ND						-
05/16/2001D	FMETL	1.72	ND	ND	ND						-
09/11/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/05/2002	FMETL	5.16	ND	ND	ND	ND					V,P
03/13/2003	FMETL	9.43	ND	ND	1.18	1.30					V,P
05/21/2003	FMETL	3.90	ND	ND	ND	ND					V,P

SOURCE: 12

Sampling Dates:
04/08/1997 - 05/21/2003

NOTES:

Page 1 of 1
Stream 12 is Fresh-Water.
cis-1,2-Di limit is NLE.
Acetone limit is NLE.

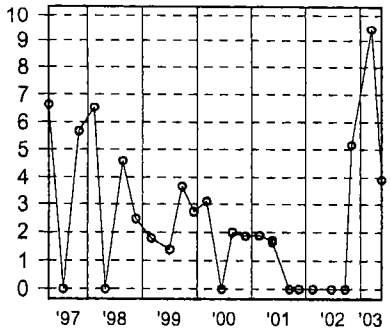
Fort Monmouth

GW Monitoring
Streams

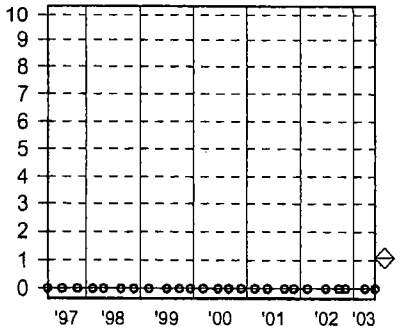
Source 7 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

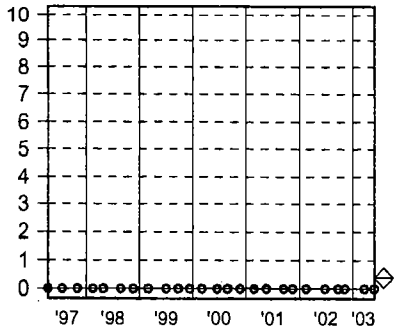
cis-1,2-Dichloroethene
(ug/l)



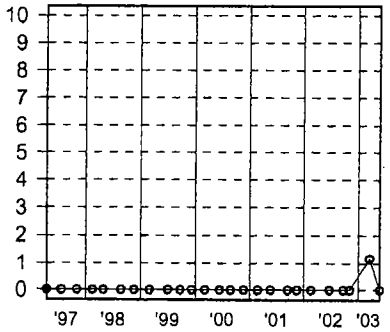
Trichloroethene
(ug/l)



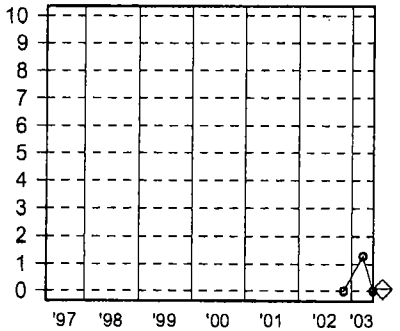
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 12

Sampling Dates:
04/08/1997 - 05/21/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 7 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	ND	ND	ND	ND						
07/17/1997	FMETL	ND	ND	ND	ND						
10/30/1997	FMETL	ND	ND	ND	ND						
02/10/1998	FMETL	ND	ND	ND	ND						
04/21/1998	FMETL	ND	ND	ND	ND						
08/19/1998	FMETL	ND	ND	ND	ND						
11/18/1998	FMETL	ND	ND	ND	ND						
02/25/1999	FMETL	ND	ND	ND	ND						
06/29/1999	FMETL	ND	ND	ND	ND						
09/22/1999	FMETL	ND	ND	ND	ND						
12/09/1999	FMETL	ND	ND	3.94	ND						
03/01/2000	FMETL	1.35	1.40	6.92	2.40						
06/12/2000	FMETL	ND	ND	5.56	ND						
08/24/2000	FMETL	2.17	1.78	5.40	ND						
11/20/2000	FMETL	ND	ND	6.58	ND						-
02/21/2001	FMETL	ND	ND	ND	ND						-
05/16/2001	FMETL	ND	ND	ND	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/05/2002	FMETL	ND	ND	1.46	ND	ND					V,P
03/24/2003	FMETL	ND	ND	ND	ND	ND					V,P
05/21/2003	FMETL	ND	ND	ND	ND	ND					V,P

SOURCE: 13

Sampling Dates:
04/08/1997 - 05/21/2003

NOTES:

Page 1 of 1
Stream 13 is Fresh-Water.
MeCl limit is 2.49 ug/L.
cis-1,2-Di limit is NLE.
TCE limit is 1.09.
PCE limit is 0.388 ug/L.
Acetone limit is NLE.
MTBE limit is NLE.

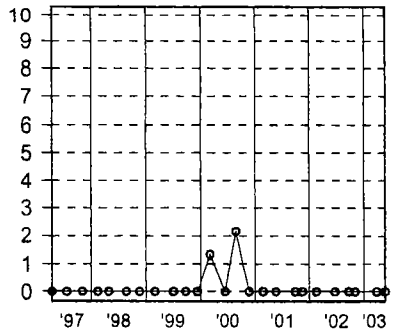
Fort Monmouth

GW Monitoring
Streams

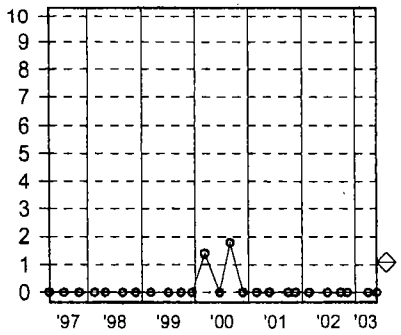
Source 8 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

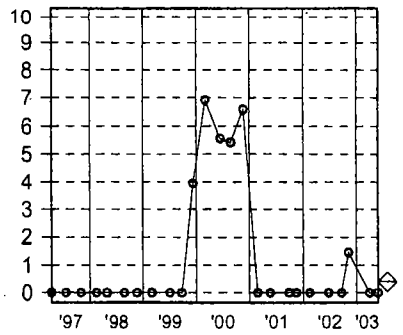
cis-1,2-Dichloroethene
(ug/l)



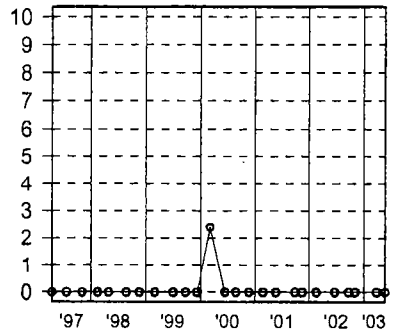
Trichloroethene
(ug/l)



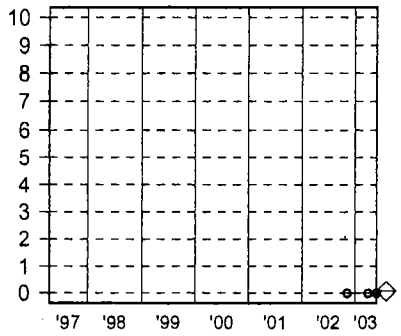
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 13

Sampling Dates:
04/08/1997 - 05/21/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 8 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	ND	ND	ND	ND						
07/17/1997	FMETL	ND	ND	ND	ND						
10/30/1997	FMETL	1.59	1.75	ND	ND						
02/10/1998	FMETL	ND	ND	ND	ND						
04/21/1998	FMETL	ND	ND	ND	ND						
08/19/1998	FMETL	ND	ND	ND	ND						
11/18/1998	FMETL	ND	ND	ND	ND						
02/25/1999	FMETL	ND	ND	ND	ND						
06/29/1999	FMETL	ND	ND	ND	ND						
09/22/1999	FMETL	ND	ND	ND	ND						
12/09/1999	FMETL	11.26	ND	ND	ND						
03/01/2000	FMETL	ND	ND	ND	ND						
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	ND	ND	ND	ND						
11/20/2000	FMETL	ND	ND	ND	ND						-
03/08/2001	FMETL	ND	ND	ND	ND						-
03/08/2001D	FMETL	ND	ND	ND	ND						-
05/16/2001	FMETL	ND	ND	ND	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/05/2002	FMETL	ND	ND	ND	ND	ND					V,P
03/24/2003	FMETL	ND	ND	ND	ND	ND					V,P
05/21/2003	FMETL	ND	ND	ND	ND	ND					V,P

SOURCE: 14

Sampling Dates:
04/08/1997 - 05/21/2003

NOTES:

Page 1 of 1
Stream 14 is Fresh-Water.
cis-1,2-Di limit is NLE.
TCE limit is 1.09.
Acetone limit is NLE.

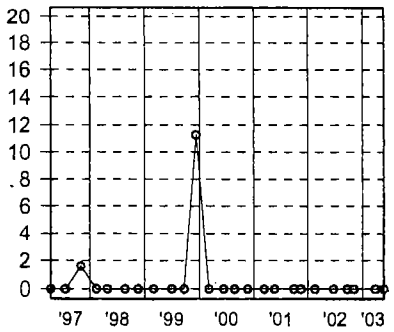
Fort Monmouth

GW Monitoring
Streams

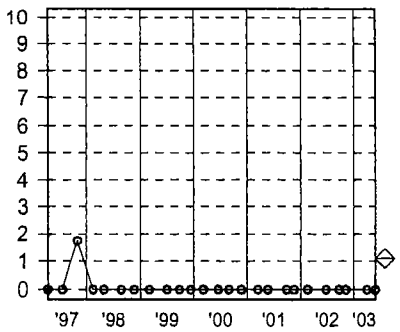
Source 9 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

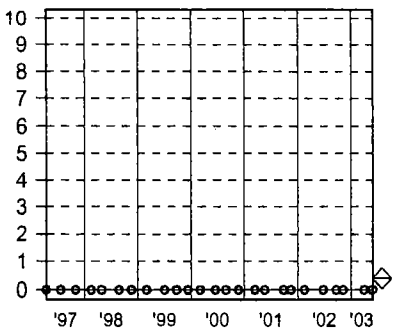
cis-1,2-Dichloroethene
(ug/l)



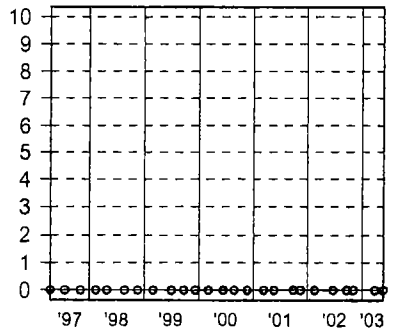
Trichloroethene
(ug/l)



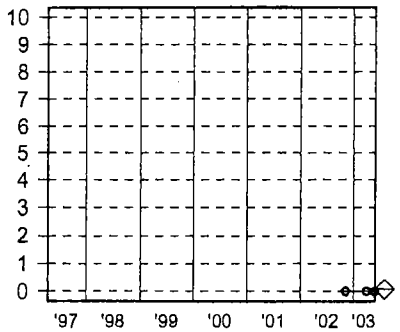
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 14

Sampling Dates:
04/08/1997 - 05/21/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 9 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	2.69	1.60	6.00	ND						
07/17/1997	FMETL	5.53	2.50	7.12	ND						
10/30/1997	FMETL	2.57	ND	2.72	ND						
02/10/1998	FMETL	ND	1.03	6.90	ND						
04/21/1998	FMETL	1.22	1.21	5.72	ND						
08/19/1998	FMETL	3.89	2.06	5.39	ND						
11/18/1998	FMETL	ND	ND	ND	ND						
02/25/1999	FMETL	ND	ND	7.33	ND						
06/29/1999	FMETL	4.17	2.40	7.86	ND						
09/21/1999	FMETL	3.59	1.37	2.61	ND						
12/09/1999	FMETL	ND	ND	4.08	ND						
03/01/2000	FMETL	1.39	1.39	6.95	2.38						
06/12/2000	FMETL	ND	ND	5.94	ND						
08/24/2000	FMETL	2.02	1.09	5.20	ND						
11/20/2000	FMETL	ND	ND	6.29	ND						-
02/21/2001	FMETL	ND	ND	7.19	ND						-
05/16/2001	FMETL	1.50	ND	6.64	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
09/25/2001D	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	3.09	ND	3.49	ND						-
02/11/2002	FMETL	ND	ND	2.65	ND						V
06/18/2002	FMETL	1.63	ND	2.67	ND						V,P
09/18/2002	FMETL	2.39	ND	2.55	ND						V,P
11/05/2002	FMETL	ND	ND	1.52	ND	ND					V,P
03/24/2003	FMETL	1.44	1.11	3.96	ND	ND					V,P
05/21/2003	FMETL	1.89	ND	3.84	ND	ND					V,P

SOURCE: 15

Sampling Dates:
04/08/1997 - 05/21/2003

NOTES:

Page 1 of 1
Stream 15 is Fresh-Water.
cis-1,2-Di limit is NLE.
TCE limit is 1.09 ug/L.
PCE limit is 0.388 ug/L.
MTBE limit is NLE.

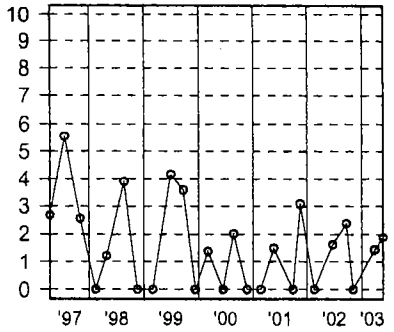
Fort Monmouth

GW Monitoring
Streams

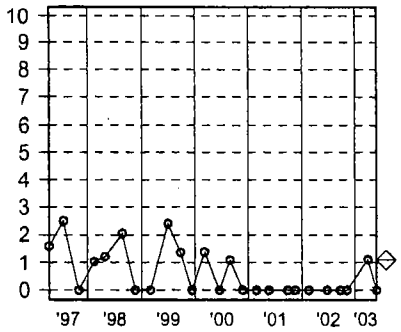
Source 10 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

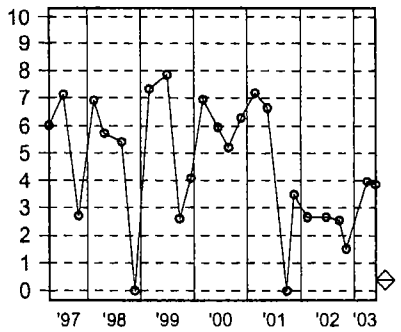
cis-1,2-Dichloroethene
(ug/l)



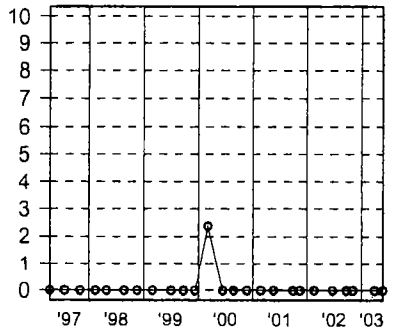
Trichloroethene
(ug/l)



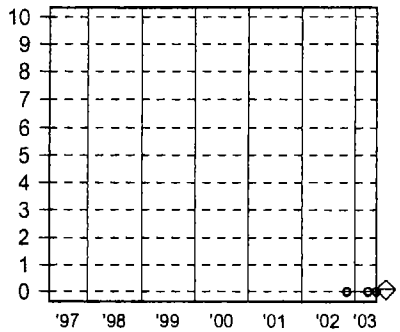
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 15

Sampling Dates:
04/08/1997 - 05/21/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 10 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	2.05	1.26	4.47	ND						
07/17/1997	FMETL	2.55	ND	4.72	ND						
10/30/1997	FMETL	1.76	ND	1.86	ND						
02/10/1998	FMETL	ND	ND	6.23	ND						
04/21/1998	FMETL	ND	ND	4.58	ND						
08/19/1998	FMETL	2.94	1.63	4.33	ND						
11/18/1998	FMETL	ND	ND	1.48	ND						
02/25/1999	FMETL	ND	ND	6.06	ND						
06/29/1999	FMETL	3.56	2.25	7.70	ND						
09/22/1999	FMETL	2.74	ND	2.63	ND						
12/09/1999	FMETL	1.79	ND	4.13	ND						
03/01/2000	FMETL	1.28	1.27	6.47	2.33						
06/12/2000	FMETL	ND	ND	3.74	ND						
08/24/2000	FMETL	1.68	1.28	4.47	ND						
11/20/2000	FMETL	ND	ND	4.49	ND						-
02/21/2001	FMETL	ND	ND	6.25	ND						-
05/16/2001	FMETL	1.23	ND	4.91	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	1.41	ND	2.00	ND						-
02/11/2002	FMETL	ND	ND	2.47	ND						V
06/18/2002	FMETL	1.35	ND	2.46	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/05/2002	FMETL	ND	ND	1.49	ND	ND					V,P
03/13/2003	FMETL	0.90	0.74	3.21	ND	ND					V,P
05/21/2003	FMETL	1.85	ND	3.68	ND	ND					V,P

SOURCE: 16

Sampling Dates:
04/08/1997 - 05/21/2003

NOTES:

Page 1 of 1
Stream 16 is Salt-Water.
cis-1,2-di limit is NLE.
TCE limit is 81 ug/L.
PCE limit is 4.29 ug/L.
MTBE limit is NLE.

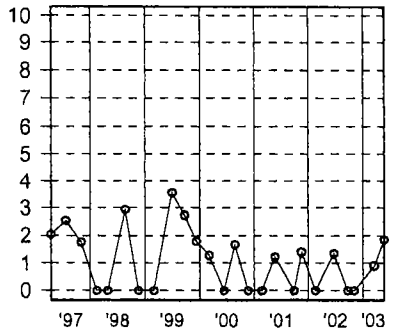
Fort Monmouth

GW Monitoring
Streams

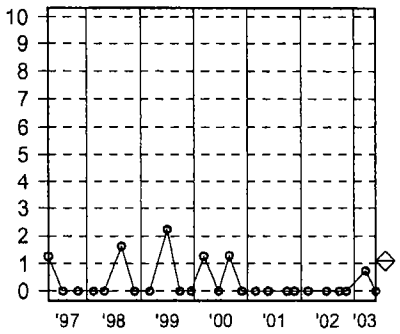
Source 11 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

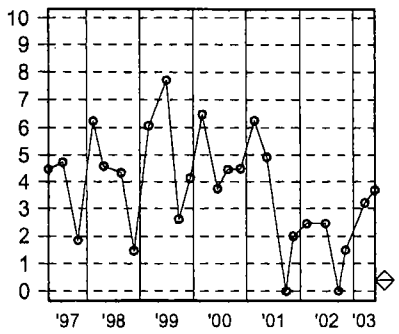
cis-1,2-Dichloroethene
(ug/l)



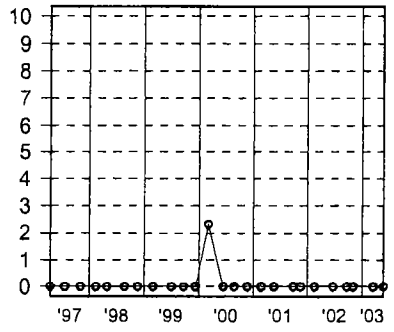
Trichloroethene
(ug/l)



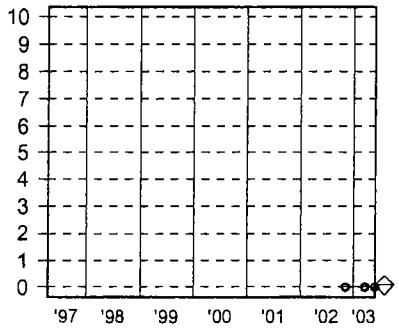
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 16

Sampling Dates:
04/08/1997 - 05/21/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 11 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	ND	ND	ND	ND						
07/17/1997	FMETL	ND	ND	ND	ND						
10/30/1997	FMETL	ND	ND	ND	ND						
02/10/1998	FMETL	ND	ND	ND	ND						
04/21/1998	FMETL	ND	ND	ND	ND						
08/19/1998	FMETL	ND	ND	ND	ND						
11/18/1998	FMETL	4.43	2.12	5.09	ND						
02/25/1999	FMETL	ND	ND	ND	ND						
06/29/1999	FMETL	ND	ND	ND	ND						
09/22/1999	FMETL	1.09	ND	ND	ND						
12/09/1999	FMETL	ND	ND	ND	ND						
03/01/2000	FMETL	ND	ND	ND	ND						
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	ND	ND	ND	ND						
11/20/2000	FMETL	ND	ND	ND	ND						-
03/08/2001	FMETL	ND	ND	ND	ND						-
05/16/2001	FMETL	ND	ND	ND	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	ND	ND	ND	ND	ND					V,P
03/24/2003	FMETL	ND	ND	ND	ND	ND					V,P
05/21/2003	FMETL	ND	ND	ND	ND	ND					V,P

SOURCE: 17

Sampling Dates:
04/08/1997 - 05/21/2003

NOTES:

Page 1 of 1
stream 17 is Salt-Water.
cis-1,2-Di limit is NLE.
TCE limit is 81 ug/L.
PCE limit is 4.29 ug/L.
Acetone limit is NLE.
Chlorobenzene limit is 21000 ug/L.

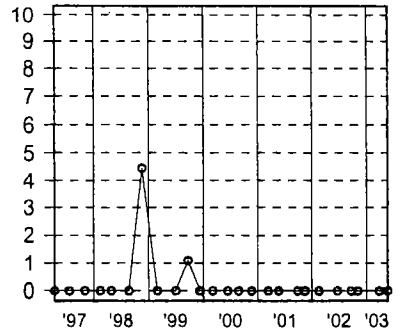
Fort Monmouth

GW Monitoring
Streams

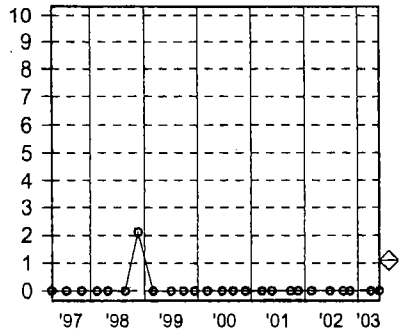
Source 12 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

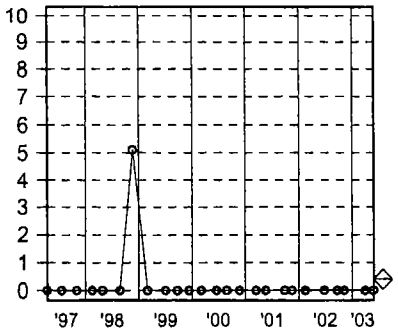
cis-1,2-Dichloroethene
(ug/l)



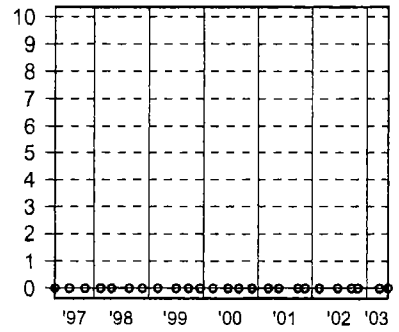
Trichloroethene
(ug/l)



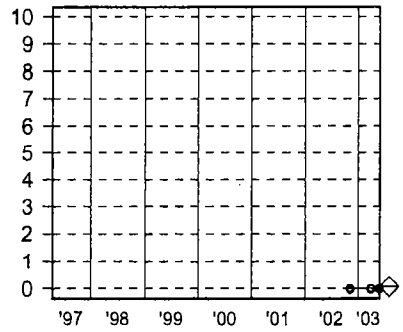
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 17

Sampling Dates:
04/08/1997 - 05/21/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 12 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	ND	ND	ND	ND						
07/17/1997	FMETL	1.06	ND	ND	ND						
10/30/1997	FMETL	5.87	ND	ND	ND						
02/10/1998	FMETL	14.36	ND	ND	ND						
04/21/1998	FMETL	ND	ND	ND	ND						
08/19/1998	FMETL	4.65	ND	ND	ND						
11/18/1998	FMETL	3.18	ND	ND	ND						
02/25/1999	FMETL	3.95	ND	ND	ND						
06/29/1999	FMETL	1.47	ND	ND	ND						
09/21/1999	FMETL	4.67	ND	ND	ND						
12/09/1999	FMETL	4.90	ND	ND	ND						
03/01/2000	FMETL	5.57	ND	ND	ND						
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	2.46	ND	ND	ND						
11/20/2000	FMETL	1.80	ND	ND	ND						-
02/21/2001	FMETL	4.10	ND	ND	ND						-
05/16/2001	FMETL	1.45	ND	ND	ND						-
09/11/2001	FMETL	ND	ND	ND	ND						-
09/11/2001D	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/05/2002	FMETL	5.14	ND	ND	ND	ND					V,P
03/13/2003	FMETL	17.75	0.52	ND	0.67	2.33					V,P
05/21/2003	FMETL	3.92	ND	ND	ND	ND					V,P

SOURCE: 18

Sampling Dates:
04/08/1997 - 05/21/2003

NOTES:

Page 1 of 1
Stream 18 is Fresh-Water.
cis-1,2-Di limit is NLE.

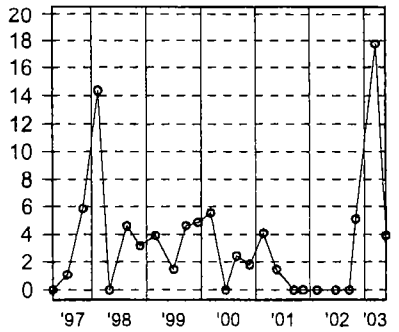
Fort Monmouth

GW Monitoring
Streams

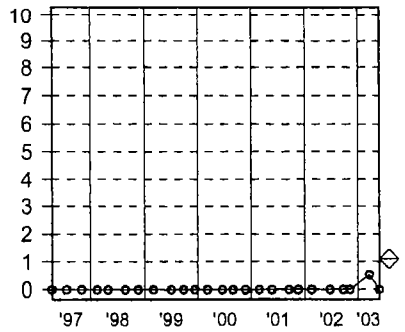
Source 13 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

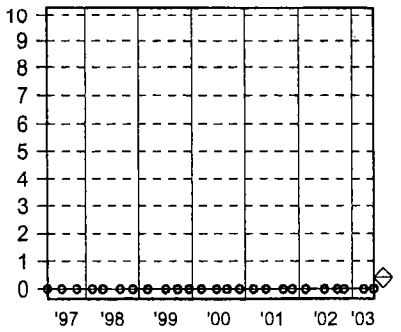
cis-1,2-Dichloroethene
(ug/l)



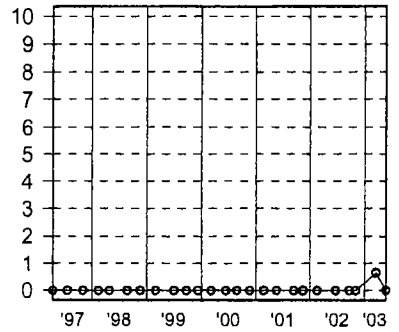
Trichloroethene
(ug/l)



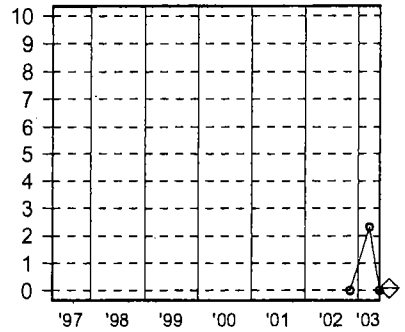
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 18

Sampling Dates:
04/08/1997 - 05/21/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 13 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	6.44	ND	ND	ND						
07/17/1997	FMETL	ND	ND	ND	ND						
10/30/1997	FMETL	4.69	ND	ND	ND						
02/10/1998	FMETL	8.22	ND	ND	ND						
04/21/1998	FMETL	6.86	ND	ND	ND						
08/19/1998	FMETL	2.95	ND	ND	ND						
11/17/1998	FMETL	2.3	ND	ND	ND						
02/25/1999	FMETL	2.30	ND	ND	ND						
06/29/1999	FMETL	ND	ND	ND	ND						
09/21/1999	FMETL	3.53	ND	ND	ND						
12/09/1999	FMETL	2.60	ND	ND	ND						
03/01/2000	FMETL	2.92	ND	ND	ND						
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	2.07	ND	ND	ND						
11/20/2000	FMETL	ND	ND	ND	ND						-
02/21/2001	FMETL	2.99	ND	ND	ND						-
02/21/2001D	FMETL	3.87	ND	ND	ND						-
05/16/2001	FMETL	1.57	ND	ND	ND						-
09/11/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	2.69	ND	ND	ND	ND					V,P
03/13/2003	FMETL	13.43	0.44	ND	ND	1.61					V,P
05/21/2003	FMETL	3.07	ND	ND	ND	ND					V,P

SOURCE: 19

Sampling Dates:
04/08/1997 - 05/21/2003

NOTES:

Page 1 of 1
Stream 19 is Salt-Water.
cis-1,2-Di limit is NLE.

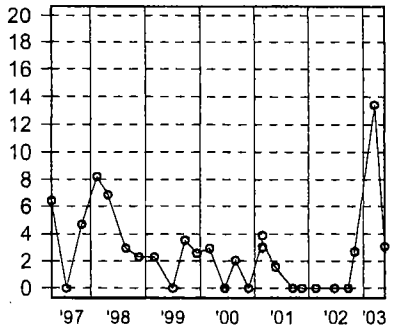
Fort Monmouth

GW Monitoring
Streams

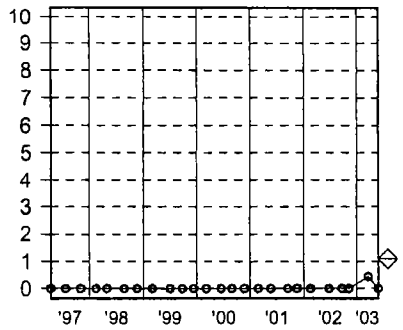
Source 14 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

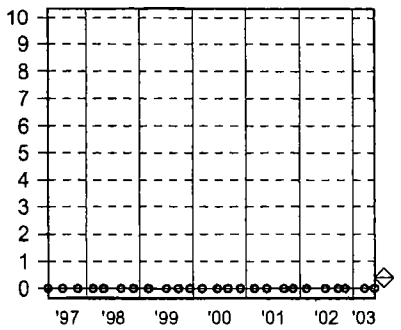
cis-1,2-Dichloroethene
(ug/l)



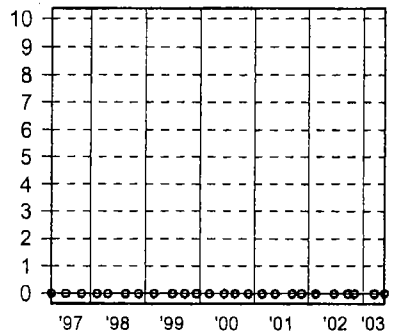
Trichloroethene
(ug/l)



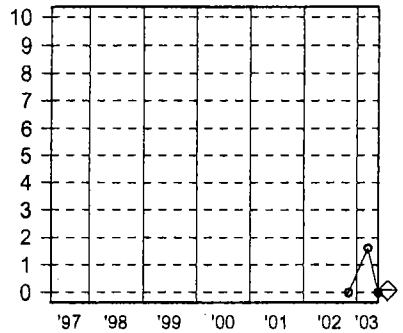
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 19

Sampling Dates:
04/08/1997 - 05/21/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 14 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	ND	ND	ND	ND						
07/17/1997	FMETL	ND	ND	ND	2.63						
10/30/1997	FMETL	ND	ND	ND	ND						
02/10/1998	FMETL	ND	ND	ND	ND						
04/21/1998	FMETL	ND	ND	ND	ND						
08/19/1998	FMETL	ND	ND	ND	4.85						
11/17/1998	FMETL	ND	ND	ND	ND						
02/25/1999	FMETL	ND	ND	ND	ND						
06/29/1999	FMETL	ND	ND	ND	5.70						
09/21/1999	FMETL	ND	ND	ND	2.10						
12/09/1999	FMETL	ND	ND	ND	ND						
03/01/2000	FMETL	ND	ND	ND	ND						
06/12/2000	FMETL	ND	ND	ND	6.38						
08/24/2000	FMETL	ND	ND	ND	2.58						
11/20/2000	FMETL	ND	ND	ND	ND						-
02/21/2001	FMETL	ND	ND	ND	ND						-
05/16/2001	FMETL	ND	ND	ND	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	1.26						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	ND	ND	ND	ND	ND					V,P
03/13/2003	FMETL	ND	ND	0.64	ND	ND					V,P
05/21/2003	FMETL	ND	ND	ND	1.37	ND					V,P

SOURCE: 20

Sampling Dates:
04/08/1997 - 05/21/2003

NOTES:

Page 1 of 1
Stream20 is Salt-Water.
Ethylben limit is 27900 ug/L.
MTBE limit is NLE.

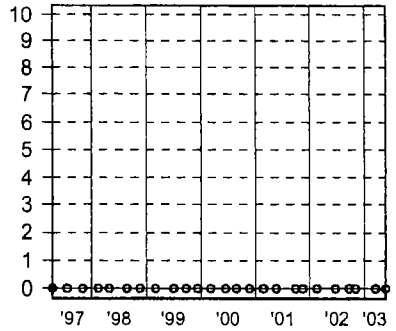
Fort Monmouth

GW Monitoring
Streams

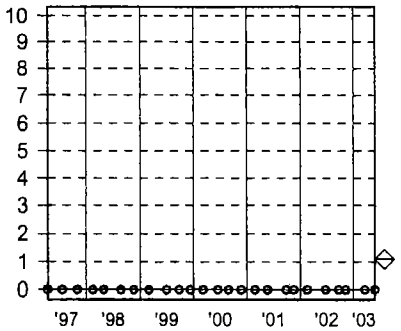
Source 15 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

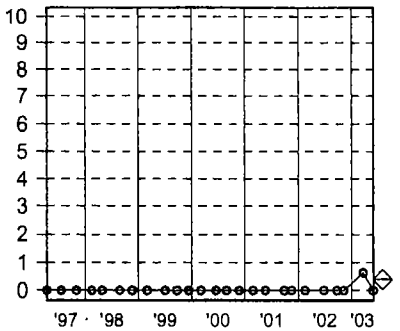
cis-1,2-Dichloroethene
(ug/l)



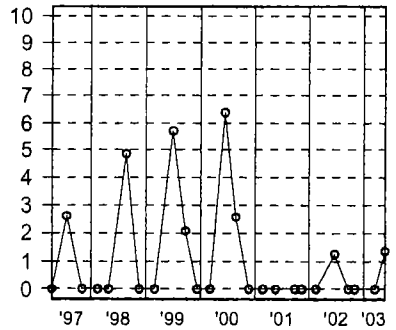
Trichloroethene
(ug/l)



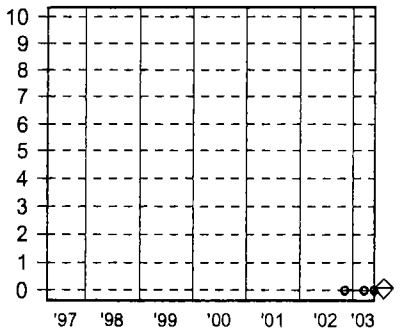
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 20

Sampling Dates:
04/08/1997 - 05/21/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 15 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	ND	ND	ND	ND						
07/17/1997	FMETL	ND	ND	ND	2.90						
10/30/1997	FMETL	ND	ND	ND	ND						
02/10/1998	FMETL	ND	ND	ND	ND						
04/21/1998	FMETL	ND	ND	ND	ND						
08/19/1998	FMETL	ND	ND	ND	4.71						
11/17/1998	FMETL	ND	ND	ND	ND						
02/25/1999	FMETL	ND	ND	ND	ND						
06/29/1999	FMETL	ND	ND	ND	7.40						
09/21/1999	FMETL	1.17	ND	ND	2.24						
12/09/1999	FMETL	ND	ND	ND	ND						
03/01/2000	FMETL	ND	ND	ND	ND						
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	ND	ND	ND	2.67						
11/20/2000	FMETL	ND	ND	ND	ND						-
02/21/2001	FMETL	ND	ND	ND	ND						-
05/16/2001	FMETL	ND	ND	ND	ND						-
09/11/2001	FMETL	ND	ND	ND	1.76						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	ND	ND	ND	ND	ND					V,P
03/13/2003	FMETL	ND	ND	0.63	ND	ND					V,P
05/21/2003	FMETL	ND	ND	ND	1.34	ND					V,P

SOURCE: 21

Sampling Dates:
04/08/1997 - 05/21/2003

NOTES:

Page 1 of 1
Sream 21 is Salt-Water.
cis-1,2-Di limit is NLE.
Acetone limit is NLE.
MTBE limit is NLE.

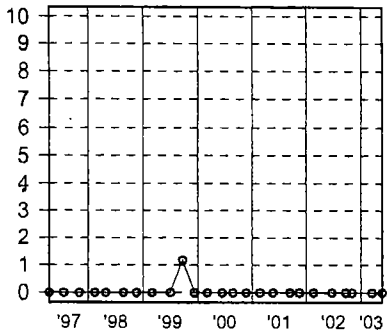
Fort Monmouth

GW Monitoring
Streams

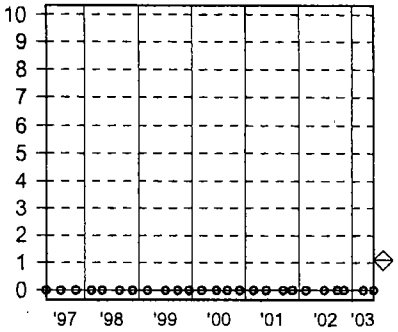
Source 16 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

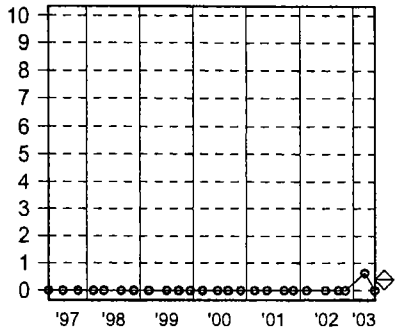
cis-1,2-Dichloroethene
(ug/l)



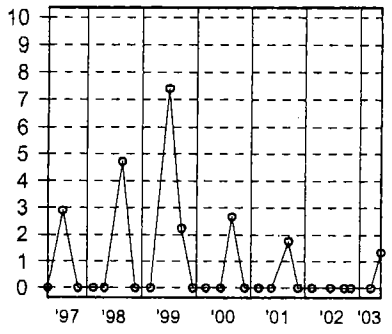
Trichloroethene
(ug/l)



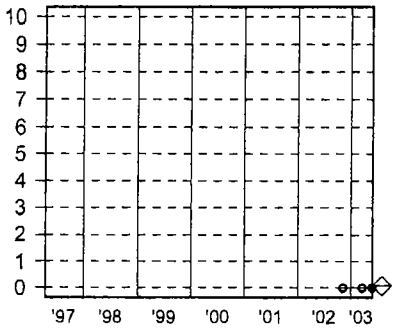
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 21

Sampling Dates:
04/08/1997 - 05/21/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 16 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	ND	ND	ND	ND						
07/17/1997	FMETL	ND	ND	ND	4.26						
10/30/1997	FMETL	ND	ND	ND	ND						
02/10/1998	FMETL	ND	ND	ND	ND						
04/21/1998	FMETL	ND	ND	ND	ND						
08/19/1998	FMETL	ND	ND	ND	4.50						
11/17/1998	FMETL	ND	ND	ND	ND						
02/25/1999	FMETL	ND	ND	ND	ND						
06/29/1999	FMETL	ND	ND	ND	8.30						
09/21/1999	FMETL	ND	ND	ND	0.82						
12/09/1999	FMETL	ND	ND	ND	ND						
03/01/2000	FMETL	ND	ND	ND	ND						
06/12/2000	FMETL	ND	ND	ND	10.26						
06/12/2000D	FMETL	ND	ND	ND	10.66						
08/24/2000	FMETL	ND	ND	ND	ND						
11/20/2000	FMETL	ND	ND	ND	ND						-
02/21/2001	FMETL	ND	ND	ND	ND						-
05/16/2001	FMETL	ND	ND	ND	ND						V
09/11/2001	FMETL	ND	ND	ND	3.53						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	2.12						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	ND	ND	ND	ND	ND					V,P
03/13/2003	FMETL	1.57	ND	ND	ND	ND					V,P
05/21/2003	FMETL	ND	ND	ND	ND	ND					V,P

SOURCE: 22

Sampling Dates:
04/08/1997 - 05/21/2003

NOTES:

Page 1 of 1
Stream 22 is Salt-Water.
Acetone limit is NLE.
MTBE limit is NLE.

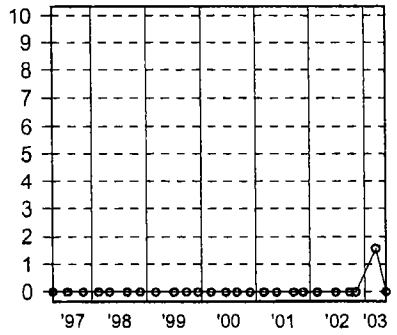
Fort Monmouth

GW Monitoring
Streams

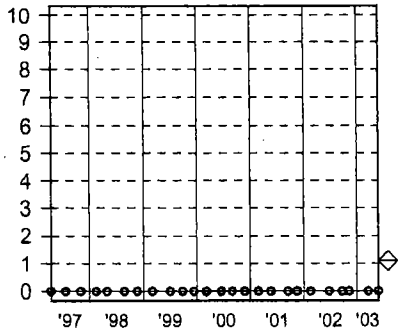
Source 17 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

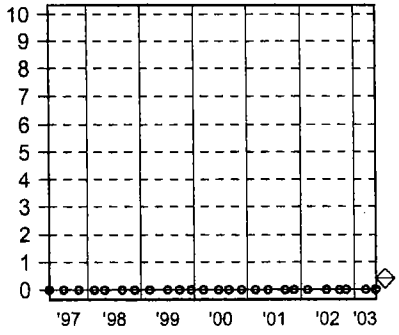
cis-1,2-Dichloroethene
(ug/l)



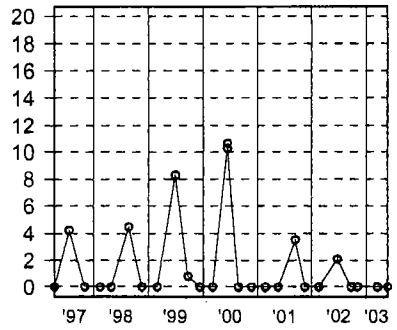
Trichloroethene
(ug/l)



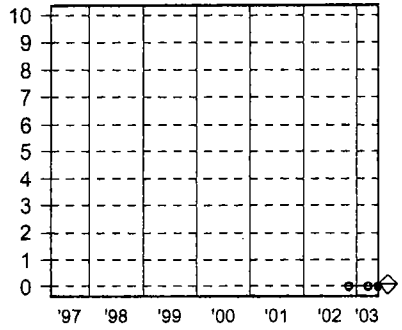
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 22

Sampling Dates:
04/08/1997 - 05/21/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 17 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
06/12/2000	FMETL	ND	ND	5.60	ND						
08/24/2000	FMETL	2.24	1.82	5.18	ND						
11/20/2000	FMETL	ND	ND	6.29	ND						-
03/08/2001	FMETL	ND	ND	4.78	ND						-
05/16/2001	FMETL	1.73	ND	6.41	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	3.23	ND	3.64	ND						-
02/11/2002	FMETL	ND	ND	2.85	ND						V
06/18/2002	FMETL	1.58	ND	2.88	ND						V,P
09/18/2002	FMETL	2.49	ND	ND	ND						V,P
11/05/2002	FMETL	ND	ND	1.44	ND	ND					V,P
03/24/2003	FMETL	1.41	1.05	4.01	ND	ND					V,P
05/21/2003	FMETL	2.03	ND	4.06	ND	ND					V,P

SOURCE: 23

Sampling Dates:
06/12/2000 - 05/21/2003

NOTES:

Page 1 of 1
Stream 23 is Fresh-Water

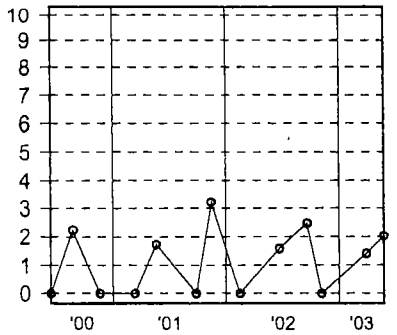
Fort Monmouth

GW Monitoring
Streams

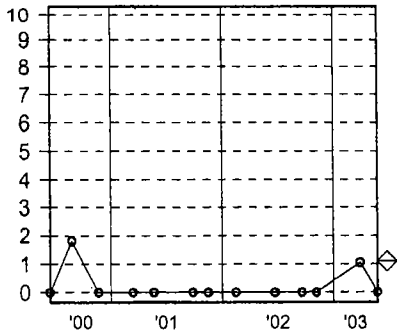
Source 18 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

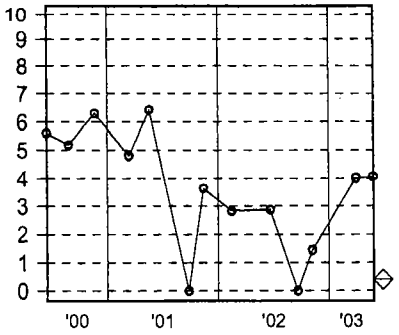
cis-1,2-Dichloroethene
(ug/l)



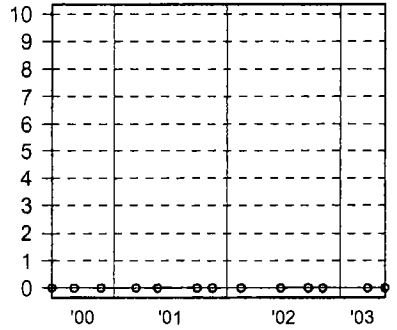
Trichloroethene
(ug/l)



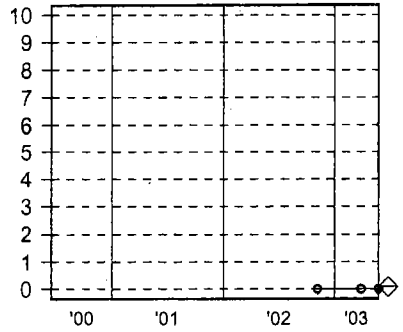
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 23

Sampling Dates:
06/12/2000 - 05/21/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 18 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
06/12/2000	FMETL	ND	ND	4.72	ND						
08/24/2000	FMETL	1.54	1.41	4.33	ND						
11/20/2000	FMETL	ND	ND	4.41	ND						-
03/08/2001	FMETL	ND	ND	4.76	ND						-
05/16/2001	FMETL	1.37	ND	5.12	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	3.11	ND	3.28	ND						-
02/11/2002	FMETL	ND	ND	2.69	ND						V
06/18/2002	FMETL	1.60	ND	2.74	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/05/2002	FMETL	ND	ND	1.64	ND	ND					V,P
03/13/2003	FMETL	0.99	0.83	3.50	ND	ND					V,P
05/21/2003	FMETL	1.98	ND	3.94	ND	ND					V,P

SOURCE: 24

Sampling Dates:
06/12/2000 - 05/21/2003

NOTES:

Page 1 of 2
Stream 24 is Fresh-Water

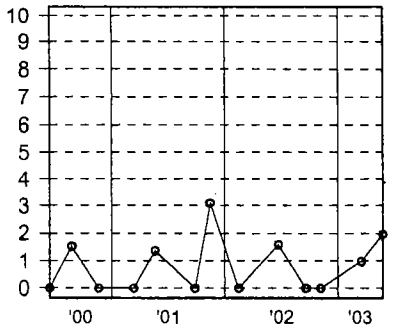
Fort Monmouth

GW Monitoring
Streams

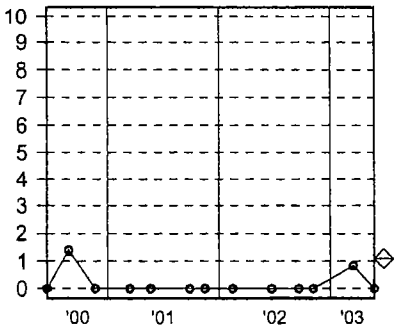
Source 19 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

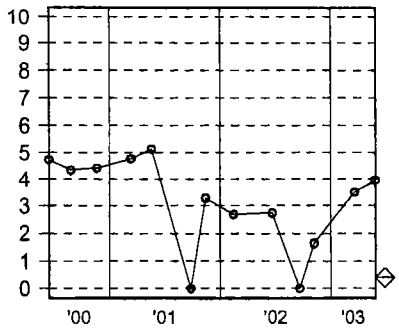
cis-1,2-Dichloroethene
(ug/l)



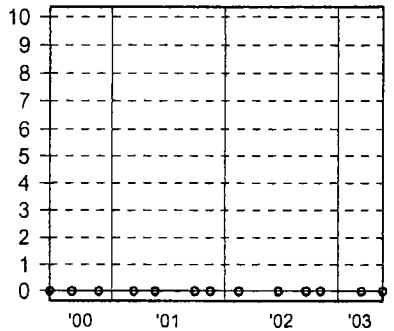
Trichloroethene
(ug/l)



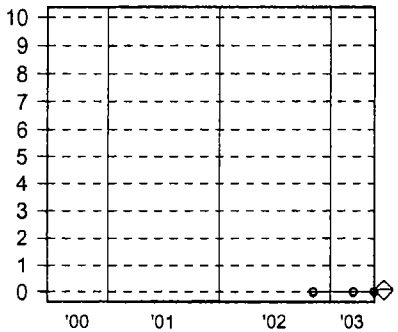
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 24

Sampling Dates:
06/12/2000 - 05/21/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 19 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	ND	ND	ND	ND						
11/20/2000	FMETL	ND	ND	ND	ND						-
03/08/2001	FMETL	ND	ND	ND	ND						-
05/16/2001	FMETL	ND	ND	ND	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	ND	ND	ND	ND	ND					V,P
03/24/2003	FMETL	ND	ND	2.22	ND	ND					V,P
05/21/2003	FMETL	ND	ND	ND	ND	ND					V,P

SOURCE: 25

Sampling Dates:
06/12/2000 - 05/21/2003

NOTES:

Page 1 of 1
Stream 25 is Salt-Water.

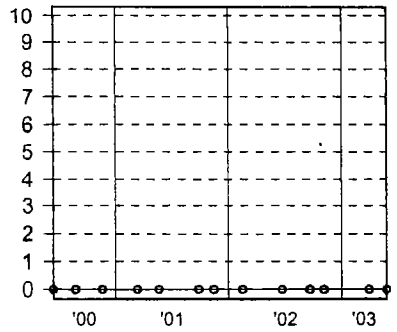
Fort Monmouth

GW Monitoring
Streams

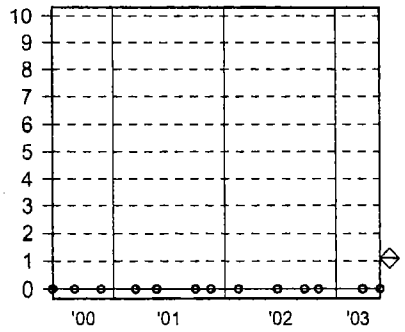
Source 20 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

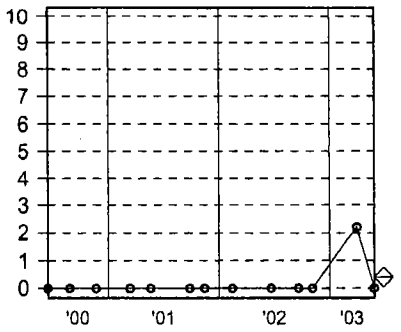
cis-1,2-Dichloroethene
(ug/l)



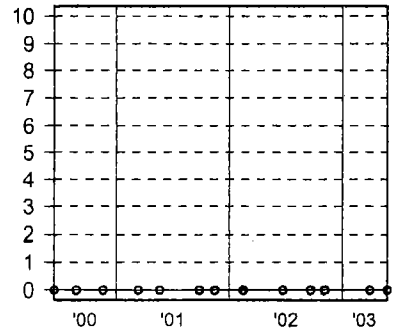
Trichloroethene
(ug/l)



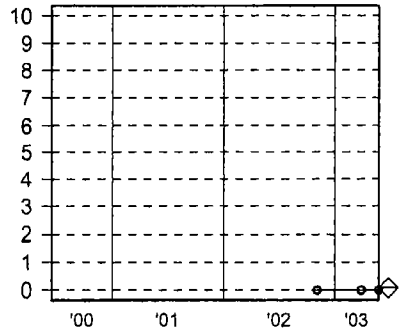
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 25

Sampling Dates:
06/12/2000 - 05/21/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 20 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	ND	ND	ND	ND						
11/20/2000	FMETL	ND	ND	ND	ND						-
03/08/2001	FMETL	ND	ND	ND	ND						-
05/16/2001	FMETL	ND	ND	ND	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	ND	ND	ND	ND	ND					V,P
03/24/2003	FMETL	ND	ND	ND	ND	ND					V,P
05/21/2003	FMETL	ND	ND	ND	ND	ND					V,P

SOURCE: 26

Sampling Dates:
06/12/2000 - 05/21/2003

NOTES:

Page 1 of 1
Stream 26 is Fresh-Water

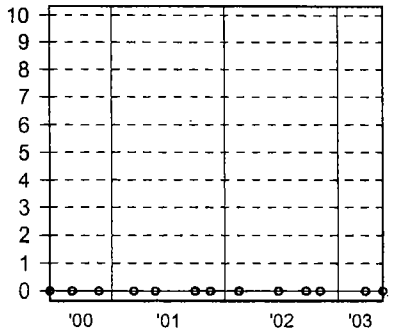
Fort Monmouth

GW Monitoring
Streams

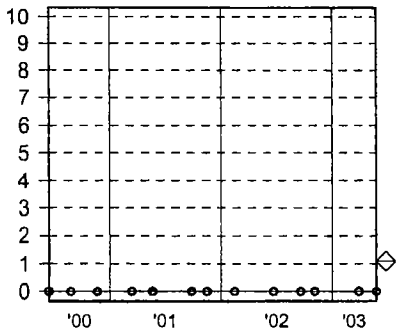
Source 21 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

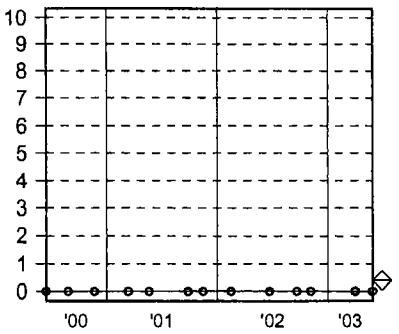
cis-1,2-Dichloroethene
(ug/l)



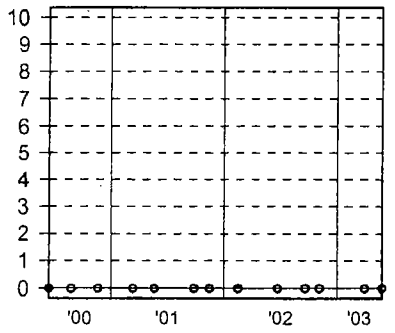
Trichloroethene
(ug/l)



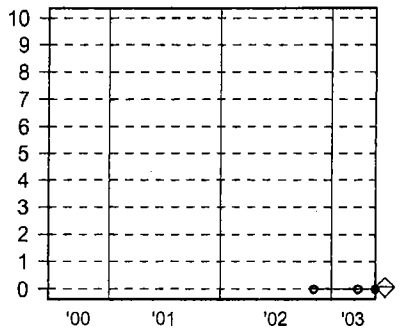
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 26

Sampling Dates:
06/12/2000 - 05/21/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 21 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	ND	ND	1.72	ND						
11/20/2000	FMETL	ND	ND	1.87	ND						-
03/08/2001	FMETL	ND	ND	ND	ND						-
05/16/2001	FMETL	ND	ND	ND	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	ND	ND	ND	ND	ND					V,P
03/13/2003	FMETL	ND	ND	1.71	ND	ND					V,P
05/21/2003	FMETL	1.38	2.68	ND	ND	ND					V,P

SOURCE: 27

Sampling Dates:
06/12/2000 - 05/21/2003

NOTES:

Page 1 of 1
Stream 27 is Salt Water.

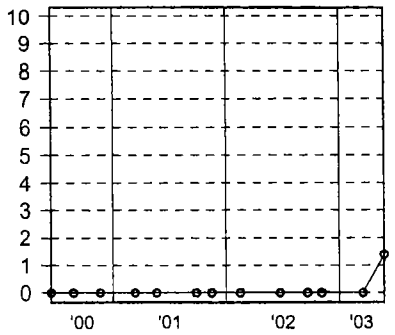
Fort Monmouth

GW Monitoring
Streams

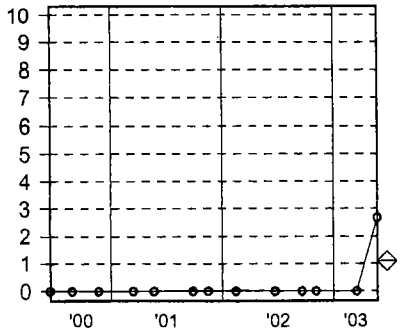
Source 22 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

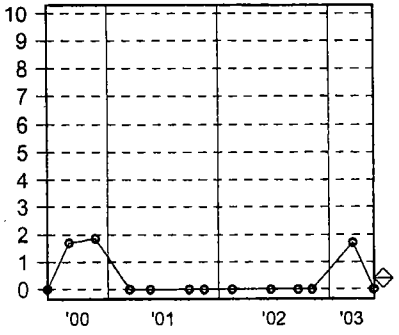
cis-1,2-Dichloroethene
(ug/l)



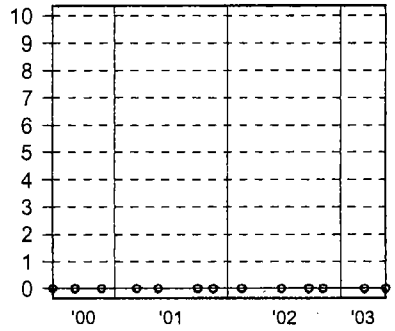
Trichloroethene
(ug/l)



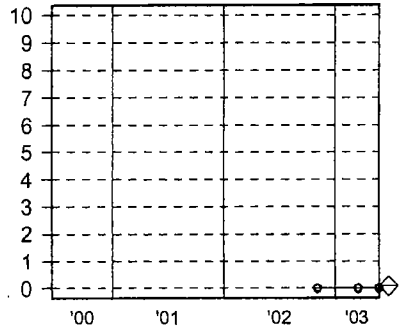
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 27

Sampling Dates:
06/12/2000 - 05/21/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 22 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	1.28	1.07	3.67	ND						
11/20/2000	FMETL	ND	ND	3.60	ND						-
03/08/2001	FMETL	ND	ND	2.56	ND						-
05/16/2001	FMETL	ND	ND	2.77	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	1.55	ND						V
06/18/2002	FMETL	ND	ND	1.99	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	ND	ND	ND	ND	ND					V,P
03/13/2003	FMETL	0.73	0.60	2.78	ND	ND					V,P
05/21/2003	FMETL	1.50	ND	2.58	ND	ND					V,P

SOURCE: 28

Sampling Dates:
06/12/2000 - 05/21/2003

NOTES:

Page 1 of 1
Stream 28 is Salt-Water
cis-1,2-Dichloroethene limit is NLE
TCE limit is 81
PCE limit is 4.29

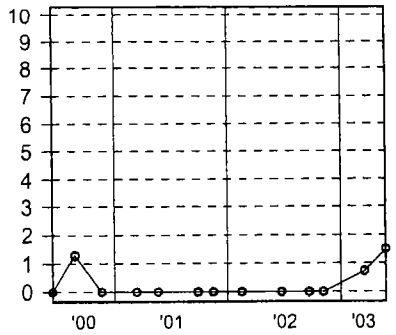
Fort Monmouth

GW Monitoring
Streams

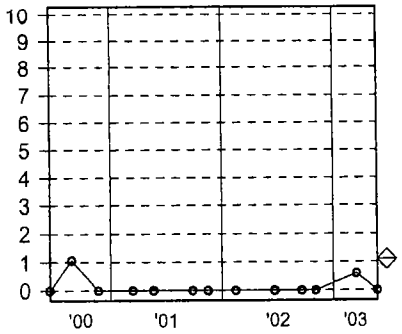
Source 23 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

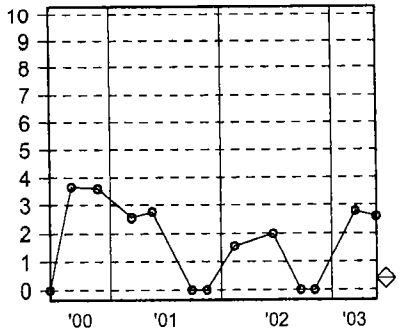
cis-1,2-Dichloroethene
(ug/l)



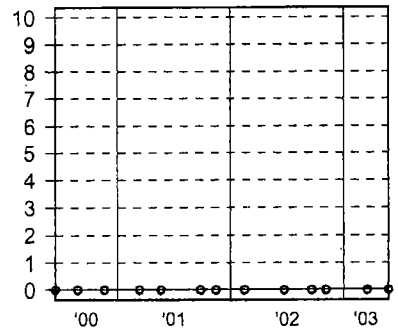
Trichloroethene
(ug/l)



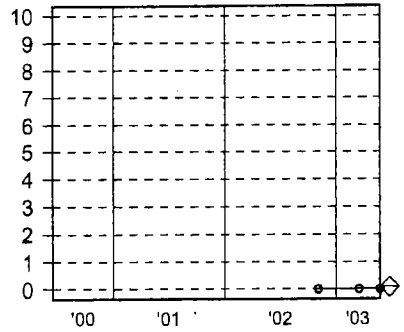
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 28

Sampling Dates:
06/12/2000 - 05/21/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 23 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

FORT MONMOUTH ENVIRONMENTAL TESTING LABORATORY

DIRECTORATE OF PUBLIC WORKS
PHONE: (732) 532-6224 FAX: (732) 532-6263
WET-CHEM - METALS - ORGANICS - FIELD SAMPLING
CERTIFICATIONS: NJDEP #13461, NYSDOH #11699

ANALYTICAL DATA REPORT
Fort Monmouth Environmental Laboratory
ENVIRONMENTAL DIVISION
Fort Monmouth, New Jersey
PROJECT: 3rd QTR/03 Streams

Streams

Field Sample Location	Laboratory Sample ID#	Matrix	Date and Time of Collection	Date Received
Stream Site #22	3059204	Aqueous	17-Sept-03 07:39	09/17/03
Stream Site #21	3059205	Aqueous	17-Sept-03 07:50	09/17/03
Stream Site #20	3059206	Aqueous	17-Sept-03 07:56	09/17/03
Stream Site #09	3059207	Aqueous	17-Sept-03 08:05	09/17/03
Stream Site #19	3059208	Aqueous	17-Sept-03 08:16	09/17/03
Stream Site #12	3059209	Aqueous	17-Sept-03 08:25	09/17/03
Stream Site #18	3059210	Aqueous	17-Sept-03 08:32	09/17/03
Stream Site #11	3059211	Aqueous	17-Sept-03 08:41	09/17/03
Stream Site #27	3059212	Aqueous	17-Sept-03 09:49	09/17/03
Stream Site #07	3059213	Aqueous	17-Sept-03 09:57	09/17/03
Stream Site #28	3059214	Aqueous	17-Sept-03 10:09	09/17/03
Stream Site #04	3059215	Aqueous	17-Sept-03 10:17	09/17/03
Stream Site #05	3059216	Aqueous	17-Sept-03 09:38	09/17/03
Stream Site #16	3059217	Aqueous	17-Sept-03 08:55	09/17/03
Stream Site #24	3059218	Aqueous	17-Sept-03 09:06	09/17/03
Stream Site #23	3059219	Aqueous	17-Sept-03 09:19	09/17/03
Stream Site #15	3059220	Aqueous	17-Sept-03 09:27	09/17/03
Stream Site #25	3059221	Aqueous	17-Sept-03 10:29	09/17/03
Stream Site #17	3059222	Aqueous	17-Sept-03 10:37	09/17/03
Stream Site #26	3059223	Aqueous	17-Sept-03 10:45	09/17/03
Stream Site #03	3059224	Aqueous	17-Sept-03 10:57	09/17/03
Stream Site #14	3059225	Aqueous	17-Sept-03 11:10	09/17/03
Stream Site #13	3059226	Aqueous	17-Sept-03 11:18	09/17/03

ANALYSIS:
FORT MONMOUTH ENVIRONMENTAL LAB
VOA+15, PCB's, WET CHEMISTRY

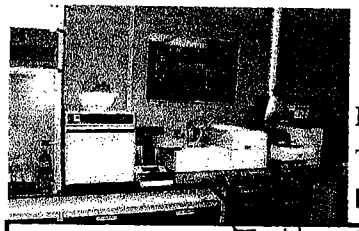
10-29-03
Daniel Wright/Date
Laboratory Director

The enclosed report relates only to the items tested. The report may not be reproduced, except in full, without written approval of the U.S. Army Fort Monmouth Directorate of Public Works.

METHODOLOGY SUMMARY

PARAMETER	REFERENCE
TARGET ANALYTE LIST	Standard Methods, 18th ed.
Aluminum	3120B
Antimony	3120B
Arsenic	3120B
Barium	3120B
Beryllium	3120B
Cadmium	3120B
Calcium	3120B
Chromium	3120B
Cobalt	3120B
Copper	3120B
Iron	3120B
Lead	3120B
Magnesium	3120B
Manganese	3120B
Mercury	3112B
Nickel	3120B
Potassium	3120B
Selenium	3120B
Silver	3120B
Sodium	3120B
Thallium	3120B
Vanadium	3120B
Zinc	3120B
TARGET COMPOUND LIST	Federal Register 40 CFR Part 136 Appendix A
Base/Neutrals and Acid Extractables by GC/MS	625
Purgeable Organcis by GC/MS	624
Pesticides and PCB's by GC	608

SAMPLING



Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:wrightd@mail1.monmouth.army.mil
NJDEP Certification #13461

Chain of Custody Record

Customer: J. FALLON
Phone #: 126223
( )DERA ( )OMA ( )Other:_____
Project No:
Location: Streams 3rd Qtr '03
Samplers Name / Company: Corey McCormack, TVS

LIMS/Work Order #	Sample Location	Date	Time	Sample Type	# bottles	VO+15	T. Coli	PCB	NH_3 / NO_3	PO_4 / SO_4	Temp. °C	pH (su)	Dissolved Oxygen	Remarks / Preservation Method
30592 01	Trip	9/17/03	0721	AQ	2	✓					—	—	—	
02	Field Blank		0730		5	✓		✓	✓	✓	—	—	—	Salinity
03	Dupe		—		6	✓	✓	✓	✓	✓	—	—	—	‰ / D^{20}_{20}
04	Stream Site #22 *		0739		6	✓	✓	✓	✓	✓	9.71	7.76	8.53	1.015 / 18
05	#21		0750			✓	✓	✓	✓	✓	9.70	7.79	8.63	1.016 / 19
06	#20		0756			✓	✓	✓	✓	✓	9.71	7.80	8.64	1.016 / 19
07	#09		0805			✓	✓	✓	✓	✓	8.81	7.84	8.31	1.011 / 14
08	#19		0816			✓	✓	✓	✓	✓	8.76	7.86	8.59	1.001 / 2
09	#12		0825			✓	✓	✓	✓	✓	9.11	7.76	7.91	1.000 / 0
10	#18		0832			✓	✓	✓	✓	✓	9.11	7.78	7.87	1.000 / 0
11	#11		0841			✓	✓	✓	✓	✓	9.37	7.84	8.39	1.000 / 0
12	#27		0949			✓	✓	✓	✓	✓	9.45	7.91	8.11	1.008 / 10
13	#07		0957			✓	✓	✓	✓	✓	9.76	7.86	8.09	1.007 / 9
14	#28		~~0949~~ 1009			✓	✓	✓	✓	✓	9.63	7.89	8.10	1.007 / 9

Comments: HCL/HNO_3/4°C

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Corey McCormack	9/17/03 1127				

Report Type: ( )Full, ( )Reduced, (X)Standard, ( )Screen / non-certified, ( )EDD
Turnaround time: (X)Standard 3 wks, ( )Rush ____ Days, ( )ASAP Verbal ____ Hrs.

Remarks: Tide: H→L

print legibly

COC.XLS6/17/2003

Fort Monmouth Environmental Testing Laboratory

Bldg. 173, SELFM-PW-EV, Fort Monmouth, NJ 07703
Tel (732)532-4359 Fax (732)532-6263 EMail:wrightd@mail1.monmouth.army.mil

NJDEP Certification #13461

Chain of Custody Record

Customer: J. FALLON
Phone #: 426223
( )DERA ( )OMA ( )Other:_____

Project No:
Location: Streams
3rd Qrtr 03

Samplers Name / Company: Corey McCormack, TVS

LIMS/Work Order #	Sample Location	Date	Time	Sample Type	# bottles	VOA's	T. Coli	PCB	NH_3/NO_3	PO_4/SO_4	°C Temp	pH su	Dissolved Oxygen	Remarks / Preservation Method	
30592 15	Stream Site #04	9/17/03	1017 cor	AQ	6	✓	✓	✓	✓	✓	8.90	7.80	7.98	1.004	8
16	#05		0938			✓	✓	✓	✓	✓	9.07	7.65	7.93	1.003	7
17	#16		0855			✓	✓	✓	✓	✓	8.86	7.53	7.91	1.003	7
18	#24		0906			✓	✓	✓	✓	✓	8.87	7.55	7.86	1.002	6
19	#23		0919			✓	✓	✓	✓	✓	8.89	7.57	7.89	1.000	1
20	#15		0927			✓	✓	✓	✓	✓	8.88	7.55	7.76	1.000	0
21	#25		1029			✓	✓	✓	✓	✓	8.83	7.79	7.83	1.005	8
22	#17		1037			✓	✓	✓	✓	✓	8.79	7.81	7.89	1.005	8
23	#26		1045			✓	✓	✓	✓	✓	9.17	7.76	7.88	1.004	7
24	#03		1059			✓	✓	✓	✓	✓	8.71	7.75	7.86	1.003	7
25	#14		1110			✓	✓	✓	✓	✓	8.76	7.76	7.88	1.000	0
26	#13		1118			✓	✓	✓	✓	✓	8.74	7.53	8.00	1.000	0

Comments: HCL/HNO_3/4°C

Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):
Corey McCormack	9/17/03 1127				
Relinquished by (signature):	Date/Time:	Received by (signature):	Relinquished by (signature):	Date/Time:	Received by (signature):

Report Type: ( )Full, ( )Reduced, (X)Standard, ( )Screen / non-certified, ( )EDD
Turnaround time: (X)Standard 3 wks, ( )Rush ____ Days, ( )ASAP Verbal ____ Hrs.

Remarks:
Tide: H->L

print legibly

COC.XLS6/17/2003

VOLATILE ORGANICS

US ARMY FT. MONMOUTH ENVIRONMENTAL LABORATORY
NJDEP CERTIFICATION # 13461

Definition of Qualifiers

U: The compound was analyzed for but not detected.

B: Indicates that the compound was found in the associated method blank as well as in the sample.

J: Indicates an estimated value. This flag is used:

(1) When the mass spec and retention time data indicate the presence of a compound however the result is less than the MDL but greater than zero.

(2) When estimating the concentration of a tentatively identified compound (TIC), where a 1:1 response is assumed.

D: This flag is used to identify all compounds (target or TIC) that required a dilution.

E: Indicates the compound's concentration exceeds the calibration range of the instrument for that specific analysis.

N: This flag is only used for TICs. It indicates the presumptive evidence of a compound. For a generic characterization of a TIC, such as unknown hydrocarbon, the flag is not used.

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC010380.D**	Sample Name	**MB 23Sept03**
Operator	**Skelton**	Field ID	**MB 23Sept03**
Date Aquired	**23-Sep-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

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Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
Freshwater Results

Data File	**VC010380.D**	Sample Name	**MB 23Sept03**
Operator	**Skelton**	Field ID	**MB 23Sept03**
Date Aquired	**23-Sep-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	0.083	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	0.388	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Recovery Limit

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **MB 23Sept03**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 30592 Location: 3rdQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: MB 23Sept03

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC010380.D

Level: (low/med) LOW Date Received: 9/17/2003

% Moisture: not dec. Date Analyzed: 9/23/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC010386.D**	Sample Name	**3059201**
Operator	**Skelton**	Field ID	**Trip Blank**
Date Aquired	**23-Sep-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform	15.57	303389	4.91 ug/L	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

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Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
Freshwater Results

Data File	**VC010386.D**	Sample Name	**3059201**
Operator	**Skelton**	Field ID	**Trip Blank**
Date Aquired	**23-Sep-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	0.083	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform	15.57	303389	4.91 ug/L	5.67	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	0.388	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Recovery Limit

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Trip Blank**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 30592 Location: 3rdQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3059201

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC010386.D

Level: (low/med) LOW Date Received: 9/17/2003

% Moisture: not dec. Date Analyzed: 9/23/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
Freshwater Results

Data File	**VC010387.D**	Sample Name	**3059202**
Operator	**Skelton**	Field ID	**Field Blank**
Date Aquired	**23-Sep-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	0.083	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform	15.58	246859	4.10 ug/L	5.67	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	0.388	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Recovery Limit

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC010387.D**	Sample Name	**3059202**
Operator	**Skelton**	Field ID	**Field Blank**
Date Aquired	**23-Sep-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform	15.58	246859	4.10 ug/L	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Field Blank**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 30592 Location: 3rdQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3059202

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC010387.D

Level: (low/med) LOW Date Received: 9/17/2003

% Moisture: not dec. Date Analyzed: 9/23/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
Freshwater Results

Data File	**VC010388.D**	Sample Name	**3059203**
Operator	**Skelton**	Field ID	**Dupe**
Date Aquired	**23-Sep-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	0.083	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	0.388	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Recovery Limit

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC010388.D**	Sample Name	**3059203**
Operator	**Skelton**	Field ID	**Dupe**
Date Aquired	**23-Sep-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **Dupe**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 30592 Location: 3rdQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3059203

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC010388.D

Level: (low/med) LOW Date Received: 9/17/2003

% Moisture: not dec. Date Analyzed: 9/23/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
Freshwater Results

Data File	**VC010409.D**	Sample Name	**3059224**
Operator	**Skelton**	Field ID	**StreamSite#03**
Date Aquired	**24-Sep-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	0.083	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	0.388	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Recovery Limit

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **StreamSite#03**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 30592 Location: 3rdQtr SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 3059224

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC010409.D

Level: (low/med) LOW Date Received: 9/17/2003

% Moisture: not dec. _____ Date Analyzed: 9/24/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC010400.D**	Sample Name	**3059215**
Operator	**Skelton**	Field ID	**StreamSite#04**
Date Aquired	**23-Sep-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	14.71	42375	1.14 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	22.89	41132	1.13 ug/L	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **StreamSite#04**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 30592 Location: 3rdQtr SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 3059215

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC010400.D

Level: (low/med) LOW Date Received: 9/17/2003

% Moisture: not dec. _____ Date Analyzed: 9/23/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC010401.D**	Sample Name	**3059216**
Operator	**Skelton**	Field ID	**StreamSite#05**
Date Aquired	**23-Sep-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	14.71	50597	1.36 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	22.88	45532	1.23 ug/L	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **StreamSite#05**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 30592 Location: 3rdQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3059216

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC010401.D

Level: (low/med) LOW Date Received: 9/17/2003

% Moisture: not dec. Date Analyzed: 9/23/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC010398.D**	Sample Name	**3059213**
Operator	**Skelton**	Field ID	**StreamSite#07**
Date Aquired	**23-Sep-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	14.70	43363	1.17 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	22.88	39831	1.08 ug/L	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **StreamSite#07**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 30592 Location: 3rdQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3059213

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC010398.D

Level: (low/med) LOW Date Received: 9/17/2003

% Moisture: not dec. Date Analyzed: 9/23/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC010392.D**	Sample Name	**3059207**
Operator	**Skelton**	Field ID	**StreamSite#09**
Date Aquired	**23-Sep-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **StreamSite#09**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 30592 Location: 3rdQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3059207

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC010392.D

Level: (low/med) LOW Date Received: 9/17/2003

% Moisture: not dec. Date Analyzed: 9/23/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
Freshwater Results

Data File	**VC010396.D**	Sample Name	**3059211**
Operator	**Skelton**	Field ID	**StreamSite#11**
Date Aquired	**23-Sep-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride	5.15	66622	1.74 ug/L	0.083	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	14.70	294190	7.79 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	0.388	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Recovery Limit

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **StreamSite#11**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 30592 Location: 3rdQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3059211

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC010396.D

Level: (low/med) LOW Date Received: 9/17/2003

% Moisture: not dec. Date Analyzed: 9/23/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO..	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
Freshwater Results

Data File	**VC010394.D**	Sample Name	**3059209**
Operator	**Skelton**	Field ID	**StreamSite#12**
Date Aquired	**23-Sep-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	0.083	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	14.70	111164	2.91 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	0.388	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Recovery Limit

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **StreamSite#12**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 30592 Location: 3rdQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3059209

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC010394.D

Level: (low/med) LOW Date Received: 9/17/2003

% Moisture: not dec. Date Analyzed: 9/23/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
Freshwater Results

Data File	**VC010411.D**	Sample Name	**3059226**
Operator	**Skelton**	Field ID	**StreamSite#13**
Date Aquired	**24-Sep-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	0.083	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	0.388	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Recovery Limit

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **StreamSite#13**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 30592 Location: 3rdQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3059226

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC010411.D

Level: (low/med) LOW Date Received: 9/17/2003

% Moisture: not dec. Date Analyzed: 9/24/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
Freshwater Results

Data File	**VC010410.D**	Sample Name	**3059225**
Operator	**Skelton**	Field ID	**StreamSite#14**
Date Aquired	**24-Sep-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	0.083	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	0.388	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Recovery Limit

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **StreamSite#14**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 30592 Location: 3rdQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3059225

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC010410.D

Level: (low/med) LOW Date Received: 9/17/2003

% Moisture: not dec. Date Analyzed: 9/24/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
Freshwater Results

Data File	**VC010405.D**	Sample Name	**3059220**
Operator	**Skelton**	Field ID	**StreamSite#15**
Date Aquired	**24-Sep-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	0.083	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	14.70	62434	1.64 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	22.88	59651	1.60 ug/L	0.388	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Recovery Limit

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **StreamSite#15**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 30592 Location: 3rdQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3059220

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC010405.D

Level: (low/med) LOW Date Received: 9/17/2003

% Moisture: not dec. Date Analyzed: 9/24/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC010402.D**	Sample Name	**3059217**
Operator	**Skelton**	Field ID	**StreamSite#16**
Date Aquired	**24-Sep-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	14.70	64054	1.79 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	22.88	58501	1.70 ug/L	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **StreamSite#16**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 30592 Location: 3rdQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3059217

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC010402.D

Level: (low/med) LOW Date Received: 9/17/2003

% Moisture: not dec. Date Analyzed: 9/24/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC010407.D**	Sample Name	**3059222**
Operator	**Skelton**	Field ID	**StreamSite#17**
Date Aquired	**24-Sep-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **StreamSite#17**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 30592 Location: 3rdQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3059222

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC010407.D

Level: (low/med) LOW Date Received: 9/17/2003

% Moisture: not dec. Date Analyzed: 9/24/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
Freshwater Results

Data File	**VC010395.D**	Sample Name	**3059210**
Operator	**Skelton**	Field ID	**StreamSite#18**
Date Aquired	**23-Sep-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	320	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.0591	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	5.7	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	0.083	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	48.4	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	4.81	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	2.49	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	592	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	14.70	109969	2.89 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	5.67	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	127	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	0.363	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	0.15	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	0.291	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	1.09	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	0.266	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	7440	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	0.193	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	13.5	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	0.388	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	72.6	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	22	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	3030	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	4.38	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	1.72	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	2620	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	343	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	2520	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.T. = Retention Time
R.L. = Recovery Limit

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **StreamSite#18**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 30592 Location: 3rdQtr SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 3059210

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC010395.D

Level: (low/med) LOW Date Received: 9/17/2003

% Moisture: not dec. _____ Date Analyzed: 9/23/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC010393.D**	Sample Name	**3059208**
Operator	**Skelton**	Field ID	**StreamSite#19**
Date Aquired	**23-Sep-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	14.70	66384	1.72 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **StreamSite#19**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 30592 Location: 3rdQtr SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: 3059208

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC010393.D

Level: (low/med) LOW Date Received: 9/17/2003

% Moisture: not dec. _____ Date Analyzed: 9/23/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC010391.D**	Sample Name	**3059206**
Operator	**Skelton**	Field ID	**StreamSite#20**
Date Aquired	**23-Sep-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected.	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **StreamSite#20**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 30592 Location: 3rdQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3059206

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC010391.D

Level: (low/med) LOW Date Received: 9/17/2003

% Moisture: not dec. Date Analyzed: 9/23/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC010390.D**	Sample Name	**3059205**
Operator	**Skelton**	Field ID	**StreamSite#21**
Date Aquired	**23-Sep-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **StreamSite#21**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 30592 Location: 3rdQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3059205

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC010390.D

Level: (low/med) LOW Date Received: 9/17/2003

% Moisture: not dec. Date Analyzed: 9/23/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC010389.D**	Sample Name	**3059204**
Operator	**Skelton**	Field ID	**StreamSite#22**
Date Aquired	**23-Sep-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **StreamSite#22**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 30592 Location: 3rdQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3059204

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC010389.D

Level: (low/med) LOW Date Received: 9/17/2003

% Moisture: not dec. Date Analyzed: 9/23/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 1

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q
1.	unknown	5.69	3	J

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC010404.D**	Sample Name	**3059219**
Operator	**Skelton**	Field ID	**StreamSite#23**
Date Aquired	**24-Sep-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	14.70	68418	1.91 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	22.89	61114	1.77 ug/L	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit

MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **StreamSite#23**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 30592 Location: 3rdQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3059219

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC010404.D

Level: (low/med) LOW Date Received: 9/17/2003

% Moisture: not dec. Date Analyzed: 9/24/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC010403.D**	Sample Name	**3059218**
Operator	**Skelton**	Field ID	**StreamSite#24**
Date Aquired	**24-Sep-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	14.70	63668	1.69 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	22.88	57428	1.61 ug/L	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **StreamSite#24**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 30592 Location: 3rdQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3059218

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC010403.D

Level: (low/med) LOW Date Received: 9/17/2003

% Moisture: not dec. Date Analyzed: 9/24/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC010406.D**	Sample Name	**3059221**
Operator	**Skelton**	Field ID	**StreamSite#25**
Date Aquired	**24-Sep-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **StreamSite#25**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 30592 Location: 3rdQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3059221

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC010406.D

Level: (low/med) LOW Date Received: 9/17/2003

% Moisture: not dec. Date Analyzed: 9/24/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC010408.D**	Sample Name	**3059223**
Operator	**Skelton**	Field ID	**StreamSite#26**
Date Aquired	**24-Sep-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene			not detected	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene			not detected	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **StreamSite#26**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 30592 Location: 3rdQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3059223

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC010408.D

Level: (low/med) LOW Date Received: 9/17/2003

% Moisture: not dec. Date Analyzed: 9/24/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC010397.D**	Sample Name	**3059212**
Operator	**Skelton**	Field ID	**StreamSite#27**
Date Aquired	**23-Sep-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	14.70	42309	1.16 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	22.88	41176	1.16 ug/L	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **StreamSite#27**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 30592 Location: 3rdQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3059212

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC010397.D

Level: (low/med) LOW Date Received: 9/17/2003

% Moisture: not dec. Date Analyzed: 9/23/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

Volatile Analysis Report
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEP Certification Number #13461
SaltWater Results

Data File	**VC010399.D**	Sample Name	**3059214**
Operator	**Skelton**	Field ID	**StreamSite#28**
Date Aquired	**23-Sep-03**	Multiplier	**1**

CAS#	Compound Name	R.T.	Response	Result	Regulatory Level (ug/L)*	MDL	RL	Qualifier
107028	Acrolein			not detected	780	1.85 ug/L	20.00 ug/L	
107131	Acrylonitrile			not detected	0.665	2.78 ug/L	20.00 ug/L	
75650	tert-Butyl alcohol			not detected	nle	8.52 ug/L	20.00 ug/L	
1634044	Methyl-tert-Butyl ether			not detected	nle	0.16 ug/L	2.00 ug/L	
108203	Di-isopropyl ether			not detected	nle	0.25 ug/L	2.00 ug/L	
75718	Dichlorodifluoromethane			not detected	nle	1.68 ug/L	2.00 ug/L	
74-87-3	Chloromethane			not detected	Reserved	1.16 ug/L	2.00 ug/L	
75-01-4	Vinyl Chloride			not detected	525	1.06 ug/L	2.00 ug/L	
74-83-9	Bromomethane			not detected	4000	1.10 ug/L	2.00 ug/L	
75-00-3	Chloroethane			not detected	nle	1.01 ug/L	2.00 ug/L	
75-69-4	Trichlorofluoromethane			not detected	nle	0.50 ug/L	2.00 ug/L	
75-35-4	1,1-Dichloroethene			not detected	nle	0.24 ug/L	2.00 ug/L	
67-64-1	Acetone			not detected	nle	1.36 ug/L	2.00 ug/L	
75-15-0	Carbon Disulfide			not detected	nle	0.46 ug/L	2.00 ug/L	
75-09-2	Methylene Chloride			not detected	1600	0.24 ug/L	2.00 ug/L	
156-60-5	trans-1,2-Dichloroethene			not detected	nle	0.16 ug/L	2.00 ug/L	
75-35-3	1,1-Dichloroethane			not detected	nle	0.12 ug/L	2.00 ug/L	
108-05-4	Vinyl Acetate			not detected	nle	0.78 ug/L	2.00 ug/L	
78-93-3	2-Butanone			not detected	nle	0.62 ug/L	2.00 ug/L	
156-59-2	cis-1,2-Dichloroethene	14.69	42501	1.14 ug/L	nle	0.17 ug/L	2.00 ug/L	
67-66-3	Chloroform			not detected	470	0.30 ug/L	2.00 ug/L	
75-55-6	1,1,1-Trichloroethane			not detected	nle	0.23 ug/L	2.00 ug/L	
56-23-5	Carbon Tetrachloride			not detected	6.31	0.47 ug/L	2.00 ug/L	
71-43-2	Benzene			not detected	71	0.23 ug/L	2.00 ug/L	
107-06-2	1,2-Dichloroethane			not detected	99	0.18 ug/L	2.00 ug/L	
79-01-6	Trichloroethene			not detected	81	0.23 ug/L	2.00 ug/L	
78-87-5	1,2-Dichloropropane			not detected	nle	0.40 ug/L	2.00 ug/L	
75-27-4	Bromodichloromethane			not detected	22	0.55 ug/L	2.00 ug/L	
110-75-8	2-Chloroethyl vinyl ether			not detected	nle	0.65 ug/L	2.00 ug/L	
10061-01-5	cis-1,3-Dichloropropene			not detected	nle	0.69 ug/L	2.00 ug/L	
108-10-1	4-Methyl-2-Pentanone			not detected	nle	0.59 ug/L	2.00 ug/L	
108-88-3	Toluene			not detected	200000	0.37 ug/L	2.00 ug/L	
10061-02-6	trans-1,3-Dichloropropene			not detected	1700	0.87 ug/L	2.00 ug/L	
79-00-5	1,1,2-Trichloroethane			not detected	nle	0.48 ug/L	2.00 ug/L	
127-18-4	Tetrachloroethene	22.89	41465	1.14 ug/L	4.29	0.32 ug/L	2.00 ug/L	
591-78-6	2-Hexanone			not detected	nle	0.71 ug/L	2.00 ug/L	
126-48-1	Dibromochloromethane			not detected	nle	0.86 ug/L	2.00 ug/L	
108-90-7	Chlorobenzene			not detected	21000	0.39 ug/L	2.00 ug/L	
100-41-4	Ethylbenzene			not detected	27900	0.65 ug/L	2.00 ug/L	
1330-20-7	m+p-Xylenes			not detected	nle	1.14 ug/L	4.00 ug/L	
1330-20-7	o-Xylene			not detected	nle	0.62 ug/L	2.00 ug/L	
100-42-5	Styrene			not detected	nle	0.56 ug/L	2.00 ug/L	
75-25-2	Bromoform			not detected	360	0.70 ug/L	2.00 ug/L	
79-34-5	1,1,2,2-Tetrachloroethane			not detected	nle	0.47 ug/L	2.00 ug/L	
541-73-1	1,3-Dichlorobenzene			not detected	22200	0.55 ug/L	2.00 ug/L	
106-46-7	1,4-Dichlorobenzene			not detected	3159	0.57 ug/L	2.00 ug/L	
95-50-1	1,2-Dichlorobenzene			not detected	16500	0.64 ug/L	2.00 ug/L	

*Higher of PQL's and Ground Water Quality Criteria as per N.J.A.C., 7:9-6 2-Sept 97

Qualifiers

B = Compound found in related blank
E = Value above linear range
D = Value from dilution
PQL = Practical Quantitation Limit
MDL = Method Detection Limit
NLE = No Limit Established
R.L. = Recovery Limits
R.T. = Retention Time

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD ID: **StreamSite#28**

Lab Name: FMETL NJDEP#: 13461

Project: Streams Case No.: 30592 Location: 3rdQtr SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 3059214

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC010399.D

Level: (low/med) LOW Date Received: 9/17/2003

% Moisture: not dec. Date Analyzed: 9/23/2003

GC Column: ZB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

Number TICs found: 0

CAS NO.	COMPOUND NAME	RT	EST. CONC.	Q

PCB's

TABULATED ANALYTICAL REPORT
POLYCHLORINATED BIPHENYLS
EPA METHOD 8082

mb 091803

MATRIX: Aqueous
Date Extracted: 9/18/2003
Ext. Batch: 091803
Filename: PCB12517.D
Date Analyzed: 9/18/2003

Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (mg/L)	MDL (mg/L)
12674-11-2	Aroclor 1016	ND	0.0112
11104-28-2	Aroclor 1221	ND	0.0206
12672-29-6	Aroclor 1248	ND	0.0140
53469-21-9	Aroclor 1242	ND	0.0160
11141-16-5	Aroclor 1232	ND	0.0064
11097-69-1	Aroclor 1254	ND	0.0040
11096-82-5	Aroclor 1260	ND	0.0036

MDL - Method Detection Limit
ND = Not detected at or above MDL

Initial Vol..(ml)) **1000**
Final Vol.(ml) **10**

COMMENTS:

TABULATED ANALYTICAL REPORT
POLYCHLORINATED BIPHENYLS
EPA METHOD 8082

mb 091903

MATRIX: Aqueous
Date Extracted: 9/19/2003
Ext. Batch: 091903
Filename: PCB12868.D
Date Analyzed: 10/24/2003

Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (mg/L)	MDL (mg/L)
12674-11-2	Aroclor 1016	ND	0.0112
11104-28-2	Aroclor 1221	ND	0.0206
12672-29-6	Aroclor 1248	ND	0.0140
53469-21-9	Aroclor 1242	ND	0.0160
11141-16-5	Aroclor 1232	ND	0.0064
11097-69-1	Aroclor 1254	ND	0.0040
11096-82-5	Aroclor 1260	ND	0.0036

MDL - Method Detection Limit
ND = Not detected at or above MDL

Initial Vol..(ml)) **1000**
Final Vol.(ml) **10**

COMMENTS:

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 3rd Qrtr.
Client ID: FIELDBLANK
Lab ID: 3059202
Filename: PCB12519.D
Lab Project No: 30592

MATRIX: Aqueous
Date Extracted: 9/18/2003
Ext. Batch: 091803
Date Analyzed: 9/18/2003
DILUTION: 1
QC Batch: 91803
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0007
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.0007
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0006
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.0005
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0005
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0006
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0007

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client:	**U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.**	**MATRIX:**	**Aqueous**
Location:	**Streams 3rd Qrtr.**	**Date Extracted:**	**9/18/2003**
Client ID:	**Dupe**	**Ext. Batch:**	**091803**
Lab ID:	**3059203**	**Date Analyzed:**	**9/18/2003**
Filename:	**PCB12520.D**	**DILUTION:**	**1**
Lab Project No:	**30592**	**QC Batch:**	**91803**
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	**AROCLOR 1016**	**ND**	0.05	NA		0.0007
11104-28-2	**AROCLOR 1221**	**ND**	0.05	NA		0.0007
11141-16-5	**AROCLOR 1232**	**ND**	0.05	NA		0.0006
53469-21-9	**AROCLOR 1242**	**ND**	0.05	NA		0.0005
12672-29-6	**AROCLOR 1248**	**ND**	0.05	NA		0.0005
11097-69-1	**AROCLOR 1254**	**ND**	0.05	NA		0.0006
11096-82-5	**AROCLOR 1260**	**ND**	0.05	NA		0.0007

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client:	**U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.**	**MATRIX:**	**Aqueous**
Location:	**Streams 3rd Qrtr.**	**Date Extracted:**	**9/19/2003**
Client ID:	**Stream Site # 03**	**Ext. Batch:**	**091903**
Lab ID:	**3059224**	**Date Analyzed:**	**10/24/2003**
Filename:	**PCB12873.D**	**DILUTION:**	**1**
Lab Project No:	**30592**	**QC Batch:**	**91803**
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	**AROCLOR 1016**	**ND**	0.05	NA		0.0007
11104-28-2	**AROCLOR 1221**	**ND**	0.05	NA		0.0007
11141-16-5	**AROCLOR 1232**	**ND**	0.05	NA		0.0006
53469-21-9	**AROCLOR 1242**	**ND**	0.05	NA		0.0005
12672-29-6	**AROCLOR 1248**	**ND**	0.05	NA		0.0005
11097-69-1	**AROCLOR 1254**	**ND**	0.05	NA		0.0006
11096-82-5	**AROCLOR 1260**	**ND**	0.05	NA		0.0007

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client:	**U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.**	**MATRIX:**	**Aqueous**
Location:	**Streams 3rd Qrtr.**	**Date Extracted:**	**9/18/2003**
Client ID:	**Stream Site # 04**	**Ext. Batch:**	**091803**
Lab ID:	**3059215**	**Date Analyzed:**	**9/18/2003**
Filename:	**PCB12532.D**	**DILUTION:**	**1**
Lab Project No:	**30592**	**QC Batch:**	**91803**
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	**AROCLOR 1016**	**ND**	0.05	NA		0.0007
11104-28-2	**AROCLOR 1221**	**ND**	0.05	NA		0.0007
11141-16-5	**AROCLOR 1232**	**ND**	0.05	NA		0.0006
53469-21-9	**AROCLOR 1242**	**ND**	0.05	NA		0.0005
12672-29-6	**AROCLOR 1248**	**ND**	0.05	NA		0.0005
11097-69-1	**AROCLOR 1254**	**ND**	0.05	NA		0.0006
11096-82-5	**AROCLOR 1260**	**ND**	0.05	NA		0.0007

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client:	**U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.**	**MATRIX:**	**Aqueous**
Location:	**Streams 3rd Qrtr.**	**Date Extracted:**	**9/18/2003**
Client ID:	**Stream Site # 05**	**Ext. Batch:**	**091803**
Lab ID:	**3059216**	**Date Analyzed:**	**9/18/2003**
Filename:	**PCB12533.D**	**DILUTION:**	**1**
Lab Project No:	**30592**	**QC Batch:**	**91803**
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	**AROCLOR 1016**	**ND**	0.05	NA		0.0007
11104-28-2	**AROCLOR 1221**	**ND**	0.05	NA		0.0007
11141-16-5	**AROCLOR 1232**	**ND**	0.05	NA		0.0006
53469-21-9	**AROCLOR 1242**	**ND**	0.05	NA		0.0005
12672-29-6	**AROCLOR 1248**	**ND**	0.05	NA		0.0005
11097-69-1	**AROCLOR 1254**	**ND**	0.05	NA		0.0006
11096-82-5	**AROCLOR 1260**	**ND**	0.05	NA		0.0007

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client:	**U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.**	**MATRIX:**	**Aqueous**
Location:	**Streams 3rd Qrtr.**	**Date Extracted:**	**9/18/2003**
Client ID:	**Stream Site # 07**	**Ext. Batch:**	**091803**
Lab ID:	**3059213**	**Date Analyzed:**	**9/18/2003**
Filename:	**PCB12530.D**	**DILUTION:**	**1**
Lab Project No:	**30592**	**QC Batch:**	**91803**
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	**AROCLOR 1016**	**ND**	0.05	NA		0.0007
11104-28-2	**AROCLOR 1221**	**ND**	0.05	NA		0.0007
11141-16-5	**AROCLOR 1232**	**ND**	0.05	NA		0.0006
53469-21-9	**AROCLOR 1242**	**ND**	0.05	NA		0.0005
12672-29-6	**AROCLOR 1248**	**ND**	0.05	NA		0.0005
11097-69-1	**AROCLOR 1254**	**ND**	0.05	NA		0.0006
11096-82-5	**AROCLOR 1260**	**ND**	0.05	NA		0.0007

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client:	**U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.**	**MATRIX:**	**Aqueous**
Location:	**Streams 3rd Qrtr.**	**Date Extracted:**	**9/18/2003**
Client ID:	**Stream Site # 09**	**Ext. Batch:**	**091803**
Lab ID:	**3059207**	**Date Analyzed:**	**9/18/2003**
Filename:	**PCB12524.D**	**DILUTION:**	**1**
Lab Project No:	**30592**	**QC Batch:**	**91803**
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	**AROCLOR 1016**	**ND**	0.05	NA		0.0007
11104-28-2	**AROCLOR 1221**	**ND**	0.05	NA		0.0007
11141-16-5	**AROCLOR 1232**	**ND**	0.05	NA		0.0006
53469-21-9	**AROCLOR 1242**	**ND**	0.05	NA		0.0005
12672-29-6	**AROCLOR 1248**	**ND**	0.05	NA		0.0005
11097-69-1	**AROCLOR 1254**	**ND**	0.05	NA		0.0006
11096-82-5	**AROCLOR 1260**	**ND**	0.05	NA		0.0007

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client:	**U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.**	**MATRIX:**	**Aqueous**
Location:	**Streams 3rd Qrtr.**	**Date Extracted:**	**9/18/2003**
Client ID:	**Stream Site # 11**	**Ext. Batch:**	**091803**
Lab ID:	**3059211**	**Date Analyzed:**	**9/18/2003**
Filename:	**PCB12528.D**	**DILUTION:**	**1**
Lab Project No:	**30592**	**QC Batch:**	**91803**
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	**AROCLOR 1016**	**ND**	0.05	NA		0.0007
11104-28-2	**AROCLOR 1221**	**ND**	0.05	NA		0.0007
11141-16-5	**AROCLOR 1232**	**ND**	0.05	NA		0.0006
53469-21-9	**AROCLOR 1242**	**ND**	0.05	NA		0.0005
12672-29-6	**AROCLOR 1248**	**ND**	0.05	NA		0.0005
11097-69-1	**AROCLOR 1254**	**ND**	0.05	NA		0.0006
11096-82-5	**AROCLOR 1260**	**ND**	0.05	NA		0.0007

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 3rd Qrtr.
Client ID: Stream Site # 12
Lab ID: 3059209
Filename: PCB12526.D
Lab Project No: 30592

MATRIX: Aqueous
Date Extracted: 9/18/2003
Ext. Batch: 091803
Date Analyzed: 9/18/2003
DILUTION: 1
QC Batch: 91803
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	AROCLOR 1016	ND	0.05	NA		0.0007
11104-28-2	AROCLOR 1221	ND	0.05	NA		0.0007
11141-16-5	AROCLOR 1232	ND	0.05	NA		0.0006
53469-21-9	AROCLOR 1242	ND	0.05	NA		0.0005
12672-29-6	AROCLOR 1248	ND	0.05	NA		0.0005
11097-69-1	AROCLOR 1254	ND	0.05	NA		0.0006
11096-82-5	AROCLOR 1260	ND	0.05	NA		0.0007

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client:	**U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.**	**MATRIX:**	**Aqueous**
Location:	**Streams 3rd Qrtr.**	**Date Extracted:**	**9/19/2003**
Client ID:	**Stream Site # 13**	**Ext. Batch:**	**091903**
Lab ID:	**3059226**	**Date Analyzed:**	**10/24/2003**
Filename:	**PCB12875.D**	**DILUTION:**	**1**
Lab Project No:	**30592**	**QC Batch:**	**91803**
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	**AROCLOR 1016**	**ND**	0.05	NA		0.0007
11104-28-2	**AROCLOR 1221**	**ND**	0.05	NA		0.0007
11141-16-5	**AROCLOR 1232**	**ND**	0.05	NA		0.0006
53469-21-9	**AROCLOR 1242**	**ND**	0.05	NA		0.0005
12672-29-6	**AROCLOR 1248**	**ND**	0.05	NA		0.0005
11097-69-1	**AROCLOR 1254**	**ND**	0.05	NA		0.0006
11096-82-5	**AROCLOR 1260**	**ND**	0.05	NA		0.0007

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client:	**U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.**	**MATRIX:**	**Aqueous**
Location:	**Streams 3rd Qrtr.**	**Date Extracted:**	**9/19/2003**
Client ID:	**Stream Site # 14**	**Ext. Batch:**	**091903**
Lab ID:	**3059225**	**Date Analyzed:**	**10/24/2003**
Filename:	**PCB12874.D**	**DILUTION:**	**1**
Lab Project No:	**30592**	**QC Batch:**	**91803**
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	**AROCLOR 1016**	**ND**	0.05	NA		0.0007
11104-28-2	**AROCLOR 1221**	**ND**	0.05	NA		0.0007
11141-16-5	**AROCLOR 1232**	**ND**	0.05	NA		0.0006
53469-21-9	**AROCLOR 1242**	**ND**	0.05	NA		0.0005
12672-29-6	**AROCLOR 1248**	**ND**	0.05	NA		0.0005
11097-69-1	**AROCLOR 1254**	**ND**	0.05	NA		0.0006
11096-82-5	**AROCLOR 1260**	**ND**	0.05	NA		0.0007

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client:	**U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.**	**MATRIX:**	**Aqueous**
Location:	**Streams 3rd Qrtr.**	**Date Extracted:**	**9/18/2003**
Client ID:	**Stream Site # 15**	**Ext. Batch:**	**091803**
Lab ID:	**3059220**	**Date Analyzed:**	**9/19/2003**
Filename:	**PCB12537.D**	**DILUTION:**	**1**
Lab Project No:	**30592**	**QC Batch:**	**91803**
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	**AROCLOR 1016**	**ND**	0.05	NA		0.0007
11104-28-2	**AROCLOR 1221**	**ND**	0.05	NA		0.0007
11141-16-5	**AROCLOR 1232**	**ND**	0.05	NA		0.0006
53469-21-9	**AROCLOR 1242**	**ND**	0.05	NA		0.0005
12672-29-6	**AROCLOR 1248**	**ND**	0.05	NA		0.0005
11097-69-1	**AROCLOR 1254**	**ND**	0.05	NA		0.0006
11096-82-5	**AROCLOR 1260**	**ND**	0.05	NA		0.0007

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client:	**U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.**	**MATRIX:**	**Aqueous**
Location:	**Streams 3rd Qrtr.**	**Date Extracted:**	**9/18/2003**
Client ID:	**Stream Site # 16**	**Ext. Batch:**	**091803**
Lab ID:	**3059217**	**Date Analyzed:**	**9/18/2003**
Filename:	**PCB12534.D**	**DILUTION:**	**1**
Lab Project No:	**30592**	**QC Batch:**	**91803**
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	**AROCLOR 1016**	**ND**	0.05	NA		0.0007
11104-28-2	**AROCLOR 1221**	**ND**	0.05	NA		0.0007
11141-16-5	**AROCLOR 1232**	**ND**	0.05	NA		0.0006
53469-21-9	**AROCLOR 1242**	**ND**	0.05	NA		0.0005
12672-29-6	**AROCLOR 1248**	**ND**	0.05	NA		0.0005
11097-69-1	**AROCLOR 1254**	**ND**	0.05	NA		0.0006
11096-82-5	**AROCLOR 1260**	**ND**	0.05	NA		0.0007

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) **1000.00**
Final Vol.(ml) **10.00**

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client: U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.
Location: Streams 3rd Qrtr.
Client ID: Stream Site # 17
Lab ID: 3059222
Filename: PCB12871.D
Lab Project No: 30592

MATRIX: Aqueous
Date Extracted: 9/19/2003
Ext. Batch: 091903
Date Analyzed: 10/24/2003
DILUTION: 1
QC Batch: 91803
Analyst: A.A.

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	**AROCLOR 1016**	**ND**	0.05	NA		0.0007
11104-28-2	**AROCLOR 1221**	**ND**	0.05	NA		0.0007
11141-16-5	**AROCLOR 1232**	**ND**	0.05	NA		0.0006
53469-21-9	**AROCLOR 1242**	**ND**	0.05	NA		0.0005
12672-29-6	**AROCLOR 1248**	**ND**	0.05	NA		0.0005
11097-69-1	**AROCLOR 1254**	**ND**	0.05	NA		0.0006
11096-82-5	**AROCLOR 1260**	**ND**	0.05	NA		0.0007

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client:	**U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.**	**MATRIX:**	**Aqueous**
Location:	**Streams 3rd Qrtr.**	**Date Extracted:**	**9/18/2003**
Client ID:	**Stream Site # 18**	**Ext. Batch:**	**091803**
Lab ID:	**3059210**	**Date Analyzed:**	**9/18/2003**
Filename:	**PCB12527.D**	**DILUTION:**	**1**
Lab Project No:	**30592**	**QC Batch:**	**91803**
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	**AROCLOR 1016**	**ND**	0.05	NA		0.0007
11104-28-2	**AROCLOR 1221**	**ND**	0.05	NA		0.0007
11141-16-5	**AROCLOR 1232**	**ND**	0.05	NA		0.0006
53469-21-9	**AROCLOR 1242**	**ND**	0.05	NA		0.0005
12672-29-6	**AROCLOR 1248**	**ND**	0.05	NA		0.0005
11097-69-1	**AROCLOR 1254**	**ND**	0.05	NA		0.0006
11096-82-5	**AROCLOR 1260**	**ND**	0.05	NA		0.0007

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client:	**U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.**	**MATRIX:**	**Aqueous**
Location:	**Streams 3rd Qrtr.**	**Date Extracted:**	**9/18/2003**
Client ID:	**Stream Site # 19**	**Ext. Batch:**	**091803**
Lab ID:	**3059208**	**Date Analyzed:**	**9/18/2003**
Filename:	**PCB12525.D**	**DILUTION:**	**1**
Lab Project No:	**30592**	**QC Batch:**	**91803**
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	**AROCLOR 1016**	**ND**	0.05	NA		0.0007
11104-28-2	**AROCLOR 1221**	**ND**	0.05	NA		0.0007
11141-16-5	**AROCLOR 1232**	**ND**	0.05	NA		0.0006
53469-21-9	**AROCLOR 1242**	**ND**	0.05	NA		0.0005
12672-29-6	**AROCLOR 1248**	**ND**	0.05	NA		0.0005
11097-69-1	**AROCLOR 1254**	**ND**	0.05	NA		0.0006
11096-82-5	**AROCLOR 1260**	**ND**	0.05	NA		0.0007

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client:	**U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.**	**MATRIX:**	**Aqueous**
Location:	**Streams 3rd Qrtr.**	**Date Extracted:**	**9/18/2003**
Client ID:	**Stream Site # 20**	**Ext. Batch:**	**091803**
Lab ID:	**3059206**	**Date Analyzed:**	**9/18/2003**
Filename:	**PCB12523.D**	**DILUTION:**	**1**
Lab Project No:	**30592**	**QC Batch:**	**91803**
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	**AROCLOR 1016**	**ND**	0.05	NA		0.0007
11104-28-2	**AROCLOR 1221**	**ND**	0.05	NA		0.0007
11141-16-5	**AROCLOR 1232**	**ND**	0.05	NA		0.0006
53469-21-9	**AROCLOR 1242**	**ND**	0.05	NA		0.0005
12672-29-6	**AROCLOR 1248**	**ND**	0.05	NA		0.0005
11097-69-1	**AROCLOR 1254**	**ND**	0.05	NA		0.0006
11096-82-5	**AROCLOR 1260**	**ND**	0.05	NA		0.0007

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client:	**U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.**	**MATRIX:**	**Aqueous**
Location:	**Streams 3rd Qrtr.**	**Date Extracted:**	**9/18/2003**
Client ID:	**Stream Site # 21**	**Ext. Batch:**	**091803**
Lab ID:	**3059205**	**Date Analyzed:**	**9/18/2003**
Filename:	**PCB12522.D**	**DILUTION:**	**1**
Lab Project No:	**30592**	**QC Batch:**	**91803**
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	**AROCLOR 1016**	**ND**	0.05	NA		0.0007
11104-28-2	**AROCLOR 1221**	**ND**	0.05	NA		0.0007
11141-16-5	**AROCLOR 1232**	**ND**	0.05	NA		0.0006
53469-21-9	**AROCLOR 1242**	**ND**	0.05	NA		0.0005
12672-29-6	**AROCLOR 1248**	**ND**	0.05	NA		0.0005
11097-69-1	**AROCLOR 1254**	**ND**	0.05	NA		0.0006
11096-82-5	**AROCLOR 1260**	**ND**	0.05	NA		0.0007

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client:	**U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.**	**MATRIX:**	**Aqueous**
Location:	**Streams 3rd Qrtr.**	**Date Extracted:**	**9/18/2003**
Client ID:	**Stream Site # 22**	**Ext. Batch:**	**091803**
Lab ID:	**3059204**	**Date Analyzed:**	**9/18/2003**
Filename:	**PCB12521.D**	**DILUTION:**	**1**
Lab Project No:	**30592**	**QC Batch:**	**91803**
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	**AROCLOR 1016**	**ND**	0.05	NA		0.0007
11104-28-2	**AROCLOR 1221**	**ND**	0.05	NA		0.0007
11141-16-5	**AROCLOR 1232**	**ND**	0.05	NA		0.0006
53469-21-9	**AROCLOR 1242**	**ND**	0.05	NA		0.0005
12672-29-6	**AROCLOR 1248**	**ND**	0.05	NA		0.0005
11097-69-1	**AROCLOR 1254**	**ND**	0.05	NA		0.0006
11096-82-5	**AROCLOR 1260**	**ND**	0.05	NA		0.0007

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client:	**U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.**	**MATRIX:**	**Aqueous**
Location:	**Streams 3rd Qrtr.**	**Date Extracted:**	**9/18/2003**
Client ID:	**Stream Site # 23**	**Ext. Batch:**	**091803**
Lab ID:	**3059219**	**Date Analyzed:**	**9/19/2003**
Filename:	**PCB12536.D**	**DILUTION:**	**1**
Lab Project No:	**30592**	**QC Batch:**	**91803**
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	**AROCLOR 1016**	**ND**	0.05	NA		0.0007
11104-28-2	**AROCLOR 1221**	**ND**	0.05	NA		0.0007
11141-16-5	**AROCLOR 1232**	**ND**	0.05	NA		0.0006
53469-21-9	**AROCLOR 1242**	**ND**	0.05	NA		0.0005
12672-29-6	**AROCLOR 1248**	**ND**	0.05	NA		0.0005
11097-69-1	**AROCLOR 1254**	**ND**	0.05	NA		0.0006
11096-82-5	**AROCLOR 1260**	**ND**	0.05	NA		0.0007

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client:	**U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.**	**MATRIX:**	**Aqueous**
Location:	**Streams 3rd Qrtr.**	**Date Extracted:**	**9/18/2003**
Client ID:	**Stream Site # 24**	**Ext. Batch:**	**091803**
Lab ID:	**3059218**	**Date Analyzed:**	**9/18/2003**
Filename:	**PCB12535.D**	**DILUTION:**	**1**
Lab Project No:	**30592**	**QC Batch:**	**91803**
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	**AROCLOR 1016**	**ND**	0.05	NA		0.0007
11104-28-2	**AROCLOR 1221**	**ND**	0.05	NA		0.0007
11141-16-5	**AROCLOR 1232**	**ND**	0.05	NA		0.0006
53469-21-9	**AROCLOR 1242**	**ND**	0.05	NA		0.0005
12672-29-6	**AROCLOR 1248**	**ND**	0.05	NA		0.0005
11097-69-1	**AROCLOR 1254**	**ND**	0.05	NA		0.0006
11096-82-5	**AROCLOR 1260**	**ND**	0.05	NA		0.0007

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client:	**U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.**	**MATRIX:**	**Aqueous**
Location:	**Streams 3rd Qrtr.**	**Date Extracted:**	**9/19/2003**
Client ID:	**Stream Site # 25**	**Ext. Batch:**	**091903**
Lab ID:	**3059221**	**Date Analyzed:**	**10/24/2003**
Filename:	**PCB12870.D**	**DILUTION:**	**1**
Lab Project No:	**30592**	**QC Batch:**	**91803**
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	**AROCLOR 1016**	**ND**	0.05	NA		0.0007
11104-28-2	**AROCLOR 1221**	**ND**	0.05	NA		0.0007
11141-16-5	**AROCLOR 1232**	**ND**	0.05	NA		0.0006
53469-21-9	**AROCLOR 1242**	**ND**	0.05	NA		0.0005
12672-29-6	**AROCLOR 1248**	**ND**	0.05	NA		0.0005
11097-69-1	**AROCLOR 1254**	**ND**	0.05	NA		0.0006
11096-82-5	**AROCLOR 1260**	**ND**	0.05	NA		0.0007

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client:	**U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.**	**MATRIX:**	**Aqueous**
Location:	**Streams 3rd Qrtr.**	**Date Extracted:**	**9/19/2003**
Client ID:	**Stream Site # 26**	**Ext. Batch:**	**091903**
Lab ID:	**3059223**	**Date Analyzed:**	**10/24/2003**
Filename:	**PCB12872.D**	**DILUTION:**	**1**
Lab Project No:	**30592**	**QC Batch:**	**91803**
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	**AROCLOR 1016**	**ND**	0.05	NA		0.0007
11104-28-2	**AROCLOR 1221**	**ND**	0.05	NA		0.0007
11141-16-5	**AROCLOR 1232**	**ND**	0.05	NA		0.0006
53469-21-9	**AROCLOR 1242**	**ND**	0.05	NA		0.0005
12672-29-6	**AROCLOR 1248**	**ND**	0.05	NA		0.0005
11097-69-1	**AROCLOR 1254**	**ND**	0.05	NA		0.0006
11096-82-5	**AROCLOR 1260**	**ND**	0.05	NA		0.0007

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol.,(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client:	**U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.**	**MATRIX:**	**Aqueous**
Location:	**Streams 3rd Qrtr.**	**Date Extracted:**	**9/18/2003**
Client ID:	**Stream Site # 27**	**Ext. Batch:**	**091803**
Lab ID:	**3059212**	**Date Analyzed:**	**9/18/2003**
Filename:	**PCB12529.D**	**DILUTION:**	**1**
Lab Project No:	**30592**	**QC Batch:**	**91803**
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	**AROCLOR 1016**	**ND**	0.05	NA		0.0007
11104-28-2	**AROCLOR 1221**	**ND**	0.05	NA		0.0007
11141-16-5	**AROCLOR 1232**	**ND**	0.05	NA		0.0006
53469-21-9	**AROCLOR 1242**	**ND**	0.05	NA		0.0005
12672-29-6	**AROCLOR 1248**	**ND**	0.05	NA		0.0005
11097-69-1	**AROCLOR 1254**	**ND**	0.05	NA		0.0006
11096-82-5	**AROCLOR 1260**	**ND**	0.05	NA		0.0007

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

U.S.Army, FT. Monmouth Environmental Laboratory.

Report Of Analysis
NJDEP Certification # 13461
METHOD 8082

Client:	**U.S.Army, Bldg 173, Ft. Monmouth, NJ 07703.**	**MATRIX:**	**Aqueous**
Location:	**Streams 3rd Qrtr.**	**Date Extracted:**	**9/18/2003**
Client ID:	**Stream Site # 28**	**Ext. Batch:**	**091803**
Lab ID:	**3059214**	**Date Analyzed:**	**9/18/2003**
Filename:	**PCB12531.D**	**DILUTION:**	**1**
Lab Project No:	**30592**	**QC Batch:**	**91803**
		Analyst:	**A.A.**

CAS #	COMPOUNDS	RESULTS (ug/L)	*Reporting Limit (ug/L)	Cleanup Criteria (ug/L)	QUALIFIER	MDL (ug/L)
12674-11-2	**AROCLOR 1016**	**ND**	0.05	NA		0.0007
11104-28-2	**AROCLOR 1221**	**ND**	0.05	NA		0.0007
11141-16-5	**AROCLOR 1232**	**ND**	0.05	NA		0.0006
53469-21-9	**AROCLOR 1242**	**ND**	0.05	NA		0.0005
12672-29-6	**AROCLOR 1248**	**ND**	0.05	NA		0.0005
11097-69-1	**AROCLOR 1254**	**ND**	0.05	NA		0.0006
11096-82-5	**AROCLOR 1260**	**ND**	0.05	NA		0.0007

*RESULTS BETWEEN MDL AND RL ARE ESTIMATED.
MDL = METHOD DETECTION LIMIT
ND =UNDETECTED BELOW THE MDL
B = PRESENT IN THE ASSOCIATED BLANK
E = EXCEEDED CALIBRATION RANGE, DILUTION TO FOLLOW
D = DILUTION

Initial Vol..(ml)) 1000.00
Final Vol.(ml) 10.00

WET CHEMISTRY

Stream Water Analysis

3rd Quarter 2003

Sample ID	Date Sampled	Stream Site#	pH	Ammonia (mg/L)	Nitrates (mg/L)	Phosphate (mg/L as PO4)	Sulfate (mg/L)	DO (mg/L)	T.Coliform (cfu/100ml)	F.Coliform (cfu/100ml)	% Salinity
3059204	9/17/03	22	7.76	ND	ND	0.50	1320	8.53	1020	40	18
3059205	9/17/03	21	7.79	ND	ND	0.56	1240	8.63	740	40	19
3059206	9/17/03	20	7.80	ND	0.50	0.47	1210	8.64	1160	10	19
3059207	9/17/03	09	7.84	0.13	1.22	0.04	153	8.31	5400	ND	14
3059208	9/17/03	19	7.86	ND	1.74	0.07	13.9	8.59	1120	30	2
3059209	9/17/03	12	7.76	ND	1.94	0.07	11.4	7.91	2760	ND	0
3059210	9/17/03	18	7.78	ND	1.49	0.04	11.2	7.87	1020	20	0
3059211	9/17/03	11	7.84	ND	3.00	0.14	15.0	8.39	7700	30	0
3059212	9/17/03	27	7.91	0.18	1.38	0.10	32.5	8.11	2480	ND	10
3059213	9/17/03	07	7.86	0.17	1.38	0.45	33.5	8.09	2400	20	9
3059214	9/17/03	28	7.88	0.17	1.42	0.31	33.3	8.10	1640	20	9
3059215	9/17/03	04	7.80	0.18	1.32	0.15	33.1	7.98	1320	10	8
3059216	9/17/03	05	7.65	0.19	1.50	0.16	24.1	7.93	920	10	7
3059217	9/17/03	16	7.53	0.17	1.37	0.06	19.5	7.91	1900	10	7
3059218	9/17/03	24	7.55	0.22	1.52	0.10	18.6	7.86	3240	ND	6
3059219	9/17/03	23	7.57	0.17	1.48	0.07	18.8	7.89	2240	ND	1
3059220	9/17/03	15	7.55	0.17	1.40	0.16	19.7	7.76	1720	10	0
3059221	9/17/03	25	7.79	0.12	1.53	0.31	21.8	7.83	5400	30	8
3059222	9/17/03	17	7.81	0.13	1.62	0.35	21.4	7.89	10200	70	8
3059223	9/17/03	26	7.76	0.15	1.74	0.28	22.0	7.88	3960	ND	7
3059224	9/17/03	03	7.75	0.17	1.43	0.22	22.7	7.86	3360	ND	7
3059225	9/17/03	14	7.76	ND	1.42	0.25	19.7	7.88	4520	ND	0
3059226	9/17/03	13	7.53	0.19	1.46	0.11	20.9	8.00	2280	ND	0

mg/L = Parts Per Million
cfu = Colony Forming Units
ND = Not detected
TNTC = Too Numerous to Count

Completed: 10/08/03
Reviewed: 10/09/03

10-29-03

Daniel K. Wright
Laboratory Director

LTM

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
07/17/1997	FMETL	ND	ND	ND	ND						
10/30/1997	FMETL	ND	ND	ND	ND						
02/10/1998	FMETL	ND	ND	ND	ND						
04/21/1998	FMETL	ND	ND	ND	ND						
08/19/1998	FMETL	ND	ND	ND	ND						
11/18/1998	FMETL	ND	ND	1.09	ND						
02/25/1999	FMETL	ND	ND	ND	ND						
06/29/1999	FMETL	ND	ND	ND	ND						
09/22/1999	FMETL	ND	ND	ND	ND						
12/09/1999	FMETL	ND	ND	ND	ND						
03/01/2000	FMETL	ND	ND	ND	ND						
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	ND	ND	ND	ND						
11/20/2000	FMETL	ND	ND	ND	ND						
03/08/2001	FMETL	ND	ND	ND	ND						-
05/16/2001	FMETL	ND	ND	ND	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/05/2002	FMETL	ND	ND	ND	ND						V,P
03/24/2003	FMETL	ND	ND	ND	ND	ND					V,P
05/21/2003	FMETL	ND	ND	ND	ND	ND					V,P
09/17/2003	FMETL	ND	ND	ND	ND	ND					V,P

SOURCE: 3

Sampling Dates:
07/17/1997 - 09/17/2003

NOTES:

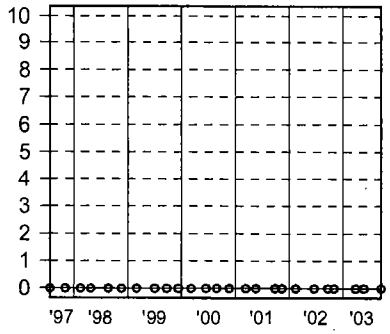
Stream 3 is Fresh-Water.
MeCl limit is 2.49 ug/L.
PCE limit is 0.388 ug/L.

Fort Monmouth

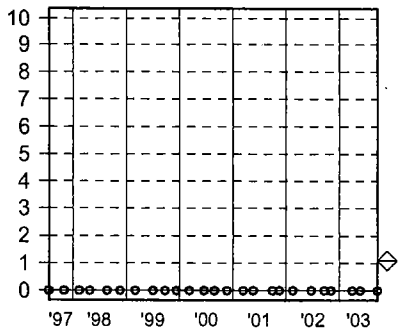
GW Monitoring
Streams

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

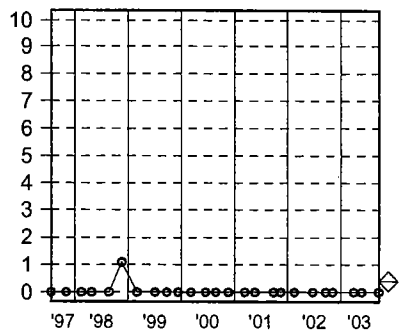
cis-1,2-Dichloroethene
(ug/l)



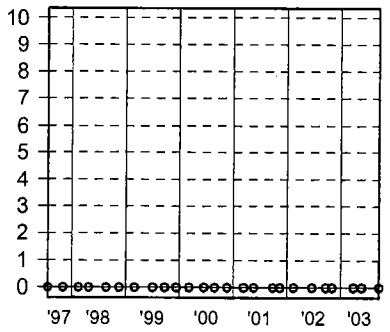
Trichloroethene
(ug/l)



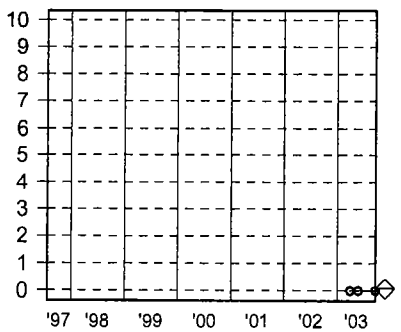
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 3

Sampling Dates:
07/17/1997 - 09/17/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 1 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	2.18	ND	ND	ND						
07/17/1997	FMETL	1.63	ND	1.61	ND						
10/30/1997	FMETL	ND	ND	1.24	ND						
02/10/1998	FMETL	ND	ND	6.61	ND						
04/21/1998	FMETL	ND	ND	4.42	ND						
08/19/1998	FMETL	1.92	1.10	2.85	ND						
11/17/1998	FMETL	1.19	ND	1.62	ND						
02/25/1999	FMETL	ND	ND	5.61	ND						
06/29/1999	FMETL	2.41	1.56	5.27	ND						
09/22/1999	FMETL	2.02	ND	1.85	ND						
12/09/1999	FMETL	ND	ND	ND	ND						
03/01/2000	FMETL	1.23	1.26	6.18	2.18						
06/12/2000	FMETL	ND	ND	4.37	ND						
08/24/2000	FMETL	1.19	1.19	3.19	ND						
11/20/2000	FMETL	ND	ND	3.70	ND						-
03/08/2001	FMETL	ND	ND	2.52	ND						-
05/16/2001	FMETL	ND	ND	2.95	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	1.64	ND						V
06/18/2002	FMETL	ND	ND	1.97	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	ND	ND	ND	ND						V,P
03/13/2003	FMETL	0.57	0.51	2.33	ND	ND					V,P
05/21/2003	FMETL	ND	ND	ND	ND	ND					V,P
09/17/2003	FMETL	1.14	ND	1.13	ND	ND					V,P

SOURCE: 4

Sampling Dates:
04/08/1997 - 09/17/2003

NOTES:

PAGE 1 OF 1
Stream 4 is Salt-Water.
MTBE limit is NLE
cis-1,2-Di limit is NLE
TCE limit is 81
PCE limit is 4.29

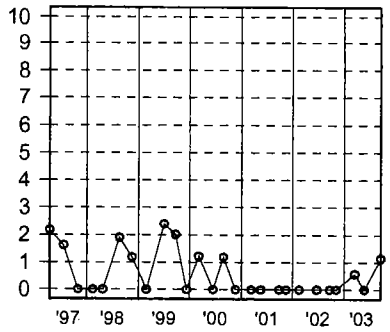
Fort Monmouth

GW Monitoring
Streams

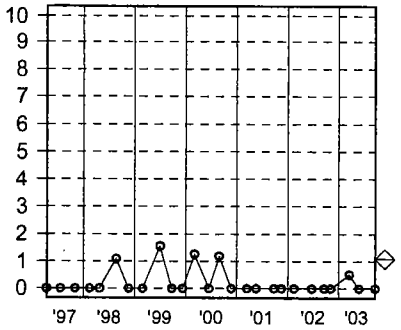
Source 2 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

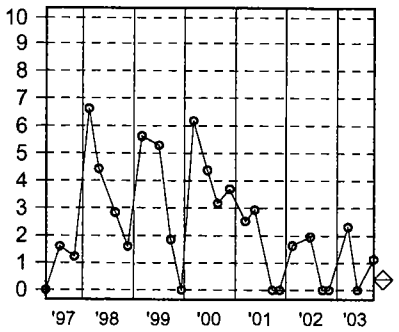
cis-1,2-Dichloroethene
(ug/l)



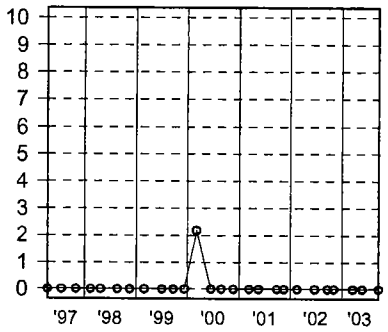
Trichloroethene
(ug/l)



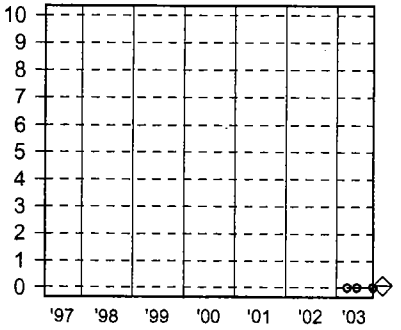
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 4

Sampling Dates:
04/08/1997 - 09/17/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 2 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	1.80	ND	2.28	ND						
07/17/1997	FMETL	3.66	ND	3.54	ND						
10/30/1997	FMETL	1.83	ND	1.70	ND						
02/10/1998	FMETL	ND	ND	6.34	ND						
04/21/1998	FMETL	ND	ND	4.48	ND						
08/19/1998	FMETL	2.28	1.27	3.39	ND						
11/17/1998	FMETL	1.67	ND	2.17	ND						
02/25/1999	FMETL	ND	ND	5.45	ND						
06/29/1999	FMETL	2.74	1.74	6.04	ND						
09/22/1999	FMETL	1.96	ND	1.82	ND						
12/09/1999	FMETL	1.60	ND	3.82	ND						
03/01/2000	FMETL	1.27	1.36	6.62	2.34						
06/12/2000	FMETL	ND	ND	4.38	ND						
08/24/2000	FMETL	1.19	ND	3.44	ND						
11/20/2000	FMETL	ND	ND	3.58	ND						-
03/08/2001	FMETL	ND	ND	ND	ND						-
05/16/2001	FMETL	0.97	ND	4.09	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	1.51	ND	1.99	ND						-
02/11/2002	FMETL	ND	ND	2.44	ND						V
06/18/2002	FMETL	ND	ND	2.39	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	ND	ND	ND	ND						V,P
03/13/2003	FMETL	0.81	0.71	3.08	ND	ND					V,P
05/21/2003	FMETL	ND	ND	3.54	ND	ND					V,P
09/17/2003	FMETL	1.36	ND	1.23	ND	ND					V,P

SOURCE: 5

Sampling Dates:
04/08/1997 - 09/17/2003

NOTES:

Page 1 of 1
Stream 5 is Salt-Water.
MeCl limit is 1600 ug/L.
cis-1,2-Di limit is NLE.
TCE limit is 81 ug/L.
PCE limit is 4.29 ug/L.
MTBE limit is NLE.

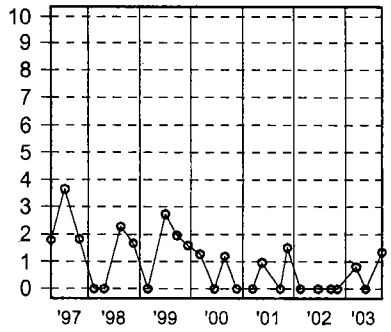
Fort Monmouth

GW Monitoring
Streams

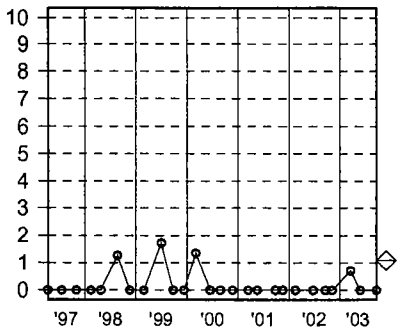
Source 3 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

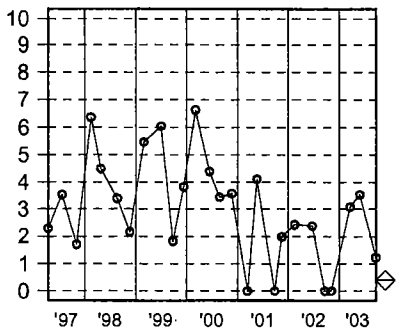
cis-1,2-Dichloroethene
(ug/l)



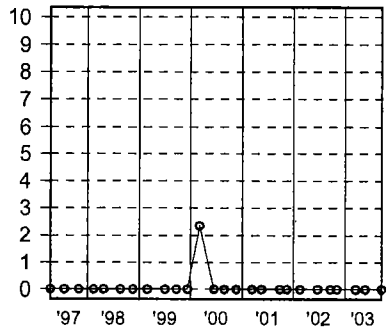
Trichloroethene
(ug/l)



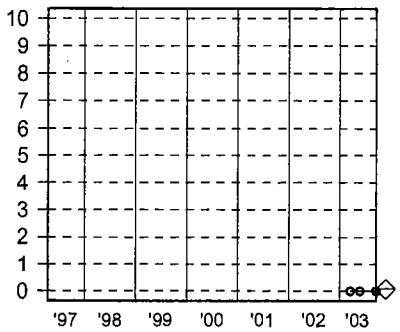
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 5

Sampling Dates:
04/08/1997 - 09/17/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 3 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	ND	ND	ND	ND						
07/17/1997	FMETL	1.14	ND	1.08	ND						
10/30/1997	FMETL	ND	ND	ND	ND						
02/10/1998	FMETL	ND	ND	2.04	ND						
04/21/1998	FMETL	ND	ND	2.40	ND						
08/19/1998	FMETL	ND	ND	ND	ND						
11/17/1998	FMETL	ND	ND	ND	ND						
02/25/1999	FMETL	ND	ND	2.85	ND						
06/29/1999	FMETL	ND	ND	1.42	2.00						
09/22/1999	FMETL	ND	ND	ND	ND						
12/09/1999	FMETL	ND	ND	ND	ND						
03/01/2000	FMETL	1.19	1.30	6.47	2.14						
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	ND	ND	1.77	ND						
11/20/2000	FMETL	ND	ND	1.94	ND						-
03/08/2001	FMETL	ND	ND	ND	ND						-
05/16/2001	FMETL	ND	ND	ND	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	ND	ND	ND	ND						V,P
03/13/2003	FMETL	ND	ND	1.61	ND	ND					V,P
05/21/2003	FMETL	ND	ND	2.67	ND	ND					V,P
09/17/2003	FMETL	1.17	ND	1.08	ND	ND					V,P

SOURCE: 7

Sampling Dates:
04/08/1997 - 09/17/2003

NOTES:

Page 1 of 1
Stream 7 is Salt-Water.
cis-1,2-Di limit is NLE.
TCE limit is 81 ug/L.
PCE limit is 4.29 ug/L.
MTBE limit is NLE.
Acetone limit is NLE.

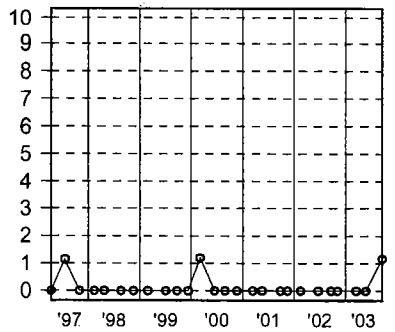
Fort Monmouth

GW Monitoring
Streams

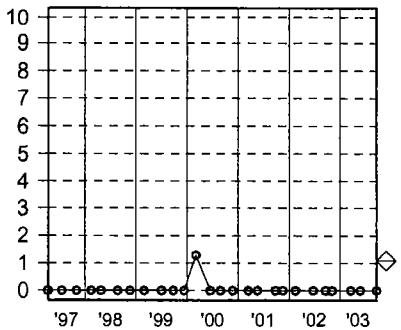
Source 4 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

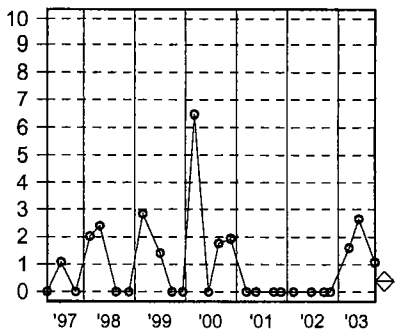
cis-1,2-Dichloroethene
(ug/l)



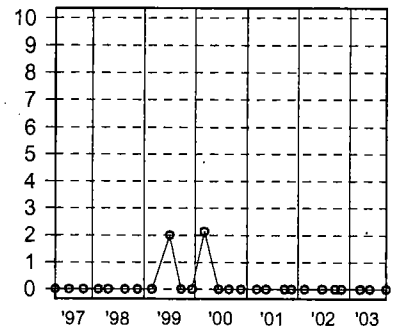
Trichloroethene
(ug/l)



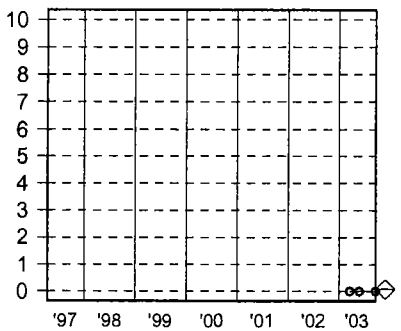
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 7

Sampling Dates:
04/08/1997 - 09/17/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 4 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	2.78	ND	ND	ND						
07/17/1997	FMETL	ND	ND	ND	ND						
10/30/1997	FMETL	2.14	ND	ND	ND						
02/10/1998	FMETL	6.00	ND	ND	ND						
04/21/1998	FMETL	4.73	ND	ND	ND						
08/19/1998	FMETL	1.69	ND	ND	ND						
11/17/1998	FMETL	ND	ND	ND	ND						
02/25/1999	FMETL	1.78	ND	ND	ND						
06/29/1999	FMETL	ND	ND	ND	ND						
09/21/1999	FMETL	1.91	ND	ND	ND						
12/09/1999	FMETL	ND	ND	ND	ND						
03/01/2000	FMETL	2.17	ND	ND	ND						
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	1.11	ND	ND	ND						
11/20/2000	FMETL	ND	ND	ND	ND						-
11/20/2000D	FMETL	ND	ND	ND	ND						-
02/21/2001	FMETL	1.72	ND	ND	ND						-
05/16/2001	FMETL	ND	ND	ND	ND						-
09/11/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	1.24	ND	ND	ND						V,P
03/13/2003	FMETL	9.40	ND	ND	ND	ND					V,P
05/21/2003	FMETL	1.48	ND	ND	ND	ND					V,P
09/17/2003	FMETL	ND	ND	ND	ND	ND					V,P

SOURCE: 9

Sampling Dates:
04/08/1997 - 09/17/2003

NOTES:

PAGE 1 OF 1
Stream 9 is Salt-Water.
MeCl limit is 1600 ug/L.
cis-1,2-Di limit is NLE.
Acetone limit is NLE.

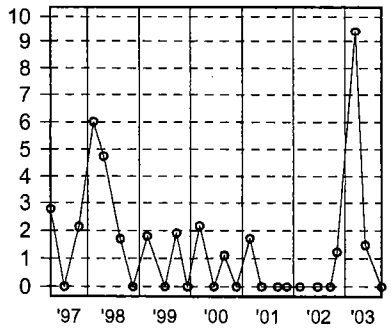
Fort Monmouth

GW Monitoring
Streams

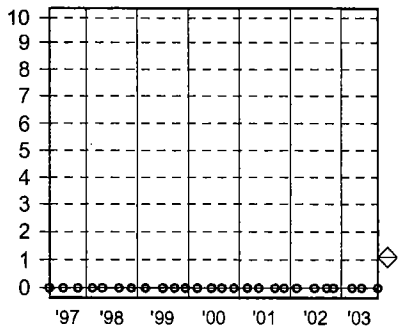
Source 5 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

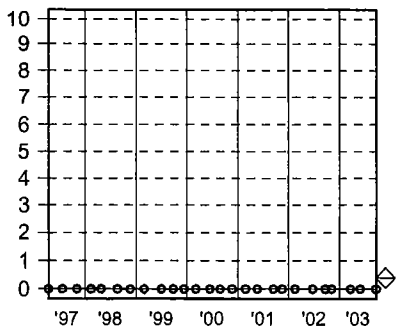
cis-1,2-Dichloroethene
(ug/l)



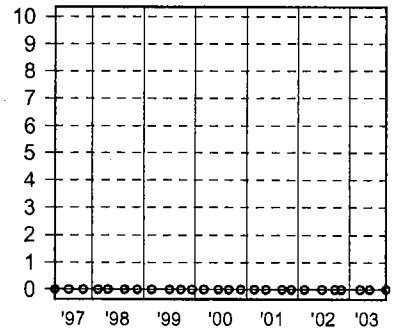
Trichloroethene
(ug/l)



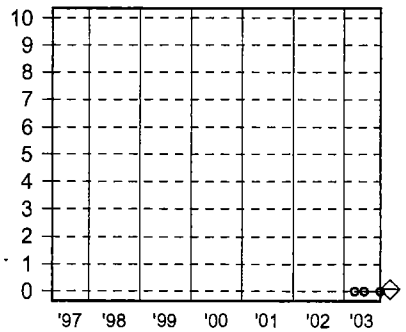
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 9

Sampling Dates:
04/08/1997 - 09/17/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 5 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	18.72	1.58	ND	ND						
07/17/1997	FMETL	14.13	ND	ND	ND						
10/30/1997	FMETL	18.23	ND	ND	ND						
02/10/1998	FMETL	24.71	2.14	ND	ND						
04/21/1998	FMETL	21.66	1.82	ND	ND						
08/19/1998	FMETL	11.73	ND	ND	ND						
11/18/1998	FMETL	8.82	ND	ND	ND						
02/25/1999	FMETL	9.11	ND	ND	ND						
06/29/1999	FMETL	5.77	ND	ND	ND						
09/21/1999	FMETL	15.62	ND	ND	ND						
12/09/1999	FMETL	11.90	ND	ND	ND						
03/01/2000	FMETL	11.01	ND	ND	1.64						
06/12/2000	FMETL	8.03	ND	ND	ND						
08/24/2000	FMETL	9.08	ND	ND	ND						
08/24/2000D	FMETL	8.70	ND	ND	ND						
11/20/2000	FMETL	5.34	ND	ND	ND						-
02/21/2001	FMETL	8.26	ND	ND	ND						-
05/16/2001	FMETL	5.21	ND	ND	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	1.93	ND	ND	ND						-
02/11/2002	FMETL	1.05	ND	ND	ND						V
06/18/2002	FMETL	3.08	ND	ND	ND						V,P
09/18/2002	FMETL	4.17	ND	ND	ND						V,P
11/05/2002	FMETL	7.48	ND	ND	ND	1.33					V,P
03/13/2003	FMETL	24.28	0.67	ND	0.79	3.37					V,P
05/21/2003	FMETL	14.79	ND	ND	ND	1.41					V,P
09/17/2003	FMETL	7.79	ND	ND	ND	1.74					V,P

SOURCE: 11

Sampling Dates:
04/08/1997 - 09/17/2003

NOTES:

Page 1 of1
Stream 11 is Fresh-Water.
cis-1,2-Di limit is NLE.
TCE limit is 1.09 ug/L.
MTBE limit is NLE.

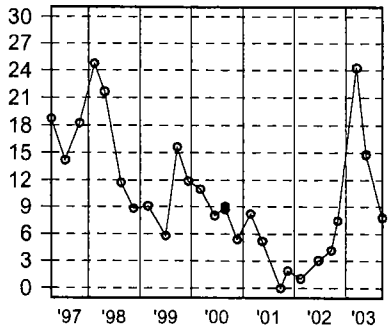
Fort Monmouth

GW Monitoring
Streams

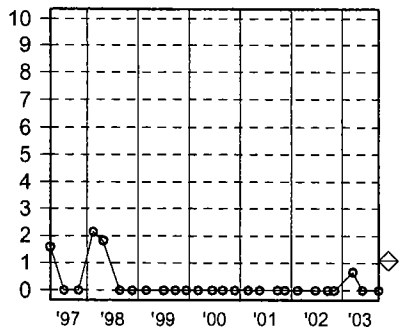
Source 6 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

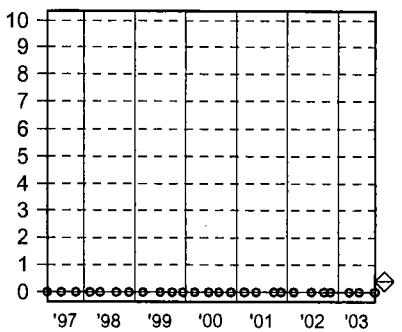
cis-1,2-Dichloroethene
(ug/l)



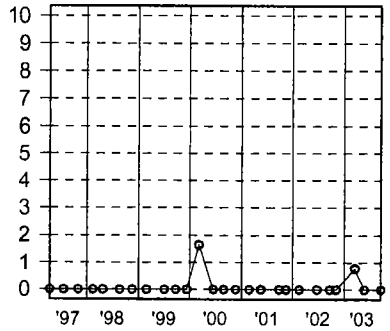
Trichloroethene
(ug/l)



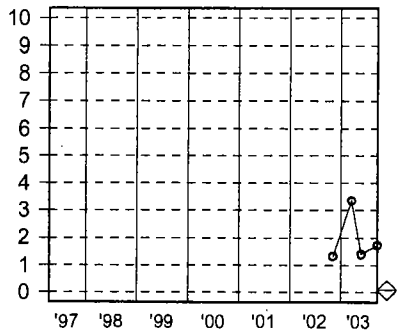
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 11

Sampling Dates:
04/08/1997 - 09/17/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 6 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	6.63	ND	ND	ND						
07/17/1997	FMETL	ND	ND	ND	ND						
10/30/1997	FMETL	5.67	ND	ND	ND						
02/10/1998	FMETL	6.54	ND	ND	ND						
04/21/1998	FMETL	ND	ND	ND	ND						
08/19/1998	FMETL	4.58	ND	ND	ND						
11/18/1998	FMETL	2.48	ND	ND	ND						
02/25/1999	FMETL	1.80	ND	ND	ND						
06/29/1999	FMETL	1.39	ND	ND	ND						
09/21/1999	FMETL	3.67	ND	ND	ND						
12/09/1999	FMETL	2.74	ND	ND	ND						
03/01/2000	FMETL	3.13	ND	ND	ND						
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	2.00	ND	ND	ND						
11/20/2000	FMETL	1.87	ND	ND	ND						-
02/21/2001	FMETL	1.89	ND	ND	ND						-
05/16/2001	FMETL	1.66	ND	ND	ND						-
05/16/2001D	FMETL	1.72	ND	ND	ND						-
09/11/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/05/2002	FMETL	5.16	ND	ND	ND	ND					V,P
03/13/2003	FMETL	9.43	ND	ND	1.18	1.30					V,P
05/21/2003	FMETL	3.90	ND	ND	ND	ND					V,P
09/17/2003	FMETL	2.91	ND	ND	ND	ND					V,P

SOURCE: 12

Sampling Dates:
04/08/1997 - 09/17/2003

NOTES:

Page 1 of 1
Stream 12 is Fresh-Water.
cis-1,2-Di limit is NLE.
Acetone limit is NLE.

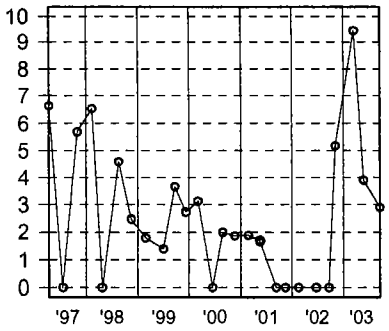
Fort Monmouth

GW Monitoring
Streams

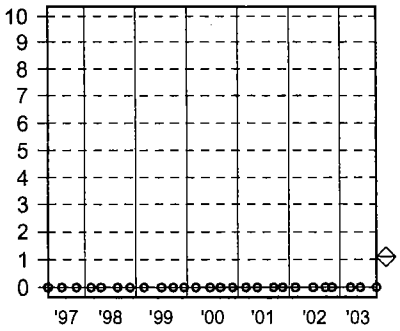
Source 7 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

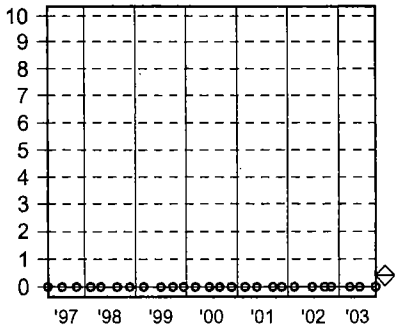
cis-1,2-Dichloroethene
(ug/l)



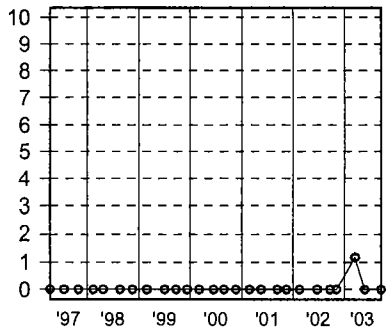
Trichloroethene
(ug/l)



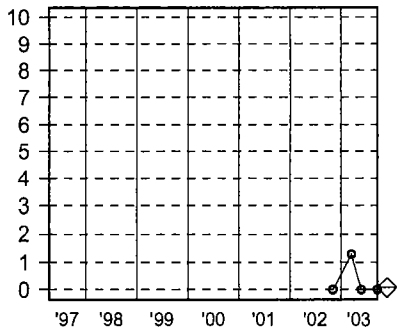
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 12

Sampling Dates:
04/08/1997 - 09/17/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 7 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	ND	ND	ND	ND						
07/17/1997	FMETL	ND	ND	ND	ND						
10/30/1997	FMETL	ND	ND	ND	ND						
02/10/1998	FMETL	ND	ND	ND	ND						
04/21/1998	FMETL	ND	ND	ND	ND						
08/19/1998	FMETL	ND	ND	ND	ND						
11/18/1998	FMETL	ND	ND	ND	ND						
02/25/1999	FMETL	ND	ND	ND	ND						
06/29/1999	FMETL	ND	ND	ND	ND						
09/22/1999	FMETL	ND	ND	ND	ND						
12/09/1999	FMETL	ND	ND	3.94	ND						
03/01/2000	FMETL	1.35	1.40	6.92	2.40						
06/12/2000	FMETL	ND	ND	5.56	ND						
08/24/2000	FMETL	2.17	1.78	5.40	ND						
11/20/2000	FMETL	ND	ND	6.58	ND						-
02/21/2001	FMETL	ND	ND	ND	ND						-
05/16/2001	FMETL	ND	ND	ND	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/05/2002	FMETL	ND	ND	1.46	ND	ND					V,P
03/24/2003	FMETL	ND	ND	ND	ND	ND					V,P
05/21/2003	FMETL	ND	ND	ND	ND	ND					V,P
09/17/2003	FMETL	ND	ND	ND	ND	ND					V,P

SOURCE: 13

Sampling Dates:
04/08/1997 - 09/17/2003

NOTES:

Page 1 of 1
Stream 13 is Fresh-Water.
MeCl limit is 2.49 ug/L.
cis-1,2-Di limit is NLE.
TCE limit is 1.09.
PCE limit is 0.388 ug/L.
Acetone limit is NLE.
MTBE limit is NLE.

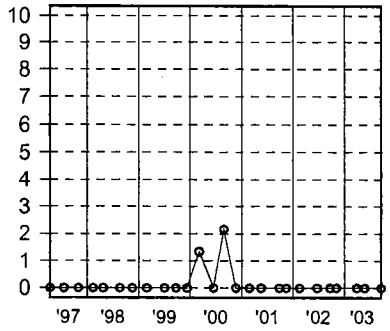
Fort Monmouth

GW Monitoring
Streams

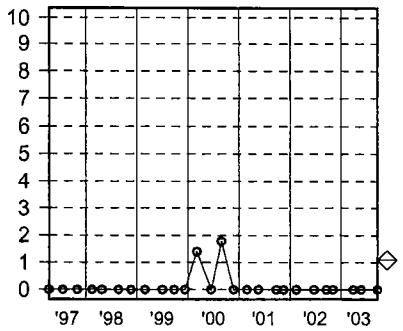
Source 8 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

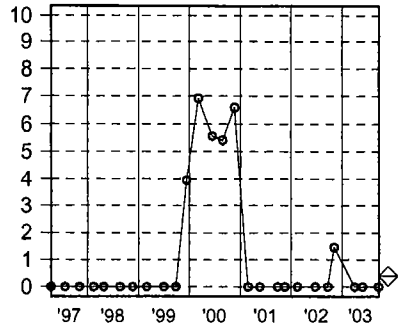
cis-1,2-Dichloroethene
(ug/l)



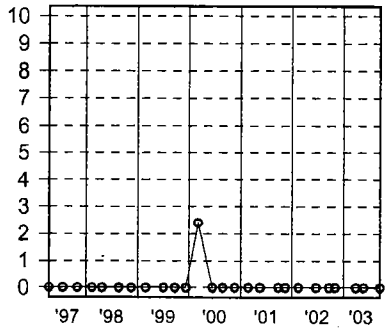
Trichloroethene
(ug/l)



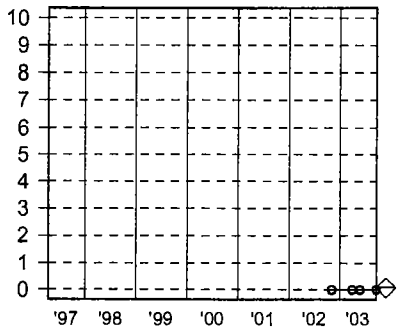
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 13

Sampling Dates:
04/08/1997 - 09/17/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 8 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	ND	ND	ND	ND						
07/17/1997	FMETL	ND	ND	ND	ND						
10/30/1997	FMETL	1.59	1.75	ND	ND						
02/10/1998	FMETL	ND	ND	ND	ND						
04/21/1998	FMETL	ND	ND	ND	ND						
08/19/1998	FMETL	ND	ND	ND	ND						
11/18/1998	FMETL	ND	ND	ND	ND						
02/25/1999	FMETL	ND	ND	ND	ND						
06/29/1999	FMETL	ND	ND	ND	ND						
09/22/1999	FMETL	ND	ND	ND	ND						
12/09/1999	FMETL	11.26	ND	ND	ND						
03/01/2000	FMETL	ND	ND	ND	ND						
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	ND	ND	ND	ND						
11/20/2000	FMETL	ND	ND	ND	ND						-
03/08/2001	FMETL	ND	ND	ND	ND						-
03/08/2001D	FMETL	ND	ND	ND	ND						-
05/16/2001	FMETL	ND	ND	ND	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/05/2002	FMETL	ND	ND	ND	ND	ND					V,P
03/24/2003	FMETL	ND	ND	ND	ND	ND					V,P
05/21/2003	FMETL	ND	ND	ND	ND	ND					V,P
09/17/2003	FMETL	ND	ND	ND	ND	ND					V,P

SOURCE: 14

Sampling Dates:
04/08/1997 - 09/17/2003

NOTES:

Page 1 of 1
Stream 14 is Fresh-Water.
cis-1,2-Di limit is NLE.
TCE limit is 1.09.
Acetone limit is NLE.

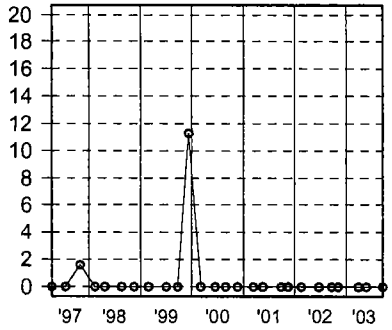
Fort Monmouth

GW Monitoring
Streams

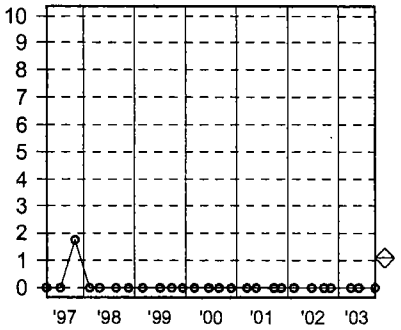
Source 9 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

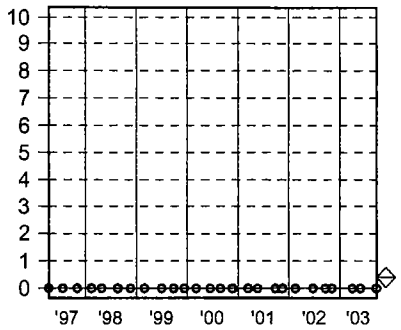
cis-1,2-Dichloroethene
(ug/l)



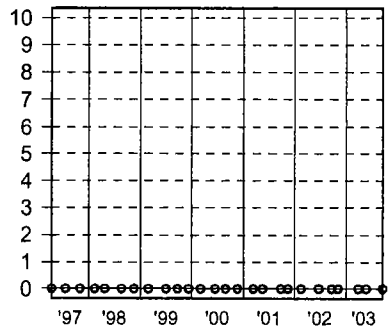
Trichloroethene
(ug/l)



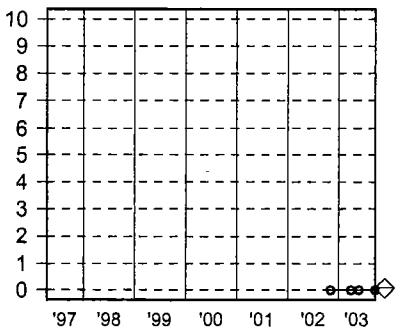
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 14

Sampling Dates:
04/08/1997 - 09/17/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 9 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	2.69	1.60	6.00	ND						
07/17/1997	FMETL	5.53	2.50	7.12	ND						
10/30/1997	FMETL	2.57	ND	2.72	ND						
02/10/1998	FMETL	ND	1.03	6.90	ND						
04/21/1998	FMETL	1.22	1.21	5.72	ND						
08/19/1998	FMETL	3.89	2.06	5.39	ND						
11/18/1998	FMETL	ND	ND	ND	ND						
02/25/1999	FMETL	ND	ND	7.33	ND						
06/29/1999	FMETL	4.17	2.40	7.86	ND						
09/21/1999	FMETL	3.59	1.37	2.61	ND						
12/09/1999	FMETL	ND	ND	4.08	ND						
03/01/2000	FMETL	1.39	1.39	6.95	2.38						
06/12/2000	FMETL	ND	ND	5.94	ND						
08/24/2000	FMETL	2.02	1.09	5.20	ND						
11/20/2000	FMETL	ND	ND	6.29	ND						-
02/21/2001	FMETL	ND	ND	7.19	ND						-
05/16/2001	FMETL	1.50	ND	6.64	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
09/25/2001D	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	3.09	ND	3.49	ND						-
02/11/2002	FMETL	ND	ND	2.65	ND						V
06/18/2002	FMETL	1.63	ND	2.67	ND						V,P
09/18/2002	FMETL	2.39	ND	2.55	ND						V,P
11/05/2002	FMETL	ND	ND	1.52	ND	ND					V,P
03/24/2003	FMETL	1.44	1.11	3.96	ND	ND					V,P
05/21/2003	FMETL	1.89	ND	3.84	ND	ND					V,P
09/17/2003	FMETL	1.64	ND	1.60	ND	ND					V,P

SOURCE: 15

Sampling Dates:
04/08/1997 - 09/17/2003

NOTES:

Page 1 of 1
Stream 15 is Fresh-Water.
cis-1,2-Di limit is NLE.
TCE limit is 1.09 ug/L.
PCE limit is 0.388 ug/L.
MTBE limit is NLE.

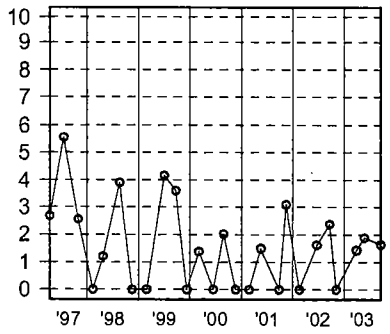
Fort Monmouth

GW Monitoring
Streams

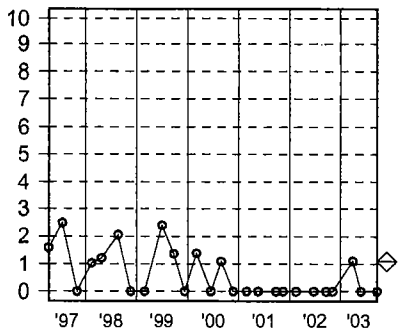
Source 10 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

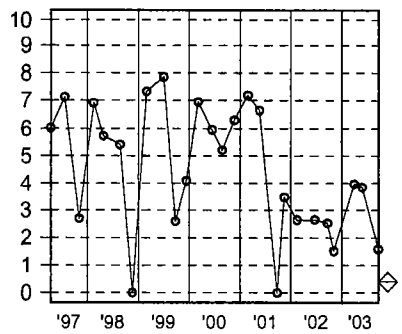
cis-1,2-Dichloroethene
(ug/l)



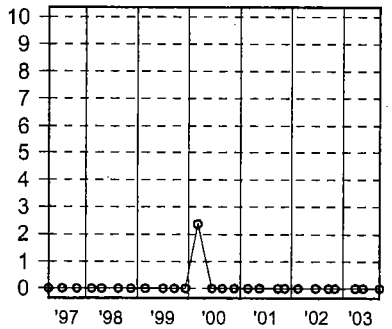
Trichloroethene
(ug/l)



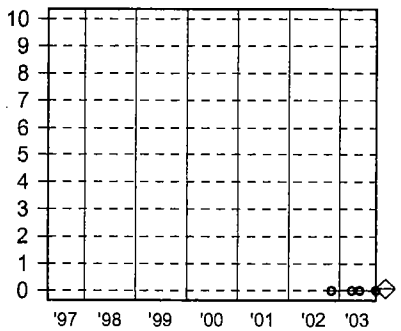
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 15

Sampling Dates:
04/08/1997 - 09/17/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 10 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	2.05	1.26	4.47	ND						
07/17/1997	FMETL	2.55	ND	4.72	ND						
10/30/1997	FMETL	1.76	ND	1.86	ND						
02/10/1998	FMETL	ND	ND	6.23	ND						
04/21/1998	FMETL	ND	ND	4.58	ND						
08/19/1998	FMETL	2.94	1.63	4.33	ND						
11/18/1998	FMETL	ND	ND	1.48	ND						
02/25/1999	FMETL	ND	ND	6.06	ND						
06/29/1999	FMETL	3.56	2.25	7.70	ND						
09/22/1999	FMETL	2.74	ND	2.63	ND						
12/09/1999	FMETL	1.79	ND	4.13	ND						
03/01/2000	FMETL	1.28	1.27	6.47	2.33						
06/12/2000	FMETL	ND	ND	3.74	ND						
08/24/2000	FMETL	1.68	1.28	4.47	ND						
11/20/2000	FMETL	ND	ND	4.49	ND						-
02/21/2001	FMETL	ND	ND	6.25	ND						-
05/16/2001	FMETL	1.23	ND	4.91	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	1.41	ND	2.00	ND						-
02/11/2002	FMETL	ND	ND	2.47	ND						V
06/18/2002	FMETL	1.35	ND	2.46	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/05/2002	FMETL	ND	ND	1.49	ND	ND					V,P
03/13/2003	FMETL	0.90	0.74	3.21	ND	ND					V,P
05/21/2003	FMETL	1.85	ND	3.68	ND	ND					V,P
09/17/2003	FMETL	1.79	ND	1.70	ND	ND					V,P

SOURCE: 16

Sampling Dates:
04/08/1997 - 09/17/2003

NOTES:

Page 1 of 1
Stream 16 is Salt-Water.
cis-1,2-di limit is NLE.
TCE limit is 81 ug/L.
PCE limit is 4.29 ug/L.
MTBE limit is NLE.

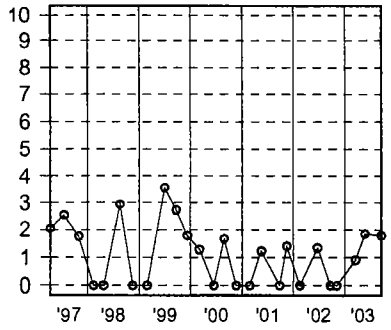
Fort Monmouth

GW Monitoring
Streams

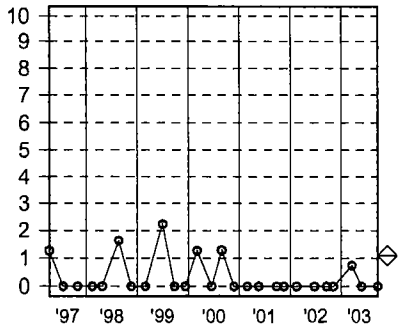
Source 11 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

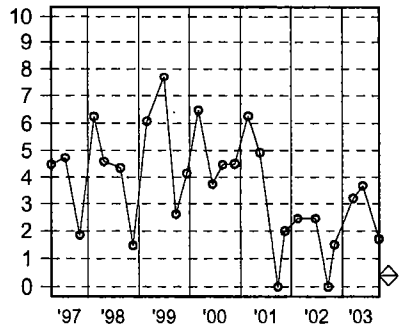
cis-1,2-Dichloroethene
(ug/l)



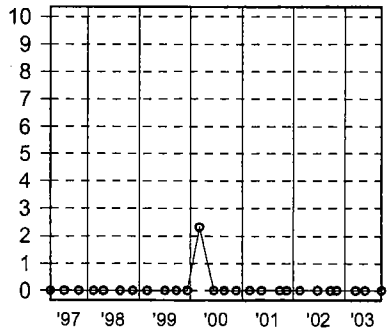
Trichloroethene
(ug/l)



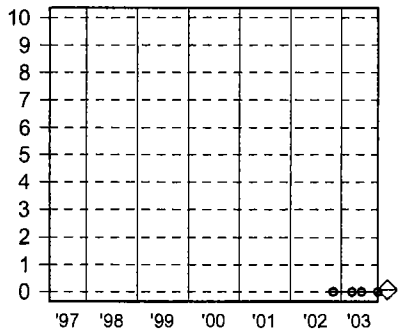
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 16

Sampling Dates:
04/08/1997 - 09/17/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 11 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	ND	ND	ND	ND						
07/17/1997	FMETL	ND	ND	ND	ND						
10/30/1997	FMETL	ND	ND	ND	ND						
02/10/1998	FMETL	ND	ND	ND	ND						
04/21/1998	FMETL	ND	ND	ND	ND						
08/19/1998	FMETL	ND	ND	ND	ND						
11/18/1998	FMETL	4.43	2.12	5.09	ND						
02/25/1999	FMETL	ND	ND	ND	ND						
06/29/1999	FMETL	ND	ND	ND	ND						
09/22/1999	FMETL	1.09	ND	ND	ND						
12/09/1999	FMETL	ND	ND	ND	ND						
03/01/2000	FMETL	ND	ND	ND	ND						
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	ND	ND	ND	ND						
11/20/2000	FMETL	ND	ND	ND	ND						-
03/08/2001	FMETL	ND	ND	ND	ND						-
05/16/2001	FMETL	ND	ND	ND	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	ND	ND	ND	ND	ND					V,P
03/24/2003	FMETL	ND	ND	ND	ND	ND					V,P
05/21/2003	FMETL	ND	ND	ND	ND	ND					V,P
09/17/2003	FMETL	ND	ND	ND	ND	ND					V,P

SOURCE: 17

Sampling Dates:
04/08/1997 - 09/17/2003

NOTES:

Page 1 of 1
stream 17 is Salt-Water.
cis-1,2-Di limit is NLE.
TCE limit is 81 ug/L.
PCE limit is 4.29 ug/L.
Acetone limit is NLE.
Chlorobenzene limit is 21000 ug/L.

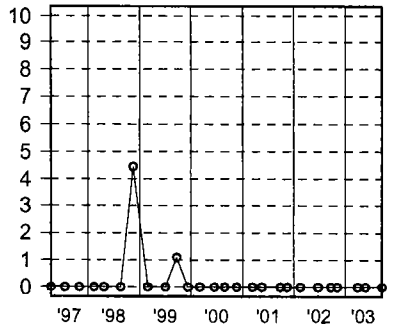
Fort Monmouth

GW Monitoring
Streams

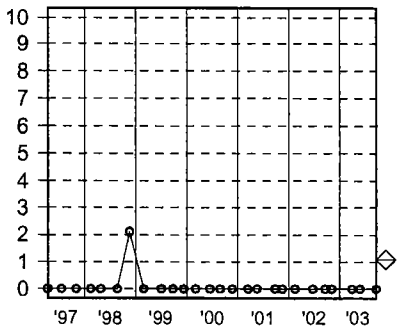
Source 12 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

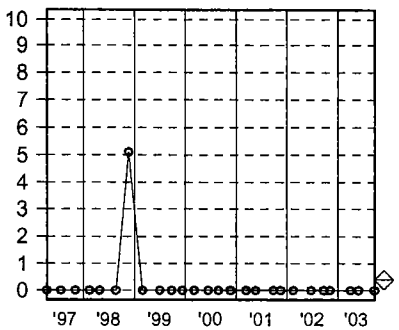
cis-1,2-Dichloroethene
(ug/l)



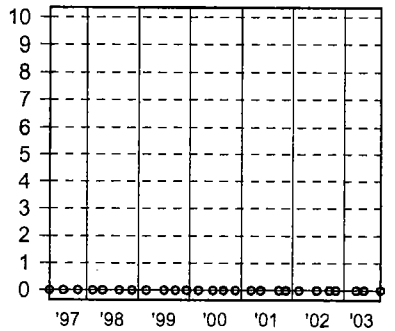
Trichloroethene
(ug/l)



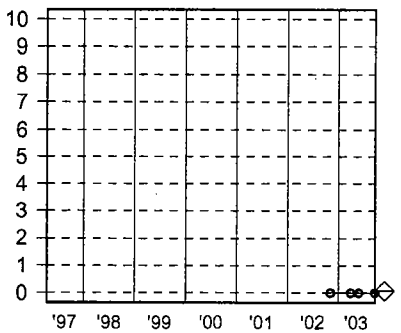
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 17

Sampling Dates:
04/08/1997 - 09/17/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 12 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	ND	ND	ND	ND						
07/17/1997	FMETL	1.06	ND	ND	ND						
10/30/1997	FMETL	5.87	ND	ND	ND						
02/10/1998	FMETL	14.36	ND	ND	ND						
04/21/1998	FMETL	ND	ND	ND	ND						
08/19/1998	FMETL	4.65	ND	ND	ND						
11/18/1998	FMETL	3.18	ND	ND	ND						
02/25/1999	FMETL	3.95	ND	ND	ND						
06/29/1999	FMETL	1.47	ND	ND	ND						
09/21/1999	FMETL	4.67	ND	ND	ND						
12/09/1999	FMETL	4.90	ND	ND	ND						
03/01/2000	FMETL	5.57	ND	ND	ND						
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	2.46	ND	ND	ND						
11/20/2000	FMETL	1.80	ND	ND	ND						-
02/21/2001	FMETL	4.10	ND	ND	ND						-
05/16/2001	FMETL	1.45	ND	ND	ND						-
09/11/2001	FMETL	ND	ND	ND	ND						-
09/11/2001D	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/05/2002	FMETL	5.14	ND	ND	ND	ND					V,P
03/13/2003	FMETL	17.75	0.52	ND	0.67	2.33					V,P
05/21/2003	FMETL	3.92	ND	ND	ND	ND					V,P
09/17/2003	FMETL	2.89	ND	ND	ND	ND					V,P

SOURCE: 18

Sampling Dates:
04/08/1997 - 09/17/2003

NOTES:

Page 1 of 1
Stream 18 is Fresh-Water.
cis-1,2-Di limit is NLE.

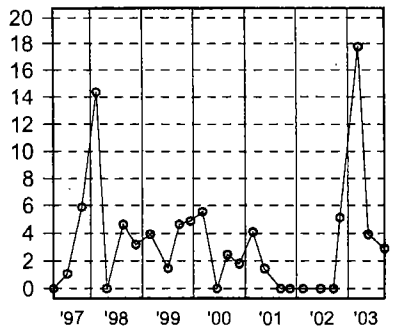
Fort Monmouth

GW Monitoring
Streams

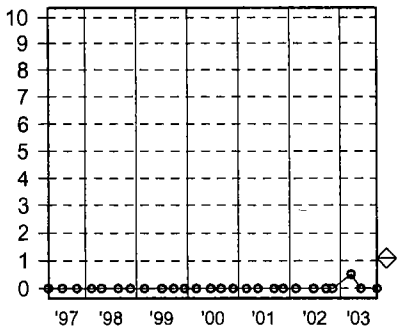
Source 13 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

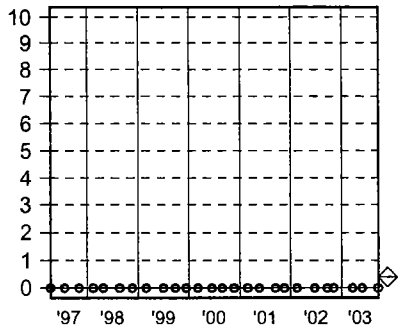
cis-1,2-Dichloroethene
(ug/l)



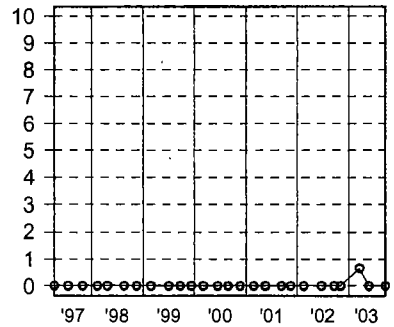
Trichloroethene
(ug/l)



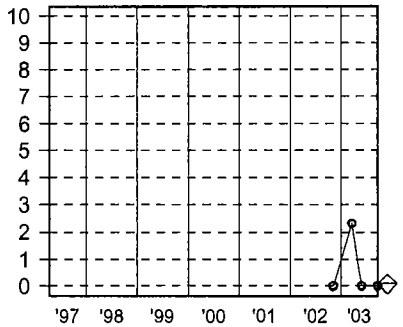
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 18

Sampling Dates:
04/08/1997 - 09/17/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 13 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	6.44	ND	ND	ND						
07/17/1997	FMETL	ND	ND	ND	ND						
10/30/1997	FMETL	4.69	ND	ND	ND						
02/10/1998	FMETL	8.22	ND	ND	ND						
04/21/1998	FMETL	6.86	ND	ND	ND						
08/19/1998	FMETL	2.95	ND	ND	ND						
11/17/1998	FMETL	2.3	ND	ND	ND						
02/25/1999	FMETL	2.30	ND	ND	ND						
06/29/1999	FMETL	ND	ND	ND	ND						
09/21/1999	FMETL	3.53	ND	ND	ND						
12/09/1999	FMETL	2.60	ND	ND	ND						
03/01/2000	FMETL	2.92	ND	ND	ND						
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	2.07	ND	ND	ND						
11/20/2000	FMETL	ND	ND	ND	ND						-
02/21/2001	FMETL	2.99	ND	ND	ND						-
02/21/2001D	FMETL	3.87	ND	ND	ND						-
05/16/2001	FMETL	1.57	ND	ND	ND						-
09/11/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	2.69	ND	ND	ND	ND					V,P
03/13/2003	FMETL	13.43	0.44	ND	ND	1.61					V,P
05/21/2003	FMETL	3.07	ND	ND	ND	ND					V,P
09/17/2003	FMETL	1.72	ND	ND	ND	ND					V,P

SOURCE: 19

Sampling Dates:
04/08/1997 - 09/17/2003

NOTES:

Page 1 of 1
Stream 19 is Salt-Water.
cis-1,2-Di limit is NLE.

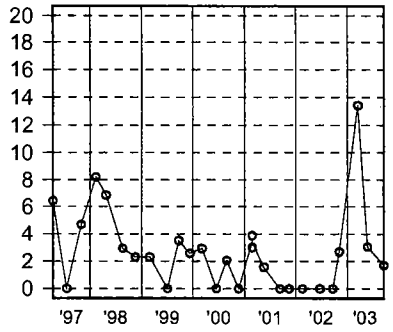
Fort Monmouth

GW Monitoring
Streams

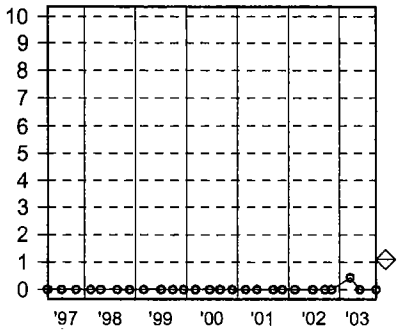
Source 14 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

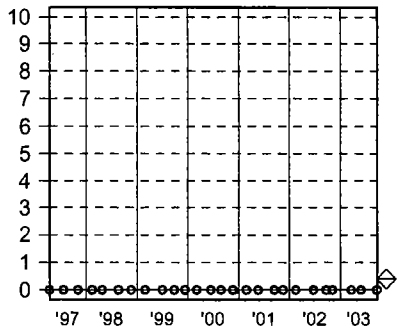
cis-1,2-Dichloroethene
(ug/l)



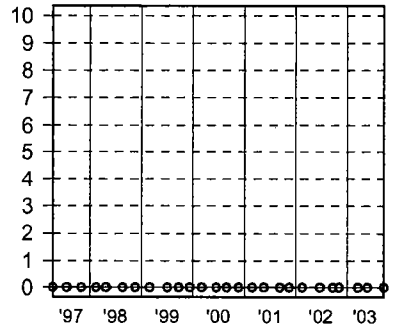
Trichloroethene
(ug/l)



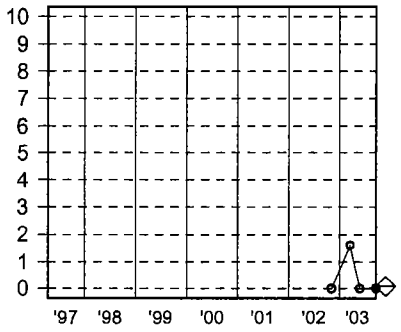
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 19

Sampling Dates:
04/08/1997 - 09/17/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 14 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	ND	ND	ND	ND						
07/17/1997	FMETL	ND	ND	ND	2.63						
10/30/1997	FMETL	ND	ND	ND	ND						
02/10/1998	FMETL	ND	ND	ND	ND						
04/21/1998	FMETL	ND	ND	ND	ND						
08/19/1998	FMETL	ND	ND	ND	4.85						
11/17/1998	FMETL	ND	ND	ND	ND						
02/25/1999	FMETL	ND	ND	ND	ND						
06/29/1999	FMETL	ND	ND	ND	5.70						
09/21/1999	FMETL	ND	ND	ND	2.10						
12/09/1999	FMETL	ND	ND	ND	ND						
03/01/2000	FMETL	ND	ND	ND	ND						
06/12/2000	FMETL	ND	ND	ND	6.38						
08/24/2000	FMETL	ND	ND	ND	2.58						
11/20/2000	FMETL	ND	ND	ND	ND						-
02/21/2001	FMETL	ND	ND	ND	ND						-
05/16/2001	FMETL	ND	ND	ND	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	1.26						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	ND	ND	ND	ND	ND					V,P
03/13/2003	FMETL	ND	ND	0.64	ND	ND					V,P
05/21/2003	FMETL	ND	ND	ND	1.37	ND					V,P
09/17/2003	FMETL	ND	ND	ND	ND	ND					V,P

SOURCE: 20

Sampling Dates:
04/08/1997 - 09/17/2003

NOTES:

Page 1 of 1
Stream20 is Salt-Water.
Ethylben limit is 27900 ug/L.
MTBE limit is NLE.

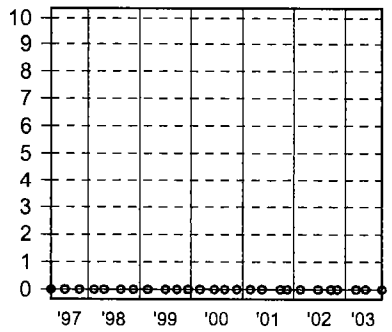
Fort Monmouth

GW Monitoring
Streams

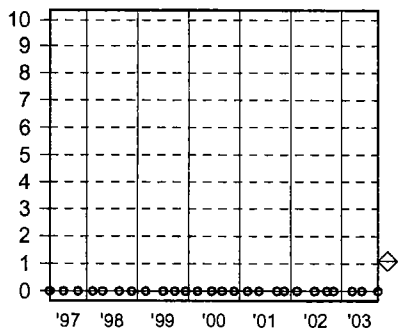
Source 15 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

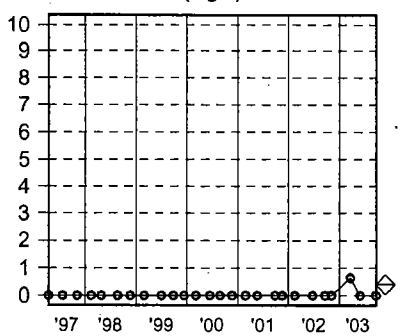
cis-1,2-Dichloroethene
(ug/l)



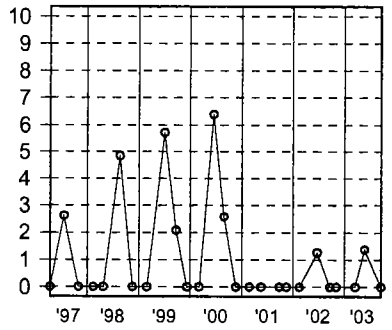
Trichloroethene
(ug/l)



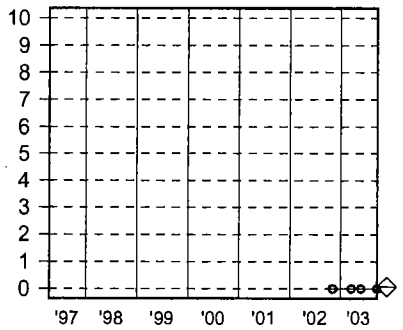
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 20

Sampling Dates:
04/08/1997 - 09/17/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 15 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	ND	ND	ND	ND						
07/17/1997	FMETL	ND	ND	ND	2.90						
10/30/1997	FMETL	ND	ND	ND	ND						
02/10/1998	FMETL	ND	ND	ND	ND						
04/21/1998	FMETL	ND	ND	ND	ND						
08/19/1998	FMETL	ND	ND	ND	4.71						
11/17/1998	FMETL	ND	ND	ND	ND						
02/25/1999	FMETL	ND	ND	ND	ND						
06/29/1999	FMETL	ND	ND	ND	7.40						
09/21/1999	FMETL	1.17	ND	ND	2.24						
12/09/1999	FMETL	ND	ND	ND	ND						
03/01/2000	FMETL	ND	ND	ND	ND						
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	ND	ND	ND	2.67						
11/20/2000	FMETL	ND	ND	ND	ND						-
02/21/2001	FMETL	ND	ND	ND	ND						-
05/16/2001	FMETL	ND	ND	ND	ND						-
09/11/2001	FMETL	ND	ND	ND	1.76						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	ND	ND	ND	ND	ND					V,P
03/13/2003	FMETL	ND	ND	0.63	ND	ND					V,P
05/21/2003	FMETL	ND	ND	ND	1.34	ND					V,P
09/17/2003	FMETL	ND	ND	ND	ND	ND					V,P

SOURCE: 21

Sampling Dates:
04/08/1997 - 09/17/2003

NOTES:

Page 1 of 1
Sream 21 is Salt-Water.
cis-1,2-Di limit is NLE.
Acetone limit is NLE.
MTBE limit is NLE.

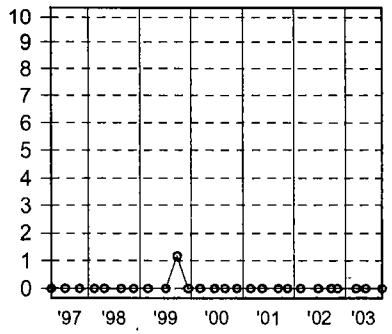
Fort Monmouth

GW Monitoring
Streams

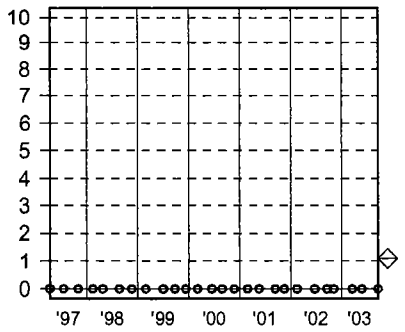
Source 16 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

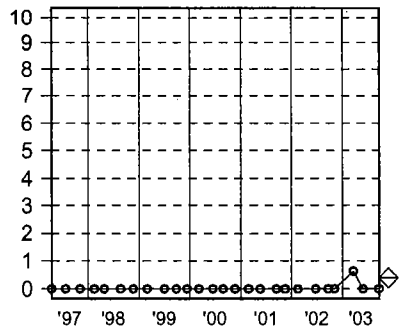
cis-1,2-Dichloroethene
(ug/l)



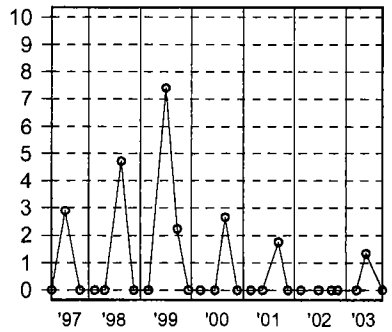
Trichloroethene
(ug/l)



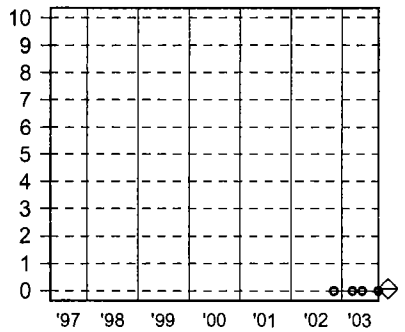
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 21

Sampling Dates:
04/08/1997 - 09/17/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 16 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
04/08/1997	FMETL	ND	ND	ND	ND						
07/17/1997	FMETL	ND	ND	ND	4.26						
10/30/1997	FMETL	ND	ND	ND	ND						
02/10/1998	FMETL	ND	ND	ND	ND						
04/21/1998	FMETL	ND	ND	ND	ND						
08/19/1998	FMETL	ND	ND	ND	4.50						
11/17/1998	FMETL	ND	ND	ND	ND						
02/25/1999	FMETL	ND	ND	ND	ND						
06/29/1999	FMETL	ND	ND	ND	8.30						
09/21/1999	FMETL	ND	ND	ND	0.82						
12/09/1999	FMETL	ND	ND	ND	ND						
03/01/2000	FMETL	ND	ND	ND	ND						
06/12/2000	FMETL	ND	ND	ND	10.26						
06/12/2000D	FMETL	ND	ND	ND	10.66						
08/24/2000	FMETL	ND	ND	ND	ND						
11/20/2000	FMETL	ND	ND	ND	ND						-
02/21/2001	FMETL	ND	ND	ND	ND						-
05/16/2001	FMETL	ND	ND	ND	ND						V
09/11/2001	FMETL	ND	ND	ND	3.53						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	2.12						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	ND	ND	ND	ND	ND					V,P
03/13/2003	FMETL	1.57	ND	ND	ND	ND					V,P
05/21/2003	FMETL	ND	ND	ND	ND	ND					V,P
09/17/2003	FMETL	ND	ND	ND	ND	ND					V,P

SOURCE: 22

Sampling Dates:
04/08/1997 - 09/17/2003

NOTES:

Page 1 of 1
Stream 22 is Salt-Water.
Acetone limit is NLE.
MTBE limit is NLE.

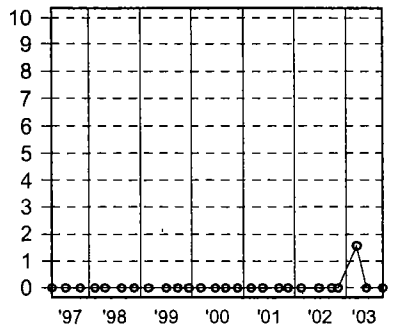
Fort Monmouth

GW Monitoring
Streams

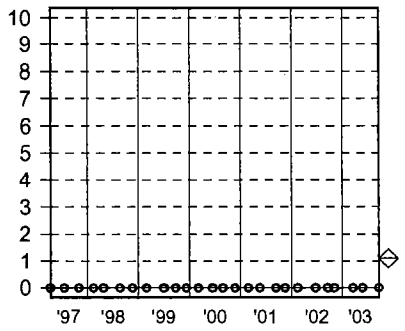
Source 17 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

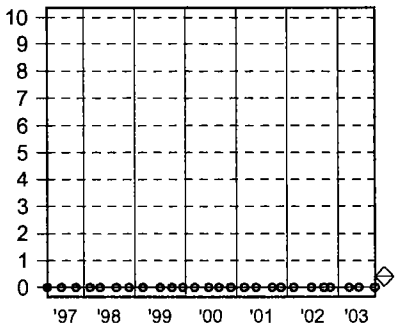
cis-1,2-Dichloroethene
(ug/l)



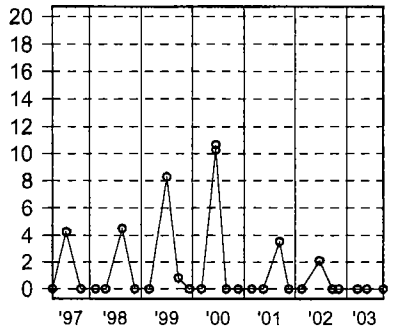
Trichloroethene
(ug/l)



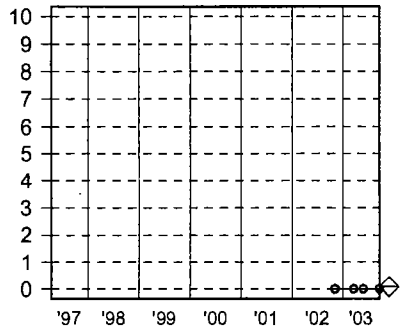
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 22

Sampling Dates:
04/08/1997 - 09/17/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 17 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
06/12/2000	FMETL	ND	ND	5.60	ND						
08/24/2000	FMETL	2.24	1.82	5.18	ND						
11/20/2000	FMETL	ND	ND	6.29	ND						-
03/08/2001	FMETL	ND	ND	4.78	ND						-
05/16/2001	FMETL	1.73	ND	6.41	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	3.23	ND	3.64	ND						-
02/11/2002	FMETL	ND	ND	2.85	ND						V
06/18/2002	FMETL	1.58	ND	2.88	ND						V,P
09/18/2002	FMETL	2.49	ND	ND	ND						V,P
11/05/2002	FMETL	ND	ND	1.44	ND	ND					V,P
03/24/2003	FMETL	1.41	1.05	4.01	ND	ND					V,P
05/21/2003	FMETL	2.03	ND	4.06	ND	ND					V,P
09/17/2003	FMETL	1.91	ND	1.77	ND	ND					V,P

SOURCE: 23

Sampling Dates:
06/12/2000 - 09/17/2003

NOTES:

Page 1 of 1
Stream 23 is Fresh-Water

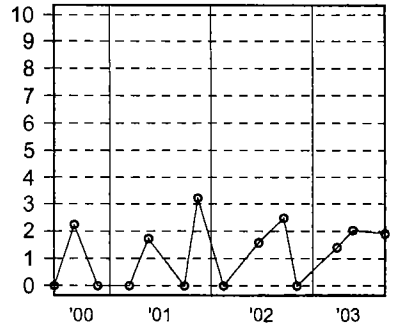
Fort Monmouth

GW Monitoring
Streams

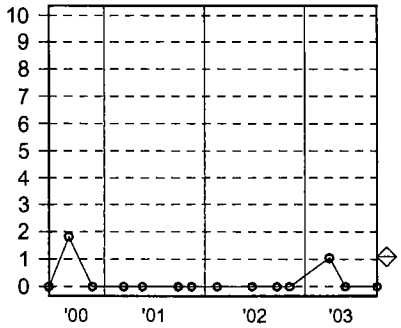
Source 18 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

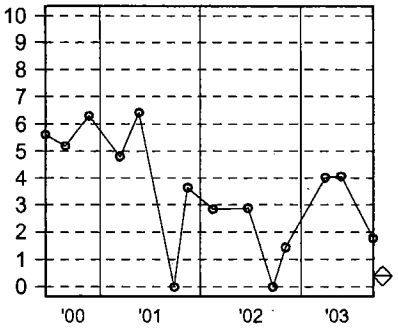
cis-1,2-Dichloroethene
(ug/l)



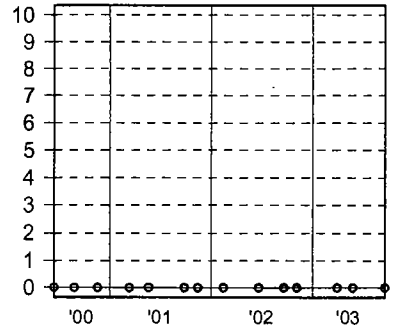
Trichloroethene
(ug/l)



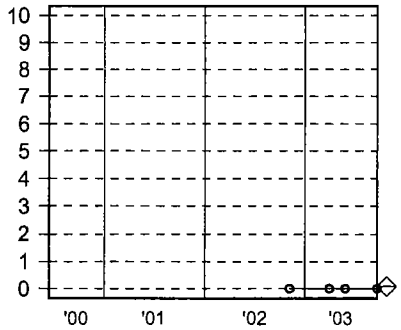
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 23

Sampling Dates:
06/12/2000 - 09/17/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 18 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
06/12/2000	FMETL	ND	ND	4.72	ND						
08/24/2000	FMETL	1.54	1.41	4.33	ND						
11/20/2000	FMETL	ND	ND	4.41	ND						-
03/08/2001	FMETL	ND	ND	4.76	ND						-
05/16/2001	FMETL	1.37	ND	5.12	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	3.11	ND	3.28	ND						-
02/11/2002	FMETL	ND	ND	2.69	ND						V
06/18/2002	FMETL	1.60	ND	2.74	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/05/2002	FMETL	ND	ND	1.64	ND	ND					V,P
03/13/2003	FMETL	0.99	0.83	3.50	ND	ND					V,P
05/21/2003	FMETL	1.98	ND	3.94	ND	ND					V,P
09/17/2003	FMETL	1.69	ND	1.61	ND	ND					V,P

SOURCE: 24

Sampling Dates:
06/12/2000 - 09/17/2003

NOTES:

Page 1 of 2
Stream 24 is Fresh-Water

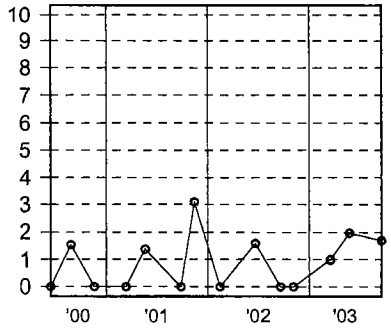
Fort Monmouth

GW Monitoring
Streams

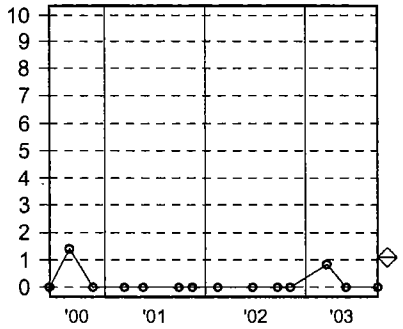
Source 19 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

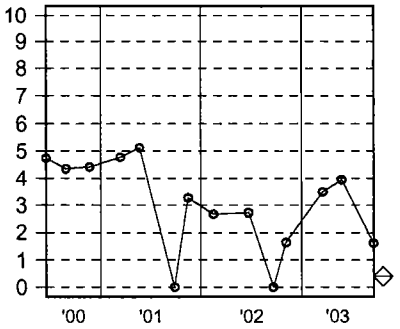
cis-1,2-Dichloroethene
(ug/l)



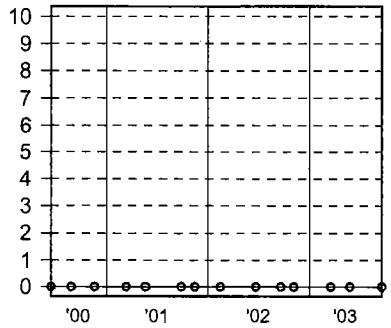
Trichloroethene
(ug/l)



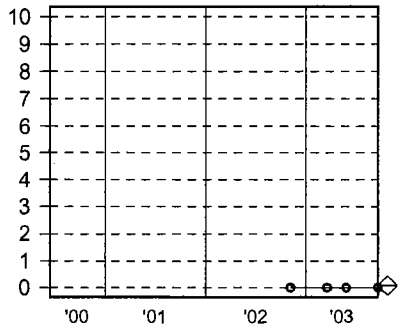
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 24

Sampling Dates:
06/12/2000 - 09/17/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 19 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	ND	ND	ND	ND						
11/20/2000	FMETL	ND	ND	ND	ND						-
03/08/2001	FMETL	ND	ND	ND	ND						-
05/16/2001	FMETL	ND	ND	ND	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	ND	ND	ND	ND	ND					V,P
03/24/2003	FMETL	ND	ND	2.22	ND	ND					V,P
05/21/2003	FMETL	ND	ND	ND	ND	ND					V,P
09/17/2003	FMETL	ND	ND	ND	ND	ND					V,P

SOURCE: 25

Sampling Dates:
06/12/2000 - 09/17/2003

NOTES:

Page 1 of 1
Stream 25 is Salt-Water.

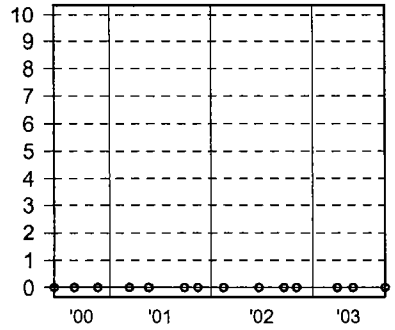
Fort Monmouth

GW Monitoring
Streams

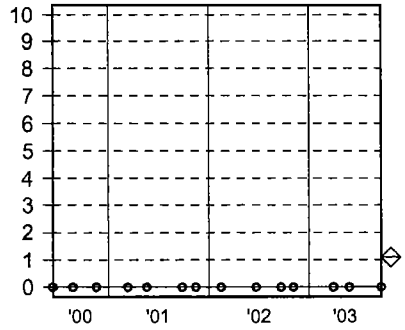
Source 20 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

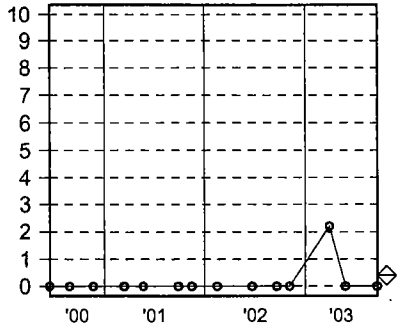
cis-1,2-Dichloroethene
(ug/l)



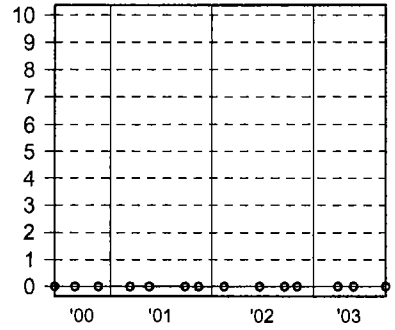
Trichloroethene
(ug/l)



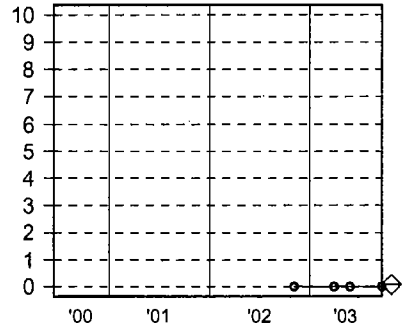
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



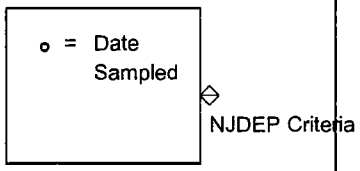
Vinyl Chloride
(ug/l)



SOURCE: 25

Sampling Dates:
06/12/2000 - 09/17/2003

LEGEND:



Fort Monmouth

GW Monitoring
Streams

Source 20 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	ND	ND	ND	ND						
11/20/2000	FMETL	ND	ND	ND	ND						-
03/08/2001	FMETL	ND	ND	ND	ND						-
05/16/2001	FMETL	ND	ND	ND	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	ND	ND	ND	ND	ND					V,P
03/24/2003	FMETL	ND	ND	ND	ND	ND					V,P
05/21/2003	FMETL	ND	ND	ND	ND	ND					V,P
09/17/2003	FMETL	ND	ND	ND	ND	ND					V,P

SOURCE: 26

Sampling Dates:
06/12/2000 - 09/17/2003

NOTES:

Page 1 of 1
Stream 26 is Fresh-Water

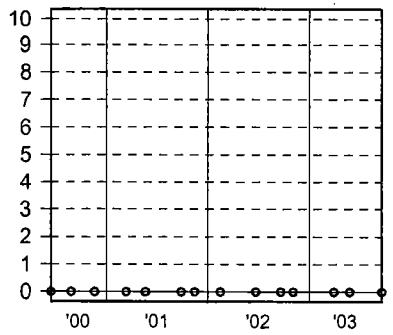
Fort Monmouth

GW Monitoring
Streams

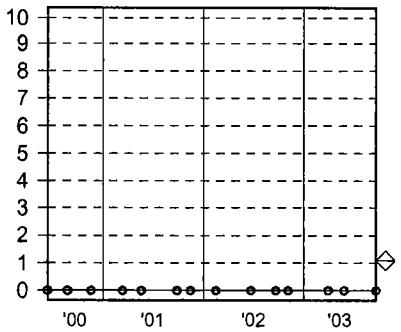
Source 21 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

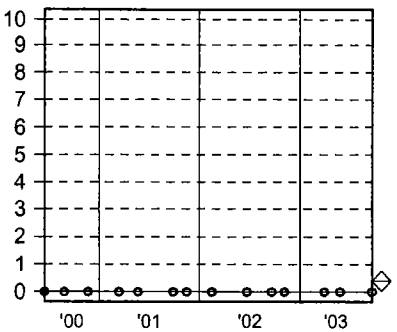
cis-1,2-Dichloroethene
(ug/l)



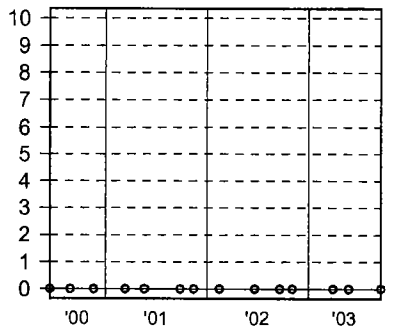
Trichloroethene
(ug/l)



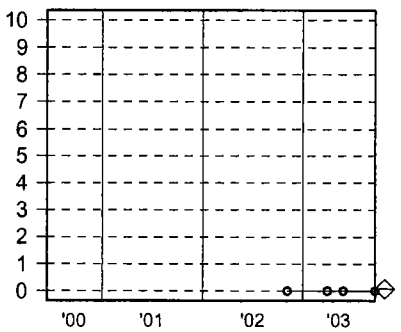
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 26

Sampling Dates:
06/12/2000 - 09/17/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 21 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-dichloroethene	Trichloroethene	Tetrachloroethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	ND	ND	1.72	ND						
11/20/2000	FMETL	ND	ND	1.87	ND						-
03/08/2001	FMETL	ND	ND	ND	ND						-
05/16/2001	FMETL	ND	ND	ND	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	ND	ND						V
06/18/2002	FMETL	ND	ND	ND	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	ND	ND	ND	ND	ND					V,P
03/13/2003	FMETL	ND	ND	1.71	ND	ND					V,P
05/21/2003	FMETL	1.38	2.68	ND	ND	ND					V,P
09/17/2003	FMETL	1.16	ND	1.16	ND	ND					V,P

SOURCE: 27

Sampling Dates:
06/12/2000 - 09/17/2003

NOTES:

Page 1 of 1
Stream 27 is Salt Water.

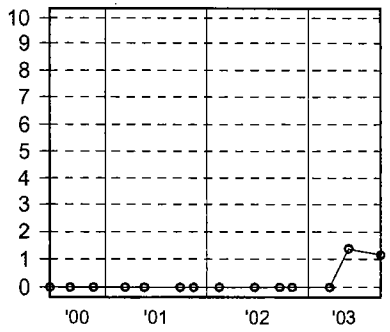
Fort Monmouth

GW Monitoring
Streams

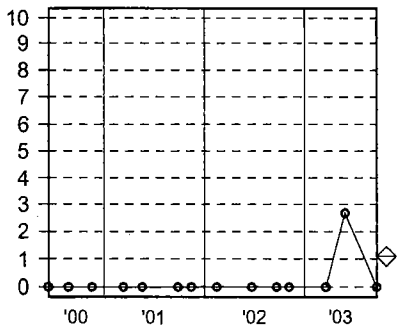
Source 22 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

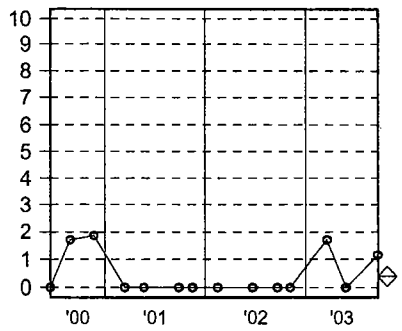
cis-1,2-Dichloroethene
(ug/l)



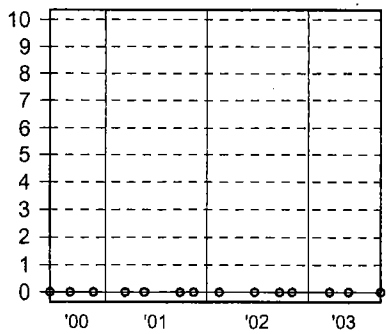
Trichloroethene
(ug/l)



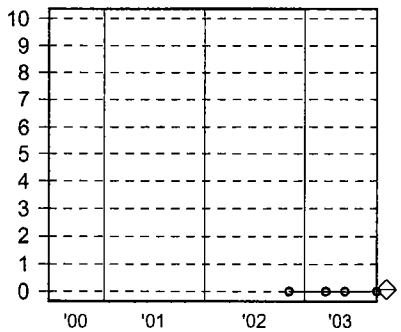
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 27

Sampling Dates:
06/12/2000 - 09/17/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 22 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

	Lab	cis-1,2-di chloro ethene	Trichloro ethene	Tetrachloro ethene	Methyl-tert Butyl ether	Vinyl Chloride					Notes
Units:	-	ug/l	ug/l	ug/l	ug/l	ug/l					-
NJDEP Criteria:	-	-	1.09	0.388	-	0.083					-
06/12/2000	FMETL	ND	ND	ND	ND						
08/24/2000	FMETL	1.28	1.07	3.67	ND						
11/20/2000	FMETL	ND	ND	3.60	ND						-
03/08/2001	FMETL	ND	ND	2.56	ND						-
05/16/2001	FMETL	ND	ND	2.77	ND						-
09/25/2001	FMETL	ND	ND	ND	ND						-
11/14/2001	FMETL	ND	ND	ND	ND						-
02/11/2002	FMETL	ND	ND	1.55	ND						V
06/18/2002	FMETL	ND	ND	1.99	ND						V,P
09/18/2002	FMETL	ND	ND	ND	ND						V,P
11/04/2002	FMETL	ND	ND	ND	ND	ND					V,P
03/13/2003	FMETL	0.73	0.60	2.78	ND	ND					V,P
05/21/2003	FMETL	1.50	ND	2.58	ND	ND					V,P
09/17/2003	FMETL	1.14	ND	1.14	ND	ND					V,P

SOURCE: 28

Sampling Dates:
06/12/2000 - 09/17/2003

NOTES:

Page 1 of 1
Stream 28 is Salt-Water
cis-1,2-Dichloroethene limit is NLE
TCE limit is 81
PCE limit is 4.29

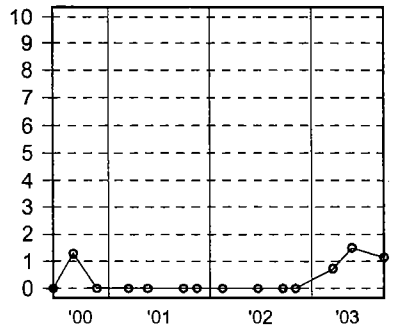
Fort Monmouth

GW Monitoring
Streams

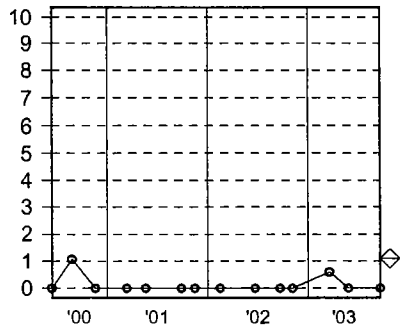
Source 23 of 23

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

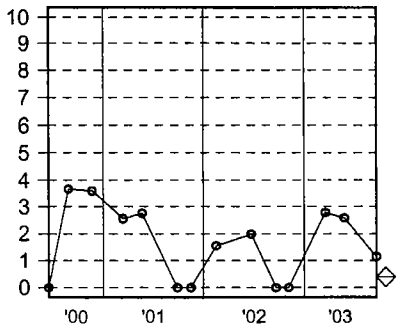
cis-1,2-Dichloroethene
(ug/l)



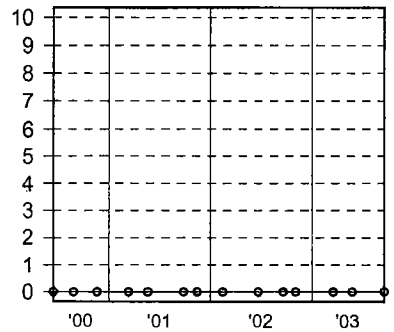
Trichloroethene
(ug/l)



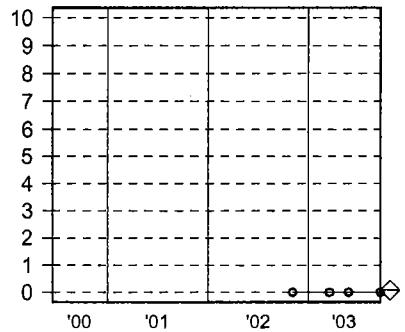
Tetrachloroethene
(ug/l)



Methyl-tert-Butyl Ether
(ug/l)



Vinyl Chloride
(ug/l)



SOURCE: 28

Sampling Dates:
06/12/2000 - 09/17/2003

LEGEND:

PARAMETER

o = Date Sampled

NJDEP Criteria

Fort Monmouth

GW Monitoring
Streams

Source 23 of 23, Graph

U.S.ARMY
FORT MONMOUTH
SELFM-PW-EV

PREPARED BY:

201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044

March 15, 2004

VERSAR PROJECT NO. 104936.4936.104

TABLE OF CONTENTS

EXECUTIVE SUMMARY i
1.0 INTRODUCTION **1-1**
1.1 Objectives 1-1
1.2 Report Organization 1-1
2.0 SITE BACKGROUND AND ENVIRONMENTAL SETTING **2-1**
2.1 Site Location and Description 2-1
2.2 Site Background 2-1
2.3 Environmental Setting 2-2
2.3.1 Regional and Local Geology 2-2
2.3.2 Hydrogeology 2-4
2.3.3 Soils 2-5
2.3.4 Topography and Surface Drainage 2-5
3.0 SITE ACTIVITIES **3-1**
4.0 SOIL SAMPLING RESULTS AND COMPLIANCE ANALYSIS **4-1**
4.1 Soil Analytical Results 4-1
4.1.1 VOCs 4-1
4.1.2 SVOCs 4-2
4.1.3 Pesticides and PCBs 4-3
4.1.4 Metals 4-4
4.2 Compliance Analysis Method 4-5
4.3 Compliance Analysis 4-6
4.3.1 VOCs 4-7
4.3.2 SVOCs 4-7
4.3.3 Pesticides and PCBs 4-10
4.3.4 Metals 4-11
5.0 CONCLUSIONS AND RECOMMENDATIONS **5-1**
6.0 REFERENCES **6-1**

TABLES

Table 3-1 Soil Sample Collection Summary
Table 4-1 Soil Sampling Results – March 1998
Table 4-2 Borings in Which Detections Exceeded Criteria
Table 4-3 Laboratory Analysis Exceedence Summary
Table 4-4 Compliance Analysis Method Summary
Table 4-5 Compliance Averaging Results
Table 4-6 Compliance Averaging Results Summary

FIGURES

Figure 2-1 Site Location Map
Figure 2-2 Geologic Map
Figure 2-3 Soil Map of Monmouth County
Figure 3-1 Soil Boring Location Map
Figure 4-1 Landfill Contaminant Map – VOCs
Figure 4-2 Landfill Contaminant Map – SVOCs
Figure 4-3 Landfill Contaminant Map – Pesticides and PCBs
Figure 4-4 Landfill Contaminant Map – Metals
Figure 4-5 Compliance Analysis Decision Tree

APPENDICES

Appendix A DPW Proposal Letter to NJDEP defining RIR for Near Surface Soils at the M-5 Landfill Site, dated July 7, 1998
Appendix B NJDEP Approval Letter to DPW for RIR for Near Surface Soils at the M-5 Landfill Site, dated August 10, 1998
Appendix C Roy F. Weston, Inc. Site Investigation Report, December 1995; Section 4.2.5 – Landfill 5 (M-5)
Appendix D Soil Boring Samples Laboratory Data Sheets
Appendix E Soil Boring Logs
Appendix F Compliance Average Area Names

EXECUTIVE SUMMARY

To demonstrate compliance equivalence of the existing soil cover over the M-5 Landfill Site with respect to the Solid Waste Disposal Act of 1965, DPW characterized the near-surface soils using 254 borings installed at strategic locations over the site. DPW performed soil borings and obtained soil samples between April1998 and August 1998. All soil samples were analyzed for Target Compound List (TCL) Organics + 30 parameters and Target Analyte List (TAL) metals. The data that exceeded the laboratory method detection limit (MDL) and/or the New Jersey Department of Environmental Protection (NJDEP) Residential Direct Contact Soil Cleanup Criteria (RDCSCC) are summarized in table form in this RIR. Where applicable and appropriate, the data were evaluated utilizing the "compliance averaging" approach to determine compliance with NJDEP RDCSCC.

Concentrations of VOCs, SVOCs, pesticides and PCBs and metals were detected exceeding the NJDEP RDCSCC. In all cases, further analysis of the analytical results did not define a "source area" or level of contamination that necessitated the identification and evaluation of potential remedial actions. In most cases, either the calculated compliance average was below the respective RDCSCC or the exceedence was considered marginal. However, to address the exceedences of analytes that did not meet cleanup criteria in the near surface soils, the DPW will incorporate a document equivalent to a Declaration of Environmental Restriction (DER) into the Fort Monmouth Master Plan for soils at the site. The Army is requesting a ***No Further Action*** determination for these parameters. The DER equivalent may be developed for the entire M-5 Landfill Site or be restricted to specific areas of the site and specific analytes, as identified in this document.

Given the inactive and undisturbed status of the landfill, the continued performance of long-term surface water and groundwater monitoring proximate to the M-5 Landfill Site, the minimal potential for environmental and/or human health impacts, the lack of groundwater uses at or downgradient of the site, and the distribution, occurrence and relatively low concentrations of contaminants of concern (COCs), ***No Further Action*** is recommended for the near-surface soils at the M-5 Landfill Site.

1.0 INTRODUCTION

Versar, Inc. (Versar) has been contracted by the United States (U.S.) Army Fort Monmouth, Directorate of Public Works (DPW), Fort Monmouth, New Jersey to prepare a Remedial Investigation Report (RIR) for the M-5 Landfill Site. The M-5 Landfill Site is located on the western portion of the Main Post of Fort Monmouth. This RIR presents a compilation of the results of remedial investigation conducted at the M-5 Landfill Site for near-surface soils and has been prepared in partial fulfillment of Contract No. DACA 51-00-D-004, Delivery Order No. 0004.

1.1 Objectives

The objective of this RIR is to define shallow soil conditions at the M-5 Landfill Site as proposed in DPW's letter, dated July 7, 1998 and approved by the NJDEP in correspondence dated August 10, 1998 (**Appendix A** and **Appendix B**). The remedial investigation was conducted in accordance with NJDEP Technical Requirements for Site Remediation (July 1999), NJAC 7:26E, et seq.

The remedial investigation and subsequent preparation of the RIR encompassed the following:

- Characterization of shallow subsurface soils through soil sampling and laboratory analysis.
- Comparison of the soil sample analytical results with the NJDEP RDCSC.
- Evaluation of each of the analytes found to exceed the RDCSCC using the compliance averaging approach and discussion of site-specific conditions.

1.2 Report Organization

This report is organized to minimize repetition. The findings of the Roy F. Weston, Inc. (Weston) report entitled, *Site Investigation, Fort Monmouth, New Jersey, Main Post and Charles Wood Areas, Site Investigation Report* (December 1995), were used as the basis for this remedial investigation program. **Section 2.0** provides background information and a general description of the M-5 Landfill Site located at Fort Monmouth. **Section 3.0** describes and summarizes the soil sampling activities conducted at the M-5 Landfill Site. **Section 4.0** presents the soil sample analytical results and compliance analysis**.** The sample collection information, sample results and analyses presented in this RIR were incorporated into a proprietary relational database designed to manage sample data and eliminate errors in cross-referencing information between data tables in this section. Recommendations are presented in **Section 5.0**. References used to prepare this report are listed in **Section 6.0**.

2.0 SITE BACKGROUND AND ENVIRONMENTAL SETTING

The following sections describe the site background and environmental setting of the area surrounding Fort Monmouth and the M-5 Landfill Site. Included is a description of the site location, history, current conditions and environmental setting.

2.1 Site Location and Description

Fort Monmouth is located in the central-eastern portion of New Jersey in Monmouth County, approximately 45 miles south of New York City and 70 miles northeast of Philadelphia (**Figure 2-1**). In addition to the Main Post, the installation includes two subposts, the Charles Wood Area and the Evans Area. The Main Post encompasses approximately 2540 acres and is generally bounded by State Highway 35, Parkers Creek, Lafetra Creek, the New Jersey Transit Railroad and a residential area to the south. The post was established in 1918 during World War I (WWI) as an Army Signal Corps training center. The Main Post currently provides administrative, training, and housing support functions, as well as providing many of the community facilities for Fort Monmouth. The primary mission of Fort Monmouth is to provide command, administrative, and logistical support for Headquarters, U.S. Army Communications and Electronics Command (CECOM). CECOM is a major subordinate command of the U.S. Army Materiel Command (AMC) and is the host tenant at Fort Monmouth.

The M-5 Landfill was a former historic fill site located on the northwest corner of the intersection of North Drive and Wilson Avenue and is bordered by Mill Creek and Parkers Creek to the west in the Main Post Area. The historic fill reportedly contained automobiles as well as for domestic and industrial wastes. The approximate size of the M-5 Landfill Site area is 138,200 feet^2 (3.2 acres). Based on historical research, the period of operation of the fill site was approximately 1952 to 1959.

2.2 Site Background

The U.S. Army Corps of Engineers (USACE), Baltimore District, initially contracted Roy F. Weston, Inc. (Weston) to perform a field investigation at Fort Monmouth, New Jersey. This investigation was conducted at two separate areas of Fort Monmouth, the Main Post and the Charles Wood areas. Suspected hazardous waste sites were initially identified at Fort Monmouth in a report prepared by the U.S. Army Toxic and Hazardous Materials Agency (USATHAMA, 1980). The USATHAMA report identified 37 sites with known or suspected waste materials on the Main Post and the two subposts (Charles Wood and Evans Area). A background investigation was conducted by Weston of the 37 sites and eight additional sites that were identified by Fort Monmouth and the NJDEP. Weston's findings were described in a report titled, *Investigation of Suspected Hazardous Waste Sites at Fort Monmouth, New Jersey* (1993). In this background report, additional investigations (including sampling and other field work) were recommended at 22 of the sites on the Main Post and Charles Wood areas, including the M-5 Landfill Site. NJDEP

approved the recommendations on April 20, 1995. Additional investigations were also recommended at the Evans Area, and such investigations are being completed under the Base Realignment and Closure (BRAC) program.

The 1995 Weston SI report presents the results of field investigation activities that were performed at 13 sites at the Main Post Area and eight sites at the Charles Wood Area. The results of the investigation of the M-5 Landfill Site are included in the Weston SI report. Initial field investigation activities were performed between November 1994 and March 1995. The field investigation activities included groundwater monitoring well installation and sampling. The Weston SI report was used as the basis for the supplemental remedial investigations described in the following sections of this report.

Lithologic data collected from the soil borings indicated that the overburden material consisted of a thin soil cover, approximately 0.5 feet, overlaying fill material consisting of coal, glass and plastic fragments intermixed with a silty sand and clay matrix.

2.3 Environmental Setting

The following is a description of the geological/hydrogeological setting of the area surrounding the M-5 Landfill Site. Included is a description of the regional geology of the area surrounding Fort Monmouth, as well as descriptions of the local geology and hydrogeology of the Main Post Area.

2.3.1 Regional and Local Geology

Monmouth County lies within the New Jersey Section of the Atlantic Coastal Plain physiographic province. The M-5 Landfill Site is located in what is referred to as the Outer Coastal Plain subprovince, or the Outer Lowlands. The geologic map of New Jersey is provided as **Figure 2-2**.

In general, New Jersey Coastal Plain formations consist of a seaward-dipping wedge of unconsolidated deposits of clay, silt, sand and gravel. These formations typically strike northeast-southwest with a dip ranging from 10 to 60 feet per mile and were deposited on Precambrian and lower Paleozoic rocks (Zapecza, 1989). These sediments, predominantly derived from deltaic, shallow marine and continental shelf environments, date from Cretaceous through the Quaternary Periods. The mineralogy ranges from quartz to glauconite.

The formations record several major transgressive/regressive cycles and contain units, which are generally thicker to the southeast and reflect a deeper water environment. More than 20 regional geologic units are present within the sediments of the Coastal Plain. Regressive, upward coarsening deposits are usually aquifers (e.g., Englishtown and Kirkwood Formations and the Cohansey Sand), while the transgressive deposits act as confining units (e.g., the Merchantville, Marshalltown and Navesink Formations). The individual thickness for these units varies greatly (e.g., from several feet to several hundred feet). The Coastal Plain deposits thicken to the southeast from the Fall Line

(e.g., a boundary zone between older, resistant rocks and younger, softer plain sediments) to greater than 6,500 feet in Cape May County (Brown and Zapecza, 1990).

Based on the regional geologic map (Jablonski, 1968), the Cretaceous age Red Bank and Tinton Sands outcrop at the Main Post area. The Red Bank Sand conformably overlies the Navesink Formation and dips to the southeast at 35 feet per mile. The upper member (Shrewsbury) of the Red Bank Sand is a yellowish-gray to reddish brown clayey, medium-to-coarse-grained sand that contains abundant rock fragments, minor mica and glauconite (Jablonski). The lower member (Sandy Hook) is a dark gray to black, medium-to-fine grained sand with abundant clay, mica and glauconite.

The Tinton Sand conformably overlies the Red Bank Sand and ranges from a clayey medium to very coarse-grained feldspathic-quartz and glauconite-sand to a glauconitic-coarse sand. The color varies from dark yellowish orange or light brown to moderate brown and from light olive to grayish olive. Glauconite may constitute 60 to 80 percent of the sand fraction in the upper part of the unit. The upper part of the Tinton is often highly oxidized and iron oxide encrusted (Minard, 1969). Groundwater occurs beneath the site at a depth of approximately 2 to 12 feet bgs.

The Kirkwood Formation (part of the Kirkwood-Cohansey system) crops out southeast of the Main Post and dips to the southeast at a slope of 20 feet per mile (Jablonski, 1968). The Kirkwood Formation consists of alternating layers of sand and clay. The upper unit is a light gray to yellowish-brown, fine-grained quartz sand with quartz nodules and small pebbles. The lower unit is a brown silt in Monmouth County (Jablonski, 1968).

As presented in the *Site Investigation Report - Main Post and Charles Wood Areas, Fort Monmouth, New Jersey*, prepared by Weston, Inc, December 1995 (Weston SI), several natural and anthropogenic factors contribute to the wide range in concentrations of metals in soils, which further impact the concentration of metals in groundwater. Soils derived from the glauconitic sands contain abundant aluminum, calcium, potassium, iron, magnesium and manganese (among others), which are likely to be present at elevated concentrations in the groundwater, particularly when sediments are entrained in the collected groundwater samples.

As presented in the Weston SI Report (relevant portions presented in **Appendix C**), the lithologic logs from monitoring well installations indicate that the lithology at the M-5 Landfill Site consists of a thin soil cover (0.5 feet) underlain by fill material. The components of the fill materials observed in the borings consist of coal, glass and plastic fragments intermixed with a silty sand and clay matrix. Groundwater saturation was observed at approximately 4 feet below ground surface (bgs) across the site. Water-level elevation data collected during the Weston SI indicates that local groundwater flow is consistently to the west toward Mill Creek.

2.3.2 Hydrogeology

Fort Monmouth lies in the Atlantic and Eastern Gulf Coastal Plain groundwater region (Meisler et al., 1988). This groundwater region is underlain by undeformed, unconsolidated to semi-consolidated sedimentary deposits. The chemistry of the water near the surface is variable with low dissolved solids and high iron concentrations. The water chemistry in areas underlain by glauconitic sediments (such as Red Bank, Tinton and Hornerstown Sands) is dominated by calcium, magnesium, manganese, aluminum and iron. The sediments in the area of Fort Monmouth were deposited in fluvial-deltaic to near shore environments.

The water table aquifer in the Main Post Area is identified as part of the "Navesink-Hornerstown Confining Units," or minor aquifers. The minor aquifers include the Navesink formation, Red Bank Sand, Tinton Sand, Hornerstown Sand, Vincentown Formation, Manasquan Formation, Shark River Formation, Piney Point Formation and the basal clay of the Kirkwood Formation. These geologic formations comprise a "Composite Confining Bed" for the Wenonah Mount Laurel Aquifer (Zapecza, 1984).

Wells installed in the Red Bank and Tinton Sands produce 2 to 25 gallons per minute (gpm) (Jablonski, 1968). Groundwater is typically encountered at the Main Post and in the surrounding areas at shallow depths below ground surface (2 to 9 feet bgs). Water in the surficial aquifer generally flows east toward the Atlantic Ocean.

Based on a review of the NJDEP GWQS (NJAC 7:9-6), January 7, 1993, Versar has determined that the site is underlain by a Class III-A aquifer. A formal presentation of this finding was made to the NJDEP on April 17, 2001. The primary designated use for Class III-A groundwater is the release or transmittal of groundwater to adjacent classification areas and surface water, as relevant. Secondary designated uses in Class III-A include any reasonable use.

Shallow groundwater may be locally influenced within the Main Post Area by the following factors:

- Tidal influence (based on proximity to the Atlantic Ocean, rivers, and tributaries)
- Topography
- Nature of the fill material within the Main Post area
- Presence of clay and silt lenses in the natural overburden deposits
- Local groundwater recharge areas (i.e., streams, lakes)
- Roadways, utility conduits, and stormwater culverts

Due to the fluvial nature of the overburden deposits (e.g., sand and clay lenses), shallow groundwater flow direction is best determined on a case-by-case basis.

2.3.3 Soils

According to the U.S. Department of Agriculture (USDA), Soil Conservation Service, Monmouth County Soil Survey, the majority of the Main Post is covered by urban land (**Figure 2-3**). The soil survey described urban land as areas where concrete, asphalt, buildings, shopping centers, airports or other impervious surfaces cover 80 percent or more of the surface. In addition, the survey indicated that the natural subsurface soils have largely been replaced with artificial or foreign fill materials (developed land with disturbed soils). The following soil series and classification units are mapped in the Main Post Area:

- DoB Downer sandy loam (with 2 to 5 percent slopes);
- FrB Freehold sandy loam (with 2 to 5 percent slopes);
- FUB Freehold sandy loam/urban land complex (with 0 to 10 percent slopes);
- HV Humaquepts, frequently flooded;
- KvA Kresson loam (with 0 to 5 percent slopes);
- UA Udorthents, smoothed; and
- UD Udorthents – urban land complex (with 0 to 3 percent slopes).

The Downer series soils are well-drained soils that are found on uplands and terraces. The soils are formed in acid, silty coastal plain sediments. The Freehold soils are also well drained and are formed in acid, loamy, coastal plain sediments that, by volume, are one to 10 percent glauconite and are found on uplands. The Humaquepts soils are somewhat poorly- to very poorly-drained soils that are formed in stratified, sandy, or loamy sediments of fluvial origins. The Humaquepts soils are located on the floodplain and are subject to flooding several times each year. The Kresson loam is a nearly level to gently sloping soil and is somewhat poorly drained. The soil is found on low divides and in depressions. The Udorthents soils have been altered by excavation or filling activities. In filled areas, these soils consist of loamy material that is more than 20 inches thick. The filled areas include floodplain, tidal marshes and areas with moderately well drained to very poorly drained soils. Some Udorthent soils contain concrete, asphalt, metal and glass. The soils in the vicinity of the M-12 Landfill Site are classified as UA – Udorthents, smoothed, which may also include old sand and gravel pits that have been smoothed or filled in (Weston, 1995).

2.3.4 Topography and Surface Drainage

Over the last 80 years, the natural topography of Fort Monmouth has been altered by excavation and filling activities conducted by the military. The land surface at the Main Post is relatively flat and ranges in elevation from approximately 4 feet above mean sea level (amsl) in the east at Oceanport Creek to 32 feet amsl at the western end of the post, near Highway 35. The eastern half of the post is generally 10 feet amsl in elevation.

Surface water runoff from the western part of the Main Post flows into the Lafetra Creek to the north or into Mill Creek to the south. The USGS topographic map (**Figure 2-1**) shows the Lafetra Creek as Parkers Creek Branch and Mill Creek as Wampum. Both Mill Creek and Lafetra Creek originate off-post. Mill Creek flows along the southern boundary of the Main Post, turning north just past the Auto Craft Shop. Lafetra Creek forms the northern boundary of the Main Post and joins Mill Creek to form Parkers Creek. Husky Brook flows eastward in the southern part of the Main Post from Husky Brook Lake and into Oceanport Creek. Parkers Creek flows eastward along the northern boundary and joins Oceanport Creek east of the post. Most of Husky Brook, Parkers Creek, Lafetra Creek and Mill Creek are tidally influenced.

The U.S. Fish and Wildlife Service (FWS) National Wetland Inventory Long Branch quadrangle maps indicate the presence of wetlands at the Main Post. Parkers Creek and Oceanport Creek are classified as estuarine intertidal aquatic beds. The area of Parkers Creek and the part of Oceanport Creek/Husky Brook are classified as estuarine intertidal emergent wetlands. Lafetra Creek and Mill Creek are classified as riverine lower perennial open water/unknown bottom.

The M-5 Landfill Site is located on the east side of Mill Creek, which flows eastward into Parkers Creek. The USGS topographic map (**Figure 2-1**) shows that the land surface of the site is relatively flat at an elevation of less than 20 feet amsl. Surface water runoff from the M-5 Landfill Site is likely to flow west into Mill Creek.

3.0 SITE ACTIVITIES

The DPW conducted this remedial investigation in accordance that the NJDEP Technical Requirements for Site Remediation (N.J.A.C. 26:E) to characterize near surface soils and assess potential risks to human health or the environment. The remedial investigation activities consisted of the collection of near-surface soil samples at the M-5 Landfill Site. Remedial investigation activities were performed between April 1998 and August 1998. These activities were managed by the Fort Monmouth DPW and performed by TECOM-Vinnell Services (TVS). The details of remedial investigation activities that occurred at the M-5 Landfill Site are described below.

The DPW characterized the near-surface soils at the M-5 Landfill Site by completing 254 borings (B01-B254) at the site. Samples were collected using a 2-inch Geoprobe® Macrocore sampler. Sampling activities were performed in accordance with the *Fort Monmouth Standard Sampling Operating Procedure* (December 1997). A total of 508 soil samples were collected from the 254 borings and were analyzed for the presence of VOCs, SVOCs, pesticides, PCBs and TAL metals. The soil boring locations were located in and around the M-5 Landfill Site as identified in the Weston SI (1995). The locations of the borings were established in a grid-like pattern within the previously designated boundaries of the M-5 Landfill Site.

Each of the soil samples, except those prepared for VOC analysis, were collected between approximately 0 and 12 inches bgs. VOC samples were taken at approximately 24 inches bgs since surface soils would not be expected to retain volatile constituents over time.

Laboratory analyses of the samples collected at the M-5 Landfill Site were conducted at the Fort Monmouth Environmental Testing Laboratory (FMETL), a New Jersey certified laboratory (Certification No. 13461). The locations of these 254 borings are shown in **Figure 3-1**. A summary of the soil sample collection information and analyses performed is provided in **Table 3-1**. Soil sample laboratory data sheets are provided in **Appendix D**. Soil boring logs are presented in **Appendix E**. Soil analytical results are discussed in **Section 4.0**.

4.0 SOIL SAMPLING RESULTS AND COMPLIANCE ANALYSIS

A summary of the laboratory analytical results for near-surface soils at the M-5 Landfill Site is discussed below. The results were compared with the Cleanup Standards for Contaminated Sites (N.J.A.C. 7:26D), which was revised with Soil Cleanup Criteria dated May 12, 1999. The soil analytical results are presented by analyte (VOCs, SVOCs, Pesticides and PCBs and TAL Metals) and compare the analytical data with the NJDEP RDCSCC. Exceedences of the RDCSCC were subjected to further evaluation involving compliance averaging and site-specific considerations. All of the soil sample results in this report are expressed in milligrams per kilogram (mg/kg), equivalent to parts per million (ppm).

4.1 Soil Analytical Results

The analytical results from the 508 soil samples collected from 254 borings at the M-5 Landfill Site are discussed below, and are included in **Table 4-1**. The soil analytical data is provided in **Appendix D**. The data presented in **Table 4-1** are compared to the RDCSCC. Soil samples from the 254 borings at the M-5 Landfill Site were analyzed for VOCs, SVOCs, pesticides and PCBs and metals. The results that exceeded the respective RDCSCC are shaded in **Table 4-1**.

4.1.1 VOCs

VOC analyses were conducted on soil samples collected from the 254 soil borings at the M-5 Landfill Site (see **Figure 4-1**). Each of these soil samples was collected at approximately the same depth range, 24 inches bgs.

Soil cleanup criteria for VOCs were exceeded in two of the 254 soil boring locations. The borings that presented exceedences of VOCs are listed in **Table 4-2**. One VOC was detected in site soils at concentrations above the RDCSCC. The one VOCs that exceeded the RDCSCC is, with number of exceedences in parentheses, Tetrachloroethene (2). **Table 4-3** presents a summary of the results, identifying the maximum, minimum and average exceedences for this parameter. A discussion of these exceedences is presented below.

- Tetrachloroethene was detected in two of the site soil samples above the RDCSCC of 4.0 mg/kg. The exceedence concentrations ranged from a minimum of 4.8 mg/kg (B23) to a maximum of 5.0 mg/kg (B15). The average exceedence concentration for Tetrachloroethene is 4.90 mg/kg.

4.1.2 SVOCs

SVOC analyses were conducted on soil samples collected from the 254 soil borings at the M-5 Landfill Site (see **Figure 4-2**). Each of these soil samples was collected at approximately the same depth range, 6-12 inches bgs.

Soil cleanup criteria for SVOCs were exceeded in 17 of the 254 soil boring locations. The borings that presented exceedences of SVOCs are listed in **Table 4-2**. Seven SVOCs were detected in site soils at concentrations above the RDCSCC. The seven SVOCs that exceeded the RDCSCC are, with number of exceedences in parentheses, Benzo(a)anthracene (11), Benzo(a)pyrene (17), Benzo(b)fluoranthene (10), Benzo(k)fluoranthene (10), Chrysene (3), Dibenz(a,h)anthracene (4), and Indeno(1,2,3-cd)pyrene (7). **Table 4-3** presents a summary of the results, identifying the maximum, minimum and average exceedences for each of these parameters. A discussion of these exceedences is presented below.

- Benzo(a)anthracene was detected in 11 of the site soil samples above the RDCSCC of 0.9 mg/kg. The exceedence concentrations ranged from a minimum of 0.97 mg/kg (B72) to a maximum of 14 mg/kg (B220). The average exceedence concentration for Benzo(a)anthracene is 4.369 mg/kg.

- Benzo(a)pyrene was detected in 17 site soil samples above the RDCSCC of 0.66 mg/kg. The exceedence concentrations ranged from a minimum of 0.67 mg/kg (B26, B42) to a maximum of 11 mg/kg (B84). The average exceedence concentration for Benzo(a)pyrene is 2.405 mg/kg.

- Benzo(b)fluoranthene was detected in ten of the site soil samples above the RDCSCC of 0.9 mg/kg. The exceedence concentrations ranged from a minimum of 1.1 mg/kg (B218) to a maximum of 9.5 mg/kg (B220). The average exceedence concentration for Benzo(b)fluoranthene exceedences is 3.69 mg/kg.

- Benzo(k)fluoranthene was detected in ten of the site soil samples above the RDCSCC of 0.9 mg/kg. The exceedence concentrations ranged from a minimum of 1.2 mg/kg (B218, B72) to a maximum of 8.8 mg/kg (B84). The average exceedence concentration for Benzo(k)fluoranthene is 2.60 mg/kg.

- Chrysene was detected in three site soil samples above the RDCSCC of 9.0 mg/kg. The exceedence concentrations ranged from a minimum of 9.7 mg/kg (B92) to a maximum of 25 mg/kg (B220). The average exceedence concentration for Chrysene is 18.567 mg/kg.

- Dibenz(a,h)anthracene was detected in four site soil samples above the RDCSCC of 0.66 mg/kg. The exceedence concentrations ranged from a minimum of 1.0 mg/kg (B71) to a maximum of 2.9 mg/kg (B84). The average exceedence concentration for Chrysene is 1.70 mg/kg.

- Indeno(1,2,3-cd)pyrene was detected in seven of the site soil samples above the RDCSCC of 0.9 mg/kg. The exceedence concentrations ranged from a minimum of 1.2 mg/kg (B27) to a maximum of 4.9 mg/kg (B84). The average exceedence concentration for Indeno(1,2,3-cd)pyrene is 2.343 mg/kg.

4.1.3 Pesticides and PCBs

Pesticide and PCB analyses were conducted on soil samples collected from the 254 borings at the M-5 Landfill Site (see **Figure 4-3**). Each of these soil samples was collected at approximately the same depth range, 6-12 inches bgs. Each of the 254 borings was analyzed for 19 pesticides and seven PCB compounds.

Soil cleanup criteria for pesticides were exceeded in nine of the 254 soil boring locations. The borings that presented exceedences of pesticides are listed in **Table 4-2**. Four pesticides were detected in site soils at concentrations above the RDCSCC. The four pesticides that exceeded the RDCSCC are, with number of exceedences in parentheses, 4,4'-DDD (1), 4,4'-DDE (3), 4,4'-DDT (9), and Dieldrin (1). **Table 4-3** presents a summary of the results, identifying the maximum, minimum and average exceedences for each of these parameters. A discussion of these exceedences is presented below.

- 4,4'-DDD was detected in one site soil sample above the RDCSCC of 3.0 mg/kg at a concentration of 3.787 mg/kg (B254).

- 4,4'-DDE was detected in three of the site soil samples above the RDCSCC of 2.0 mg/kg. The exceedence concentrations ranged from a minimum of 2.058 mg/kg (B59) to a maximum of 4.185 mg/kg (B254). The average exceedence concentration for 4,4'-DDE is 3.191 mg/kg.

- 4,4'-DDT was detected in nine of the site soil samples above the RDCSCC of 2.0 mg/kg. The exceedence concentrations ranged from a minimum of 2.094 mg/kg (B251) to a maximum of 56.446 mg/kg (B254). The average exceedence concentration for 4,4'-DDT is 13.425 mg/kg.

- Dieldrin was detected in one site soil sample above the RDCSCC of 0.042 mg/kg at a concentration of 0.049 mg/kg (B239).

Soil cleanup criteria for PCBs were exceeded in one of the 254 soil boring locations. The boring that presented exceedences of PCBs are listed in **Table 4-2**. One PCB was detected in site soils at concentrations above the RDCSCC. The one PCB that exceeded the RDCSCC is, with number of exceedences in parentheses, Arochlor 1254 (1). **Table 4-3** presents a summary of the results, identifying the maximum, minimum and average exceedences for this parameter. A discussion of these exceedences is presented below.

- Arochlor 1254 was detected in one site soil sample above the RDCSCC of 0.49 mg/kg at a concentration of 1.499 mg/kg (B201).

4.1.4 Metals

The soil samples from the 254 borings (see **Figure 4-3**) were analyzed for 24 TAL metals. The samples were collected from depths of 6-12 inches. A total of seven metals were detected at concentrations above their respective RDCSCC at 28 of 254 boring locations. The borings that contained exceedences of metals are listed in **Table 4-2**. The seven metals that exceeded the RDCSCC in the borings are, with the number of exceedences in parentheses, Arsenic (9), Beryllium (3), Copper (4) Lead (15), Mercury (1), Nickel (1), Thallium (1) and Zinc (3). **Table 4-3** presents a summary of the results, presenting the maximum, minimum and average exceedences for each of these parameters. A discussion of these exceedences is presented below.

- Arsenic was detected in nine of the site soil samples above the RDCSCC of 20 mg/kg. The exceedence concentrations ranged from a minimum of 20.13 mg/kg (B02) to a maximum of 1,030 mg/kg (B19). The average exceedence concentration for Arsenic is 164.416 mg/kg.

- Beryllium was detected in three of the site soil samples above the RDCSCC of 2.0 mg/kg. The exceedence concentrations ranged from a minimum of 2.05 mg/kg (B254) to a maximum of 10.89 mg/kg (B35). The average exceedence concentration for Beryllium is 5.909 mg/kg.

- Copper was detected in four of the site soil samples above the RDCSCC of 600 mg/kg. The exceedence concentrations ranged from a minimum of 1,168 mg/kg (B99) to a maximum of 2,837 mg/kg (B09). The average exceedence concentration for Copper is 1,965.75 mg/kg.

- Lead was detected in 15 of the site soil samples above the RDCSCC of 400 mg/kg. The exceedence concentrations ranged from a minimum of 494 mg/kg (B199) to a maximum of 4,549 mg/kg (B99). The average exceedence concentration for Lead is 1,357.733 mg/kg.

- Mercury was detected above the RDCSCC of 14 mg/kg in one site soil sample at a concentration of 17.584 mg/kg (B59).

- Nickel was detected above the RDCSCC of 250 mg/kg in one site soil sample at a concentration of 431 mg/kg (B242).

- Thallium was detected above the RDCSCC of 2.0 mg/kg in one site soil sample at a concentration of 47.42 mg/kg (B35).

- Zinc was detected in three of the site soil samples above the RDCSCC of 1,500 mg/kg. The exceedence concentrations ranged from a minimum of 1,598 mg/kg (B44) to a maximum of 9,772 mg/kg (B99). The average exceedence concentration for Zinc is 4,393.0 mg/kg.

4.2 Compliance Analysis Method

The first step in determining compliance with the NJDEP Technical Requirements for Site Remediation (7:26E) at the M-5 Landfill Site was to complete the soil sampling analysis. The analytical results from the 508 soil samples collected from 254 borings at the M-5 Landfill Site are discussed above and are included in **Table 4-1**. The method used to determine regulatory compliance is portrayed as a decision tree in **Figure 4-5** and described below.

Figures 4-1, **4-2**, **4-3** and **4-4** present the analytical results for VOCs, SVOCs, pesticides and PCBs and metals, respectively, by soil boring, for those analytes that exceeded the RDCSCC at one or more locations. The results for each analyte presented are uniquely colored at each boring location, and results that exceed the respective RDCSCC have been "boxed" in "red." These results are discussed in greater detail in **Section 4.2**. The borings that contained exceedences of the RDCSCC are shown in **Table 4-2**.

For many of the analytical results that exceeded the RDCSCC, the "compliance averaging" approach was then used to determine compliance with NJDEP technical requirements. Compliance averaging uses the average contaminant concentration in an area of concern rather than the contaminant concentration of individual samples for comparison to applicable soil cleanup criteria. The NJDEP policy for compliance averaging is presented in an article entitled, *Compliance Averaging*, from the NJDEP Spring 1995 (Volume 7, No. 2 – Article 08) issue of *Site Remediation News*.

There are several analyte-specific conditions that determine whether compliance averaging can be applied to an exceedence of NJDEP soil cleanup criteria, including maximum analytical results ("ceilings") for individual samples based on the particular NJDEP criterion, as well as specific requirements for arsenic, thallium, beryllium, Benzo(a)pyrene and Dibenz(a,h)anthracene. The compliance analysis method used for the M-5 Landfill Site for each detected analyte that exceeded the respective RDCSCC is summarized in the last column in **Table 4-4**.

Compliance averaging was performed for analytes that met the requirements as summarized in **Figure 4-5**. Compliance average areas were identified within the M-5 Landfill Site based on analyte category (such as VOCs, SVOCs, etc.). The boundaries for these areas of concern were based on areas within that M-5 Landfill Site that presented exceedences of the RDCSCC. Soil borings outside of the areas of concern (referred to as "clean areas" in NJDEP, 1995) presented contaminant concentrations below the RDCSCC and were not included in calculating compliance averages. The boundaries of the compliance average areas are shown in **Figures 4-1** (VOCs), **4-2**

(SVOCs), **4-3** (pesticides and PCBs) and **4-4** (metals). The compliance average area names are shown in **Appendix F**. The compliance average area names are defined according to the analyte category, such as "AREA VOC-1." When calculating average results, the following rules applied:

1) One-half the MDL was used for non-detect (ND) results.
2) If a sample was diluted, ND results were not used in computing the average.
3) For estimated results (results with "J" qualifiers), the estimated result was used for computing the averages.
4) Compliance averages were calculated as the mean of the results incorporating the ND and estimated results described above.

The compliance averages areas are presented in **Appendix F** and summarized in **Table 4-5**. Compliance averages that were below the NJDEP criteria for a particular analyte justify a recommendation for No Further Action. No Further Action was also justified if a compliance average meets the following conditions for *de minimus* exceedence:

1) Compliance averages met the same analyte-specific conditions that are used for determining whether compliance averaging can be applied,
2) Contaminant concentrations were found within a limited area (for the M-5 Landfill Site, a 15-foot radius, or one-half the grid-spacing, was used for the *de minimus* area determination),
3) Evaluation of contaminant mass, persistence, and location indicated limited potential for significant human health or environmental impacts, and
4) There can only be one *de minimus* exemption per area of concern.

Finally, if an analyte did not meet the *de minimus* conditions, or did not meet the analyte-specific conditions required to perform compliance averaging, additional site-specific parameters were considered as conditions for a No Further Action proposal. If further analysis of the analytical results did not define a "source area" or level of contamination that necessitated the identification and evaluation of potential remedial actions, then the exceedence was considered marginal, or an isolated location and no further action is warranted for the near surface soils. However, to further address the exceedences in the near surface soils, the DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan for soils at the M-5 Landfill Site presenting the exceedence.

4.3 Compliance Analysis

The Compliance analysis method used to evaluate exceedences of the RDCSCC is presented in **Table 4-4,** and the discussion below is presented for VOCs, SVOCs, pesticides and PCBs and metals and compares the analytical data with the RDCSCC. **Table 4-5** summarizes the compliance averaging results. A summary of the compliance analysis for analytes that exceeded the RDCSCC is provided in **Table 4-6**.

4.3.1 VOCs

One VOC was detected in site soils at concentrations above its respective RDCSCC: Tetrachloroethene. For the purposes of compliance analysis, the sample locations with exceedences of the RDCSCC for VOCs have been grouped into one area, AREA VOC-1. The borings contained within this compliance average area are labeled in **Figure 4-1** and listed in **Appendix F**. The compliance analysis method for these compounds is presented in **Table 4-4**.

Tetrachloroethene (AREA VOC-1)

Tetrachloroethene was detected in two of the site soil samples above the RDCSCC of 4.0 mg/kg at concentrations ranging from 4.8 mg/kg to 5.0 mg/kg (average exceedence concentration of 4.90 mg/kg).

Compliance averaging conducted for Tetrachloroethene in AREA VOC-1 yielded the compliance average concentration of 3.247 mg/kg. Therefore, the compliance average for Tetrachloroethene in AREA VOC-1 is below the RDCSCC of 4.0 mg/kg and is not of concern.

These findings support a No Further Action determination for Tetrachloroethene in near-surface soils at the M-5 Landfill Site.

4.3.2 SVOCs

Seven SVOCs were detected in site soils at concentrations above their respective RDCSCC: Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Chrysene, Dibenz(a,h)anthracene and Indeno(1,2,3-cd)pyrene. For the purposes of compliance analysis, the sample locations with exceedences of the RDCSCC for SVOCs have been grouped into one area, AREA SVOC-1. The borings contained within this compliance average area are labeled in **Figure 4-2** and listed in **Appendix F**. The compliance analysis method for these compounds is presented in **Table 4-4**.

Benzo(a)anthracene (AREA SVOC-1)

Benzo(a)anthracene was detected in 11 of the site soil samples above the RDCSCC of 0.9 mg/kg at concentrations ranging from 0.97 mg/kg to 14 mg/kg (average exceedence concentration of 4.369 mg/kg). Because the maximum concentration of Benzo(a)anthracene was greater than the 10X ceiling limit of 9 mg/kg in AREA SVOC-1, compliance averaging was not appropriate for Benzo(a)anthracene for this area of the M-5 Landfill Site.

Due to the limited presence of Benzo(a)anthracene in the area of the M-5 Landfill Site identified as AREA SVOC-1 at concentrations that are both above the RDCSCC and inappropriate for compliance averaging, the DPW will incorporate a document equivalent

to a DER into the Fort Monmouth Master Plan. The DER equivalent will apply to soils presenting exceedences of Benzo(a)anthracene at the M-5 Landfill Site (AREA SVOC-1) and will be protective of human health and the environment. The DER equivalent supports a No Further Action determination for Benzo(a)anthracene in near-surface soils at the M-5 Landfill Site.

Benzo(a)pyrene (AREA SVOC-1)

Benzo(a)pyrene was detected in 17 site soil samples above the RDCSCC of 0.66 mg/kg at concentrations ranging from 0.67 mg/kg to 11 mg/kg (average exceedence concentration of 2.405 mg/kg). Compliance averaging was not undertaken for Benzo(a)pyrene because, as described in the Spring 1995 *Site Remediation News* (Volume 7, Number 2), NJDEP's guidance regarding the use of multiplication factors (initially applied to RDCSCCs to limit the maximum allowable concentration for individual samples) had changed. NJDEP's current guidance is to apply the multiplication factors to health based criteria, not RDCSCC. The health-based criteria for Benzo(a)pyrene in soil is 0.09 mg/kg. Applying the 10X factor to 0.09 mg/kg means that no individual sample may exceed 0.9 mg/kg for the purposes of compliance averaging. Therefore, compliance averaging was not appropriate for the M-5 Landfill Site with respect to Benzo(a)pyrene.

Due to the limited presence of Benzo(a)pyrene in the area of the M-5 Landfill Site identified as AREA SVOC-1 at concentrations that are both above the RDCSCC and inappropriate for compliance averaging, the DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan. The DER equivalent will apply to soils presenting exceedences of Benzo(a)pyrene at the M-5 Landfill Site (AREA SVOC-1) and will be protective of human health and the environment. The DER equivalent supports a No Further Action determination for Benzo(a)pyrene in near-surface soils at the M-5 Landfill Site.

Benzo(b)fluoranthene (AREA SVOC-1)

Benzo(b)fluoranthene was detected in ten of the site soil samples above the RDCSCC of 0.9 mg/kg at concentrations ranging from 1.1 mg/kg to 9.5 mg/kg (average exceedence concentration of 3.69 mg/kg).

Compliance averaging was conducted for Benzo(b)fluoranthene in AREA SVOC-1 and found to be 0.885 mg/kg. Therefore, the compliance average for Benzo(b)fluoranthene in AREA SVOC-1 is below the RDCSCC of 0.9 mg/kg and is not of concern.

These findings support a No Further Action determination for Benzo(b)fluoranthene in near-surface soils at the M-5 Landfill Site.

Benzo(k)fluoranthene (AREA SVOC-1)

Benzo(k)fluoranthene was detected in ten of the site soil samples above the RDCSCC of 0.9 mg/kg at concentrations ranging from 1.2 mg/kg to 8.8 mg/kg (average exceedence concentration of 2.60 mg/kg).

Compliance averaging was conducted for Benzo(k)fluoranthene in AREA SVOC-1 and found to be 0.664 mg/kg. Therefore, the compliance average for Benzo(b)fluoranthene in AREA SVOC-1 is below the RDCSCC of 0.9 mg/kg and is not of concern.

These findings support a No Further Action determination for Benzo(k)fluoranthene in near-surface soils at the M-5 Landfill Site.

Chrysene (AREA SVOC-1)

Chrysene was detected in three site soil samples above the RDCSCC of 9.0 mg/kg at concentrations ranging from 9.7 mg/kg to 25 mg/kg (average exceedence concentration of 18.567 mg/kg).

Compliance averaging was conducted for Chrysene in AREA SVOC-1 and found to be 1.812 mg/kg. Therefore, the compliance average for Chrysene in AREA SVOC-1 is below the RDCSCC of 9.0 mg/kg and is not of concern.

These findings support a No Further Action determination for Chrysene in near-surface soils at the M-5 Landfill Site.

Dibenz(a,h)anthracene (AREA SVOC-1)

Dibenz(a,h)anthracene was detected in four site soil samples above the RDCSCC of 0.66 mg/kg at concentrations ranging from 1.0 mg/kg to 2.9 mg/kg (average exceedence concentration of 1.70 mg/kg). Compliance averaging was not undertaken for Dibenz(a,h)anthracene because, as described in the Spring 1995 *Site Remediation News* (Volume 7, Number 2), NJDEP's guidance regarding the use of multiplication factors (initially applied to RDCSCCs to limit the maximum allowable concentration for individual samples) had changed. NJDEP's current guidance is to apply the multiplication factors to health based criteria, not RDCSCC. The health-based criteria for Dibenz(a,h)anthracene in soil is 0.09 mg/kg. Applying the 10X factor to 0.09 mg/kg means that no individual sample may exceed 0.9 mg/kg for the purposes of compliance averaging. Therefore, compliance averaging was not appropriate for AREA SVOC-1 at the M-5 Landfill Site with respect to Dibenz(a,h)anthracene.

Due to the limited presence of Dibenz(a,h)anthracene in the area of the M-5 Landfill Site identified as AREA SVOC-1 at concentrations that are both above the RDCSCC and inappropriate for compliance averaging, the DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan. The DER equivalent will apply to soils presenting exceedences of Dibenz(a,h)anthracene at the M-5 Landfill Site (AREA

SVOC-1) and will be protective of human health and the environment. The DER equivalent supports a No Further Action determination for Dibenz(a,h)anthracene in near-surface soils at the M-5 Landfill Site.

Indeno(1,2,3-cd)pyrene (AREA SVOC-1)

Indeno(1,2,3-cd)pyrene was detected in seven of the site soil samples above the RDCSCC of 0.9 mg/kg at concentrations ranging from 1.2 mg/kg to 4.9 mg/kg (average exceedence concentration of 2.343 mg/kg).

Compliance averaging conducted for Indeno(1,2,3-cd)pyrene in AREA SVOC-1 yielded the compliance average concentration of 0.517 mg/kg. Therefore, the compliance average for Indeno(1,2,3-cd)pyrene in AREA SVOC-1 does not exceed the RDCSCC of 0.9 mg/kg and is not of concern.

These findings support a No Further Action determination for Indeno(1,2,3-cd)pyrene in near-surface soils at the M-5 Landfill Site.

4.3.3 Pesticides and PCBs

Four pesticides were detected in site soils at concentrations above their respective RDCSCC: 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, and Dieldrin. For the purposes of compliance analysis, the sample locations with exceedences of the RDCSCC for pesticides have been grouped into one area, AREA PESTPCB-1. The borings contained within this compliance average area are labeled in **Figure 4-3** and listed in **Appendix F**. The compliance analysis method for these compounds is presented in **Table 4-4**.

4,4'-DDD (AREA PESTPCB-1)

4,4'-DDD was detected in one site soil sample above the RDCSCC of 3.0 mg/kg at a concentration of 3.787 mg/kg.

Compliance averaging for 4,4'-DDD in AREA PESTPCB-1 yielded the compliance average concentration of 0.479 mg/kg. Therefore, the compliance average for 4,4'-DDD in AREA PESTPCB-1 is below the RDCSCC of 3.0 mg/kg and is not of concern. These findings support a No Further Action determination for 4,4'-DDD in near-surface soils at the M-5 Landfill Site.

4,4'-DDE (AREA PESTPCB-1)

4,4'-DDE was detected in three of the site soil samples above the RDCSCC of 2.0 mg/kg at concentrations ranging from 2.058 mg/kg to 4.185 mg/kg (average exceedence concentration of 3.191 mg/kg).

Compliance averaging for 4,4'-DDE in AREA PESTPCB-1 yielded the compliance average concentration of 0.654 mg/kg. Therefore, the compliance average for 4,4'-DDE in AREA PESTPCB-1 is below the RDCSCC of 2.0 mg/kg and is not of concern.

These findings support a No Further Action determination for 4,4'-DDE in near-surface soils at the M-5 Landfill Site.

4,4'-DDT (AREA PESTPCB-1)

4,4'-DDT was detected in nine of the site soil samples above the RDCSCC of 2.0 mg/kg at concentrations ranging from 2.094 mg/kg to 56.446 mg/kg (average exceedence concentration of 13.425 mg/kg). Because the maximum concentration of 4,4'-DDT was greater than the 10X ceiling limit of 20 mg/kg in AREA PESTPCB-1, compliance averaging was not appropriate for 4,4'-DDT for this area of the M-5 Landfill Site.

Due to the limited presence of 4,4'-DDT in the area of the M-5 Landfill Site identified as AREA PESTPCB-1 at concentrations that are both above the RDCSCC and inappropriate for compliance averaging, the DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan. The DER equivalent will apply to soils presenting exceedences of 4,4'-DDT at the M-5 Landfill Site (AREA PESTPCB-1) and will be protective of human health and the environment. The DER equivalent supports a No Further Action determination for 4,4'-DDT in near-surface soils at the M-5 Landfill Site.

Dieldrin (AREA PESTPCB-1)

Dieldrin was detected in one site soil sample above the RDCSCC of 0.042 mg/kg at a concentration of 0.049 mg/kg.

Compliance averaging for Dieldrin in AREA PESTPCB-1 yielded the compliance average concentration of 0.049 mg/kg. Therefore, the compliance average for Dieldrin in AREA PESTPCB-1 is marginally above the RDCSCC of 0.042 mg/kg and is not of concern.

These findings support a No Further Action determination for Dieldrin in near-surface soils at the M-5 Landfill Site.

One PCB was detected in site soils at concentrations above its RDCSCC: Arochlor 1254. For the purposes of compliance analysis, the sample locations with exceedences of the RDCSCC for PCBs have been grouped into one area, AREA PESTPCB-1. The boring contained within this compliance average area is labeled in **Figure 4-3** and listed in **Appendix F**. The compliance analysis method for this compound is presented in **Table 4-4**.

Arochlor 1254 (AREA PESTPCB-1)

Arochlor 1254 was detected in one site soil sample above the RDCSCC of 0.49 mg/kg at a concentration of 1.499 mg/kg.

Compliance averaging for Arochlor 1254 in AREA PESTPCB-1 yielded the compliance average concentration of 0.832 mg/kg. Therefore, the compliance average for Arochlor 1254 in AREA PESTPCB-1 is marginally above the RDCSCC of 0.49 mg/kg and is not of concern.

These findings support a No Further Action determination for Arochlor 1254 in near-surface soils at the M-5 Landfill Site.

4.3.4 Metals

Seven metals were detected at concentrations above their respective RDCSCC: Arsenic, Beryllium, Copper, Lead, Mercury, Thallium and Zinc. For the purpose of compliance analysis, the sample locations with exceedences of the RDCSCC for metals have been grouped into one area, AREA METALS-1. The borings contained within these compliance average areas are labeled in **Figure 4-4** and listed in **Appendix F**. The compliance analysis method for these compounds is presented in **Table 4-4**.

Arsenic (AREA METALS-1)

Arsenic was detected in nine of the site soil samples above the RDCSCC of 20 mg/kg at concentrations ranging from 20.13 mg/kg to 1,030 mg/kg (average exceedence concentration of 164.416 mg/kg). Compliance averaging was not undertaken for Arsenic because, as described in the Spring 1995 *Site Remediation News* (Volume 7, Number 2), the 20 mg/kg RDCSCC for arsenic is already 50 times higher than the health based number for arsenic (0.4 mg/kg). Many of these samples also exceeded the site-specific maximum background concentration for Arsenic in soils (Weston, 1995) of 22.9 mg/kg.

Due to the distribution of Arsenic in the area of the M-5 Landfill Site identified as AREA METALS-1 at concentrations that are both above the RDCSCC and inappropriate for compliance averaging, the DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan. The DER equivalent will apply to soils presenting exceedences of Arsenic at the M-5 Landfill Site (AREA METALS-1) and will be protective of human health and the environment. The DER equivalent supports a No Further Action determination for Arsenic in near-surface soils at the M-5 Landfill Site.

Beryllium (AREA METALS-1)

Beryllium was detected above the RDCSCC of 2.0 mg/kg in three site soil samples at concentrations ranging from 2.05 mg/kg to 10.89 mg/kg (average exceedence concentration of 5.909 mg/kg). Compliance averaging was not undertaken for Beryllium because, as described in the Spring 1995 *Site Remediation News* (Volume 7, Number 2),

compliance averaging is not appropriate for soil samples that present Beryllium concentrations that exceed 2.0 mg/kg.

Due to the limited presence of Beryllium in the area of the M-5 Landfill Site identified as AREA METALS-1 at concentrations that are both above the RDCSCC and inappropriate for compliance averaging, the DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan. The DER equivalent will apply to soils presenting exceedences of Beryllium at the M-5 Landfill Site (AREA METALS-1) and will be protective of human health and the environment. The DER equivalent supports a No Further Action determination for Beryllium in near-surface soils at the M-5 Landfill Site.

Copper (AREA METALS-1)

Copper was detected above the RDCSCC of 600 mg/kg in four site soil samples at concentrations ranging from 1,168 mg/kg to 2,837 mg/kg (average exceedence concentration of 1,965.75 mg/kg). Because the maximum concentration of Copper was greater than the 2X ceiling limit of 1,200 mg/kg in AREA METALS-1, compliance averaging was not appropriate for Copper for this area of the M-5 Landfill Site.

Due to the limited presence of Copper in the area of the M-5 Landfill Site identified as AREA METALS-1 at concentrations that are both above the RDCSCC and inappropriate for compliance averaging, the DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan. The DER equivalent will apply to soils presenting exceedences of Copper at the M-5 Landfill Site (AREA METALS-1) and will be protective of human health and the environment. The DER equivalent supports a No Further Action determination for Copper in near-surface soils at the M-5 Landfill Site.

Lead (AREA METALS-1)

Lead was detected above the RDCSCC of 400 mg/kg in 15 site soil samples at concentrations ranging from 494 mg/kg to 4,549 mg/kg (average exceedence concentration of 1,357.733 mg/kg). Because the maximum concentration of Lead was greater than the 2X ceiling limit of 800 mg/kg in AREA METALS-1, compliance averaging was not appropriate for Lead for this area of the M-5 Landfill Site.

Due to the limited presence of Lead in the area of the M-5 Landfill Site identified as AREA METALS-1 at concentrations that are both above the RDCSCC and inappropriate for compliance averaging, the DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan. The DER equivalent will apply to soils presenting exceedences of Lead at the M-5 Landfill Site (AREA METALS-1) and will be protective of human health and the environment. The DER equivalent supports a No Further Action determination for Lead in near-surface soils at the M-5 Landfill Site.

Mercury (AREA METALS-1)

Mercury was detected above the RDCSCC of 14 mg/kg at one boring at a concentration of 17.584 mg/kg.

Compliance averaging conducted for Mercury in AREA METALS-1 yielded the compliance average concentration of 1.089 mg/kg. Therefore, the compliance average for Mercury in AREA METALS-1 is below the RDCSCC of 14 mg/kg and is not of concern.

These findings support a No Further Action determination relative to Mercury in near-surface soils at the M-5 Landfill Site.

Nickel (AREA METALS-1)

Nickel was detected above the RDCSCC of 250 mg/kg at one boring at a concentration of 431 mg/kg.

Compliance averaging conducted for Nickel in AREA METALS-2 yielded the compliance average concentration of 66.644 mg/kg. Therefore, the compliance average for Nickel in AREA METALS-2 is below the RDCSCC of 250 mg/kg and is not of concern.

These findings support a No Further Action determination relative to Nickel in near-surface soils at the M-5 Landfill Site.

Thallium (AREA METALS-1)

Thallium was detected above the RDCSCC of 2.0 mg/kg in one site soil sample at a concentration of 47.42 mg/kg. Compliance averaging was not undertaken for Thallium because, as described in the Spring 1995 *Site Remediation News* (Volume 7, Number 2), the 2.0 mg/kg RDCSCC for Thallium is already much higher than the health based number for Thallium (0.0 mg/kg).

Due to the limited presence of Thallium in the area of the site identified as AREA METALS-1 at concentrations that are both above the RDCSCC and inappropriate for compliance averaging, the DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan. The DER equivalent will apply to soils presenting exceedences of Thallium at the M-5 Landfill Site (AREA METALS-1) and will be protective of human health and the environment. The DER equivalent and compliance averaging approach support a No Further Action determination for Thallium in near-surface soils at the M-5 Landfill Site.

Zinc (AREA METALS-1)

Zinc was detected above the RDCSCC of 1,500 mg/kg in three site soil samples at concentrations ranging from 1,598 mg/kg to 4,510 mg/kg (average exceedence concentration of 9,772 mg/kg). Because the maximum concentration of Zinc was greater than the 2X ceiling limit of 3000 mg/kg in AREA METALS-1, compliance averaging was not appropriate for Zinc for this area of the M-5 Landfill Site.

Due to the limited presence of Zinc in the area of the site identified as AREA METALS-1 at concentrations that are both above the RDCSCC and inappropriate for compliance averaging, the DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan. The DER equivalent will apply to soils presenting exceedences of Zinc at the M-5 Landfill Site (AREA METALS-1) and will be protective of human health and the environment. The DER equivalent supports a No Further Action determination for Zinc in near-surface soils at the M-5 Landfill Site.

5.0 CONCLUSIONS AND RECOMMENDATIONS

To demonstrate compliance equivalence of the existing soil cover over the M-5 Landfill Site with respect to the Solid Waste Disposal Act of 1965, DPW characterized the near-surface soils using 254 borings from strategic locations over the site. DPW installed soil borings and obtained soil samples between April 1998 and August 1998. All soil samples were analyzed for TCL Organics + 30 parameters and TAL metals. The data that exceeded the laboratory MDL and/or the NJDEP RDCSCC are summarized in table form in this RIR. Where applicable and appropriate, the data were evaluated utilizing the "compliance averaging" approach to determine compliance with NJDEP RDCSCC. The conclusions and recommendations of the evaluation of analytical results from the near-surface soils site characterization are provided below.

As discussed in **Section 4.1**, concentrations of VOCs, SVOCs, pesticides and PCBs and metals were detected exceeding the NJDEP RDCSCC. **Table 4-6** provides a summary of the compliance analysis discussed in this RIR. In all cases, further analysis of the analytical results did not define a "source area" or level of contamination that necessitated the identification and evaluation of potential remedial actions. In most cases, either the calculated compliance average was below the respective RDCSCC or the exceedence was considered marginal (e.g., within 1 to 2 mg/kg of the RDCSCC). However, to address the exceedences of analytes that did not meet cleanup requirements in the near surface soils, the DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan for soils containing these exceedences. As discussed in **Section 2.3.2.**, the M-5 Landfill Site is located within a Class-III-A aquifer (aquitard) zone, which would minimize the possibility of any cantamination migrating offsite. The Army is therefore requesting a ***No Further Action*** for these parameters. The DER equivalent may be developed for the entire M-5 Landfill Site or be restricted to the following areas and analytes (see **Figures 4-1, 4-2**, **4-3** and **4-4** for the boundaries of these areas):

- AREA SVOC-1: Benzo(a)anthracene, Benzo(a)pyrene and Dibenz(a,h)anthracene
- AREA PESTPCB-1: 4,4'-DDT
- AREA METALS-1: Arsenic, Beryllium, Copper, Lead, Thallium and Zinc

Given the inactive and undisturbed status of the landfill, the performance of long-term surface water and groundwater monitoring proximate to the M-5 Landfill Site, the negligible impacts reported to-date, the lack of groundwater use at or downgradient of the M-5 Landfill Site and the relatively low levels of COCs in the shallow surface soils across the site, No Further Action is recommended for the near-surface soils at the M-5 Landfill Site.

6.0 REFERENCES

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TABLES

Table 3-1
Soil Sample Collection Summary
M-5 Landfill
Fort Monmouth, New Jersey

Boring ID	Field Sample ID	Lab Sample ID	Depth	Date Collected	Matrix	Analytical Parameters	Analytical Methods
B01	B01 (6-12")	3465.03	(6-12")	4/8/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B01	B01 (24")	3465.04	(24")	4/8/1998	Soil	VOCs	Method 8260
B02	B02 (6-12")	3465.07	(6-12")	4/8/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B02	B02 (24")	3465.08	(24")	4/8/1998	Soil	VOCs	Method 8260
B03	B03 (6-12")	3465.11	(6-12")	4/8/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B03	B03 (24")	3465.12	(24")	4/8/1998	Soil	VOCs	Method 8260
B04	B04 (6-12")	3470.03	(6-12")	4/9/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B04	B04 (24")	3470.04	(24")	4/9/1998	Soil	VOCs	Method 8260
B05	B05 (6-12")	3470.07	(6-12")	4/9/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B05	B05 (24")	3470.08	(24")	4/9/1998	Soil	VOCs	Method 8260
B06	B06 (6-12")	3470.11	(6-12")	4/9/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B06	B06 (24")	3470.12	(24")	4/9/1998	Soil	VOCs	Method 8260
B07	B07 (6-12")	3470.15	(6-12")	4/9/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B07	B07 (24")	3470.16	(24")	4/9/1998	Soil	VOCs	Method 8260
B08	B08 (6-12")	3472.03	(6-12")	4/10/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B08	B08 (24")	3472.04	(24")	4/10/1998	Soil	VOCs	Method 8260
B09	B09 (6-12")	3472.07	(6-12")	4/10/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B09	B09 (24")	3472.08	(24")	4/10/1998	Soil	VOCs	Method 8260
B10	B10 (6-12")	3472.11	(6-12")	4/10/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B10	B10 (24")	3472.12	(24")	4/10/1998	Soil	VOCs	Method 8260
B11	B11 (6-12")	3473.03	(6-12")	4/11/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B11	B11 (24")	3473.04	(24")	4/11/1998	Soil	VOCs	Method 8260
B12	B12 (6-12")	3473.07	(6-12")	4/11/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B12	B12 (24")	3473.08	(24")	4/11/1998	Soil	VOCs	Method 8260
B13	B13 (6-12")	3473.11	(6-12")	4/11/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B13	B13 (24")	3473.12	(24")	4/11/1998	Soil	VOCs	Method 8260
B14	B14 (6-12")	3473.15	(6-12")	4/11/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B14	B14 (24")	3473.16	(24")	4/11/1998	Soil	VOCs	Method 8260
B15	B15 (6-12")	3473.19	(6-12")	4/11/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B15	B15 (24")	3473.20	(24")	4/11/1998	Soil	VOCs	Method 8260
B16	B16 (6-12")	3477.03	(6-12")	4/13/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B16	B16 (24")	3477.04	(24")	4/13/1998	Soil	VOCs	Method 8260
B17	B17 (6-12")	3477.07	(6-12")	4/13/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B17	B17 (24")	3477.08	(24")	4/13/1998	Soil	VOCs	Method 8260
B18	B18 (6-12")	3477.11	(6-12")	4/13/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B18	B18 (24")	3477.12	(24")	4/13/1998	Soil	VOCs	Method 8260
B19	B19 (6-12")	3477.15	(6-12")	4/13/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B19	B19 (24")	3477.16	(24")	4/13/1998	Soil	VOCs	Method 8260
B20	B20 (6-12")	3479.03	(6-12")	4/14/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B20	B20 (24")	3479.04	(24")	4/14/1998	Soil	VOCs	Method 8260

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls; TAL Metals = Target Analyte List Metals

Table 3-1
Soil Sample Collection Summary
M-5 Landfill
Fort Monmouth, New Jersey

Boring ID	Field Sample ID	Lab Sample ID	Depth	Date Collected	Matrix	Analytical Parameters	Analytical Methods
B21	B21 (6-12")	3479.07	(6-12")	4/14/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B21	B21 (24")	3479.08	(24")	4/14/1998	Soil	VOCs	Method 8260
B22	B22 (6-12")	3479.11	(6-12")	4/14/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B22	B22 (24")	3479.12	(24")	4/14/1998	Soil	VOCs	Method 8260
B23	B23 (6-12")	3485.03	(6-12")	4/15/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B23	B23 (24")	3485.04	(24")	4/15/1998	Soil	VOCs	Method 8260
B24	B24 (6-12")	3485.07	(6-12")	4/15/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B24	B24 (24")	3485.08	(24")	4/15/1998	Soil	VOCs	Method 8260
B25	B25 (6-12")	3485.11	(6-12")	4/15/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B25	B25 (24")	3485.12	(24")	4/15/1998	Soil	VOCs	Method 8260
B26	B26 (6-12")	3485.15	(6-12")	4/15/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B26	B26 (24")	3485.16	(24")	4/15/1998	Soil	VOCs	Method 8260
B27	B27 (6-12")	3498.03	(6-12")	4/20/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B27	B27 (24")	3498.04	(24")	4/20/1998	Soil	VOCs	Method 8260
B28	B28 (6-12")	3498.07	(6-12")	4/20/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B28	B28 (24")	3498.08	(24")	4/20/1998	Soil	VOCs	Method 8260
B29	B29 (6-12")	3498.11	(6-12")	4/20/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B29	B29 (24")	3498.12	(24")	4/20/1998	Soil	VOCs	Method 8260
B30	B30 (6-12")	3498.15	(6-12")	4/20/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B30	B30 (24")	3498.16	(24")	4/20/1998	Soil	VOCs	Method 8260
B31	B31 (6-12")	3500.02	(6-12")	4/21/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B31	B31 (24")	3500.03	(24")	4/21/1998	Soil	VOCs	Method 8260
B32	B32 (6-12")	3500.06	(6-12")	4/21/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B32	B32 (24")	3500.07	(24")	4/21/1998	Soil	VOCs	Method 8260
B33	B33 (6-12")	3500.10	(6-12")	4/21/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B33	B33 (24")	3500.11	(24")	4/21/1998	Soil	VOCs	Method 8260
B34	B34 (6-12")	3500.14	(6-12")	4/21/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B34	B34 (24")	3500.15	(24")	4/21/1998	Soil	VOCs	Method 8260
B35	B35 (6-12")	3500.18	(6-12")	4/21/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B35	B35 (24")	3500.19	(24")	4/21/1998	Soil	VOCs	Method 8260
B36	B36 (6-12")	3501.02	(6-12")	4/22/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B36	B36 (24")	3501.03	(24")	4/22/1998	Soil	VOCs	Method 8260
B37	B37 (6-12")	3501.06	(6-12")	4/22/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B37	B37 (24")	3501.07	(24")	4/22/1998	Soil	VOCs	Method 8260
B38	B38 (6-12")	3501.10	(6-12")	4/22/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B38	B38 (24")	3501.11	(24")	4/22/1998	Soil	VOCs	Method 8260
B39	B39 (6-12")	3501.14	(6-12")	4/22/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B39	B39 (24")	3501.15	(24")	4/22/1998	Soil	VOCs	Method 8260
B40	B40 (6-12")	3501.18	(6-12")	4/22/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B40	B40 (24")	3501.19	(24")	4/22/1998	Soil	VOCs	Method 8260

Notes:
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VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls; TAL Metals = Target Analyte List Metals

Table 3-1
Soil Sample Collection Summary
M-5 Landfill
Fort Monmouth, New Jersey

Boring ID	Field Sample ID	Lab Sample ID	Depth	Date Collected	Matrix	Analytical Parameters	Analytical Methods
B41	B41 (6-12")	3539.02	(6-12")	5/1/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B41	B41 (24")	3539.03	(24")	5/1/1998	Soil	VOCs	Method 8260
B42	B42 (6-12")	3539.06	(6-12")	5/1/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B42	B42 (24")	3539.07	(24")	5/1/1998	Soil	VOCs	Method 8260
B43	B43 (6-12")	3543.02	(6-12")	5/1/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B43	B43 (24")	3543.03	(24")	5/1/1998	Soil	VOCs	Method 8260
B44	B44 (6-12")	3543.06	(6-12")	5/1/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B44	B44 (24")	3543.07	(24")	5/1/1998	Soil	VOCs	Method 8260
B45	B45 (6-12")	3543.10	(6-12")	5/1/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B45	B45 (24")	3543.11	(24")	5/1/1998	Soil	VOCs	Method 8260
B46	B46 (6-12")	3543.14	(6-12")	5/1/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B46	B46 (24")	3543.15	(24")	5/1/1998	Soil	VOCs	Method 8260
B47	B47 (6-12")	3547.02	(6-12")	5/5/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B47	B47 (24")	3547.03	(24")	5/5/1998	Soil	VOCs	Method 8260
B48	B48 (6-12")	3547.06	(6-12")	5/5/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B48	B48 (24")	3547.07	(24")	5/5/1998	Soil	VOCs	Method 8260
B49	B49 (6-12")	3547.10	(6-12")	5/5/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B49	B49 (24")	3547.11	(24")	5/5/1998	Soil	VOCs	Method 8260
B50	B50 (6-12")	3547.14	(6-12")	5/5/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B50	B50 (24")	3547.15	(24")	5/5/1998	Soil	VOCs	Method 8260
B51	B51 (6-12")	3547.18	(6-12")	5/5/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B51	B51 (24")	3547.19	(24")	5/5/1998	Soil	VOCs	Method 8260
B52	B52 (6-12")	3550.03	(6-12")	5/6/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B52	B52 (24")	3550.04	(24")	5/6/1998	Soil	VOCs	Method 8260
B53	B53 (6-12")	3550.07	(6-12")	5/6/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B53	B53 (24")	3550.08	(24")	5/6/1998	Soil	VOCs	Method 8260
B54	B54 (6-12")	3550.11	(6-12")	5/6/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B54	B54 (24")	3550.12	(24")	5/6/1998	Soil	VOCs	Method 8260
B55	B55 (6-12")	3550.15	(6-12")	5/6/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B55	B55 (24")	3550.16	(24")	5/6/1998	Soil	VOCs	Method 8260
B56	B56 (6-12")	3561.02	(6-12")	5/11/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B56	B56 (24")	3561.03	(24")	5/11/1998	Soil	VOCs	Method 8260
B57	B57 (6-12")	3561.06	(6-12")	5/11/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B57	B57 (24")	3561.07	(24")	5/11/1998	Soil	VOCs	Method 8260
B58	B58 (6-12")	3561.10	(6-12")	5/11/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B58	B58 (24")	3561.11	(24")	5/11/1998	Soil	VOCs	Method 8260
B59	B59 (6-12")	3561.14	(6-12")	5/11/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B59	B59 (24")	3561.15	(24")	5/11/1998	Soil	VOCs	Method 8260
B60	B60 (6-12")	3567.02	(6-12")	5/14/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B60	B60 (24")	3567.03	(24")	5/14/1998	Soil	VOCs	Method 8260

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Table 3-1
Soil Sample Collection Summary
M-5 Landfill
Fort Monmouth, New Jersey

Boring ID	Field Sample ID	Lab Sample ID	Depth	Date Collected	Matrix	Analytical Parameters	Analytical Methods
B61	B61 (6-12")	3567.06	(6-12")	5/14/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B61	B61 (24")	3567.07	(24")	5/14/1998	Soil	VOCs	Method 8260
B62	B62 (6-12")	3567.10	(6-12")	5/14/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B62	B62 (24")	3567.11	(24")	5/14/1998	Soil	VOCs	Method 8260
B63	B63 (6-12")	3567.14	(6-12")	5/14/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B63	B63 (20")	3567.15	(20")	5/14/1998	Soil	VOCs	Method 8260
B63	B63 (24")	3567.16	(24")	5/14/1998	Soil	VOCs	Method 8260
B64	B64 (6-12")	3567.19	(6-12")	5/14/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B64	B64 (24")	3567.20	(24")	5/14/1998	Soil	VOCs	Method 8260
B65	B65 (6-12")	3571.02	(6-12")	5/15/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B65	B65 (24")	3571.03	(24")	5/15/1998	Soil	VOCs	Method 8260
B66	B66 (6-12")	3571.06	(6-12")	5/15/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B66	B66 (24")	3571.07	(24")	5/15/1998	Soil	VOCs	Method 8260
B67	B67 (6-12")	3571.10	(6-12")	5/15/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B67	B67 (24")	3571.11	(24")	5/15/1998	Soil	VOCs	Method 8260
B68	B68 (6-12")	3571.13	(6-12")	5/15/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B68	B68 (24")	3571.14	(24")	5/15/1998	Soil	VOCs	Method 8260
B69	B69 (6-12")	3571.17	(6-12")	5/15/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B69	B69 (24")	3571.18	(24")	5/15/1998	Soil	VOCs	Method 8260
B70	B70 (6-12")	3576.02	(6-12")	5/18/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B70	B70 (24")	3576.03	(24")	5/18/1998	Soil	VOCs	Method 8260
B71	B71 (6-12")	3576.06	(6-12")	5/18/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B71	B71 (24")	3576.07	(24")	5/18/1998	Soil	VOCs	Method 8260
B72	B72 (6-12")	3576.10	(6-12")	5/18/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B72	B72 (24")	3576.11	(24")	5/18/1998	Soil	VOCs	Method 8260
B73	B73 (6-12")	3576.14	(6-12")	5/18/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B73	B73 (24")	3576.15	(24")	5/18/1998	Soil	VOCs	Method 8260
B74	B74 (6-12")	3580.02	(6-12")	5/19/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B74	B74 (24")	3580.03	(24")	5/19/1998	Soil	VOCs	Method 8260
B75	B75 (6-12")	3580.05	(6-12")	5/19/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B75	B75 (24")	3580.06	(24")	5/19/1998	Soil	VOCs	Method 8260
B76	B76 (6-12")	3580.08	(6-12")	5/19/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B76	B76 (24")	3580.09	(24")	5/19/1998	Soil	VOCs	Method 8260
B77	B77 (6-12")	3580.11	(6-12")	5/19/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B77	B77 (24")	3580.12	(24")	5/19/1998	Soil	VOCs	Method 8260
B78	B78 (6-12")	3580.14	(6-12")	5/19/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B78	B78 (24")	3580.15	(24")	5/19/1998	Soil	VOCs	Method 8260
B79	B79 (6-12")	3580.18	(6-12")	5/19/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B79	B79 (24")	3580.19	(24")	5/19/1998	Soil	VOCs	Method 8260
B80	B80 (6-12")	3580.22	(6-12")	5/19/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A

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Pest/PCBs = Pesticides/Polychlorinated-Biphenyls; TAL Metals = Target Analyte List Metals

Table 3-1
Soil Sample Collection Summary
M-5 Landfill
Fort Monmouth, New Jersey

Boring ID	Field Sample ID	Lab Sample ID	Depth	Date Collected	Matrix	Analytical Parameters	Analytical Methods
B80	B80 (24")	3580.23	(24")	5/19/1998	Soil	VOCs	Method 8260
B81	B81 (6-12")	3580.26	(6-12")	5/19/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B81	B81 (24")	3580.27	(24")	5/19/1998	Soil	VOCs	Method 8260
B82	B82 (6-12")	3580.30	(6-12")	5/19/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B82	B82 (24")	3580.31	(24")	5/19/1998	Soil	VOCs	Method 8260
B83	B83 (6-12")	3580.34	(6-12")	5/19/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B83	B83 (24")	3580.35	(24")	5/19/1998	Soil	VOCs	Method 8260
B84	B84 (6-12")	3584.02	(6-12")	5/20/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B84	B84 (24")	3584.03	(24")	5/20/1998	Soil	VOCs	Method 8260
B85	B85 (6-12")	3584.06	(6-12")	5/20/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B85	B85 (24")	3584.07	(24")	5/20/1998	Soil	VOCs	Method 8260
B86	B86 (6-12")	3584.10	(6-12")	5/20/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B86	B86 (24")	3584.11	(24")	5/20/1998	Soil	VOCs	Method 8260
B87	B87 (6-12")	3584.14	(6-12")	5/20/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B87	B87 (24")	3584.15	(24")	5/20/1998	Soil	VOCs	Method 8260
B88	B88 (6-12")	3584.18	(6-12")	5/20/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B88	B88 (24")	3584.19	(24")	5/20/1998	Soil	VOCs	Method 8260
B89	B89 (6-12")	3584.22	(6-12")	5/20/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B89	B89 (24")	3584.23	(24")	5/20/1998	Soil	VOCs	Method 8260
B90	B90 (6-12")	3584.26	(6-12")	5/20/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B90	B90 (24")	3584.27	(24")	5/20/1998	Soil	VOCs	Method 8260
B91	B91 (6-12")	3584.30	(6-12")	5/20/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B91	B91 (24")	3584.31	(24")	5/20/1998	Soil	VOCs	Method 8260
B92	B92 (6-12")	3584.34	(6-12")	5/20/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B92	B92 (24")	3584.35	(24")	5/20/1998	Soil	VOCs	Method 8260
B93	B93 (6-12")	3588.02	(6-12")	5/21/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B93	B93 (24")	3588.03	(24")	5/21/1998	Soil	VOCs	Method 8260
B94	B94 (6-12")	3588.06	(6-12")	5/21/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B94	B94 (24")	3588.07	(24")	5/21/1998	Soil	VOCs	Method 8260
B95	B95 (6-12")	3588.10	(6-12")	5/21/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B95	B95 (24")	3588.11	(24")	5/21/1998	Soil	VOCs	Method 8260
B96	B96 (6-12")	3588.14	(6-12")	5/21/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B96	B96 (24")	3588.15	(24")	5/21/1998	Soil	VOCs	Method 8260
B97	B97 (6-12")	3588.18	(6-12")	5/21/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B97	B97 (24")	3588.19	(24")	5/21/1998	Soil	VOCs	Method 8260
B98	B98 (6-12")	3588.22	(6-12")	5/21/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B98	B98 (24")	3588.23	(24")	5/21/1998	Soil	VOCs	Method 8260
B99	B99 (6-12")	3593.02	(6-12")	5/26/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B99	B99 (24")	3593.03	(24")	5/26/1998	Soil	VOCs	Method 8260
B158	B158 (6-12")	3665.12	(6-12")	6/17/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A

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Table 3-1
Soil Sample Collection Summary
M-5 Landfill
Fort Monmouth, New Jersey

Boring ID	Field Sample ID	Lab Sample ID	Depth	Date Collected	Matrix	Analytical Parameters	Analytical Methods
B158	B158 (24")	3665.13	(24")	6/17/1998	Soil	VOCs	Method 8260
B159	B159 (6-12")	3665.16	(6-12")	6/17/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B159	B159 (24")	3665.17	(24")	6/17/1998	Soil	VOCs	Method 8260
B160	B160 (6-12")	3665.19	(6-12")	6/17/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B160	B160 (24")	3665.20	(24")	6/17/1998	Soil	VOCs	Method 8260
B161	B161 (6-12")	3665.22	(6-12")	6/17/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B161	B161 (24")	3665.23	(24")	6/17/1998	Soil	VOCs	Method 8260
B162	B162 (6-12")	3686.04	(6-12")	6/26/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B162	B162 (17")	3686.05	(17")	6/26/1998	Soil	VOCs	Method 8260
B163	B163 (6-12")	3686.07	(6-12")	6/26/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B163	B163 (19")	3686.08	(19")	6/26/1998	Soil	VOCs	Method 8260
B164	B164 (6-12")	3686.10	(6-12")	6/26/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B164	B164 (24")	3686.11	(24")	6/26/1998	Soil	VOCs	Method 8260
B165	B165 (6-12")	3688.02	(6-12")	6/29/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B165	B165 (24")	3688.03	(24")	6/29/1998	Soil	VOCs	Method 8260
B166	B166 (6-12")	3688.06	(6-12")	6/29/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B166	B166 (24")	3688.07	(24")	6/29/1998	Soil	VOCs	Method 8260
B167	B167 (6-12")	3688.09	(6-12")	6/29/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B167	B167 (24")	3688.10	(24")	6/29/1998	Soil	VOCs	Method 8260
B168	B168 (6-12")	3688.12	(6-12")	6/29/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B168	B168 (24")	3688.13	(24")	6/29/1998	Soil	VOCs	Method 8260
B169	B169 (6-12")	3688.15	(6-12")	6/29/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B169	B169 (24")	3688.16	(24")	6/29/1998	Soil	VOCs	Method 8260
B178	B178 (6-12")	3722.12	(6-12")	7/13/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B178	B178 (24")	3722.13	(24")	7/13/1998	Soil	VOCs	Method 8260
B179	B179 (6-12")	3722.15	(6-12")	7/13/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B179	B179 (24")	3722.16	(24")	7/13/1998	Soil	VOCs	Method 8260
B180	B180 (6-12")	3722.18	(6-12")	7/13/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B180	B180 (24")	3722.19	(24")	7/13/1998	Soil	VOCs	Method 8260
B181	B181 (6-12")	3722.21	(6-12")	7/13/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B181	B181 (24")	3722.22	(24")	7/13/1998	Soil	VOCs	Method 8260
B197	B197 (6-12")	3805.02	(6-12")	8/12/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B197	B197 (24")	3805.03	(24")	8/12/1998	Soil	VOCs	Method 8260
B198	B198 (6-12")	3805.04	(6-12")	8/12/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B198	B198 (24")	3805.05	(24")	8/12/1998	Soil	VOCs	Method 8260
B199	B199 (6-12")	3805.06	(6-12")	8/12/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B199	B199 (24")	3805.07	(24")	8/12/1998	Soil	VOCs	Method 8260
B200	B200 (6-12")	3805.08	(6-12")	8/12/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B200	B200 (24")	3805.09	(24")	8/12/1998	Soil	VOCs	Method 8260
B201	B201 (6-12")	3805.10	(6-12")	8/12/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A

Notes:
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VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls; TAL Metals = Target Analyte List Metals

Table 3-1
Soil Sample Collection Summary
M-5 Landfill
Fort Monmouth, New Jersey

Boring ID	Field Sample ID	Lab Sample ID	Depth	Date Collected	Matrix	Analytical Parameters	Analytical Methods
B201	B201 (24")	3805.11	(24")	8/12/1998	Soil	VOCs	Method 8260
B202	B202 (6-12")	3805.12	(6-12")	8/12/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B202	B202 (24")	3805.13	(24")	8/12/1998	Soil	VOCs	Method 8260
B203	B203 (6-12")	3805.14	(6-12")	8/12/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B203	B203 (24")	3805.15	(24")	8/12/1998	Soil	VOCs	Method 8260
B204	B204 (6-12")	3805.16	(6-12")	8/12/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B204	B204 (24")	3805.17	(24")	8/12/1998	Soil	VOCs	Method 8260
B205	B205 (6-12")	3805.18	(6-12")	8/12/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B205	B205 (24")	3805.19	(24")	8/12/1998	Soil	VOCs	Method 8260
B206	B206 (6-12")	3805.20	(6-12")	8/12/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B206	B206 (24")	3805.21	(24")	8/12/1998	Soil	VOCs	Method 8260
B207	B207 (6-12")	3805.22	(6-12")	8/12/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B207	B207 (24")	3805.23	(24")	8/12/1998	Soil	VOCs	Method 8260
B208	B208 (6-12")	3805.24	(6-12")	8/12/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B208	B208 (24")	3805.25	(24")	8/12/1998	Soil	VOCs	Method 8260
B209	B209 (6-12")	3805.26	(6-12")	8/12/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B209	B209 (24")	3805.27	(24")	8/12/1998	Soil	VOCs	Method 8260
B210	B210 (6-12")	3805.28	(6-12")	8/12/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B210	B210 (24")	3805.29	(24")	8/12/1998	Soil	VOCs	Method 8260
B211	B211 (6-12")	3805.30	(6-12")	8/12/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B211	B211 (24")	3805.31	(24")	8/12/1998	Soil	VOCs	Method 8260
B212	B212 (6-12")	3809.02	(6-12")	8/13/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B212	B212 (24")	3809.03	(24")	8/13/1998	Soil	VOCs	Method 8260
B213	B213 (6-12")	3809.04	(6-12")	8/13/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B213	B213 (24")	3809.05	(24")	8/13/1998	Soil	VOCs	Method 8260
B214	B214 (6-12")	3809.06	(6-12")	8/13/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B214	B214 (24")	3809.07	(24")	8/13/1998	Soil	VOCs	Method 8260
B215	B215 (6-12")	3809.08	(6-12")	8/13/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B215	B215 (24")	3809.09	(24")	8/13/1998	Soil	VOCs	Method 8260
B216	B216 (6-12")	3809.10	(6-12")	8/13/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B216	B216 (24")	3809.11	(24")	8/13/1998	Soil	VOCs	Method 8260
B217	B217 (6-12")	3809.12	(6-12")	8/13/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B217	B217 (24")	3809.13	(24")	8/13/1998	Soil	VOCs	Method 8260
B218	B218 (6-12")	3809.14	(6-12")	8/13/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B218	B218 (24")	3809.15	(24")	8/13/1998	Soil	VOCs	Method 8260
B219	B219 (6-12")	3809.16	(6-12")	8/13/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B219	B219 (24")	3809.17	(24")	8/13/1998	Soil	VOCs	Method 8260
B220	B220 (6-12")	3809.18	(6-12")	8/13/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B220	B220 (24")	3809.19	(24")	8/13/1998	Soil	VOCs	Method 8260
B221	B221 (6-12")	3809.20	(6-12")	8/13/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A

Notes:
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VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls; TAL Metals = Target Analyte List Metals

Table 3-1
Soil Sample Collection Summary
M-5 Landfill
Fort Monmouth, New Jersey

Boring ID	Field Sample ID	Lab Sample ID	Depth	Date Collected	Matrix	Analytical Parameters	Analytical Methods
B221	B221 (24")	3809.21	(24")	8/13/1998	Soil	VOCs	Method 8260
B222	B222 (6-12")	3809.22	(6-12")	8/13/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B222	B222 (24")	3809.23	(24")	8/13/1998	Soil	VOCs	Method 8260
B223	B223 (6-12")	3812.02	(6-12")	8/14/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B223	B223 (24")	3812.03	(24")	8/14/1998	Soil	VOCs	Method 8260
B224	B224 (6-12")	3812.04	(6-12")	8/14/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B224	B224 (24")	3812.05	(24")	8/14/1998	Soil	VOCs	Method 8260
B225	B225 (6-12")	3812.06	(6-12")	8/14/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B225	B225 (24")	3812.07	(24")	8/14/1998	Soil	VOCs	Method 8260
B226	B226 (6-12")	3812.08	(6-12")	8/14/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B226	B226 (24")	3812.09	(24")	8/14/1998	Soil	VOCs	Method 8260
B227	B227 (6-12")	3812.10	(6-12")	8/14/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B227	B227 (24")	3812.11	(24")	8/14/1998	Soil	VOCs	Method 8260
B228	B228 (6-12")	3812.12	(6-12")	8/14/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B228	B228 (24")	3812.13	(24")	8/14/1998	Soil	VOCs	Method 8260
B229	B229 (6-12")	3812.14	(6-12")	8/14/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B229	B229 (24")	3812.15	(24")	8/14/1998	Soil	VOCs	Method 8260
B230	B230 (6-12")	3812.16	(6-12")	8/14/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B230	B230 (24")	3812.17	(24")	8/14/1998	Soil	VOCs	Method 8260
B231	B231 (6-12")	3812.18	(6-12")	8/14/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B231	B231 (24")	3812.19	(24")	8/14/1998	Soil	VOCs	Method 8260
B232	B232 (6-12")	3827.02	(6-12")	8/25/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B232	B232 (24")	3827.03	(24")	8/25/1998	Soil	VOCs	Method 8260
B233	B233 (6-12")	3827.04	(6-12")	8/25/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B233	B233 (24")	3827.05	(24")	8/25/1998	Soil	VOCs	Method 8260
B234	B234 (6-12")	3827.06	(6-12")	8/25/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B234	B234 (24")	3827.07	(24")	8/25/1998	Soil	VOCs	Method 8260
B235	B235 (6-12")	3827.08	(6-12")	8/25/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B235	B235 (24")	3827.09	(24")	8/25/1998	Soil	VOCs	Method 8260
B236	B236 (6-12")	3827.10	(6-12")	8/25/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B236	B236 (24")	3827.11	(24")	8/25/1998	Soil	VOCs	Method 8260
B237	B237 (6-12")	3836.02	(6-12")	8/26/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B237	B237 (24")	3836.03	(24")	8/26/1998	Soil	VOCs	Method 8260
B238	B238 (6-12")	3836.04	(6-12")	8/26/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B238	B238 (24")	3836.05	(24")	8/26/1998	Soil	VOCs	Method 8260
B239	B239 (6-12")	3836.06	(6-12")	8/26/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B239	B239 (24")	3836.07	(24")	8/26/1998	Soil	VOCs	Method 8260
B240	B240 (6-12")	3836.08	(6-12")	8/26/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B240	B240 (24")	3836.09	(24")	8/26/1998	Soil	VOCs	Method 8260
B241	B241 (6-12")	3836.10	(6-12")	8/26/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A

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Pest/PCBs = Pesticides/Polychlorinated-Biphenyls; TAL Metals = Target Analyte List Metals

Table 3-1
Soil Sample Collection Summary
M-5 Landfill
Fort Monmouth, New Jersey

Boring ID	Field Sample ID	Lab Sample ID	Depth	Date Collected	Matrix	Analytical Parameters	Analytical Methods
B241	B241 (24")	3836.11	(24")	8/26/1998	Soil	VOCs	Method 8260
B242	B242 (6-12")	3836.12	(6-12")	8/26/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B242	B242 (24")	3836.13	(24")	8/26/1998	Soil	VOCs	Method 8260
B243	B243 (6-12")	3836.14	(6-12")	8/26/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B243	B243 (24")	3836.15	(24")	8/26/1998	Soil	VOCs	Method 8260
B244	B244 (6-12")	3836.16	(6-12")	8/26/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B244	B244 (24")	3836.17	(24")	8/26/1998	Soil	VOCs	Method 8260
B245	B245 (6-12")	3836.18	(6-12")	8/26/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B245	B245 (24")	3836.19	(24")	8/26/1998	Soil	VOCs	Method 8260
B246	B246 (6-12")	3836.20	(6-12")	8/26/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B246	B246 (24")	3836.21	(24")	8/26/1998	Soil	VOCs	Method 8260
B247	B247 (6-12")	3836.22	(6-12")	8/26/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B247	B247 (24")	3836.23	(24")	8/26/1998	Soil	VOCs	Method 8260
B248	B248 (6-12")	3836.24	(6-12")	8/26/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B248	B248 (24")	3836.25	(24")	8/26/1998	Soil	VOCs	Method 8260
B249	B249 (6-12")	3836.26	(6-12")	8/26/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B249	B249 (24")	3836.27	(24")	8/26/1998	Soil	VOCs	Method 8260
B250	B250 (6-12")	3836.28	(6-12")	8/26/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B250	B250 (24")	3836.29	(24")	8/26/1998	Soil	VOCs	Method 8260
B251	B251 (6-12")	3836.30	(6-12")	8/26/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B251	B251 (24")	3836.31	(24")	8/26/1998	Soil	VOCs	Method 8260
B252	B252 (6-12")	3836.32	(6-12")	8/26/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B252	B252 (24")	3836.33	(24")	8/26/1998	Soil	VOCs	Method 8260
B253	B253 (6-12")	3836.34	(6-12")	8/26/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B253	B253 (24")	3836.35	(24")	8/26/1998	Soil	VOCs	Method 8260
B254	B254 (6-12")	3836.36	(6-12")	8/26/1998	Soil	SVOCs; Pesticides/PCBs; TAL Metals	Method 8270; Method 8080; Methods 3151, 6010B, and 7471A
B254	B254 (24")	3836.37	(24")	8/26/1998	Soil	VOCs	Method 8260

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Table 4-1
Soil Sampling Results
M5 Landfill Site
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP Cleanup Criteria	3465.03		3465.04		3465.07		3465.08		3465.11		3465.12		3470.03		3470.04		3470.07		3470.08		3470.11		3470.12		3470.15		3470.16		3472.03		3472.04		3472.07		3472.08	
Field Sample Location		B01 (6-12")		B01 (24")		B02 (6-12")		B02 (24")		B03 (6-12")		B03 (24")		B04 (6-12")		B04 (24")		B05 (6-12")		B05 (24")		B06 (6-12")		B06 (24")		B07 (6-12")		B07 (24")		B08 (6-12")		B08 (24")		B09 (6-12")		B09 (24")	
Sample Date	(mg/kg)	4/8/1998		4/8/1998		4/8/1998		4/8/1998		4/8/1998		4/8/1998		4/9/1998		4/9/1998		4/9/1998		4/9/1998		4/9/1998		4/9/1998		4/9/1998		4/9/1998		4/10/1998		4/10/1998		4/10/1998		4/10/1998	
Volatiles (mg/kg)																																			
Benzene	3			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Chloroform	19			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Methylene Chloride	49			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Tetrachloroethene	4			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Toluene	1000			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Semi-Volatiles (mg/kg)																																			
Pyridine	NLE	ND				ND				ND				ND				ND				.5J				0.68J				ND				ND			
4-Methylphenol	2800	ND				ND				ND				ND				ND				ND				ND				ND				ND			
Naphthalene	230	ND				ND				ND				ND				ND				ND				ND				ND				ND			
2-Methylnaphthalene	NLE	ND				ND				ND				ND				ND				ND				ND				ND				0.14J			
Dimethylphthalate	10,000	ND				ND				ND				ND				ND				ND				ND				ND				ND			
Acenaphthylene	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND			
Acenaphthene	3400	ND				ND				ND				ND				ND				ND				ND				ND				ND			
Dibenzofuran	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND			
Diethylphthalate	10,000	ND				ND				ND				ND				ND				ND				ND				ND				ND			
Fluorene	2300	ND				ND				ND				ND				ND				ND				ND				ND				ND			
n-Nitrosodiphenylamine	140	ND				ND				ND				ND				ND				ND				ND				ND				ND			
Phenanthrene	NLE	0.16J				ND				ND				ND				0.28				ND				1.7				0.15J				0.68			
Anthracene	10,000	ND				ND				ND				ND				ND				ND				0.3				ND				ND			
Di-n-butylphthalate	5700	0.				0.03				0.				0.				0.01				0.01				0.02				0.				0.01			
Fluoranthene	2300	0.17J				ND				ND				ND				0.31				ND				2.1				ND				1.1			
Pyrene	1700	0.28				ND				ND				ND				0.41				ND				1.6				0.15J				0.88			
Butylbenzylphthalate	1100	ND				ND				ND				ND				ND				ND				ND				ND				ND			
Benzo[a]anthracene	0.9	0.12J				ND				ND				ND				0.18J				ND				**0.99**				0.36				0.2J			
3,3'-Dichlorobenzidine	2	ND				ND				ND				ND				ND				ND				ND				ND				ND			
Chrysene	9	0.23J				ND				ND				ND				0.37				ND				1.5				0.49				0.28J			
bis(2-Ethylhexyl)phthalate	49	0.1J				0.73J				0.11J				0.11J				ND				0.17J				ND				0.15J				ND			
Benzo[b]fluoranthene	0.9	ND				ND				ND				ND				0.17J				ND				0.89				0.16J				0.6			
Benzo[k]fluoranthene	0.9	ND				ND				ND				ND				0.15J				ND				0.86				ND				0.69			
Benzo[a]pyrene	0.66	0.11J				ND				ND				ND				0.17J				ND				**0.82**				0.14J				0.57			
Indeno[1,2,3-cd]pyrene	0.9	ND				ND				ND				ND				ND				ND				0.58				ND				0.39			
Dibenz[a,h]anthracene	0.66	ND				ND				ND				ND				ND				ND				0.24J				ND				ND			
Benzo[g,h,I]perylene	NLE	ND				ND				ND				ND				ND				ND				0.48				ND				0.31			
Pesticides/PCBs (mg/kg)																																			
Heptachlor	0.15	ND				ND				ND				ND				ND				ND				ND				ND				ND			
Heptachlor Epoxide	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND			
4,4'-DDE	2	ND				0.001				0.001				0.001				ND				ND				ND				0.006				0.021			
Dieldrin	0.042	ND				ND				ND				ND				ND				ND				ND				ND				ND			
Endrin	17	ND				ND				ND				ND				ND				ND				ND				ND				ND			
Endosulfan II	NLE	0.008				ND				ND				ND				ND				ND				ND				ND				ND			
4,4'-DDD	3	ND				ND				ND				ND				ND				ND				ND				0.006				ND			
Endrin Aldehyde	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND			
4,4'-DDT	2	ND				ND				ND				ND				ND				ND				ND				0.01				ND			
Endosulfan-Sulfate	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND			
gamma-Chlordane	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND			
alpha-Chlordane	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND			
Arochlor 1254	0.49	ND				ND				ND				ND				ND				ND				ND				ND				ND			
Metals (mg/kg)																																			
Aluminum	NLE	4632				13450				10970				10250				6368				8343				13830				3691				4474			
Antimony	14	0.891				2.881				1.599				1.421				1.159				0.71				2.079				0.486				1.098			
Arsenic	20	4.12				**20.13**				**32.33**				10.22				9.054				8.85				11.54				19.98				15.98			
Barium	700	13.03				32.88				30.43				21.25				40.37				18.58				116.04				31.68				58.82			
Beryllium	2	0.4862				1.611				1.102				1.015				0.737				0.7328				1.32				0.7184				0.4577			
Cadmium	39	ND				0.201				0.1798				0.2656				0.1551				0.0579				0.541				0.2736				0.5314			
Calcium	NLE	276				748.3				928.7				707.8				459.9				561.5				3956				1373				1105			
Chromium	NLE	46.4				152.8				83.07				84.62				42.42				53.53				75.63				13.02				14.93			
Cobalt	NLE	1.692				5.048				3.708				4.383				1.834				3.863				6.127				4.926				4.535			
Copper	600	2.887				5.284				6.87				2.717				30.09				2.421				254.1				43.77				**2837**			
Iron	NLE	18680				59460				41330				44130				22150				30210				29220				10980				9325			
Lead	400	14.35				24.96				59.27				8.682				135.1				16.31				370.1				57.95				383.9			
Magnesium	NLE	623.7				1468				1548				1250				1222				1051				1571				373.7				423.7			
Manganese	NLE	47.18				69.84				76.15				83.14				50.43				104.4				146				30.67				484.3			
Mercury	14	0.018				0.084				0.949				ND				0.228				ND				0.687				1.257				0.236			
Nickel	250	5.762				18.8				11.78				12.74				6.33				10.08				16.79				12.94				10.39			
Potassium	NLE	1412				3255				4106				2577				3614				2171				4423				690				1241			
Selenium	63	ND				ND				ND				ND				ND				ND				ND				0.785				1.534			
Silver	110	ND				ND				ND				ND				ND				ND				ND				ND				ND			
Sodium	NLE	39.52				37.37				66.18				95.95				124.8				109				969.8				259.8				227.5			
Thallium	2	ND				ND				ND				ND				ND				ND				ND				ND				ND			
Vanadium	370	53.06				200.1				103.1				115.4				37.5				76.97				76.13				24				19.41			
Zinc	1500	36.18				90.91				71.52				62.01				58.64				44.99				178				22.14				942.9			

NOTES:
ND = Not Detected
NLE = No Limit Established
J = Estimated Value: Mass spectrometer and retention time data indicate the presence of the analyte, however the result is less than the method detection limit, but greater than zero.

Table 4-1
Soil Sampling Results
M5 Landfill Site
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP	3472.11		3472.12		3473.03		3473.04		3473.07		3473.08		3473.11		3473.12		3473.15		3473.16		3473.19		3473.20		3477.03		3477.04		3477.07		3477.08		3477.11		3477.12	
Field Sample Location	Cleanup Criteria	B10 (6-12")		B10 (24")		B11 (6-12")		B11 (24")		B12 (6-12")		B12 (24")		B13 (6-12")		B13 (24")		B14 (6-12")		B14 (24")		B15 (6-12")		B15 (24")		B16 (6-12")		B16 (24")		B17 (6-12")		B17 (24")		B18 (6-12")		B18 (24")	
Sample Date	(mg/kg)	4/10/1998		4/10/1998		4/11/1998		4/11/1998		4/11/1998		4/11/1998		4/11/1998		4/11/1998		4/11/1998		4/11/1998		4/11/1998		4/11/1998		4/13/1998		4/13/1998		4/13/1998		4/13/1998		4/13/1998	
Volatiles (mg/kg)																																			
Benzene	3			ND				ND				ND				ND				ND				ND				ND				ND			
Chloroform	19			ND				ND				ND				ND				ND				ND				ND				ND			
Methylene Chloride	49			ND				ND				ND				ND				ND				ND				ND				ND			
Tetrachloroethene	4			ND				ND				ND				ND				ND				5				ND				ND			
Toluene	1000			ND				ND				ND				ND				ND				ND				ND				ND			
Semi-Volatiles (mg/kg)																																			
Pyridine	NLE	0.77				ND				ND				ND				ND				0.78J				ND				ND				ND	
4-Methylphenol	2800	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Naphthalene	230	0.13J				ND				ND				ND				ND				ND				ND				0.3				ND	
2-Methylnaphthalene	NLE	0.15J				ND				ND				ND				ND				ND				ND				0.52				ND	
Dimethylphthalate	10,000	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Acenaphthylene	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Acenaphthene	3400	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Dibenzofuran	NLE	ND				ND				ND				ND				ND				ND				ND				0.16J				ND	
Diethylphthalate	10,000	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Fluorene	2300	ND				ND				ND				ND				ND				ND				ND				ND				ND	
n-Nitrosodiphenylamine	140	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Phenanthrene	NLE	0.41				ND				ND				0.3				ND				ND				0.2J				0.31				ND	
Anthracene	10,000	ND				ND				ND				0.29				ND				ND				ND				ND				ND	
Di-n-butylphthalate	5700	0.64J				0.9J				0.78J				0.3J				0.33J				0.03				0.82J				0.				0.59J	
Fluoranthene	2300	0.3				ND				ND				0.26				ND				ND				0.43				ND				0.18J	
Pyrene	1700	0.44				ND				ND				0.45				ND				ND				0.42				ND				0.22J	
Butylbenzylphthalate	1100	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Benzo[a]anthracene	0.9	0.18J				ND				ND				0.18J				ND				ND				0.27				ND				0.25	
3,3'-Dichlorobenzidine	2	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Chrysene	9	0.41				ND				ND				0.35				ND				ND				0.46				0.25J				0.41	
bis(2-Ethylhexyl)phthalate	49	0.18J				0.18J				0.18J				0.16J				0.17J				ND				0.18J				0.25J				0.19J	
Benzo[b]fluoranthene	0.9	0.15J				ND				ND				0.12J				ND				ND				0.27				ND				0.41	
Benzo[k]fluoranthene	0.9	0.15J				ND				ND				0.14J				ND				ND				0.26				ND				0.31	
Benzo[a]pyrene	0.66	0.14J				ND				ND				0.15J				ND				ND				0.27				ND				0.35	
Indeno[1,2,3-cd]pyrene	0.9	ND				ND				ND				ND				ND				ND				0.2J				ND				0.27	
Dibenz[a,h]anthracene	0.66	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Benzo[g,h,I]perylene	NLE	ND				ND				ND				ND				ND				ND				0.18J				ND				0.22J	
Pesticides/PCBs (mg/kg)																																			
Heptachlor	0.15	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Heptachlor Epoxide	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND	
4,4'-DDE	2	ND				ND				0.008				ND				ND				ND				ND				ND				ND	
Dieldrin	0.042	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Endrin	17	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Endosulfan II	NLE	ND				ND				ND				0.009				ND				ND				ND				ND				ND	
4,4'-DDD	3	0.003				ND				0.002				ND				ND				ND				ND				ND				ND	
Endrin Aldehyde	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND	
4,4'-DDT	2	0.006				ND				0.01				ND				ND				ND				0.003				ND				ND	
Endosulfan-Sulfate	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND	
gamma-Chlordane	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND	
alpha-Chlordane	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Arochlor 1254	0.49	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Metals (mg/kg)																																			
Aluminum	NLE	9667				10420				10180				10770				10610				12770				12110				2705				5034	
Antimony	14	1.569				2.011				1.568				1.548				2.184				2.339				1.504				2.11				0.716	
Arsenic	20	11.87				11.44				11.02				13.28				12.94				14.03				12.91				7.747				10.67	
Barium	700	23.16				23.76				22.06				28.75				21.51				29.59				77.62				19.8				57.41	
Beryllium	2	1.055				1.1				0.9966				1.09				1.376				1.187				1.463				0.3558				0.5955	
Cadmium	39	0.1708				0.1037				0.0837				0.0925				0.3648				0.2357				0.3385				0.482				1.934	
Calcium	NLE	453				555.8				1110				1749				1224				600.2				1370				746.9				1947	
Chromium	NLE	82.74				104.3				86.63				83.47				117.3				98.72				70.59				5.603				13.86	
Cobalt	NLE	4.224				5.456				5.389				3.82				5.631				5.412				5.138				3.41				5.639	
Copper	600	14.52				6.138				4.719				7.043				4.11				2.605				132.3				191.4				504.4	
Iron	NLE	40700				44300				39710				39530				56290				47940				33680				4204				8125	
Lead	400	17.36				8.172				9.266				32.8				8.331				8.012				288.8				**1793**				305.2	
Magnesium	NLE	1019				1049				1442				2317				1445				1278				1392				184.9				348.8	
Manganese	NLE	97.99				86.4				105.6				85.88				115.4				87.25				110.8				24.55				50.34	
Mercury	14	0.091				0.017				0.055				0.467				0.024				0.012				0.437				0.062				0.133	
Nickel	250	12.34				17.5				14.2				12.04				19.62				15.27				15.51				8.915				15.97	
Potassium	NLE	2288				2328				2392				4990				2466				3631				3944				375.3				907.7	
Selenium	63	ND				ND				ND				ND				ND				ND				ND				0.438				0.78	
Silver	110	ND				ND				ND				ND				ND				ND				ND				ND				1.519	
Sodium	NLE	68.42				142.9				66.2				67.71				79.89				83.87				248				152.2				246.7	
Thallium	2	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Vanadium	370	118.7				141				120.3				104.6				166.2				146.2				90.73				10.9				17.17	
Zinc	1500	64.9				65.8				59.62				66.81				108.8				79.64				120.7				46.07				627.4	

NOTES:
ND = Not Detected
NLE = No Limit Established
J = Estimated Value: Mass spectrometer and retention time data indicate the presence of the analyte, however the result is less than the method detection limit, but greater than zero.

Table 4-1
Soil Sampling Results
M5 Landfill Site
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP Cleanup Criteria	3477.15	3477.16	3479.03	3479.04	3479.07	3479.08	3479.11	3479.12	3485.03	3485.04	3485.07	3485.08	3485.11	3485.12	3485.15	3485.16	3498.03	3498.04
Field Sample Location		B19 (6-12")	B19 (24")	B20 (6-12")	B20 (24")	B21 (6-12")	B21 (24")	B22 (6-12")	B22 (24")	B23 (6-12")	B23 (24")	B24 (6-12")	B24 (24")	B25 (6-12")	B25 (24")	B26 (6-12")	B26 (24")	B27 (6-12")	B27 (24")
Sample Date	(mg/kg)	4/13/1998	4/13/1998	4/14/1998	4/14/1998	4/14/1998	4/14/1998	4/14/1998	4/14/1998	4/15/1998	4/15/1998	4/15/1998	4/15/1998	4/15/1998	4/15/1998	4/15/1998	4/15/1998	4/20/1998	4/20/1998
Volatiles (mg/kg)																			
Benzene	3		ND		ND		ND		ND		ND		ND		ND		ND		ND
Chloroform	19		ND		ND		ND		ND		ND		ND		ND		ND		ND
Methylene Chloride	49		ND		ND		ND		ND		ND		ND		ND		ND		ND
Tetrachloroethene	4		ND		ND		ND		ND		**4.8**		3.2		ND		ND		ND
Toluene	1000		ND		ND		ND		ND		ND		ND		ND		ND		ND
Semi-Volatiles (mg/kg)																			
Pyridine	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
4-Methylphenol	2800	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Naphthalene	230	ND		ND		ND		ND		ND		ND		ND		ND		0.17J	
2-Methylnaphthalene	NLE	ND		ND		ND		ND		ND		ND		ND		ND		0.21J	
Dimethylphthalate	10,000	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Acenaphthylene	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Acenaphthene	3400	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Dibenzofuran	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Diethylphthalate	10,000	ND		ND		ND		ND		ND		ND		ND		ND		0.2J	
Fluorene	2300	ND		ND		ND		ND		ND		ND		ND		ND		ND	
n-Nitrosodiphenylamine	140	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Phenanthrene	NLE	0.56		ND		ND		0.14J		ND		ND		0.19J		0.39		1.3	
Anthracene	10,000	ND		ND		ND		0.14J		ND		ND		ND		ND		0.21J	
Di-n-butylphthalate	5700	0.66J		0.74J		0.75J		0.52J		0.01		0.		0.01		0.		0.01	
Fluoranthene	2300	0.34		ND		ND		0.15J		ND		ND		0.33		0.91		2.8	
Pyrene	1700	0.68		ND		ND		0.22J		ND		ND		0.31		0.77		2.5	
Butylbenzylphthalate	1100	ND		ND		ND		ND		ND		ND		ND		ND		0.12J	
Benzo[a]anthracene	0.9	0.24		ND		ND		ND		ND		ND		0.25		0.54		**1.5**	
3,3'-Dichlorobenzidine	2	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Chrysene	9	0.44		ND		ND		0.19J		ND		ND		0.41		0.83		2.3	
bis(2-Ethylhexyl)phthalate	49	0.18J		0.4		0.19J		0.64		0.13J		0.		0.23J		0.		0.29J	
Benzo[b]fluoranthene	0.9	0.14J		ND		ND		ND		ND		ND		0.29		0.69		**1.6**	
Benzo[k]fluoranthene	0.9	0.15J		ND		ND		ND		ND		ND		0.26		0.56		**1.4**	
Benzo[a]pyrene	0.66	0.17J		ND		ND		ND		ND		ND		0.25		**0.67**		**1.6**	
Indeno[1,2,3-cd]pyrene	0.9	0.11J		ND		ND		ND		ND		ND		0.19J		0.58		**1.2**	
Dibenz[a,h]anthracene	0.66	ND		ND		ND		ND		ND		ND		ND		ND		0.42	
Benzo[g,h,I]perylene	NLE	0.12J		ND		ND		ND		ND		ND		0.17J		0.51		0.95	
Pesticides/PCBs (mg/kg)																			
Heptachlor	0.15	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Heptachlor Epoxide	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
4,4'-DDE	2	ND		ND		0.001		ND		ND		ND		0.007		0.001		0.092	
Dieldrin	0.042	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Endrin	17	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Endosulfan II	NLE	ND		ND		ND		0.002		ND		ND		0.005		ND		ND	
4,4'-DDD	3	ND		ND		0.001		ND		ND		ND		0.002		0.002		0.008	
Endrin Aldehyde	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
4,4'-DDT	2	ND		ND		ND		ND		ND		ND		0.015		0.001		0.03	
Endosulfan-Sulfate	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
gamma-Chlordane	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
alpha-Chlordane	NLE	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Arochlor 1254	0.49	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Metals (mg/kg)																			
Aluminum	NLE	10530		12710		12310		6500		10230		8798		5973		3987		4737	
Antimony	14	1.411		1.18		1.586		0.811		1.933		2.019		0.535		1.402		0.609	
Arsenic	20	**1030**		14.23		12.38		6.743		11.27		11.08		9.377		12.45		14.28	
Barium	700	28.22		26.01		34.1		18.78		18.63		22.06		54.85		93.31		102.3	
Beryllium	2	0.9895		1.228		1.182		0.72		1.132		1.003		0.5943		0.5401		0.5059	
Cadmium	39	1.258		1.41		ND		ND		0.2331		0.4323		0.5041		1.011		1.863	
Calcium	NLE	533.2		750.3		4851		1079		672.4		645.4		2380		1670		2181	
Chromium	NLE	83.08		106.7		109.2		53.19		106.8		92.13		43.8		24.87		25.25	
Cobalt	NLE	2.785		3.228		5.048		2.142		3.946		4.48		3.881		3.974		3.495	
Copper	600	6.488		4.663		5.5		4.971		37.2		11.34		102.8		484.1		566.7	
Iron	NLE	33280		38800		44760		19270		50900		41650		23110		17000		14330	
Lead	400	10.63		16.25		9.176		11.83		17.2		10.74		207.2		**921.5**		**708.5**	
Magnesium	NLE	2199		3160		3428		2083		1176		958.6		1409		378.7		1019	
Manganese	NLE	59.32		76.21		81.37		67.71		74.58		86.61		104.8		97.11		73.72	
Mercury	14	ND		0.019		ND		0.011		ND		ND		0.201		0.485		0.512	
Nickel	250	8.234		10.4		15.46		5.72		13.06		12.94		10.85		13.33		10.33	
Potassium	NLE	4763		5588		3221		4347		2592		1592		1725		684		1454	
Selenium	63	ND		ND		ND		ND		ND		ND		ND		0.888		0.881	
Silver	110	ND		ND		ND		ND		ND		ND		ND		1.574		0.419	
Sodium	NLE	37.78		48.64		235.5		33.37		35.27		58.67		95.4		333.1		159.7	
Thallium	2	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Vanadium	370	66.69		67.64		135.8		34.59		138.4		126.7		51.98		34.2		28.86	
Zinc	1500	42.6		56.35		74.92		32.86		86.32		67.07		163.9		303.7		179.4	

NOTES:
ND = Not Detected
NLE = No Limit Established
J = Estimated Value: Mass spectrometer and retention time data indicate the presence of the analyte, however the result is less than the method detection limit, but greater than zero.

Table 4-1
Soil Sampling Results
M5 Landfill Site
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP Cleanup Criteria	3498.07		3498.08		3498.11		3498.12		3498.15		3498.16		3500.02		3500.03		3500.06		3500.07		3500.10		3500.11		3500.14		3500.15		3500.18		3500.19		3501.02		3501.03	
Field Sample Location		B28 (6-12")		B28 (24")		B29 (6-12")		B29 (24")		B30 (6-12")		B30 (24")		B31 (6-12")		B31 (24")		B32 (6-12")		B32 (24")		B33 (6-12")		B33 (24")		B34 (6-12")		B34 (24")		B35 (6-12")		B35 (24")		B36 (6-12")		B36 (24")	
Sample Date	(mg/kg)	4/20/1998		4/20/1998		4/20/1998		4/20/1998		4/20/1998		4/20/1998		4/21/1998		4/21/1998		4/21/1998		4/21/1998		4/21/1998		4/21/1998		4/21/1998		4/21/1998		4/21/1998		4/21/1998		4/22/1998		4/22/1998	
Volatiles (mg/kg)																																			
Benzene	3			ND				ND				ND				ND				ND				ND				ND				ND			
Chloroform	19			ND				ND				ND				ND				ND				ND				ND				ND			
Methylene Chloride	49			ND				ND				ND				ND				ND				ND				ND				ND			
Tetrachloroethene	4			ND				ND				ND				ND				ND				ND				ND				ND			
Toluene	1000			ND				ND				ND				ND				ND				ND				ND				ND			
Semi-Volatiles (mg/kg)																																			
Pyridine	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND	
4-Methylphenol	2800	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Naphthalene	230	0.13J				ND				ND				ND				ND				ND				ND				ND				ND	
2-Methylnaphthalene	NLE	0.16J				ND				ND				ND				ND				0.11J				ND				0.12J				ND	
Dimethylphthalate	10,000	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Acenaphthylene	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Acenaphthene	3400	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Dibenzofuran	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Diethylphthalate	10,000	ND				0.12J				0.12J				0.15J				0.14J				0.3				0.18J				ND				ND	
Fluorene	2300	ND				ND				ND				ND				ND				ND				ND				ND				ND	
n-Nitrosodiphenylamine	140	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Phenanthrene	NLE	0.48				0.15J				ND				0.13J				0.17J				0.35				0.28				0.67				0.21	
Anthracene	10,000	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Di-n-butylphthalate	5700	0.89J				0.				0.				0.03				0.				0.				0.				0.01				0.	
Fluoranthene	2300	0.38				0.14J				ND				0.12J				0.25				0.55				0.57				1.3				0.22	
Pyrene	1700	0.6				0.24J				ND				0.19J				0.27				0.52				0.46				1.1				0.33	
Butylbenzylphthalate	1100	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Benzo[a]anthracene	0.9	0.23				ND				ND				ND				0.17J				0.32				0.35				0.69				0.14J	
3,3'-Dichlorobenzidine	2	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Chrysene	9	0.53				0.19J				ND				0.15J				0.3				0.6				0.57				1.2				0.28	
bis(2-Ethylhexyl)phthalate	49	0.14J				0.18J				0.17J				0.13J				0.16J				0.15J				0.				0.13J				0.13J	
Benzo[b]fluoranthene	0.9	0.19J				ND				ND				ND				0.16J				0.35				0.42				0.84				0.11J	
Benzo[k]fluoranthene	0.9	0.19J				ND				ND				ND				0.15J				0.36				0.34				0.7				0.12J	
Benzo[a]pyrene	0.66	0.22				ND				ND				ND				0.17J				0.37				0.39				**0.72**				0.12J	
Indeno[1,2,3-cd]pyrene	0.9	0.15J				ND				ND				ND				0.12J				0.26				0.3				0.49				ND	
Dibenz[a,h]anthracene	0.66	ND				ND				ND				ND				ND				ND				ND				0.2J				ND	
Benzo[g,h,I]perylene	NLE	0.16J				ND				ND				ND				ND				0.23J				0.25J				0.4				ND	
Pesticides/PCBs (mg/kg)																																			
Heptachlor	0.15	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Heptachlor Epoxide	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND	
4,4'-DDE	2	0.016				0.009				0.004				ND				ND				0.037				0.009				0.153				0.003	
Dieldrin	0.042	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Endrin	17	ND				ND				ND				ND				ND				ND				ND				0.023				ND	
Endosulfan II	NLE	ND				0.004				ND				ND				ND				ND				ND				0.01				ND	
4,4'-DDD	3	0.001				ND				ND				ND				ND				0.003				ND				0.02				0.001	
Endrin Aldehyde	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND	
4,4'-DDT	2	0.004				0.001				ND				ND				ND				0.02				0.003				0.051				0.006	
Endosulfan-Sulfate	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND	
gamma-Chlordane	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND	
alpha-Chlordane	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Arochlor 1254	0.49	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Metals (mg/kg)																																			
Aluminum	NLE	10510				3825				11450				9478				9374				5404				6652				12810				8275	
Antimony	14	2.536				0.562				1.41				1.835				1.035				1.754				2.403				5.962				0.964	
Arsenic	20	11.12				5.409				10.21				12.89				11.15				**32.71**				13.11				**62.27**				9.445	
Barium	700	27.13				21.8				27.58				26				36.46				150				203.9				354.6				22.98	
Beryllium	2	1.382				0.4842				0.9559				1.034				0.8538				0.6234				0.689				**10.89**				0.8057	
Cadmium	39	0.2193				0.0786				0.1311				0.1635				0.2132				2.087				1.975				7.431				0.5996	
Calcium	NLE	775.9				715.5				1593				705.5				1054				4974				3063				2477				635.6	
Chromium	NLE	141.4				28.13				78.5				102.1				70.22				38.59				44.4				72.25				61.12	
Cobalt	NLE	3.636				0.8424				4.455				1.878				3.774				5.207				5.537				55.97				3.707	
Copper	600	7.552				7.933				4.673				8.222				32.05				409.3				428				442.8				8.111	
Iron	NLE	51640				11250				36530				39390				31220				32440				23380				13500				29820	
Lead	400	21.74				39.12				10.71				34.73				70.19				**810.3**				**1090**				**2851**				16.68	
Magnesium	NLE	1088				844.5				1847				1751				1360				2213				878.7				1112				1019	
Manganese	NLE	52.63				39.55				87.83				38.07				123.3				179.6				153.2				174.9				76.98	
Mercury	14	0.064				0.056				0.012				0.184				0.025				0.979				0.662				1.562				0.059	
Nickel	250	11.45				3.095				12.99				8.486				12.04				18.98				22.35				69.97				10.12	
Potassium	NLE	2371				1592				2876				4834				3626				1348				1615				3185				2115	
Selenium	63	ND				ND				ND				ND				ND				0.602				1.104				50.7				0.584	
Silver	110	ND				ND				ND				ND				ND				2.78				3.345				9.425				ND	
Sodium	NLE	49.69				35.99				77.41				39.97				81.26				245.1				186.7				343.3				38.72	
Thallium	2	ND				ND				ND				ND				ND				ND				ND				**47.42**				ND	
Vanadium	370	191.7				19.39				109.7				79.23				76.03				44.85				52.39				84.39				84.38	
Zinc	1500	70.69				55.47				56.71				62.43				82.33				743				828				658.1				45.25	

NOTES:
ND = Not Detected
NLE = No Limit Established
J = Estimated Value: Mass spectrometer and retention time data indicate the presence of the analyte, however the result is less than the method detection limit, but greater than zero.

Table 4-1
Soil Sampling Results
M5 Landfill Site
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP Cleanup Criteria	3501.06		3501.07		3501.10		3501.11		3501.14		3501.15		3501.18		3501.19		3539.02		3539.03		3539.06		3539.07		3543.02		3543.03		3543.06		3543.07		3543.10		3543.11	
Field Sample Location		B37 (6-12")		B37 (24")		B38 (6-12")		B38 (24")		B39 (6-12")		B39 (24")		B40 (6-12")		B40 (24")		B41 (6-12")		B41 (24")		B42 (6-12")		B42 (24")		B43 (6-12")		B43 (24")		B44 (6-12")		B44 (24")		B45 (6-12")		B45 (24")	
Sample Date	(mg/kg)	4/22/1998		4/22/1998		4/22/1998		4/22/1998		4/22/1998		4/22/1998		4/22/1998		4/22/1998		5/1/1998		5/1/1998		5/1/1998		5/1/1998		5/1/1998		5/1/1998		5/1/1998		5/1/1998		5/1/1998	
Volatiles (mg/kg)																																			
Benzene	3			ND				ND				ND				ND				ND				ND				ND		ND				ND	
Chloroform	19			ND				ND				ND				ND				ND				ND				ND		ND				ND	
Methylene Chloride	49			ND				ND				ND				ND				ND				ND				ND		ND				ND	
Tetrachloroethene	4			ND				0.41				ND				3.1				ND				ND				ND		ND				ND	
Toluene	1000			ND				ND				ND				ND				ND				ND				ND		ND				ND	
Semi-Volatiles (mg/kg)																																			
Pyridine	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND	
4-Methylphenol	2800	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Naphthalene	230	ND				ND				ND				ND				0.18J				0.31				ND				0.19J				ND	
2-Methylnaphthalene	NLE	ND				ND				ND				ND				0.26J				0.26J				ND				0.16J				ND	
Dimethylphthalate	10,000	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Acenaphthylene	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Acenaphthene	3400	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Dibenzofuran	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Diethylphthalate	10,000	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Fluorene	2300	ND				ND				ND				ND				ND				ND				ND				ND				ND	
n-Nitrosodiphenylamine	140	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Phenanthrene	NLE	ND				ND				ND				ND				0.35				0.64				ND				1.3				0.3	
Anthracene	10,000	ND				ND				ND				ND				ND				ND				ND				0.19J				ND	
Di-n-butylphthalate	5700	0.				0.01				0.04				0.				0.				0.8J				0.4J				0.37J				0.29J	
Fluoranthene	2300	ND				ND				ND				ND				0.34				1.3				ND				2.8				0.71	
Pyrene	1700	ND				ND				ND				ND				0.31				0.96				ND				2.5				0.7	
Butylbenzylphthalate	1100	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Benzo[a]anthracene	0.9	ND				ND				ND				ND				0.15J				0.65				ND				**1.5**				0.44	
3,3'-Dichlorobenzidine	2	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Chrysene	9	ND				ND				ND				ND				0.41				0.98				0.13J				2.4				0.69	
bis(2-Ethylhexyl)phthalate	49	0.13J				0.15J				ND				ND				0.15J				ND				ND				ND				ND	
Benzo[b]fluoranthene	0.9	ND				ND				ND				ND				0.25J				0.72				ND				**1.6**				0.48	
Benzo[k]fluoranthene	0.9	ND				ND				ND				ND				0.18J				0.59				ND				**1.5**				0.47	
Benzo[a]pyrene	0.66	ND				ND				ND				ND				0.16J				**0.67**				ND				**1.6**				0.5	
Indeno[1,2,3-cd]pyrene	0.9	ND				ND				ND				ND				0.13J				0.58				ND				**1.3**				0.47	
Dibenz[a,h]anthracene	0.66	ND				ND				ND				ND				ND				0.2J				ND				0.47				0.16J	
Benzo[g,h,I]perylene	NLE	ND				ND				ND				ND				0.12J				0.5				ND				1.2				0.42	
Pesticides/PCBs (mg/kg)																																			
Heptachlor	0.15	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Heptachlor Epoxide	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND	
4,4'-DDE	2	ND				ND				ND				0.001				0.028				0.007				ND				ND				0.084	
Dieldrin	0.042	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Endrin	17	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Endosulfan II	NLE	ND				ND				ND				ND				ND				0.004				ND				ND				ND	
4,4'-DDD	3	ND				ND				ND				0.001				0.003				0.003				ND				ND				0.007	
Endrin Aldehyde	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND	
4,4'-DDT	2	ND				ND				ND				0.003				0.044				0.033				ND				ND				0.105	
Endosulfan-Sulfate	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND	
gamma-Chlordane	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND	
alpha-Chlordane	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Arochlor 1254	0.49	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Metals (mg/kg)																																			
Aluminum	NLE	10070				9616				9833				7769				6479				3951				6390				8077				1961	
Antimony	14	1.965				1.819				1.916				1.55				1.413				1.104				ND				1.203				0.382	
Arsenic	20	10.42				9.688				13.1				10.04				12.52				8.959				4.218				11.66				2.255	
Barium	700	24.73				26.09				30.29				20				107.8				181.9				258.9				513.9				16.6	
Beryllium	2	1.032				1.058				1.159				0.8691				0.759				0.4586				0.764				0.8622				0.166	
Cadmium	39	0.1855				0.2547				0.1541				0.1502				0.959				0.489				ND				0.6777				0.4876	
Calcium	NLE	1015				839				612.5				577.6				2137				962.9				1200				2670				10360	
Chromium	NLE	96.84				99.42				106.1				83.34				56.36				36.34				21.06				70.59				17.96	
Cobalt	NLE	4.522				4.232				4.975				4.022				4.604				4.035				5.369				2.42				1.223	
Copper	600	3.796				3.185				3.559				1.854				412.9				207.3				38.4				346.7				28.23	
Iron	NLE	43400				42240				49440				36490				27420				21350				8584				21940				6391	
Lead	400	8.622				8.58				10.66				5.945				**629.1**				**502.5**				39.9				275.5				228.1	
Magnesium	NLE	1311				1022				899.6				789.1				1009				485				331.2				2943				5665	
Manganese	NLE	103.8				85.25				110.2				86.79				193.3				102.6				68.44				84.22				52.05	
Mercury	14	0.025				0.014				0.037				0.013				0.891				0.754				0.085				0.164				10.194	
Nickel	250	14.97				15.78				15.84				10.83				19.73				10.93				13.84				13.28				4.67	
Potassium	NLE	2342				1607				1726				1611				1890				864.1				525.2				3791				722.3	
Selenium	63	ND				ND				ND				ND				0.627				0.859				1.417				0.473				ND	
Silver	110	ND				ND				ND				ND				0.945				ND				2.362				0.993				ND	
Sodium	NLE	40.28				45.41				62.79				32.38				154.9				103.4				216.8				221.4				174.2	
Thallium	2	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Vanadium	370	131.4				139				159.7				103.5				59.51				43.68				20.79				30.96				14.38	
Zinc	1500	64.17				70.04				71.88				58.82				433.1				250.3				48.22				**1598**				62.64	

NOTES:
ND = Not Detected
NLE = No Limit Established
J = Estimated Value: Mass spectrometer and retention time data indicate the presence of the analyte, however the result is less than the method detection limit, but greater than zero.

Table 4-1
Soil Sampling Results
M5 Landfill Site
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP Cleanup Criteria	3543.14		3543.15		3547.02		3547.03		3547.06		3547.07		3547.10		3547.11		3547.14		3547.15		3547.18		3547.19		3550.03		3550.04		3550.07		3550.08		3550.11		3550.12	
Field Sample Location		B46 (6-12")		B46 (24")		B47 (6-12")		B47 (24")		B48 (6-12")		B48 (24")		B49 (6-12")		B49 (24")		B50 (6-12")		B50 (24")		B51 (6-12")		B51 (24")		B52 (6-12")		B52 (24")		B53 (6-12")		B53 (24")		B54 (6-12")		B54 (24")	
Sample Date	(mg/kg)	5/1/1998		5/1/1998		5/5/1998		5/5/1998		5/5/1998		5/5/1998		5/5/1998		5/5/1998		5/5/1998		5/5/1998		5/5/1998		5/5/1998		5/6/1998		5/6/1998		5/6/1998		5/6/1998		5/6/1998	
Volatiles (mg/kg)																																			
Benzene	3			ND				ND				ND				ND				ND				ND				ND				ND			
Chloroform	19			ND				ND				ND				ND				ND				ND				ND				ND			
Methylene Chloride	49			ND				ND				ND				ND				ND				ND				ND				ND			
Tetrachloroethene	4			0.45				ND				ND				ND				ND				ND				ND				ND			
Toluene	1000			ND				ND				ND				ND				ND				ND				ND				ND			
Semi-Volatiles (mg/kg)																																			
Pyridine	NLE	ND				ND				ND				0.58				ND				ND				ND				ND				ND	
4-Methylphenol	2800	0.16J				ND				ND				ND				ND				ND				ND				ND				ND	
Naphthalene	230	ND				ND				ND				ND				ND				ND				ND				ND				ND	
2-Methylnaphthalene	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Dimethylphthalate	10,000	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Acenaphthylene	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Acenaphthene	3400	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Dibenzofuran	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Diethylphthalate	10,000	ND				0.11J				ND				ND				ND				ND				ND				ND				ND	
Fluorene	2300	ND				ND				ND				ND				ND				ND				ND				ND				ND	
n-Nitrosodiphenylamine	140	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Phenanthrene	NLE	0.32				ND				ND				ND				ND				0.14J				0.11J				0.24				0.11J	
Anthracene	10,000	ND				ND				ND				ND				ND				0.13J				ND				0.24				ND	
Di-n-butylphthalate	5700	0.				0.				0.63J				0.49J				0.26J				0.				ND				0.35J				0.	
Fluoranthene	2300	0.56				ND				0.12J				ND				0.17J				0.16J				ND				0.26				0.16J	
Pyrene	1700	0.53				ND				ND				ND				0.13J				0.23J				0.17J				0.41				0.24	
Butylbenzylphthalate	1100	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Benzo[a]anthracene	0.9	0.31				ND				ND				ND				ND				ND				ND				0.19J				0.17J	
3,3'-Dichlorobenzidine	2	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Chrysene	9	0.51				ND				ND				ND				0.13J				0.18J				0.14J				0.37				0.23J	
bis(2-Ethylhexyl)phthalate	49	0.				ND				ND				0.14J				0.12J				0.14J				ND				ND				0.22J	
Benzo[b]fluoranthene	0.9	0.33				ND				ND				ND				ND				ND				ND				0.11J				ND	
Benzo[k]fluoranthene	0.9	0.35				ND				ND				ND				ND				ND				ND				0.14J				0.11J	
Benzo[a]pyrene	0.66	0.36				ND				ND				ND				ND				ND				ND				0.17J				0.11J	
Indeno[1,2,3-cd]pyrene	0.9	0.31				ND				ND				ND				ND				ND				ND				0.11J				ND	
Dibenz[a,h]anthracene	0.66	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Benzo[g,h,I]perylene	NLE	0.28				ND				ND				ND				ND				ND				ND				0.11J				ND	
Pesticides/PCBs (mg/kg)																																			
Heptachlor	0.15	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Heptachlor Epoxide	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND	
4,4'-DDE	2	0.052				0.004				ND				ND				0.004				ND				ND				0.027				0.009	
Dieldrin	0.042	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Endrin	17	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Endosulfan II	NLE	ND				ND				ND				ND				ND				ND				0.013				0.019				ND	
4,4'-DDD	3	0.008				ND				ND				0.001				0.001				ND				ND				ND				0.019	
Endrin Aldehyde	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND	
4,4'-DDT	2	0.075				0.004				ND				ND				0.01				ND				ND				ND				0.092	
Endosulfan-Sulfate	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND	
gamma-Chlordane	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND	
alpha-Chlordane	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Arochlor 1254	0.49	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Metals (mg/kg)																																			
Aluminum	NLE	4464				1986				3363				4876				3699				8596				8267				4460				6246	
Antimony	14	0.639				0.388				0.95				0.791				0.497				1.713				1.263				0.547				1.532	
Arsenic	20	8.122				1.719				8.626				12.79				3.172				**27.93**				14.36				4.293				**147.5**	
Barium	700	69.01				10.23				113.8				76.99				16.51				27.23				29.54				25.47				14.72	
Beryllium	2	0.4403				0.3672				0.4112				0.6963				0.7032				1.108				0.9403				0.412				0.7216	
Cadmium	39	0.9829				ND				0.2786				0.1114				ND				0.1293				ND				ND				ND	
Calcium	NLE	2705				277				933.3				1111				476.2				943.5				664.1				452.9				440.1	
Chromium	NLE	36.61				21.36				23.73				52.57				30.82				108.5				87.14				31.37				81.6	
Cobalt	NLE	2.495				0.3853				2.388				1.731				0.3871				3.129				6.07				1.335				0.8229	
Copper	600	262.8				2.913				532.4				60.76				4.304				7.103				15.39				17.84				6.733	
Iron	NLE	18840				7617				20580				22280				10500				47660				40040				10340				30770	
Lead	400	273.5				8.632				**845.1**				226.7				6.099				40.53				55.83				22.07				14.64	
Magnesium	NLE	928.1				534.1				574.5				1066				602.6				963.9				1089				698.6				2093	
Manganese	NLE	725.6				10.21				107.1				71.47				20.24				65.67				153.5				74.62				30.56	
Mercury	14	5.04				0.039				0.51				5.141				0.074				0.225				0.588				0.037				0.036	
Nickel	250	7.3				2.299				7.715				6.521				3.713				12.48				11.51				2.826				3.717	
Potassium	NLE	1955				1048				1422				2485				918.9				2085				2466				1529				6333	
Selenium	63	ND				0.372				0.4				ND				ND				ND				ND				ND				0.599	
Silver	110	0.512				ND				1.123				ND				ND				ND				ND				ND				ND	
Sodium	NLE	312.4				144.3				96.56				71.52				266.9				393.3				52.66				40.01				229.7	
Thallium	2	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Vanadium	370	33.38				16.22				17.18				39.23				26.17				126.4				79.15				18.81				32.76	
Zinc	1500	**1809**				46.14				209.5				100.6				49.56				68.26				91.96				35.88				28.84	

NOTES:
ND = Not Detected
NLE = No Limit Established
J = Estimated Value: Mass spectrometer and retention time data indicate the presence of the analyte, however the result is less than the method detection limit, but greater than zero.

Table 4-1
Soil Sampling Results
M5 Landfill Site
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP Cleanup Criteria	3550.15		3550.16		3561.02		3561.03		3561.06		3561.07		3561.10		3561.11		3561.14		3561.15		3567.02		3567.03		3567.06		3567.07		3567.10		3567.11		3567.14		3567.15	
Field Sample Location		B55 (6-12")		B55 (24")		B56 (6-12")		B56 (24")		B57 (6-12")		B57 (24")		B58 (6-12")		B58 (24")		B59 (6-12")		B59 (24")		B60 (6-12")		B60 (24")		B61 (6-12")		B61 (24")		B62 (6-12")		B62 (24")		B63 (6-12")		B63 (20")	
Sample Date	(mg/kg)	5/6/1998		5/6/1998		5/11/1998		5/11/1998		5/11/1998		5/11/1998		5/11/1998		5/11/1998		5/11/1998		5/11/1998		5/14/1998		5/14/1998		5/14/1998		5/14/1998		5/14/1998		5/14/1998		5/14/1998	
Volatiles (mg/kg)																																			
Benzene	3			ND				ND				ND				ND				ND				ND				ND				ND			
Chloroform	19			ND				ND				ND				ND				ND				ND				ND				ND			
Methylene Chloride	49			ND				ND				ND				ND				ND				ND				ND				ND			
Tetrachloroethene	4			ND				ND				ND				ND				ND				ND				ND				ND			
Toluene	1000			ND				ND				ND				ND				ND				ND				ND				ND			
Semi-Volatiles (mg/kg)																																			
Pyridine	NLE	0.42				ND				ND				ND				ND				ND				ND				ND				ND	
4-Methylphenol	2800	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Naphthalene	230	ND				ND				ND				ND				ND				ND				ND				ND				ND	
2-Methylnaphthalene	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Dimethylphthalate	10,000	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Acenaphthylene	NLE	ND				ND				ND				ND				ND				ND				ND				ND				0.14J	
Acenaphthene	3400	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Dibenzofuran	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Diethylphthalate	10,000	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Fluorene	2300	ND				ND				ND				ND				ND				ND				ND				ND				ND	
n-Nitrosodiphenylamine	140	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Phenanthrene	NLE	ND				ND				0.25				ND				ND				0.44				ND				ND				0.54	
Anthracene	10,000	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Di-n-butylphthalate	5700	0.9J				0.36J				0.57J				0.				0.43J				0.61J				0.88J				0.45J				0.38J	
Fluoranthene	2300	ND				ND				0.3				ND				0.14J				0.71				0.14J				ND				0.89	
Pyrene	1700	ND				ND				0.45				ND				0.12J				0.53				0.15J				ND				1.3	
Butylbenzylphthalate	1100	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Benzo[a]anthracene	0.9	ND				ND				0.21J				ND				ND				0.28				ND				ND				0.56	
3,3'-Dichlorobenzidine	2	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Chrysene	9	ND				ND				0.29				ND				ND				0.3				0.13J				ND				0.88	
bis(2-Ethylhexyl)phthalate	49	0.13J				ND				0.14J				0.2J				ND				0.2J				0.22J				0.11J				0.21J	
Benzo[b]fluoranthene	0.9	ND				ND				ND				ND				ND				0.22J				ND				ND				0.41	
Benzo[k]fluoranthene	0.9	ND				ND				0.13J				ND				ND				0.24				ND				ND				0.52	
Benzo[a]pyrene	0.66	ND				ND				0.15J				ND				ND				0.26				ND				ND				0.58	
Indeno[1,2,3-cd]pyrene	0.9	ND				ND				ND				ND				ND				0.18J				ND				ND				0.37	
Dibenz[a,h]anthracene	0.66	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Benzo[g,h,I]perylene	NLE	ND				ND				ND				ND				ND				0.17J				ND				ND				0.44	
Pesticides/PCBs (mg/kg)																																			
Heptachlor	0.15	ND				ND				ND				ND				0.014				ND				ND				ND				ND	
Heptachlor Epoxide	NLE	ND				ND				ND				ND				0.261				ND				ND				ND				ND	
4,4'-DDE	2	0.006				0.227				0.039				0.004				**2.058**				0.003				0.005				0.001				0.007	
Dieldrin	0.042	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Endrin	17	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Endosulfan II	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND	
4,4'-DDD	3	0.002				ND				ND				ND				2.68				ND				ND				ND				ND	
Endrin Aldehyde	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND	
4,4'-DDT	2	0.012				0.17				0.06				0.007				**11.182**				0.002				0.007				ND				0.01	
Endosulfan-Sulfate	NLE	ND				ND				ND				ND				ND				ND				ND				ND				ND	
gamma-Chlordane	NLE	ND				ND				ND				ND				0.577				ND				ND				ND				ND	
alpha-Chlordane	NLE	ND				ND				ND				ND				0.409				ND				ND				ND				ND	
Arochlor 1254	0.49	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Metals (mg/kg)																																			
Aluminum	NLE	7988				11380				10290				1884				2975				13190				9246				5436				7195	
Antimony	14	1.149				1.246				1.868				0.326				0.48				1.266				0.86				0.921				1.01	
Arsenic	20	10.36				16.81				14.94				1.201				7.456				10.76				7.677				5.493				8.63	
Barium	700	101.2				44.19				88.58				5.948				27.13				34.64				21.61				18.86				111.8	
Beryllium	2	0.9041				1.233				0.9952				0.3044				0.3715				1.496				1.056				0.6189				0.8207	
Cadmium	39	ND				ND				0.2176				0.1125				0.2638				ND				ND				0.7023				0.2273	
Calcium	NLE	950.6				1662				1169				152.9				400.1				1188				491.6				181.1				1930	
Chromium	NLE	58.97				90.25				78.52				14.29				18.99				100.1				82.22				49.99				57.85	
Cobalt	NLE	2.301				2.645				4.073				0.2267				1.23				2.967				1.778				0.5732				1.54	
Copper	600	14.76				15.96				83.51				3.742				9.851				5.622				3.459				20.54				50.68	
Iron	NLE	24580				32850				34590				5510				7582				36290				26710				15460				22510	
Lead	400	45.25				108.8				**2379**				8.725				71.13				10.39				9.338				94.89				**673.7**	
Magnesium	NLE	2144				3720				1506				335.4				664.8				3941				2704				948.3				1648	
Manganese	NLE	147.5				76.07				118.1				5.243				21.19				95.3				47.43				18.48				144	
Mercury	14	0.213				0.9				0.459				0.039				**17.584**				0.671				0.058				0.161				0.115	
Nickel	250	7.104				8.858				13.31				1.59				4.389				7.747				5.302				3.305				8.803	
Potassium	NLE	5418				7138				4203				460.3				1084				7084				5398				2311				3715	
Selenium	63	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Silver	110	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Sodium	NLE	159.4				71.89				110.9				25.7				57.27				81.7				49.79				51.48				439.1	
Thallium	2	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Vanadium	370	29.63				42.8				82.13				13.82				18.5				44.53				37.72				39.39				27.81	
Zinc	1500	58.2				81.92				178.4				26.47				73.37				59.43				41.41				32.25				338.9	

NOTES:
ND = Not Detected
NLE = No Limit Established
J = Estimated Value: Mass spectrometer and retention time data indicate the presence of the analyte, however the result is less than the method detection limit, but greater than zero.

Table 4-1
Soil Sampling Results
M5 Landfill Site
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP Cleanup Criteria	3567.16		3567.19		3567.20		3571.02		3571.03		3571.06		3571.07		3571.10		3571.11		3571.13		3571.14		3571.17		3571.18		3576.02		3576.03		3576.06		3576.07		3576.10	
Field Sample Location		B63 (24")		B64 (6-12")		B64 (24")		B65 (6-12")		B65 (24")		B66 (6-12")		B66 (24")		B67 (6-12")		B67 (24")		B68 (6-12")		B68 (24")		B69 (6-12")		B69 (24")		B70 (6-12")		B70 (24")		B71 (6-12")		B71 (24")		B72 (6-12")	
Sample Date	(mg/kg)	5/14/1998		5/14/1998		5/14/1998		5/15/1998		5/15/1998		5/15/1998		5/15/1998		5/15/1998		5/15/1998		5/15/1998		5/15/1998		5/15/1998		5/15/1998		5/18/1998		5/18/1998		5/18/1998		5/18/1998	
Volatiles (mg/kg)																																			
Benzene	3	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Chloroform	19	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Methylene Chloride	49	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Tetrachloroethene	4	ND				ND				ND				ND				ND				1.6				ND				ND				ND	
Toluene	1000	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Semi-Volatiles (mg/kg)																																			
Pyridine	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
4-Methylphenol	2800			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Naphthalene	230			ND				ND				ND				ND				ND				0.12J				ND				0.22J				0.22J	
2-Methylnaphthalene	NLE			ND				ND				ND				ND				ND				0.14J				ND				0.26J				0.23J	
Dimethylphthalate	10,000			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Acenaphthylene	NLE			0.15J				ND				ND				0.19J				ND				ND				ND				0.74				ND	
Acenaphthene	3400			ND				ND				ND				ND				ND				ND				ND				0.18J				ND	
Dibenzofuran	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Diethylphthalate	10,000			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Fluorene	2300			ND				ND				ND				ND				ND				ND				ND				0.46				ND	
n-Nitrosodiphenylamine	140			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Phenanthrene	NLE			1.1				ND				ND				1.5				0.17J				0.95				ND				3.8				1.2	
Anthracene	10,000			ND				ND				ND				ND				ND				0.15J				ND				0.74				0.13J	
Di-n-butylphthalate	5700			0.82J				0.21J				0.59J				0.25J				0.18J				0.22J				0.54J				0.				0.82J	
Fluoranthene	2300			1.2				ND				0.17J				1.2				0.14J				1.5				ND				4.5				2.3	
Pyrene	1700			2.2				ND				0.15J				2.1				0.2J				1.3				ND				6.4				2.2	
Butylbenzylphthalate	1100			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Benzo[a]anthracene	0.9			0.66				ND				ND				0.76				ND				0.7				ND				**3.1**				**0.97**	
3,3'-Dichlorobenzidine	2			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Chrysene	9			1.5				ND				0.12J				1.2				0.18J				0.97				ND				5.0				1.7	
bis(2-Ethylhexyl)phthalate	49			0.28J				ND				0.12J				ND				ND				0.11J				ND				ND				ND	
Benzo[b]fluoranthene	0.9			0.56				ND				0.11J				0.41				ND				0.74				ND				**2.4**				**1.2**	
Benzo[k]fluoranthene	0.9			0.56				ND				0.11J				0.53				ND				0.7				ND				**2.4**				**1.2**	
Benzo[a]pyrene	0.66			0.66				ND				0.12J				**0.72**				ND				**0.72**				ND				**3**				**1.1**	
Indeno[1,2,3-cd]pyrene	0.9			0.44				ND				ND				0.43				ND				0.47				ND				**1.9**				0.76	
Dibenz[a,h]anthracene	0.66			ND				ND				ND				ND				ND				ND				ND				**1**				ND	
Benzo[g,h,I]perylene	NLE			0.54				ND				ND				0.53				ND				0.45				ND				2.3				0.77	
Pesticides/PCBs (mg/kg)																																			
Heptachlor	0.15			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Heptachlor Epoxide	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
4,4'-DDE	2			1.184				0.002				ND				ND				0.041				0.069				0.001				0.103				0.087	
Dieldrin	0.042			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Endrin	17			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Endosulfan II	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
4,4'-DDD	3			0.196				ND				ND				ND				ND				0.038				ND				ND				ND	
Endrin Aldehyde	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
4,4'-DDT	2			0.532				0.002				ND				ND				0.069				0.287				0.002				0.104				0.072	
Endosulfan-Sulfate	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
gamma-Chlordane	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
alpha-Chlordane	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Arochlor 1254	0.49			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Metals (mg/kg)																																			
Aluminum	NLE			15670				8058				3044				7248				6761				7952				11120				9388				8881	
Antimony	14			1.059				0.997				0.443				0.35				1.209				1.305				1.249				0.789				0.724	
Arsenic	20			14.6				7.83				3.083				7.19				11.44				10.21				10.11				9.62				8.338	
Barium	700			52.75				28.5				21.9				15.88				44.56				125.5				25.88				51.51				58.95	
Beryllium	2			1.179				0.8404				0.4444				0.604				0.8332				0.8544				1.128				0.9041				0.6764	
Cadmium	39			ND				ND				ND				ND				0.1382				1.154				ND				ND				0.1899	
Calcium	NLE			969				744.4				266.5				518.3				1209				1407				586.5				1169				1570	
Chromium	NLE			81.95				68.44				23.91				42.72				57.83				51.07				114.5				77.94				46.85	
Cobalt	NLE			4.367				3.136				0.5376				2.701				4.179				5.826				4.8				3.255				3.326	
Copper	600			8.773				5.669				7.449				3.409				42.05				**1544**				2.028				39.85				46.73	
Iron	NLE			34010				29740				8577				25900				27790				27860				47050				33340				17160	
Lead	400			20.2				30.1				37.51				9.825				90.71				**852.3**				11.87				122.6				58.5	
Magnesium	NLE			2740				1237				710.2				895.3				730.7				817.3				1074				1435				1940	
Manganese	NLE			175.4				76.07				29.05				79.87				54.71				195.3				103.5				76.53				89.7	
Mercury	14			0.17				0.074				0.088				0.068				0.268				ND				ND				0.079				0.115	
Nickel	250			13.41				9.24				2.565				7.65				10.39				17.71				16.38				10.52				8.935	
Potassium	NLE			5202				3399				1602				1460				1202				1922				2684				3817				4607	
Selenium	63			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Silver	110			ND				ND				ND				ND				ND				1.082				ND				ND				ND	
Sodium	NLE			287.7				56.68				11.9				43.74				72.72				175.9				92.7				92.75				262.7	
Thallium	2			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Vanadium	370			74.48				74.42				14.64				56.21				74.83				52.52				148.9				82.7				34.6	
Zinc	1500			73.04				55.34				43.34				42.07				49.92				455				81.93				117.6				123.4	

NOTES:
ND = Not Detected
NLE = No Limit Established
J = Estimated Value: Mass spectrometer and retention time data indicate the presence of the analyte, however the result is less than the method detection limit, but greater than zero.

Table 4-1
Soil Sampling Results
M5 Landfill Site
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP Cleanup Criteria	3576.11		3576.14		3576.15		3580.02		3580.03		3580.05		3580.06		3580.08		3580.09		3580.11		3580.12		3580.14		3580.15		3580.18		3580.19		3580.22		3580.23		3580.26	
Field Sample Location		B72 (24")		B73 (6-12")		B73 (24")		B74 (6-12")		B74 (24")		B75 (6-12")		B75 (24")		B76 (6-12")		B76 (24")		B77 (6-12")		B77 (24")		B78 (6-12")		B78 (24")		B79 (6-12")		B79 (24")		B80 (6-12")		B80 (24")		B81 (6-12")	
Sample Date	(mg/kg)	5/18/1998		5/18/1998		5/18/1998		5/19/1998		5/19/1998		5/19/1998		5/19/1998		5/19/1998		5/19/1998		5/19/1998		5/19/1998		5/19/1998		5/19/1998		5/19/1998		5/19/1998		5/19/1998		5/19/1998	
Volatiles (mg/kg)																																			
Benzene	3	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Chloroform	19	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Methylene Chloride	49	0.31J				ND				ND				ND				ND				ND				ND				ND				ND	
Tetrachloroethene	4	ND				ND				ND				ND				0.77				ND				ND				ND				ND	
Toluene	1000	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Semi-Volatiles (mg/kg)																																			
Pyridine	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
4-Methylphenol	2800			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Naphthalene	230			ND				ND				ND				ND				ND				ND				ND				ND				0.4	
2-Methylnaphthalene	NLE			ND				ND				ND				ND				ND				ND				ND				ND				0.66	
Dimethylphthalate	10,000			ND				ND				ND				ND				ND				ND				ND				ND				0.12J	
Acenaphthylene	NLE			ND				ND				ND				ND				ND				ND				ND				ND				0.11J	
Acenaphthene	3400			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Dibenzofuran	NLE			ND				ND				ND				ND				ND				ND				ND				ND				0.25	
Diethylphthalate	10,000			ND				ND				ND				ND				ND				ND				ND				ND				0.17J	
Fluorene	2300			ND				ND				ND				ND				ND				ND				ND				ND				0.11J	
n-Nitrosodiphenylamine	140			ND				ND				ND				ND				ND				ND				ND				ND				0.15J	
Phenanthrene	NLE			0.25				0.12J				0.48				0.72				0.17J				0.13J				ND				ND				0.57	
Anthracene	10,000			ND				ND				ND				ND				ND				ND				ND				ND				0.16J	
Di-n-butylphthalate	5700			0.51J				0.32J				0.76J				0.78J				0.38J				0.67J				0.6J				0.27J				0.84J	
Fluoranthene	2300			0.33				0.13J				0.3				0.5				0.19J				ND				ND				ND				0.4	
Pyrene	1700			0.56				0.17J				0.51				0.82				0.12J				0.12J				ND				ND				0.58	
Butylbenzylphthalate	1100			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Benzo[a]anthracene	0.9			0.24				ND				0.18J				0.31				ND				ND				ND				ND				0.3	
3,3'-Dichlorobenzidine	2			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Chrysene	9			0.43				0.12J				0.3				0.52				ND				ND				ND				ND				0.51	
bis(2-Ethylhexyl)phthalate	49			ND				ND				0.28J				0.1J				ND				ND				ND				ND				ND	
Benzo[b]fluoranthene	0.9			0.21J				ND				0.11J				0.2J				ND				ND				ND				ND				0.18J	
Benzo[k]fluoranthene	0.9			0.23				ND				0.13J				0.22				ND				ND				ND				ND				0.22	
Benzo[a]pyrene	0.66			0.26				ND				0.13J				0.29				ND				ND				ND				ND				0.24	
Indeno[1,2,3-cd]pyrene	0.9			ND				ND				ND				0.16J				ND				ND				ND				ND				0.15J	
Dibenz[a,h]anthracene	0.66			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Benzo[g,h,I]perylene	NLE			0.22J				ND				ND				0.19J				ND				ND				ND				ND				0.19J	
Pesticides/PCBs (mg/kg)																																			
Heptachlor	0.15			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Heptachlor Epoxide	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
4,4'-DDE	2			0.005				0.009				ND				ND				ND				0.01				0.002				0.005				ND	
Dieldrin	0.042			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Endrin	17			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Endosulfan II	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
4,4'-DDD	3			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Endrin Aldehyde	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
4,4'-DDT	2			0.005				0.01				ND				ND				ND				0.007				0.002				0.006				ND	
Endosulfan-Sulfate	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
gamma-Chlordane	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
alpha-Chlordane	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Arochlor 1254	0.49			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Metals (mg/kg)																																			
Aluminum	NLE			8643				2868				1781				6780				8537				10590				10590				10450				2577	
Antimony	14			1.158				0.57				ND				0.686				1.309				1.531				1.531				1.642				0.308	
Arsenic	20			7.981				4.511				1.452				6.874				8.003				10.88				10.88				10.26				5.594	
Barium	700			25.84				12.69				5.525				26.72				24.35				24.94				24.94				24.91				36.08	
Beryllium	2			0.867				0.4361				0.2615				0.6806				0.9024				1.19				1.19				1.143				0.2973	
Cadmium	39			ND				ND				ND				ND				ND				ND				ND				ND				0.0968	
Calcium	NLE			691				327.2				117.9				510				440.1				809.2				809.2				611.8				865.2	
Chromium	NLE			85.23				27.92				18.67				61.92				97.55				96.08				96.08				112.3				11.66	
Cobalt	NLE			5.769				0.7721				0.4013				2.925				2.623				5.587				5.587				5.818				1.554	
Copper	600			6.715				5.597				2.002				8.638				3.266				27.74				27.74				4.975				17.64	
Iron	NLE			34570				10120				6671				28090				36430				56400				56400				47360				6221	
Lead	400			75.52				18.46				5.525				48.57				16.89				33.19				33.19				65.52				36.85	
Magnesium	NLE			941				664.5				334.2				887.6				863.8				1385				1385				1003				318.6	
Manganese	NLE			168.8				30.3				13.35				67.87				62.27				160.5				160.5				141.4				17.63	
Mercury	14			0.053				0.041				ND				0.028				0.029				ND				ND				ND				0.061	
Nickel	250			11.23				2.749				1.679				8.334				10.82				13.68				13.68				15.43				4.848	
Potassium	NLE			2201				1340				614.6				1966				2023				3911				3911				2351				648.6	
Selenium	63			ND				ND				ND				ND				ND				ND				ND				ND				0.385	
Silver	110			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Sodium	NLE			62.74				61.08				27.75				32.16				31.08				150.5				150.5				27.11				138.3	
Thallium	2			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Vanadium	370			101.9				22.17				16.56				73.25				103				123				123				154.8				18.03	
Zinc	1500			104.7				25.57				12.77				53.92				58.91				72.31				72.31				70.89				29.27	

NOTES:
ND = Not Detected
NLE = No Limit Established
J = Estimated Value: Mass spectrometer and retention time data indicate the presence of the analyte, however the result is less than the method detection limit, but greater than zero.

Table 4-1
Soil Sampling Results
M5 Landfill Site
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP Cleanup Criteria	3580.27		3580.30		3580.31		3580.34		3580.35		3584.02		3584.03		3584.06		3584.07		3584.10		3584.11		3584.14		3584.15		3584.18		3584.19		3584.22		3584.23		3584.26	
Field Sample Location		B81 (24")		B82 (6-12")		B82 (24")		B83 (6-12")		B83 (24")		B84 (6-12")		B84 (24")		B85 (6-12")		B85 (24")		B86 (6-12")		B86 (24")		B87 (6-12")		B87 (24")		B88 (6-12")		B88 (24")		B89 (6-12")		B89 (24")		B90 (6-12")	
Sample Date	(mg/kg)	5/19/1998		5/19/1998		5/19/1998		5/19/1998		5/19/1998		5/20/1998		5/20/1998		5/20/1998		5/20/1998		5/20/1998		5/20/1998		5/20/1998		5/20/1998		5/20/1998		5/20/1998		5/20/1998		5/20/1998	
Volatiles (mg/kg)																																			
Benzene	3	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Chloroform	19	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Methylene Chloride	49	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Tetrachloroethene	4	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Toluene	1000	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Semi-Volatiles (mg/kg)																																			
Pyridine	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
4-Methylphenol	2800			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Naphthalene	230			ND				ND				2.3				ND				ND				ND				ND				ND				0.13J	
2-Methylnaphthalene	NLE			ND				ND				4.9				ND				ND				ND				ND				ND				0.17J	
Dimethylphthalate	10,000			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Acenaphthylene	NLE			ND				ND				4.4				ND				ND				ND				ND				ND				ND	
Acenaphthene	3400			ND				ND				1.9				ND				ND				ND				ND				ND				ND	
Dibenzofuran	NLE			ND				ND				0.54				ND				ND				ND				ND				ND				ND	
Diethylphthalate	10,000			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Fluorene	2300			ND				ND				5.3				ND				ND				ND				ND				ND				ND	
n-Nitrosodiphenylamine	140			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Phenanthrene	NLE			ND				ND				29E				ND				ND				ND				ND				ND				0.48	
Anthracene	10,000			ND				ND				3.2				ND				ND				ND				ND				ND				ND	
Di-n-butylphthalate	5700			0.17J				0.18J				0.27J				0.64J				0.87J				0.66J				0.29J				ND				0.51J	
Fluoranthene	2300			ND				ND				16E				ND				ND				ND				ND				ND				0.48	
Pyrene	1700			ND				ND				30E				0.14J				ND				ND				ND				ND				0.84	
Butylbenzylphthalate	1100			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Benzo[a]anthracene	0.9			ND				ND				**13E**				ND				ND				ND				ND				ND				0.36	
3,3'-Dichlorobenzidine	2			ND				ND				1.0				ND				ND				ND				ND				ND				ND	
Chrysene	9			ND				ND				**21E**				0.12J				ND				ND				ND				ND				0.59	
bis(2-Ethylhexyl)phthalate	49			ND				ND				0.12J				0.11J				0.15J				0.16J				ND				ND				0.12J	
Benzo[b]fluoranthene	0.9			ND				ND				**9.2**				ND				ND				ND				ND				ND				0.25J	
Benzo[k]fluoranthene	0.9			ND				ND				**8.8**				ND				ND				ND				ND				ND				0.34	
Benzo[a]pyrene	0.66			ND				ND				**11**				ND				ND				ND				ND				ND				0.41	
Indeno[1,2,3-cd]pyrene	0.9			ND				ND				**4.9**				ND				ND				ND				ND				ND				0.2J	
Dibenz[a,h]anthracene	0.66			ND				ND				**2.9**				ND				ND				ND				ND				ND				ND	
Benzo[g,h,I]perylene	NLE			ND				ND				5.8				ND				ND				ND				ND				ND				0.23J	
Pesticides/PCBs (mg/kg)																																			
Heptachlor	0.15			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Heptachlor Epoxide	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
4,4'-DDE	2			0.001				0.018				0.208				ND				0.002				0.007				ND				0.006				0.001	
Dieldrin	0.042			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Endrin	17			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Endosulfan II	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
4,4'-DDD	3			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Endrin Aldehyde	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
4,4'-DDT	2			ND				0.028				0.803				ND				ND				0.003				ND				0.003				0.002	
Endosulfan-Sulfate	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
gamma-Chlordane	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
alpha-Chlordane	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Arochlor 1254	0.49			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Metals (mg/kg)																																			
Aluminum	NLE			2449				1275				9216				6650				7711				7796				5870				4347				4758	
Antimony	14			0.356				0.255				1.288				0.52				1.219				0.834				0.834				0.237				0.945	
Arsenic	20			1.387				0.858				11.23				4.61				8.103				10.68				12.43				2.981				15.53	
Barium	700			15.13				4.896				29.34				14.66				14.57				29.97				192.3				25.61				8.797	
Beryllium	2			0.3248				0.1492				0.634				0.3893				0.9604				0.9373				**4.787**				0.3072				0.4409	
Cadmium	39			ND				ND				ND				ND				ND				ND				0.674				ND				ND	
Calcium	NLE			316.7				134.9				817.1				590.2				646.2				1477				1547				1663				181.2	
Chromium	NLE			19.27				12.27				62.61				37.09				91.08				88.9				54.19				7.984				58.29	
Cobalt	NLE			0.4012				0.2038				1.854				2.493				2.845				3.717				7.393				3.526				0.5178	
Copper	600			1.524				1.995				43.09				3.002				0.413				4.648				**2314**				46.74				139.2	
Iron	NLE			6563				4284				24830				13010				41350				41280				12220				5168				15660	
Lead	400			4.79				6.115				126.8				6.786				7.797				90.95				**1267**				15.43				19.27	
Magnesium	NLE			568.3				317.3				1392				974.8				780.5				1019				614.5				359.5				1090	
Manganese	NLE			12.37				8.873				40				85.56				49.43				101.9				175.7				97.42				9.783	
Mercury	14			ND				ND				0.123				0.024				ND				0.034				0.044				0.039				0.044	
Nickel	250			1.503				0.8202				7.483				3.728				12.44				14.15				22.36				10.93				2.453	
Potassium	NLE			1045				490				4076				1656				1321				1580				1654				633.6				3985	
Selenium	63			ND				ND				ND				ND				ND				ND				1.379				ND				1.146	
Silver	110			ND				ND				ND				ND				ND				ND				3.472				ND				ND	
Sodium	NLE			13.7				23.19				61.43				38.89				40.52				116.5				335.1				440.7				186.3	
Thallium	2			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Vanadium	370			13.74				9.388				58.91				32.18				108.4				113.1				18.83				9.574				11.28	
Zinc	1500			12.57				7.018				46.59				20.41				57.83				79.89				500.7				26.7				35.88	

NOTES:
ND = Not Detected
NLE = No Limit Established
J = Estimated Value: Mass spectrometer and retention time data indicate the presence of the analyte, however the result is less than the method detection limit, but greater than zero.

Table 4-1
Soil Sampling Results
M5 Landfill Site
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP Cleanup Criteria	3584.27		3584.30		3584.31		3584.34		3584.35		3588.02		3588.03		3588.06		3588.07		3588.10		3588.11		3588.14		3588.15		3588.18		3588.19		3588.22		3588.23		3593.02
Field Sample Location		B90 (24")		B91 (6-12")		B91 (24")		B92 (6-12")		B92 (24")		B93 (6-12")		B93 (24")		B94 (6-12")		B94 (24")		B95 (6-12")		B95 (24")		B96 (6-12")		B96 (24")		B97 (6-12")		B97 (24")		B98 (6-12")		B98 (24")		B99 (6-12")
Sample Date	(mg/kg)	5/20/1998		5/20/1998		5/20/1998		5/20/1998		5/20/1998		5/21/1998		5/21/1998		5/21/1998		5/21/1998		5/21/1998		5/21/1998		5/21/1998		5/21/1998		5/21/1998		5/21/1998		5/21/1998		5/26/1998
Volatiles (mg/kg)																																		
Benzene	3	ND				ND				ND				ND				ND				ND				ND				ND				
Chloroform	19	ND				ND				ND				ND				ND				ND				ND				ND				
Methylene Chloride	49	ND				ND				ND				ND				ND				ND				ND				ND				
Tetrachloroethene	4	ND				ND				ND				ND				ND				ND				ND				ND				
Toluene	1000	ND				ND				ND				ND				ND				ND				ND				ND				
Semi-Volatiles (mg/kg)																																		
Pyridine	NLE			ND				ND				ND				ND				ND				ND				ND				ND		ND
4-Methylphenol	2800			ND				ND				ND				ND				ND				ND				ND				ND		ND
Naphthalene	230			ND				ND				ND				ND				ND				ND				ND				ND		ND
2-Methylnaphthalene	NLE			ND				ND				ND				ND				ND				ND				ND				ND		ND
Dimethylphthalate	10,000			ND				ND				ND				ND				ND				ND				ND				ND		ND
Acenaphthylene	NLE			ND				ND				ND				ND				ND				ND				ND				ND		ND
Acenaphthene	3400			ND				0.59				ND				ND				ND				ND				ND				ND		ND
Dibenzofuran	NLE			ND				0.64				ND				ND				ND				ND				ND				ND		ND
Diethylphthalate	10,000			ND				ND				ND				ND				ND				ND				ND				ND		ND
Fluorene	2300			ND				1.1				ND				ND				ND				ND				ND				ND		ND
n-Nitrosodiphenylamine	140			ND				ND				ND				ND				ND				ND				ND				ND		ND
Phenanthrene	NLE			ND				ND				ND				ND				ND				ND				ND				0.16J		ND
Anthracene	10,000			ND				3.3				ND				ND				ND				ND				ND				ND		ND
Di-n-butylphthalate	5700			0.32J				0.28J				0.47J				0.27J				ND				0.43J				0.73J				0.5J		ND
Fluoranthene	2300			ND				ND				ND				ND				ND				ND				0.24				0.21J		ND
Pyrene	1700			ND				11.0				ND				ND				ND				ND				0.16J				0.2J		ND
Butylbenzylphthalate	1100			ND				ND				ND				ND				ND				ND				ND				ND		ND
Benzo[a]anthracene	0.9			ND				**7.2**				ND				ND				ND				ND				0.12J				0.14J		ND
3,3'-Dichlorobenzidine	2			ND				ND				ND				ND				ND				ND				ND				ND		ND
Chrysene	9			ND				**9.7**				ND				ND				ND				ND				0.17J				0.29J		ND
bis(2-Ethylhexyl)phthalate	49			0.11J				ND				ND				ND				ND				ND				0.1J				ND		ND
Benzo[b]fluoranthene	0.9			ND				**5.6**				ND				ND				ND				ND				0.11J				0.16J		ND
Benzo[k]fluoranthene	0.9			ND				**3.9**				ND				ND				ND				ND				ND				ND		ND
Benzo[a]pyrene	0.66			ND				**5.3**				ND				ND				ND				ND				0.11J				ND		ND
Indeno[1,2,3-cd]pyrene	0.9			ND				**3**				ND				ND				ND				ND				ND				ND		ND
Dibenz[a,h]anthracene	0.66			ND				0.64				ND				ND				ND				ND				ND				ND		ND
Benzo[g,h,I]perylene	NLE			ND				2.8				ND				ND				ND				ND				ND				ND		ND
Pesticides/PCBs (mg/kg)																																		
Heptachlor	0.15			ND				ND				ND				ND				ND				ND				ND				ND		ND
Heptachlor Epoxide	NLE			ND				ND				ND				ND				ND				ND				0.001				ND		ND
4,4'-DDE	2			0.002				ND				0.008				0.002				ND				0.003				0.008				0.166		0.008
Dieldrin	0.042			ND				ND				ND				ND				ND				ND				ND				ND		ND
Endrin	17			ND				ND				ND				ND				ND				ND				ND				ND		ND
Endosulfan II	NLE			ND				ND				ND				ND				ND				ND				ND				ND		ND
4,4'-DDD	3			ND				ND				0.004				ND				ND				ND				0.003				0.02		ND
Endrin Aldehyde	NLE			ND				ND				ND				ND				ND				ND				ND				ND		ND
4,4'-DDT	2			0.002				ND				0.032				0.004				ND				0.002				0.014				0.077		0.008
Endosulfan-Sulfate	NLE			ND				ND				ND				ND				ND				ND				ND				0.009		ND
gamma-Chlordane	NLE			ND				ND				ND				ND				ND				ND				ND				ND		ND
alpha-Chlordane	NLE			ND				ND				ND				ND				ND				ND				ND				ND		ND
Arochlor 1254	0.49			ND				ND				ND				ND				ND				ND				ND				ND		ND
Metals (mg/kg)																																		
Aluminum	NLE			2982				2424				6587				7273				6776				1231				8665				2673		3319
Antimony	14			0.542				0.305				0.864				0.705				0.293				1.11				0.813				0.397		1.522
Arsenic	20			4.745				1.092				9.735				9.53				7.075				12.33				9.33				7.349		4.823
Barium	700			21.03				12.71				18.68				21.47				50.99				96.83				35.87				108.4		25.33
Beryllium	2			0.3972				0.3802				0.49				0.7067				0.591				0.1224				0.6407				0.2846		0.2113
Cadmium	39			ND				ND				ND				ND				ND				ND				ND				0.415		8.552
Calcium	NLE			987.9				168.5				393.2				502.8				1605				383.6				1533				1042		1011
Chromium	NLE			27.55				16.35				56.44				57.07				28.21				11.51				41.47				11.65		20.07
Cobalt	NLE			0.9371				0.4263				1.026				3.164				4.892				1.152				3.802				2.666		2.289
Copper	600			10.16				2.46				11.74				2.615				19.37				26.15				14.07				48.11		**1168**
Iron	NLE			12860				6114				21140				28210				10070				7920				21290				4878		7295
Lead	400			50.74				5.981				30.17				131.3				18.73				78.99				46.73				69.52		**4549**
Magnesium	NLE			748				517.9				879				895				1135				286				1372				342.3		783.4
Manganese	NLE			28.45				22.4				16.42				67.3				32.46				15.55				78.04				59.09		2581
Mercury	14			0.053				0.036				0.051				0.024				0.05				0.184				0.099				0.34		4.465
Nickel	250			3.39				1.526				4.015				8.536				14.98				4.765				11.81				8.137		6.487
Potassium	NLE			1988				1086				2804				2075				2495				472.2				3002				456		1426
Selenium	63			ND				ND				ND				ND				0.627				3.91				ND				1.474		0.504
Silver	110			ND				ND				ND				ND				ND				ND				ND				0.421		37.83
Sodium	NLE			128.8				22.98				91.43				37.29				216.6				58.66				183.9				177.3		235.1
Thallium	2			ND				ND				ND				ND				ND				ND				ND				ND		ND
Vanadium	370			11.94				9.943				51.64				75.4				25.26				9.353				50.3				10.97		16.76
Zinc	1500			76.22				14.81				27.7				41.81				27.54				13.94				43.54				73.52		**9772**

NOTES:
ND = Not Detected
NLE = No Limit Established
J = Estimated Value: Mass spectrometer and retention time data indicate the presence of the analyte, however the result is less than the method detection limit, but greater than zero.

Table 4-1
Soil Sampling Results
M5 Landfill Site
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP Cleanup Criteria	3593.03	3665.12		3665.13		3665.16		3665.17		3665.19		3665.20		3665.22		3665.23		3686.04		3686.05		3686.07		3686.08		3686.10		3686.11		3688.02		3688.03		3688.06	
Field Sample Location		B99 (24")	B158 (6-12")		B158 (24")		B159 (6-12")		B159 (24")		B160 (6-12")		B160 (24")		B161 (6-12")		B161 (24")		B162 (6-12")		B162 (17")		B163 (6-12")		B163 (19")		B164 (6-12")		B164 (24")		B165 (6-12")		B165 (24")		B166 (6-12")	
Sample Date	(mg/kg)	5/26/1998	6/17/1998		6/17/1998		6/17/1998		6/17/1998		6/17/1998		6/17/1998		6/17/1998		6/17/1998		6/26/1998		6/26/1998		6/26/1998		6/26/1998		6/26/1998		6/26/1998		6/29/1998		6/29/1998		6/29/1998	
Volatiles (mg/kg)																																				
Benzene	3	ND			ND				ND				ND				ND				ND				ND				ND				ND		
Chloroform	19	ND			ND				ND				ND				ND				ND				ND				ND				ND		
Methylene Chloride	49	ND			ND				ND				ND				ND				ND				ND				ND				ND		
Tetrachloroethene	4	ND			ND				ND				ND				ND				ND				ND				ND				ND		
Toluene	1000	ND			ND				ND				ND				ND				ND				ND				ND				ND		
Semi-Volatiles (mg/kg)																																				
Pyridine	NLE			ND			ND				ND				ND				ND				ND				ND				ND				ND	
4-Methylphenol	2800			ND			ND				ND				ND				ND				ND				ND				ND				ND	
Naphthalene	230			ND			ND				ND				ND				ND				ND				ND				ND				ND	
2-Methylnaphthalene	NLE			ND			ND				ND				ND				ND				ND				ND				ND				ND	
Dimethylphthalate	10,000			ND			ND				ND				ND				ND				ND				ND				ND				ND	
Acenaphthylene	NLE			ND			ND				ND				ND				ND				ND				ND				ND				ND	
Acenaphthene	3400			ND			ND				ND				ND				ND				ND				ND				ND				ND	
Dibenzofuran	NLE			ND			ND				ND				ND				ND				ND				ND				ND				ND	
Diethylphthalate	10,000			ND			ND				ND				ND				ND				ND				ND				ND				ND	
Fluorene	2300			ND			ND				ND				ND				ND				ND				ND				ND				ND	
n-Nitrosodiphenylamine	140			ND			ND				ND				ND				ND				ND				ND				ND				ND	
Phenanthrene	NLE			ND			ND				ND				ND				ND				0.23				ND				ND				ND	
Anthracene	10,000			ND			ND				ND				ND				ND				ND				ND				ND				ND	
Di-n-butylphthalate	5700			0.23J			0.21J				0.				0.18J				0.46J				0.				0.38J				0.24J				0.29J	
Fluoranthene	2300			ND			ND				0.3				ND				ND				0.83				ND				ND				ND	
Pyrene	1700			ND			ND				0.4				ND				ND				1.1				ND				0.11J				ND	
Butylbenzylphthalate	1100			ND			ND				ND				ND				ND				ND				ND				ND				ND	
Benzo[a]anthracene	0.9			ND			ND				0.15J				ND				ND				0.59				ND				ND				ND	
3,3'-Dichlorobenzidine	2			ND			ND				ND				ND				ND				ND				ND				ND				ND	
Chrysene	9			ND			ND				0.34				ND				ND				1.1				ND				ND				0.16J	
bis(2-Ethylhexyl)phthalate	49			ND			ND				ND				ND				ND				13.0				ND				ND				ND	
Benzo[b]fluoranthene	0.9			ND			ND				0.14J				ND				ND				0.61				ND				ND				0.17J	
Benzo[k]fluoranthene	0.9			ND			ND				0.13J				ND				ND				0.63				ND				ND				0.14J	
Benzo[a]pyrene	0.66			ND			ND				0.13J				ND				ND				0.53				ND				ND				ND	
Indeno[1,2,3-cd]pyrene	0.9			ND			ND				ND				ND				ND				0.29				ND				ND				0.12J	
Dibenz[a,h]anthracene	0.66			ND			ND				ND				ND				ND				ND				ND				ND				ND	
Benzo[g,h,I]perylene	NLE			ND			ND				ND				ND				ND				0.31				ND				ND				ND	
Pesticides/PCBs (mg/kg)																																				
Heptachlor	0.15			ND			ND				0.003				ND				ND				ND				ND				ND				ND	
Heptachlor Epoxide	NLE			ND			ND				ND				ND				ND				ND				ND				ND				ND	
4,4'-DDE	2			ND			0.003				0.011				ND				ND				ND				ND				0.011				0.003	
Dieldrin	0.042			ND			ND				ND				ND				ND				ND				ND				ND				ND	
Endrin	17			ND			ND				ND				ND				ND				ND				ND				ND				ND	
Endosulfan II	NLE			ND			ND				ND				ND				ND				ND				ND				ND				ND	
4,4'-DDD	3			ND			ND				ND				ND				ND				ND				ND				ND				ND	
Endrin Aldehyde	NLE			ND			ND				ND				ND				ND				ND				ND				ND				ND	
4,4'-DDT	2			ND			0.003				0.019				ND				ND				ND				ND				0.01				0.01	
Endosulfan-Sulfate	NLE			ND			ND				ND				ND				ND				ND				ND				ND				ND	
gamma-Chlordane	NLE			ND			ND				ND				ND				ND				ND				ND				ND				ND	
alpha-Chlordane	NLE			ND			ND				ND				ND				ND				ND				ND				ND				ND	
Arochlor 1254	0.49			ND			ND				ND				ND				ND				ND				ND				ND				ND	
Metals (mg/kg)																																				
Aluminum	NLE			2715			NDA				6285				5319				2685				7000				1807				5053				9267	
Antimony	14			0.349			NDA				0.487				0.579				0.337				4.693				0.31				0.822				1.298	
Arsenic	20			1.328			NDA				8.398				4.368				5.292				**67.77**				0.977				6.525				17.45	
Barium	700			15.24			NDA				16.27				11.72				35.73				180.7				8.533				15.48				14.34	
Beryllium	2			0.401			NDA				0.5945				0.4884				0.2658				0.562				0.3014				0.4805				0.5758	
Cadmium	39			0.1991			NDA				ND				ND				0.4376				ND				0.4001				0.2383				ND	
Calcium	NLE			230.8			NDA				705.6				395				1154				9589				211.4				665				441.5	
Chromium	NLE			20.65			NDA				48.92				41.48				13.87				65.41				14.53				55.07				72.9	
Cobalt	NLE			0.3999			NDA				2.458				1.602				2.082				14.15				0.2978				0.9522				0.8807	
Copper	600			1.01			NDA				7.446				1.858				23.12				433				1.341				12.07				7.172	
Iron	NLE			7173			NDA				25200				13430				5905				131900				5494				18160				30120	
Lead	400			3.345			NDA				22.86				4.473				46.83				98.63				2.754				42.83				14.31	
Magnesium	NLE			712.5			NDA				914.9				1036				494.8				1008				363.8				983.2				902.7	
Manganese	NLE			20.15			NDA				50.78				34.64				24.99				623.9				17.74				30.92				12.46	
Mercury	14			ND			NDA				0.032				ND				0.031				0.067				ND				0.051				0.064	
Nickel	250			1.697			NDA				6.746				2.982				5.629				67.18				1.4				3.563				4.461	
Potassium	NLE			1740			NDA				1640				2860				716.6				1579				587.3				2960				2850	
Selenium	63			ND			NDA				ND				ND				ND				ND				ND				ND				0.371	
Silver	110			ND			NDA				ND				ND				ND				ND				ND				ND				ND	
Sodium	NLE			61.53			NDA				62.96				ND				134.2				953.4				4.653				46.52				7.854	
Thallium	2			ND			NDA				ND				ND				ND				ND				ND				ND				ND	
Vanadium	370			11.98			NDA				58.35				30.25				17.05				15.28				10.23				43.13				62.26	
Zinc	1500			15.95			NDA				39.62				17.6				29.63				457.1				13.81				37.72				32.28	

NOTES:
ND = Not Detected
NLE = No Limit Established
J = Estimated Value: Mass spectrometer and retention time data indicate the presence of the analyte, however the result is less than the method detection limit, but greater than zero.

Table 4-1
Soil Sampling Results
M5 Landfill Site
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP Cleanup Criteria	3688.07		3688.09		3688.10		3688.12		3688.13		3688.15		3688.16		3722.12		3722.13		3722.15		3722.16		3722.18		3722.19		3722.21		3722.22		3805.02		3805.03		3805.04	
Field Sample Location		B166 (24")		B167 (6-12")		B167 (24")		B168 (6-12")		B168 (24")		B169 (6-12")		B169 (24")		B178 (6-12")		B178 (24")		B179 (6-12")		B179 (24")		B180 (6-12")		B180 (24")		B181 (6-12")		B181 (24")		B197 (6-12")		B197 (24")		B198 (6-12")	
Sample Date	(mg/kg)	6/29/1998		6/29/1998		6/29/1998		6/29/1998		6/29/1998		6/29/1998		6/29/1998		7/13/1998		7/13/1998		7/13/1998		7/13/1998		7/13/1998		7/13/1998		7/13/1998		7/13/1998		8/12/1998		8/12/1998		8/12/1998	
Volatiles (mg/kg)																																			
Benzene	3	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Chloroform	19	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Methylene Chloride	49	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Tetrachloroethene	4	ND				3.2				ND				ND				ND				ND				ND				ND				ND	
Toluene	1000	ND				ND				ND				ND				ND				ND				ND				ND				ND	
Semi-Volatiles (mg/kg)																																			
Pyridine	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
4-Methylphenol	2800			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Naphthalene	230			ND				ND				ND				ND				ND				ND				ND				ND				ND	
2-Methylnaphthalene	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Dimethylphthalate	10,000			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Acenaphthylene	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Acenaphthene	3400			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Dibenzofuran	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Diethylphthalate	10,000			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Fluorene	2300			ND				ND				ND				ND				ND				ND				ND				ND				ND	
n-Nitrosodiphenylamine	140			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Phenanthrene	NLE			0.74				ND				ND				ND				ND				0.25				ND				ND				ND	
Anthracene	10,000			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Di-n-butylphthalate	5700			0.12J				0.48J				0.19J				0.58J				0.31J				0.61J				0.76J				ND				0.72J	
Fluoranthene	2300			0.47				ND				ND				ND				ND				0.23				ND				ND				ND	
Pyrene	1700			0.92				ND				ND				ND				ND				0.37				ND				ND				ND	
Butylbenzylphthalate	1100			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Benzo[a]anthracene	0.9			0.28				ND				ND				ND				ND				0.14J				ND				ND				ND	
3,3'-Dichlorobenzidine	2			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Chrysene	9			0.58				ND				ND				ND				ND				0.39				ND				ND				ND	
bis(2-Ethylhexyl)phthalate	49			ND				ND				ND				ND				0.11J				ND				ND				ND				ND	
Benzo[b]fluoranthene	0.9			0.2J				ND				ND				ND				ND				0.11J				ND				ND				ND	
Benzo[k]fluoranthene	0.9			0.22				ND				ND				ND				ND				ND				ND				ND				ND	
Benzo[a]pyrene	0.66			0.21				ND				ND				ND				ND				ND				ND				ND				ND	
Indeno[1,2,3-cd]pyrene	0.9			0.12J				ND				ND				ND				ND				ND				ND				ND				ND	
Dibenz[a,h]anthracene	0.66			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Benzo[g,h,I]perylene	NLE			0.14J				ND				ND				ND				ND				ND				ND				ND				ND	
Pesticides/PCBs (mg/kg)																																			
Heptachlor	0.15			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Heptachlor Epoxide	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
4,4'-DDE	2			0.067				0.003				ND				ND				0.002				0.006				ND				0.033				0.017	
Dieldrin	0.042			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Endrin	17			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Endosulfan II	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
4,4'-DDD	3			0.016				ND				ND				ND				ND				ND				ND				0.001				0.001	
Endrin Aldehyde	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
4,4'-DDT	2			0.091				0.002				ND				ND				0.002				0.009				ND				0.015				0.019	
Endosulfan-Sulfate	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
gamma-Chlordane	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
alpha-Chlordane	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Arochlor 1254	0.49			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Metals (mg/kg)																																			
Aluminum	NLE			6171				3375				1764				5330				1710				10000				12500				5970				4720	
Antimony	14			0.638				ND				0.368				0.54				0.391				0.537				1.16				0.253				1.48	
Arsenic	20			9.463				4.215				3.946				6.39				1.55				9.99				11.6				4.98				**59.1**	
Barium	700			54.63				31.47				45.13				21.4				5.27				42.8				14.2				47.1				68.6	
Beryllium	2			0.5529				0.3019				0.1749				0.728				0.255				1.35				1.8				0.53				0.548	
Cadmium	39			0.3187				0.3736				0.3013				ND				ND				ND				ND				ND				ND	
Calcium	NLE			1435				1273				624.1				851				127				1240				86.4				1720				918	
Chromium	NLE			47.49				10.58				3.82				58.8				19.6				110				139				17.1				19.5	
Cobalt	NLE			2.798				4.252				1.702				1.22				0.247				1.97				1.1				5.69				11.4	
Copper	600			38.89				20.07				14.28				4.95				1				7.44				ND				37.8				92.6	
Iron	NLE			21260				4301				2469				19400				7740				35100				48800				7220				38400	
Lead	400			94.14				20.43				18.74				7.58				7.32				14.6				6.18				40				119	
Magnesium	NLE			1306				468.3				159.2				1620				436				4220				1660				791				491	
Manganese	NLE			59.92				34.87				17.16				38.7				4.3				45.3				17.6				47.8				121	
Mercury	14			0.101				0.025				ND				1.68				0.013				0.042				0.028				0.063				0.029	
Nickel	250			8.902				11.23				4.544				3.57				1.14				5.91				6.24				14.9				18.2	
Potassium	NLE			3105				598.3				193.8				3980				774				9010				3210				1300				1330	
Selenium	63			0.342				ND				ND				ND				ND				ND				ND				ND				ND	
Silver	110			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Sodium	NLE			690				226.4				147.4				84.8				42.6				109				56.6				290				393	
Thallium	2			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Vanadium	370			41.98				14.73				9.161				18.3				17				40.3				92.1				23.2				17.5	
Zinc	1500			61.39				28.85				11.74				48.4				10.5				51.5				44.9				31.9				114	

NOTES:
ND = Not Detected
NLE = No Limit Established
J = Estimated Value: Mass spectrometer and retention time data indicate the presence of the analyte, however the result is less than the method detection limit, but greater than zero.

Table 4-1
Soil Sampling Results
M5 Landfill Site
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP Cleanup Criteria	3805.05	3805.06	3805.07	3805.08	3805.09	3805.10	3805.11	3805.12	3805.13	3805.14	3805.15	3805.16	3805.17	3805.18	3805.19	3805.20	3805.21	3805.22
Field Sample Location		B198 (24")	B199 (6-12")	B199 (24")	B200 (6-12")	B200 (24")	B201 (6-12")	B201 (24")	B202 (6-12")	B202 (24")	B203 (6-12")	B203 (24")	B204 (6-12")	B204 (24")	B205 (6-12")	B205 (24")	B206 (6-12")	B206 (24")	B207 (6-12")
Sample Date	(mg/kg)	8/12/1998	8/12/1998	8/12/1998	8/12/1998	8/12/1998	8/12/1998	8/12/1998	8/12/1998	8/12/1998	8/12/1998	8/12/1998	8/12/1998	8/12/1998	8/12/1998	8/12/1998	8/12/1998	8/12/1998	8/12/1998
Volatiles (mg/kg)																			
Benzene	3	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Chloroform	19	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Methylene Chloride	49	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Tetrachloroethene	4	ND		ND		ND		ND		ND		0.78		ND		ND		ND	
Toluene	1000	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Semi-Volatiles (mg/kg)																			
Pyridine	NLE		ND		ND		ND		ND		ND		ND		ND		ND		ND
4-Methylphenol	2800		ND		ND		ND		ND		ND		ND		ND		ND		ND
Naphthalene	230		ND		ND		ND		0.13J		ND		ND		ND		ND		ND
2-Methylnaphthalene	NLE		ND		ND		ND		ND		ND		ND		ND		ND		ND
Dimethylphthalate	10,000		ND		ND		ND		ND		ND		ND		ND		ND		ND
Acenaphthylene	NLE		0.078J		ND		ND		0.53		ND		ND		ND		ND		ND
Acenaphthene	3400		ND		ND		ND		ND		ND		ND		ND		ND		ND
Dibenzofuran	NLE		ND		ND		ND		ND		ND		ND		ND		ND		ND
Diethylphthalate	10,000		ND		ND		ND		ND		ND		ND		ND		ND		ND
Fluorene	2300		ND		ND		ND		ND		ND		ND		ND		ND		ND
n-Nitrosodiphenylamine	140		ND		ND		ND		ND		ND		ND		ND		ND		ND
Phenanthrene	NLE		0.26		ND		1.0		2.1		0.38		ND		ND		ND		ND
Anthracene	10,000		ND		ND		0.28		0.39		ND		ND		ND		ND		ND
Di-n-butylphthalate	5700		0.7J		0.63J		1.2		0.57J		0.21J		0.21J		0.27J		0.24J		ND
Fluoranthene	2300		0.4		0.17J		1.1		4.5		0.51		0.14J		ND		ND		ND
Pyrene	1700		0.56		0.26		0.95		5.1		0.74		0.26		ND		ND		ND
Butylbenzylphthalate	1100		ND		ND		ND		ND		ND		ND		ND		ND		ND
Benzo[a]anthracene	0.9		0.23J		0.13J		0.47		**2.7**		0.26		0.12J		ND		ND		ND
3,3'-Dichlorobenzidine	2		ND		ND		ND		ND		ND		ND		ND		ND		ND
Chrysene	9		0.46		0.29		0.67		4.9		0.49		0.24J		ND		ND		ND
bis(2-Ethylhexyl)phthalate	49		ND		ND		ND		ND		ND		ND		ND		ND		ND
Benzo[b]fluoranthene	0.9		0.22J		0.16J		0.36		**3.1**		0.23J		ND		ND		ND		ND
Benzo[k]fluoranthene	0.9		0.23		0.17J		0.36		**2.8**		0.25		ND		ND		ND		ND
Benzo[a]pyrene	0.66		0.24		0.13J		0.39		**2.9**		0.26		ND		ND		ND		ND
Indeno[1,2,3-cd]pyrene	0.9		ND		ND		ND		**2.1**		0.15J		ND		ND		ND		ND
Dibenz[a,h]anthracene	0.66		ND		ND		ND		**1.5**		ND		ND		ND		ND		ND
Benzo[g,h,I]perylene	NLE		ND		ND		ND		2.2		0.14J		ND		ND		ND		ND
Pesticides/PCBs (mg/kg)																			
Heptachlor	0.15		ND		ND		ND		ND		ND		ND		ND		ND		ND
Heptachlor Epoxide	NLE		ND		ND		ND		ND		ND		ND		ND		ND		ND
4,4'-DDE	2		0.26		0.01		0.047		0.016		0.102		0.024		ND		0.004		ND
Dieldrin	0.042		ND		ND		ND		ND		ND		ND		ND		ND		ND
Endrin	17		ND		ND		ND		ND		ND		ND		ND		ND		ND
Endosulfan II	NLE		ND		ND		ND		ND		ND		ND		ND		ND		ND
4,4'-DDD	3		0.116		ND		ND		ND		0.031		0.004		ND		0.003		ND
Endrin Aldehyde	NLE		ND		ND		ND		ND		ND		ND		ND		ND		ND
4,4'-DDT	2		1.321		0.01		ND		0.054		0.34		0.019		ND		0.003		ND
Endosulfan-Sulfate	NLE		ND		ND		ND		ND		ND		ND		ND		ND		ND
gamma-Chlordane	NLE		ND		ND		ND		ND		ND		ND		ND		ND		ND
alpha-Chlordane	NLE		ND		ND		ND		ND		ND		ND		ND		ND		ND
Arochlor 1254	0.49		ND		ND		**1.499**		ND		ND		ND		ND		ND		0.165
Metals (mg/kg)																			
Aluminum	NLE		9820		10500		5920		5990		6500		3940		4920		12300		3020
Antimony	14		6.56		0.35		0.617		0.751		0.359		ND		ND		ND		0.411
Arsenic	20		11.5		8.59		5.5		7.11		6.34		5.27		7.61		8.46		6.07
Barium	700		363		147		84.6		113		25.5		35.5		61.6		99.6		22.3
Beryllium	2		0.9		0.743		0.92		0.58		0.428		0.389		0.354		0.985		0.288
Cadmium	39		ND		0.543		0.929		ND		ND		ND		ND		ND		ND
Calcium	NLE		537		1390		1500		455		2470		1100		1010		1270		670
Chromium	NLE		77.4		25.8		37.8		49.8		36		19.8		12.9		26.4		18.4
Cobalt	NLE		5.14		7.57		5.81		1.98		4.27		4.61		4.8		9.39		3.91
Copper	600		122		38.6		47.3		77.4		36.4		35		18.1		110		31.8
Iron	NLE		33400		15300		12600		23300		14600		8620		5100		10200		15100
Lead	400		**494**		37.6		62.8		268		23.8		35		28.6		39.9		12.6
Magnesium	NLE		1700		900		1430		1680		2450		630		342		540		329
Manganese	NLE		143		126		332		39.1		83.9		61.8		21.1		63.2		65.6
Mercury	14		0.153		0.044		0.391		0.115		0.602		0.064		ND		ND		0.047
Nickel	250		23.6		19.6		10.5		5.95		11		8.78		14.5		24.5		11.9
Potassium	NLE		4160		3580		3670		3720		3560		1470		989		2280		852
Selenium	63		ND		ND		ND		ND		ND		ND		1.24		ND		0.606
Silver	110		ND		ND		ND		ND		ND		ND		ND		ND		ND
Sodium	NLE		535		485		526		566		411		207		339		460		252
Thallium	2		ND		ND		ND		0.498		ND		ND		ND		ND		ND
Vanadium	370		43.5		30.9		25.3		31.2		36.7		22.9		23.7		31.5		17.1
Zinc	1500		116		80.2		514		38.1		39.2		29.2		27.2		31.8		165

NOTES:
ND = Not Detected
NLE = No Limit Established
J = Estimated Value: Mass spectrometer and retention time data indicate the presence of the analyte, however the result is less than the method detection limit, but greater than zero.

Table 4-1
Soil Sampling Results
M5 Landfill Site
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP Cleanup Criteria	3805.23		3805.24		3805.25		3805.26		3805.27		3805.28		3805.29		3805.30		3805.31		3809.02		3809.03		3809.04		3809.05		3809.06		3809.07		3809.08		3809.09		3809.10	
Field Sample Location		B207 (24")		B208 (6-12")		B208 (24")		B209 (6-12")		B209 (24")		B210 (6-12")		B210 (24")		B211 (6-12")		B211 (24")		B212 (6-12")		B212 (24")		B213 (6-12")		B213 (24")		B214 (6-12")		B214 (24")		B215 (6-12")		B215 (24")		B216 (6-12")	
Sample Date	(mg/kg)	8/12/1998		8/12/1998		8/12/1998		8/12/1998		8/12/1998		8/12/1998		8/12/1998		8/12/1998		8/12/1998		8/13/1998		8/13/1998		8/13/1998		8/13/1998		8/13/1998		8/13/1998		8/13/1998		8/13/1998		8/13/1998	
Volatiles (mg/kg)																																			
Benzene	3	ND			ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Chloroform	19	ND			ND		0.45		0.49		0.55		0.46		0.52		0.41		0.43																
Methylene Chloride	49	ND			ND		ND		ND		ND		ND		ND		ND		ND																
Tetrachloroethene	4	ND			ND		ND		ND		ND		ND		ND		ND		ND																
Toluene	1000	ND			ND		ND		ND		ND		ND		ND		ND		ND																
Semi-Volatiles (mg/kg)																																			
Pyridine	NLE		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND
4-Methylphenol	2800		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND
Naphthalene	230		ND		0.12J		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND
2-Methylnaphthalene	NLE		ND		0.12J		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND
Dimethylphthalate	10,000		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND
Acenaphthylene	NLE		ND		0.26		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND
Acenaphthene	3400		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND
Dibenzofuran	NLE		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND
Diethylphthalate	10,000		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND
Fluorene	2300		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND
n-Nitrosodiphenylamine	140		ND		ND		ND		0.06J		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND
Phenanthrene	NLE		ND		0.76		ND		0.15J		0.14J		0.28J		0.19J		0.16J		ND		ND		ND		ND		ND		ND		ND		ND		ND
Anthracene	10,000		ND		0.2		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND
Di-n-butylphthalate	5700		0.25J		0.54J		0.84		0.58J		0.33J		0.67J		0.26J		0.66J		0.25J																
Fluoranthene	2300		ND		1.4		0.19J		0.16J		0.37J		0.37J		0.22J		0.16J		0.28J																
Pyrene	1700		ND		1.1		0.26		0.27		0.4J		0.56J		0.31J		0.27J		0.34J																
Butylbenzylphthalate	1100		ND		ND		ND		ND		ND		ND		ND		ND		ND																
Benzo[a]anthracene	0.9		ND		ND		0.11J		ND		0.23J		0.2J		0.12J		ND		0.14J																
3,3'-Dichlorobenzidine	2		ND		ND		ND		ND		ND		ND		ND		ND		ND																
Chrysene	9		ND		ND		0.24J		ND		0.36J		0.46J		0.24J		ND		0.28J																
bis(2-Ethylhexyl)phthalate	49		ND		ND		ND		ND		ND		ND		ND		ND		ND																
Benzo[b]fluoranthene	0.9		ND		0.53		ND		ND		0.18J		0.19J		ND		ND		ND																
Benzo[k]fluoranthene	0.9		ND		ND		ND		ND		0.22J		0.24J		ND		ND		ND																
Benzo[a]pyrene	0.66		ND		0.4		ND		ND		0.2J		0.22J		ND		ND		ND																
Indeno[1,2,3-cd]pyrene	0.9		ND		0.19J		ND		ND		0.12J		0.14J		ND		ND		ND																
Dibenz[a,h]anthracene	0.66		ND		0.17J		ND		ND		ND		ND		ND		ND		ND																
Benzo[g,h,i]perylene	NLE		ND		0.19J		ND		ND		0.21J		ND		ND		ND		ND																
Pesticides/PCBs (mg/kg)																																			
Heptachlor	0.15		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND
Heptachlor Epoxide	NLE		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND
4,4'-DDE	2		0.005		0.028		0.057		0.057		ND		0.473		0.313		0.013		0.088																
Dieldrin	0.042		ND		ND		ND		ND		ND		ND		ND		ND		ND																
Endrin	17		ND		ND		ND		ND		ND		ND		ND		ND		ND																
Endosulfan II	NLE		ND		ND		ND		ND		ND		ND		ND		ND		ND																
4,4'-DDD	3		ND		0.025		0.014		0.008		ND		0.814		0.214		0.004		0.008																
Endrin Aldehyde	NLE		ND		ND		ND		ND		ND		ND		ND		ND		ND																
4,4'-DDT	2		0.006		0.167		0.025		0.014		ND		1.042		0.463		0.015		0.106																
Endosulfan-Sulfate	NLE		ND		ND		ND		ND		ND		ND		ND		ND		ND																
gamma-Chlordane	NLE		ND		ND		ND		ND		ND		ND		ND		ND		ND																
alpha-Chlordane	NLE		ND		ND		ND		ND		ND		ND		ND		ND		ND																
Arochlor 1254	0.49		ND		ND		ND		ND		ND		ND		ND		ND		ND																
Metals (mg/kg)																																			
Aluminum	NLE		3420		6840		5330		958		3050		3690		6270		7680		10900																
Antimony	14		0.737		0.87		0.665		ND		ND		0.466		1.24		0.827		1.7																
Arsenic	20		10.7		8.17		9.51		1.23		9		10.5		10.9		6.37		18.5																
Barium	700		71.1		59.7		43.6		129		55.3		70.3		42.5		28.8		9.95																
Beryllium	2		0.525		0.671		0.525		0.0934		0.423		0.492		0.591		0.885		1.27																
Cadmium	39		ND		ND		ND		ND		ND		ND		ND		ND		ND																
Calcium	NLE		714		1740		2000		405		1440		777		320		747		511																
Chromium	NLE		32		43.7		36.8		2.75		5.38		26.1		67.3		78.2		122																
Cobalt	NLE		2.42		3.08		2.66		1.56		2.47		2.82		0.937		1.07		0.799																
Copper	600		58		36.6		26.3		12.1		14.6		33.1		7.75		4.39		3.87																
Iron	NLE		14800		18600		15500		2220		5180		16000		36000		24600		36400																
Lead	400		135		289		73.8		7.32		25.3		146		20.2		11.8		12.6																
Magnesium	NLE		995		1800		1850		136		316		918		2080		2350		3600																
Manganese	NLE		36.2		72.7		73.2		25.5		23.1		105		13		31.9		26.6																
Mercury	14		0.075		0.072		0.036		ND		0.041		0.645		0.244		0.061		0.042																
Nickel	250		7.99		10.4		7.49		3.63		5.3		11		4.41		4.35		4.77																
Potassium	NLE		3150		2920		3840		248		369		2690		4850		4890		6900																
Selenium	63		ND		ND		ND		ND		ND		0.618		ND		ND		ND																
Silver	110		ND		ND		ND		ND		ND		ND		ND		ND		ND																
Sodium	NLE		404		294		327		159		349		412		650		132		101																
Thallium	2		0.505		ND		ND		0.422		0.437		ND		0.564		0.531		0.738																
Vanadium	370		21.1		38.1		32.7		5.82		11.2		21.5		38.4		48.5		45.5																
Zinc	1500		48.9		197		48		11.7		22.3		178		27.8		43.1		34																

NOTES:
ND = Not Detected
NLE = No Limit Established
J = Estimated Value: Mass spectrometer and retention time data indicate the presence of the analyte, however the result is less than the method detection limit, but greater than zero.

Table 4-1
Soil Sampling Results
M5 Landfill Site
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP Cleanup Criteria	3809.11	3809.12	3809.13	3809.14	3809.15	3809.16	3809.17	3809.18	3809.19	3809.20	3809.21	3809.22	3809.23	3812.02	3812.03	3812.04	3812.05	3812.06
Field Sample Location		B216 (24")	B217 (6-12")	B217 (24")	B218 (6-12")	B218 (24")	B219 (6-12")	B219 (24")	B220 (6-12")	B220 (24")	B221 (6-12")	B221 (24")	B222 (6-12")	B222 (24")	B223 (6-12")	B223 (24")	B224 (6-12")	B224 (24")	B225 (6-12")
Sample Date	(mg/kg)	8/13/1998	8/13/1998	8/13/1998	8/13/1998	8/13/1998	8/13/1998	8/13/1998	8/13/1998	8/13/1998	8/13/1998	8/13/1998	8/13/1998	8/13/1998	8/14/1998	8/14/1998	8/14/1998	8/14/1998	8/14/1998
Volatiles (mg/kg)																			
Benzene	3	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Chloroform	19	0.39		0.46		0.44		0.44		ND		0.4		0.48		ND		ND	
Methylene Chloride	49	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Tetrachloroethene	4	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Toluene	1000	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Semi-Volatiles (mg/kg)																			
Pyridine	NLE		ND		ND		ND		ND		ND		ND		ND		ND		ND
4-Methylphenol	2800		ND		ND		ND		ND		ND		ND		ND		ND		ND
Naphthalene	230		ND		ND		ND		3.6		ND		ND		ND		ND		ND
2-Methylnaphthalene	NLE		ND		ND		ND		6.6		ND		ND		ND		ND		ND
Dimethylphthalate	10,000		ND		ND		ND		ND		ND		ND		ND		ND		ND
Acenaphthylene	NLE		ND		0.48J		ND		5.2		0.12J		ND		0.26J		ND		0.12J
Acenaphthene	3400		ND		ND		ND		3.3		ND		ND		ND		ND		ND
Dibenzofuran	NLE		ND		ND		ND		0.83J		ND		ND		ND		ND		ND
Diethylphthalate	10,000		ND		ND		ND		ND		ND		ND		ND		ND		ND
Fluorene	2300		ND		ND		ND		8.0		ND		ND		ND		ND		ND
n-Nitrosodiphenylamine	140		ND		ND		ND		ND		ND		ND		ND		ND		ND
Phenanthrene	NLE		0.14J		1.3		0.11J		0.06		0.56J		0.22J		1.0J		ND		0.42J
Anthracene	10,000		ND		0.25J		ND		6		ND		ND		0.15J		ND		ND
Di-n-butylphthalate	5700		0.19J		0.65J		0.38J		0.49J		0.22J		1.0 J		0.31J		0.49J		0.21J
Fluoranthene	2300		0.19J		2.9		0.22J		0.02		0.64J		0.27J		1.3		0.095J		0.71J
Pyrene	1700		0.18J		3.5		0.28J		0.04		0.9J		0.37J		1.9		0.11J		0.89J
Butylbenzylphthalate	1100		ND		ND		ND		ND		ND		ND		ND		ND		ND
Benzo[a]anthracene	0.9		ND		**1.0J**		0.11J		**0.01**		0.32J		0.16J		0.7J		ND		0.24J
3,3'-Dichlorobenzidine	2		ND		ND		ND		ND		ND		ND		ND		ND		ND
Chrysene	9		ND		2.5		0.28J		**0.03**		0.68J		0.29J		1.5		ND		0.72J
bis(2-Ethylhexyl)phthalate	49		ND		ND		0.12J		ND		ND		ND		ND		ND		ND
Benzo[b]fluoranthene	0.9		ND		**1.1**		0.17J		**9.5**		0.33J		0.14J		0.67J		ND		0.32J
Benzo[k]fluoranthene	0.9		ND		**1.2**		ND		**1.3**		0.43J		0.18J		0.72J		ND		0.38J
Benzo[a]pyrene	0.66		ND		**1.0J**		ND		**6.7**		0.36J		0.13J		**0.77J**		ND		0.28J
Indeno[1,2,3-cd]pyrene	0.9		ND		0.55J		ND		**2.0**		ND		ND		0.55J		ND		0.2J
Dibenz[a,h]anthracene	0.66		ND		ND		ND		**1.4**		ND		ND		ND		ND		ND
Benzo[g,h,I]perylene	NLE		ND		0.49J		ND		2.0		ND		ND		0.49J		ND		0.21J
Pesticides/PCBs (mg/kg)																			
Heptachlor	0.15		0.004		ND		ND		ND		ND		ND		ND		ND		ND
Heptachlor Epoxide	NLE		0.023		ND		ND		ND		ND		ND		ND		0.01		ND
4,4'-DDE	2		0.013		0.315		0.233		0.104		0.433		0.068		0.644		0.024		0.422
Dieldrin	0.042		0.004		ND		ND		ND		ND		ND		ND		0.003		ND
Endrin	17		ND		ND		ND		ND		ND		ND		ND		ND		ND
Endosulfan II	NLE		ND		ND		ND		ND		ND		ND		ND		ND		ND
4,4'-DDD	3		0.012		0.17		0.082		0.021		2.225		0.03		ND		0.004		0.048
Endrin Aldehyde	NLE		ND		ND		ND		ND		ND		ND		0.061		ND		ND
4,4'-DDT	2		0.039		0.444		0.472		0.15		**5.604**		0.427		1.237		0.05		1.0
Endosulfan-Sulfate	NLE		ND		ND		ND		ND		ND		ND		ND		ND		ND
gamma-Chlordane	NLE		0.004		ND		ND		ND		ND		ND		ND		0.002		ND
alpha-Chlordane	NLE		0.001		ND		ND		ND		ND		ND		ND		ND		ND
Arochlor 1254	0.49		ND		ND		ND		ND		ND		ND		ND		ND		ND
Metals (mg/kg)																			
Aluminum	NLE		8370		2150		3880		4400		7220		6310		8000		8920		3360
Antimony	14		ND		ND		0.285		0.763		1.38		0.483		0.759		ND		0.444
Arsenic	20		5.26		5.78		7.42		10		9.59		10.2		8.04		4.76		6.16
Barium	700		25		24.4		98.9		70.6		55.2		26		40.3		25.7		28.3
Beryllium	2		0.422		0.227		0.804		0.534		1.1		0.446		0.764		0.399		0.336
Cadmium	39		ND		ND		0.115		ND		ND		ND		ND		ND		ND
Calcium	NLE		774		901		1700		983		654		314		1210		606		631
Chromium	NLE		28.8		12.9		21.4		37.5		74.3		69		60.4		27.1		22.4
Cobalt	NLE		1.68		1.77		2.73		2.52		1.09		1.08		2.47		1.6		1.47
Copper	600		4.41		24.9		30.3		29.8		32.9		4.04		22		3.7		23.1
Iron	NLE		11900		6370		10700		19400		28900		17800		21500		11300		10800
Lead	400		23.4		54.3		117		122		137		12.9		67.7		15.3		81.2
Magnesium	NLE		1120		443		2390		1440		2280		1680		2160		1040		748
Manganese	NLE		48.9		30		103		49.5		20.7		12.9		69.5		46.6		29.2
Mercury	14		0.095		0.159		0.236		2.341		0.392		0.197		0.096		0.351		0.301
Nickel	250		4.55		4.61		6.11		6.6		5.86		4.76		8.15		4.31		5.43
Potassium	NLE		3200		882		2270		4340		4950		5820		4300		3180		1920
Selenium	63		ND		0.582		ND		ND		ND		0.353		ND		ND		ND
Silver	110		ND		ND		ND		ND		ND		ND		ND		ND		ND
Sodium	NLE		95.2		142		491		386		723		572		168		94.2		262
Thallium	2		ND		0.348		ND		0.54		ND		0.527		ND		ND		0.457
Vanadium	370		24.2		16		20.5		28.3		34.4		38.7		41.8		23.5		23.1
Zinc	1500		28.6		30.6		67.3		57.2		62		25.8		79.5		22.5		48

NOTES:
ND = Not Detected
NLE = No Limit Established
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Table 4-1
Soil Sampling Results
M5 Landfill Site
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP Cleanup Criteria	3812.07		3812.08		3812.09		3812.10		3812.11		3812.12		3812.13		3812.14		3812.15		3812.16		3812.17		3812.18		3812.19		3827.02		3827.03		3827.04		3827.05		3827.06	
Field Sample Location		B225 (24")		B226 (6-12")		B226 (24")		B227 (6-12")		B227 (24")		B228 (6-12")		B228 (24")		B229 (6-12")		B229 (24")		B230 (6-12")		B230 (24")		B231 (6-12")		B231 (24")		B232 (6-12")		B232 (24")		B233 (6-12")		B233 (24")		B234 (6-12")	
Sample Date	(mg/kg)	8/14/1998		8/14/1998		8/14/1998		8/14/1998		8/14/1998		8/14/1998		8/14/1998		8/14/1998		8/14/1998		8/14/1998		8/14/1998		8/14/1998		8/14/1998		8/25/1998		8/25/1998		8/25/1998		8/25/1998		8/25/1998	
Volatiles (mg/kg)																																			
Benzene	3	ND			ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Chloroform	19	ND			ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Methylene Chloride	49	ND			ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Tetrachloroethene	4	ND			ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Toluene	1000	ND			ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		ND		
Semi-Volatiles (mg/kg)																																			
Pyridine	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
4-Methylphenol	2800			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Naphthalene	230			ND				ND				ND				ND				ND				ND				ND				ND				ND	
2-Methylnaphthalene	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Dimethylphthalate	10,000			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Acenaphthylene	NLE			0.11J				ND				ND				ND				ND				ND				ND				0.23J				ND	
Acenaphthene	3400			ND				ND				ND				ND				ND				ND				ND				ND				0.21 J	
Dibenzofuran	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Diethylphthalate	10,000			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Fluorene	2300			ND				ND				ND				ND				ND				ND				ND				ND				0.26 J	
n-Nitrosodiphenylamine	140			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Phenanthrene	NLE			0.36J				ND				0.17J				0.28J				0.31J				ND				ND				0.59J				3.2	
Anthracene	10,000			ND				ND				ND				ND				ND				ND				ND				0.17J				0.75 J	
Di-n-butylphthalate	5700			0.53J				0.21J				0.67J				0.71J				0.47J				0.16J				0.42J				0.45J				0.58 J	
Fluoranthene	2300			0.5J				ND				0.16J				0.29J				0.36J				0.25J				0.13J				0.95J				5.1	
Pyrene	1700			0.7J				0.14J				0.27J				0.43J				0.55J				0.38J				0.2J				1.2				4.7	
Butylbenzylphthalate	1100			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Benzo[a]anthracene	0.9			0.28J				ND				ND				0.16J				0.19J				0.13J				ND				0.57J				**2.1**	
3,3'-Dichlorobenzidine	2			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Chrysene	9			0.61J				ND				0.2J				0.34J				0.45J				0.35J				ND				1.0J				3.1	
bis(2-Ethylhexyl)phthalate	49			ND				ND				ND				ND				ND				ND				ND				ND				0.13 J	
Benzo[b]fluoranthene	0.9			0.31J				ND				ND				0.13J				0.18J				0.14J				ND				0.45J				**1.6**	
Benzo[k]fluoranthene	0.9			0.36J				ND				ND				0.2J				0.21J				0.16J				ND				0.62J				**1.5**	
Benzo[a]pyrene	0.66			0.32J				ND				ND				0.15J				0.21J				0.15J				ND				0.57J				**1.6**	
Indeno[1,2,3-cd]pyrene	0.9			0.2J				ND				ND				ND				0.12J				ND				ND				0.33J				0.88 J	
Dibenz[a,h]anthracene	0.66			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Benzo[g,h,i]perylene	NLE			0.19J				ND				ND				ND				0.13J				ND				ND				0.29J				0.65J	
Pesticides/PCBs (mg/kg)																																			
Heptachlor	0.15			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Heptachlor Epoxide	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
4,4'-DDE	2			0.612				0.241				0.262				0.169				0.483				0.366				0.383				0.104				0.08	
Dieldrin	0.042			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Endrin	17			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Endosulfan II	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
4,4'-DDD	3			0.164				0.276				0.419				0.179				0.127				0.089				0.181				0.068				0.143	
Endrin Aldehyde	NLE			ND				ND				ND				ND				ND				ND				ND				ND				ND	
4,4'-DDT	2			0.973				0.859				ND				1.07				0.833				0.626				1.344				0.345				1.143	
Endosulfan-Sulfate	NLE			ND				ND				2.215				ND				ND				ND				ND				ND				ND	
gamma-Chlordane	NLE			ND				ND				ND				ND				ND				ND				0.007				ND				ND	
alpha-Chlordane	NLE			ND				ND				ND				ND				ND				ND				0.01				ND				ND	
Arochlor 1254	0.49			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Metals (mg/kg)																																			
Aluminum	NLE			5370				6730				8520				4570				6620				7420				7250				3370				4870	
Antimony	14			0.648				NDo ata				1.17				1.06				0.918				1.12				1.28				0.374				0.9	
Arsenic	20			7.7				6.64				8.79				11				9.13				7.76				9.52				6.66				6.23	
Barium	700			47.9				38.5				39.9				31.5				19				31				45.3				35.5				25.8	
Beryllium	2			0.719				0.916				1.43				0.514				0.723				0.786				0.958				0.5				0.861	
Cadmium	39			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Calcium	NLE			1020				519				395				344				420				786				862				708				199	
Chromium	NLE			44.1				73.2				92.1				51.5				62.7				59.1				74.3				20.6				55.4	
Cobalt	NLE			2.1				0.94				1.42				0.718				1.55				2.61				1.36				3.37				0.88	
Copper	600			32.9				8.81				5.93				17.7				11.6				12.9				14.2				11.9				2.95	
Iron	NLE			18800				25700				30100				30800				20200				26600				29600				12200				19900	
Lead	400			111				21.4				23.9				18.8				36.3				47.5				55.9				25.5				14.4	
Magnesium	NLE			1470				2690				2940				1530				1890				1430				2260				684				1640	
Manganese	NLE			40				11.5				26.8				10.5				45.2				45.2				21.2				61.6				14.7	
Mercury	14			0.283				0.198				0.212				0.182				0.067				0.078				0.278				0.22				0.213	
Nickel	250			7.43				4.49				5.39				3.49				5.19				9.07				6.07				6.49				3.35	
Potassium	NLE			4750				5430				6580				3610				3780				5360				4740				1950				6550	
Selenium	63			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Silver	110			ND				ND				ND				ND				ND				ND				ND				ND				ND	
Sodium	NLE			448				483				315				565				135				241				360				297				194	
Thallium	2			0.457				0.898				0.567				0.69				ND				0.429				0.725				0.456				0.68	
Vanadium	370			28.9				24.8				32.1				34				42.3				60.8				40.3				15.7				17.6	
Zinc	1500			50.3				34.3				50.8				43.5				32.1				36.3				43.4				59.6				28.8	

NOTES:
ND = Not Detected
NLE = No Limit Established
J = Estimated Value: Mass spectrometer and retention time data indicate the presence of the analyte, however the result is less than the method detection limit, but greater than zero.

Table 4-1
Soil Sampling Results
M5 Landfill Site
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP Cleanup Criteria (mg/kg)	3827.07	3827.08	3827.09	3827.10	3827.11	3836.02	3836.03	3836.04	3836.05	3836.06	3836.07	3836.08	3836.09	3836.10	3836.11	3836.12	3836.13	3836.14
Field Sample Location		B234 (24")	B235 (6-12")	B235 (24")	B236 (6-12")	B236 (24")	B237 (6-12")	B237 (24")	B238 (6-12")	B238 (24")	B239 (6-12")	B239 (24")	B240 (6-12")	B240 (24")	B241 (6-12")	B241 (24")	B242 (6-12")	B242 (24")	B243 (6-12")
Sample Date		8/25/1998	8/25/1998	8/25/1998	8/25/1998	8/25/1998	8/26/1998	8/26/1998	8/26/1998	8/26/1998	8/26/1998	8/26/1998	8/26/1998	8/26/1998	8/26/1998	8/26/1998	8/26/1998	8/26/1998	8/26/1998
Volatiles (mg/kg)																			
Benzene	3	ND		ND		0.34		ND		ND		ND		ND		ND		ND	
Chloroform	19	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Methylene Chloride	49	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Tetrachloroethene	4	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Toluene	1000	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Semi-Volatiles (mg/kg)																			
Pyridine	NLE		ND		ND		ND		ND		ND		ND		ND		ND		ND
4-Methylphenol	2800		ND		ND		ND		ND		ND		ND		ND		ND		ND
Naphthalene	230		ND		ND		ND		ND		ND		ND		ND		ND		ND
2-Methylnaphthalene	NLE		ND		ND		ND		ND		ND		ND		ND		ND		ND
Dimethylphthalate	10,000		ND		ND		ND		ND		ND		ND		ND		ND		ND
Acenaphthylene	NLE		ND		0.2J		ND		ND		0.34J		0.26J		ND		ND		ND
Acenaphthene	3400		ND		ND		ND		ND		ND		ND		ND		ND		ND
Dibenzofuran	NLE		ND		ND		ND		ND		ND		ND		ND		ND		ND
Diethylphthalate	10,000		ND		ND		ND		ND		ND		ND		ND		ND		ND
Fluorene	2300		ND		ND		ND		ND		ND		ND		ND		ND		ND
n-Nitrosodiphenylamine	140		ND		ND		ND		ND		ND		ND		ND		ND		ND
Phenanthrene	NLE		0.37J		0.67J		0.3J		0.44J		1.0J		0.99J		0.21J		ND		ND
Anthracene	10,000		ND		0.12J		ND		ND		ND		ND		ND		ND		ND
Di-n-butylphthalate	5700		0.41J		0.28J		0.32J		ND		0.19J		0.44J		0.42J		ND		0.29J
Fluoranthene	2300		0.41J		0.7J		0.31J		0.35J		0.95J		0.85J		0.25J		0.18J		ND
Pyrene	1700		0.57J		1.1		0.61J		0.58J		1.8		1.6		0.39J		0.31J		ND
Butylbenzylphthalate	1100		ND		ND		ND		ND		ND		ND		ND		ND		ND
Benzo[a]anthracene	0.9		0.22J		0.38J		0.22J		0.2J		0.55J		0.51J		ND		ND		ND
3,3'-Dichlorobenzidine	2		ND		ND		ND		ND		ND		ND		ND		ND		ND
Chrysene	9		0.45J		0.86J		0.49J		0.41J		1.3		1.1		ND		ND		ND
bis(2-Ethylhexyl)phthalate	49		ND		ND		ND		ND		ND		ND		ND		ND		ND
Benzo[b]fluoranthene	0.9		0.2J		0.34J		ND		ND		0.5J		0.41J		ND		ND		ND
Benzo[k]fluoranthene	0.9		0.24J		0.42J		ND		ND		0.52J		0.47J		ND		ND		ND
Benzo[a]pyrene	0.66		0.21J		0.4J		ND		ND		0.56J		0.51J		ND		ND		ND
Indeno[1,2,3-cd]pyrene	0.9		ND		0.18J		ND		ND		0.24J		0.21J		ND		ND		ND
Dibenz[a,h]anthracene	0.66		ND		ND		ND		ND		ND		ND		ND		ND		ND
Benzo[g,h,i]perylene	NLE		0.12J		0.19J		ND		ND		0.23J		0.22J		ND		ND		ND
Pesticides/PCBs (mg/kg)																			
Heptachlor	0.15		ND		ND		ND		ND		ND		ND		ND		ND		ND
Heptachlor Epoxide	NLE		ND		ND		ND		ND		ND		ND		ND		ND		ND
4,4'-DDE	2		0.204		0.272		0.275		0.412		0.592		0.445		0.195		0.036		0.135
Dieldrin	0.042		ND		ND		ND		ND		**0.049**		ND		ND		ND		ND
Endrin	17		ND		ND		ND		ND		ND		ND		ND		ND		ND
Endosulfan II	NLE		ND		ND		ND		ND		ND		ND		ND		ND		ND
4,4'-DDD	3		0.209		0.158		0.021		0.033		0.779		0.287		0.077		0.056		0.037
Endrin Aldehyde	NLE		ND		ND		ND		ND		ND		ND		ND		ND		ND
4,4'-DDT	2		1.028		1.28		0.65		1.438		**2.914**		1.636		0.599		0.07		0.62
Endosulfan-Sulfate	NLE		ND		ND		ND		ND		ND		ND		ND		ND		ND
gamma-Chlordane	NLE		ND		ND		0.012		0.007		0.004		ND		ND		ND		ND
alpha-Chlordane	NLE		ND		ND		0.011		0.007		0.003		0.002		ND		ND		ND
Arochlor 1254	0.49		ND		ND		ND		ND		ND		ND		ND		ND		ND
Metals (mg/kg)																			
Aluminum	NLE		5200		10200		4020		6180		5840		7580		5080		5800		7380
Antimony	14		1.04		1.67		0.604		0.948		0.721		1.16		0.821		0.593		1.15
Arsenic	20		7.87		9.48		5.11		8.95		9.08		12.6		7.6		6.45		10
Barium	700		36.4		36.3		16.8		20.1		49.4		48.1		46.5		24.5		51
Beryllium	2		0.887		1.39		0.479		0.733		0.799		0.949		1.15		0.736		0.927
Cadmium	39		ND		ND		ND		ND		ND		ND		ND		ND		ND
Calcium	NLE		442		583		595		290		371		421		332		575		427
Chromium	NLE		57.3		112		40.3		59.8		61.8		71.4		52.1		45.8		72
Cobalt	NLE		0.948		1.67		1.79		2.79		1.01		1.26		1.11		0.951		2.04
Copper	600		10.5		5.84		8.44		1.78		17.6		18.4		6.5		7.62		12.3
Iron	NLE		22900		41300		17300		31700		24100		28500		21100		17000		33900
Lead	400		30.7		21.9		26		13.4		50.6		55.8		28.5		19.4		17
Magnesium	NLE		1690		4380		928		872		1690		2060		1470		1420		1930
Manganese	NLE		14.1		15.7		53.3		60.2		13.9		16.9		13		28.1		24.9
Mercury	14		0.288		0.217		0.037		0.015		0.38		0.391		0.332		0.19		0.255
Nickel	250		4.77		6.44		5.85		7.59		4.97		6.16		5		**431**		8.64
Potassium	NLE		3720		10200		2360		2490		6150		4130		5540		4830		7840
Selenium	63		ND		ND		ND		ND		ND		ND		ND		ND		ND
Silver	110		ND		ND		ND		ND		ND		ND		ND		ND		ND
Sodium	NLE		431		582		104		97		320		374		304		362		898
Thallium	2		0.475		0.589		0.402		0.57		0.606		1.06		1.03		0.426		0.71
Vanadium	370		22.7		51.8		39.8		74.9		28.9		40.4		21.3		19.8		59.3
Zinc	1500		43.8		43.6		39.1		46.3		39.6		43.7		43.8		53.5		35.8

NOTES:
ND = Not Detected
NLE = No Limit Established
J = Estimated Value: Mass spectrometer and retention time data indicate the presence of the analyte, however the result is less than the method detection limit, but greater than zero.

Table 4-1
Soil Sampling Results
M5 Landfill Site
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP Cleanup Criteria	3836.15	3836.16	3836.17	3836.18	3836.19	3836.20	3836.21	3836.22	3836.23	3836.24	3836.25	3836.26	3836.27	3836.28	3836.29	3836.30	3836.31	3836.32
Field Sample Location		B243 (24")	B244 (6-12")	B244 (24")	B245 (6-12")	B245 (24")	B246 (6-12")	B246 (24")	B247 (6-12")	B247 (24")	B248 (6-12")	B248 (24")	B249 (6-12")	B249 (24")	B250 (6-12")	B250 (24")	B251 (6-12")	B251 (24")	B252 (6-12")
Sample Date	(mg/kg)	8/26/1998	8/26/1998	8/26/1998	8/26/1998	8/26/1998	8/26/1998	8/26/1998	8/26/1998	8/26/1998	8/26/1998	8/26/1998	8/26/1998	8/26/1998	8/26/1998	8/26/1998	8/26/1998	8/26/1998	8/26/1998
Volatiles (mg/kg)																			
Benzene	3	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Chloroform	19	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Methylene Chloride	49	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Tetrachloroethene	4	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Toluene	1000	ND		ND		ND		ND		ND		ND		ND		ND		ND	
Semi-Volatiles (mg/kg)																			
Pyridine	NLE		ND		ND		ND		ND		ND		ND		ND		ND		ND
4-Methylphenol	2800		ND		ND		ND		ND		ND		ND		ND		ND		ND
Naphthalene	230		ND		ND		ND		ND		ND		ND		ND		ND		ND
2-Methylnaphthalene	NLE		ND		ND		ND		ND		ND		ND		ND		ND		ND
Dimethylphthalate	10,000		ND		ND		ND		ND		ND		ND		ND		ND		ND
Acenaphthylene	NLE		0.21J		ND		ND		ND		ND		ND		ND		ND		ND
Acenaphthene	3400		ND		ND		ND		ND		ND		ND		ND		ND		ND
Dibenzofuran	NLE		ND		ND		ND		ND		ND		ND		ND		ND		ND
Diethylphthalate	10,000		ND		ND		ND		ND		ND		ND		ND		ND		ND
Fluorene	2300		ND		ND		ND		ND		ND		ND		ND		ND		ND
n-Nitrosodiphenylamine	140		ND		ND		ND		ND		ND		ND		ND		ND		ND
Phenanthrene	NLE		1.1		0.44J		0.36J		ND		ND		ND		0.4J		0.3J		0.24J
Anthracene	10,000		ND		ND		ND		ND		ND		ND		ND		ND		ND
Di-n-butylphthalate	5700		0.96J		0.46J		0.96J		0.44J		0.44J		0.35J		0.78J		0.39J		0.37J
Fluoranthene	2300		0.72J		0.42J		0.36J		0.19J		0.19J		ND		0.31J		0.29J		0.3J
Pyrene	1700		1.4		0.68J		0.57J		0.31J		0.3J		ND		0.56J		0.45J		0.57J
Butylbenzylphthalate	1100		ND		ND		ND		ND		ND		ND		ND		ND		ND
Benzo[a]anthracene	0.9		0.41J		0.22J		ND		ND		ND		ND		ND		ND		0.22J
3,3'-Dichlorobenzidine	2		ND		ND		ND		ND		ND		ND		ND		ND		ND
Chrysene	9		0.88J		0.46J		ND		ND		ND		ND		ND		ND		0.43J
bis(2-Ethylhexyl)phthalate	49		ND		ND		ND		ND		ND		ND		ND		ND		ND
Benzo[b]fluoranthene	0.9		ND		ND		ND		ND		ND		ND		ND		ND		ND
Benzo[k]fluoranthene	0.9		ND		ND		ND		ND		ND		ND		ND		ND		ND
Benzo[a]pyrene	0.66		ND		ND		ND		ND		ND		ND		ND		ND		ND
Indeno[1,2,3-cd]pyrene	0.9		ND		ND		ND		ND		ND		ND		ND		ND		ND
Dibenz[a,h]anthracene	0.66		ND		ND		ND		ND		ND		ND		ND		ND		ND
Benzo[g,h,i]perylene	NLE		ND		ND		ND		ND		ND		ND		ND		ND		ND
Pesticides/PCBs (mg/kg)																			
Heptachlor	0.15		ND		ND		ND		ND		ND		ND		ND		ND		ND
Heptachlor Epoxide	NLE		ND		ND		ND		ND		ND		ND		ND		ND		ND
4,4'-DDE	2		1.003		0.164		0.33		0.408		0.083		0.903		**3.33**		0.742		1.104
Dieldrin	0.042		ND		ND		ND		ND		ND		ND		ND		ND		ND
Endrin	17		ND		ND		ND		ND		ND		ND		ND		ND		ND
Endosulfan II	NLE		ND		ND		ND		ND		ND		ND		ND		ND		ND
4,4'-DDD	3		0.178		0.08		0.171		0.145		0.045		0.378		0.729		0.046		0.041
Endrin Aldehyde	NLE		ND		ND		ND		ND		ND		ND		ND		ND		ND
4,4'-DDT	2		**2.781**		0.789		**2.226**		1.918		0.525		**13.949**		**23.629**		**2.094**		1.746
Endosulfan-Sulfate	NLE		ND		ND		ND		ND		ND		ND		ND		ND		ND
gamma-Chlordane	NLE		ND		ND		ND		ND		ND		ND		0.015		ND		ND
alpha-Chlordane	NLE		ND		ND		0.003		ND		ND		ND		0.023		ND		ND
Arochlor 1254	0.49		ND		ND		ND		ND		ND		ND		ND		ND		ND
Metals (mg/kg)																			
Aluminum	NLE		3900		8730		5890		5890		6970		3390		8150		6430		5560
Antimony	14		0.495		1.28		0.94		0.931		1.14		0.654		1.43		1.31		0.774
Arsenic	20		6.62		9.43		8.91		8.61		9.13		5.72		7.84		11.3		9.19
Barium	700		34.5		53.7		53.3		40.9		34.6		25.1		31.1		69.6		32.2
Beryllium	2		0.45		1.25		0.811		1.02		0.945		0.538		1.02		0.824		0.736
Cadmium	39		ND		ND		ND		ND		ND		ND		ND		ND		ND
Calcium	NLE		929		396		306		787		1140		278		389		828		1100
Chromium	NLE		31.3		88.1		63.2		60.5		72.5		39.3		90.1		72.6		56.7
Cobalt	NLE		1.85		1.68		0.96		0.998		1.55		0.926		1.02		1.36		1.43
Copper	600		27		45.3		22.5		18		10.1		5.01		5.52		110		15.8
Iron	NLE		13200		33700		28200		24400		30600		17500		32800		31400		21200
Lead	400		94.5		50.5		53.2		47.4		21.6		23.1		20.2		163		69.8
Magnesium	NLE		1090		2980		1660		1830		2730		1160		3380		2210		1920
Manganese	NLE		53.9		18.8		15		19		33.2		8.41		12.4		38.5		49.7
Mercury	14		0.228		0.355		0.385		0.371		0.229		0.267		0.163		0.275		0.361
Nickel	250		5.75		7.73		4.64		4.52		6.14		2.99		4.74		5.81		5.24
Potassium	NLE		3120		7070		3650		3760		5980		4390		8120		4900		3860
Selenium	63		ND		ND		ND		ND		ND		ND		ND		ND		ND
Silver	110		ND		ND		ND		ND		ND		ND		ND		ND		ND
Sodium	NLE		262		303		310		349		360		336		342		388		147
Thallium	2		0.389		0.969		0.665		0.863		0.563		0.681		0.6		0.709		0.535
Vanadium	370		27.8		45.4		28.6		27.3		33		15.9		40		35.1		25.7
Zinc	1500		65.6		47.6		181		43.6		69.5		27.2		39.4		123		115

NOTES:
ND = Not Detected
NLE = No Limit Established
J = Estimated Value: Mass spectrometer and retention time data indicate the presence of the analyte, however the result is less than the method detection limit, but greater than zero.

Table 4-1
Soil Sampling Results
M5 Landfill Site
Fort Monmouth, New Jersey

Lab Sample ID	NJDEP Cleanup Criteria	3836.33	3836.34	3836.35	3836.36	3836.37
Field Sample Location		B252 (24")	B253 (6-12")	B253 (24")	B254 (6-12")	B254 (24")
Sample Date	(mg/kg)	8/26/1998	8/26/1998	8/26/1998	8/26/1998	8/26/1998
Volatiles (mg/kg)						
Benzene	3	ND		ND		ND
Chloroform	19	ND		ND		ND
Methylene Chloride	49	ND		ND		ND
Tetrachloroethene	4	ND		ND		ND
Toluene	1000	ND		ND		ND
Semi-Volatiles (mg/kg)						
Pyridine	NLE		ND		ND	
4-Methylphenol	2800		ND		ND	
Naphthalene	230		ND		ND	
2-Methylnaphthalene	NLE		ND		ND	
Dimethylphthalate	10,000		ND		ND	
Acenaphthylene	NLE		ND		0.25J	
Acenaphthene	3400		ND		ND	
Dibenzofuran	NLE		ND		ND	
Diethylphthalate	10,000		ND		ND	
Fluorene	2300		ND		ND	
n-Nitrosodiphenylamine	140		ND		ND	
Phenanthrene	NLE		ND		1.8	
Anthracene	10,000		ND		ND	
Di-n-butylphthalate	5700		ND		ND	
Fluoranthene	2300		ND		1.3	
Pyrene	1700		ND		2.4	
Butylbenzylphthalate	1100		ND		ND	
Benzo[a]anthracene	0.9		ND		0.69J	
3,3'-Dichlorobenzidine	2		ND		ND	
Chrysene	9		ND		1.4	
bis(2-Ethylhexyl)phthalate	49		ND		ND	
Benzo[b]fluoranthene	0.9		ND		0.48J	
Benzo[k]fluoranthene	0.9		ND		0.51J	
Benzo[a]pyrene	0.66		ND		0.52J	
Indeno[1,2,3-cd]pyrene	0.9		ND		0.31J	
Dibenz[a,h]anthracene	0.66		ND		ND	
Benzo[g,h,I]perylene	NLE		ND		0.32J	
Pesticides/PCBs (mg/kg)						
Heptachlor	0.15		ND		ND	
Heptachlor Epoxide	NLE		ND		ND	
4,4'-DDE	2		0.23		**4.185**	
Dieldrin	0.042		ND		ND	
Endrin	17		ND		ND	
Endosulfan II	NLE		ND		ND	
4,4'-DDD	3		0.043		**3.787**	
Endrin Aldehyde	NLE		ND		ND	
4,4'-DDT	2		0.856		**56.446**	
Endosulfan-Sulfate	NLE		ND		ND	
gamma-Chlordane	NLE		ND		0.021	
alpha-Chlordane	NLE		ND		0.026	
Arochlor 1254	0.49		ND		ND	
Metals (mg/kg)						
Aluminum	NLE		4350		6740	
Antimony	14		0.688		0.916	
Arsenic	20		5.88		10.1	
Barium	700		17		48.4	
Beryllium	2		0.84		**2.05**	
Cadmium	39		ND		ND	
Calcium	NLE		563		143	
Chromium	NLE		46.7		52.8	
Cobalt	NLE		1.21		2.76	
Copper	600		11.9		10.1	
Iron	NLE		16400		27700	
Lead	400		12.4		40.3	
Magnesium	NLE		1330		1130	
Manganese	NLE		15.4		38	
Mercury	14		0.069		0.706	
Nickel	250		3.33		6.57	
Potassium	NLE		5380		4170	
Selenium	63		ND		ND	
Silver	110		ND		0.413	
Sodium	NLE		84.6		99.8	
Thallium	2		0.332		0.691	
Vanadium	370		13.5		26.8	
Zinc	1500		32.1		51.5	

NOTES:
ND = Not Detected
NLE = No Limit Established
J = Estimated Value: Mass spectrometer and retention time data indicate the presence of the analyte, however the result is less than the method detection limit, but greater than zero.

Table 4-2
Borings in Which Detections Exceeded Criteria
M-5 Landfill
Fort Monmouth, New Jersey

Boring ID	Analyte
VOCs - 2 Borings	
B15	
	Tetrachloroethene
B23	
	Tetrachloroethene
SVOCs - 17 Borings	
B07	
	Benzo(a)anthracene
	Benzo(a)pyrene
B26	
	Benzo(a)pyrene
B27	
	Benzo(a)anthracene
	Benzo(a)pyrene
	Benzo(b)fluoranthene
	Benzo(k)fluoranthene
	Indeno(1,2,3-cd)pyrene
B35	
	Benzo(a)pyrene
B42	
	Benzo(a)pyrene
B44	
	Benzo(a)anthracene
	Benzo(a)pyrene
	Benzo(b)fluoranthene
	Benzo(k)fluoranthene
	Indeno(1,2,3-cd)pyrene
B67	
	Benzo(a)pyrene
B69	
	Benzo(a)pyrene
B71	
	Benzo(a)anthracene
	Benzo(a)pyrene
	Benzo(b)fluoranthene
	Benzo(k)fluoranthene
	Dibenz(a,h)anthracene
	Indeno(1,2,3-cd)pyrene
B72	
	Benzo(a)anthracene
	Benzo(a)pyrene
	Benzo(b)fluoranthene
	Benzo(k)fluoranthene
B84	
	Benzo(a)anthracene

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls.

Table 4-2
Borings in Which Detections Exceeded Criteria
M-5 Landfill
Fort Monmouth, New Jersey

Boring ID	Analyte
	Benzo(a)pyrene
	Benzo(b)fluoranthene
	Benzo(k)fluoranthene
	Chrysene
	Dibenz(a,h)anthracene
	Indeno(1,2,3-cd)pyrene
B92	
	Benzo(a)anthracene
	Benzo(a)pyrene
	Benzo(b)fluoranthene
	Benzo(k)fluoranthene
	Chrysene
	Indeno(1,2,3-cd)pyrene
B202	
	Benzo(a)anthracene
	Benzo(a)pyrene
	Benzo(b)fluoranthene
	Benzo(k)fluoranthene
	Dibenz(a,h)anthracene
	Indeno(1,2,3-cd)pyrene
B218	
	Benzo(a)anthracene
	Benzo(a)pyrene
	Benzo(b)fluoranthene
	Benzo(k)fluoranthene
B220	
	Benzo(a)anthracene
	Benzo(a)pyrene
	Benzo(b)fluoranthene
	Benzo(k)fluoranthene
	Chrysene
	Dibenz(a,h)anthracene
	Indeno(1,2,3-cd)pyrene
B223	
	Benzo(a)pyrene
B234	
	Benzo(a)anthracene
	Benzo(a)pyrene
	Benzo(b)fluoranthene
	Benzo(k)fluoranthene
Pest/PCBs - 10 Borings	
B59	
	4,4'-DDE
	4,4'-DDT
B201	

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Pest/PCBs = Pesticides/Polychlorinated-Biphenyls.

Table 4-2
Borings in Which Detections Exceeded Criteria
M-5 Landfill
Fort Monmouth, New Jersey

Boring ID	Analyte
	Arochlor 1254
B221	
	4,4'-DDT
B239	
	4,4'-DDT
	Dieldrin
B244	
	4,4'-DDT
B246	
	4,4'-DDT
B249	
	4,4'-DDT
B250	
	4,4'-DDE
	4,4'-DDT
B251	
	4,4'-DDT
B254	
	4,4'-DDD
	4,4'-DDE
	4,4'-DDT

Metals - 28 Borings

B02	
	Arsenic
B03	
	Arsenic
B09	
	Copper
B17	
	Lead
B19	
	Arsenic
B26	
	Lead
B27	
	Lead
B33	
	Arsenic
	Lead
B34	
	Lead
B35	
	Arsenic
	Beryllium
	Lead

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls.

Table 4-2
Borings in Which Detections Exceeded Criteria
M-5 Landfill
Fort Monmouth, New Jersey

Boring ID	Analyte
	Thallium
B41	
	Lead
B42	
	Lead
B44	
	Zinc
B46	
	Zinc
B48	
	Lead
B51	
	Arsenic
B54	
	Arsenic
B57	
	Lead
B59	
	Mercury
B63	
	Lead
B69	
	Copper
	Lead
B88	
	Beryllium
	Copper
	Lead
B99	
	Copper
	Lead
	Zinc
B163	
	Arsenic
B198	
	Arsenic
B199	
	Lead
B242	
	Nickel
B254	
	Beryllium

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls.

Table 4-3
Laboratory Analysis Exceedance Summary
M-5 Landfill
Fort Monmouth, New Jersey

Analyte Name	RDCSC	Units	Number of Exceedances	Minimum Exceedance	Boring ID (Min)	Maximum Exceedance	Boring ID (Max)	Average Exceedance
VOCs								
Tetrachloroethene	4	mg/kg	2	4.8	B23	5	B15	4.900
SVOCs								
Benzo(a)anthracene	0.9	mg/kg	11	0.97	B72	14	B220	4.369
Benzo(a)pyrene	0.66	mg/kg	17	0.67	B26, B42	11	B84	2.405
Benzo(b)fluoranthene	0.9	mg/kg	10	1.1	B218	9.5	B220	3.690
Benzo(k)fluoranthene	0.9	mg/kg	10	1.2	B218, B72	8.8	B84	2.600
Chrysene	9	mg/kg	3	9.7	B92	25	B220	18.567
Dibenz(a,h)anthracene	0.66	mg/kg	4	1	B71	2.9	B84	1.700
Indeno(1,2,3-cd)pyrene	0.9	mg/kg	7	1.2	B27	4.9	B84	2.343
Pest/PCBs								
4,4'-DDD	3	mg/kg	1	3.787	B254	3.787	B254	3.787
4,4'-DDE	2	mg/kg	3	2.058	B59	4.185	B254	3.191
4,4'-DDT	2	mg/kg	9	2.094	B251	56.446	B254	13.425
Arochlor 1254	0.49	mg/kg	1	1.499	B201	1.499	B201	1.499
Dieldrin	0.042	mg/kg	1	0.049	B239	0.049	B239	0.049
Metals								
Arsenic	20	mg/kg	9	20.13	B02	1030	B19	164.416
Beryllium	2	mg/kg	3	2.05	B254	10.89	B35	5.909
Copper	600	mg/kg	4	1168	B99	2837	B09	1965.750
Lead	400	mg/kg	15	494	B199	4549	B99	1357.733
Mercury	14	mg/kg	1	17.584	B59	17.584	B59	17.584

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls.
Site Specific Maximum Concentrations were developed by Weston (1995) and may apply to arsenic and thallium in determining whether compliance averaging can be used per NJDEP (Spring 1995).

Table 4-3
Laboratory Analysis Exceedance Summary
M-5 Landfill
Fort Monmouth, New Jersey

Analyte Name	RDCSC	Units	Number of Exceedances	Minimum Exceedance	Boring ID (Min)	Maximum Exceedance	Boring ID (Max)	Average Exceedance
Nickel	250	mg/kg	1	431	B242	431	B242	431.000
Thallium	2	mg/kg	1	47.42	B35	47.42	B35	47.420
Zinc	1500	mg/kg	3	1598	B44	9772	B99	4393.000

Notes:
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Pest/PCBs = Pesticides/Polychlorinated-Biphenyls.
Site Specific Maximum Concentrations were developed by Weston (1995) and may apply to arsenic and thallium in determining whether compliance averaging can be used per NJDEP (Spring 1995).

Table 4-4
Compliance Analysis Method Summary
M-5 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Average Area	RDCSCC	Units	Compliance Analysis Decision
VOCs				
Tetrachloroethene	AREA VOC-1	4	mg/kg	Compliance averaging used.
SVOCs				
Benzo(a)anthracene	AREA SVOC-1	0.9	mg/kg	Compliance averaging not allowed due to exceedance of the ceiling limit of 10X (for criterion<10 ppm).
Benzo(a)pyrene	AREA SVOC-1	0.66	mg/kg	Compliance averaging not allowed due to exceedance of 0.9 ppm limit for Benzo(a)pyrene.
Benzo(b)fluoranthene	AREA SVOC-1	0.9	mg/kg	Compliance averaging used.
Benzo(k)fluoranthene	AREA SVOC-1	0.9	mg/kg	Compliance averaging used.
Chrysene	AREA SVOC-1	9	mg/kg	Compliance averaging used.
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	mg/kg	Compliance averaging not allowed due to exceedance of 0.9 ppm limit for Dibenz(a,h)anthracene.
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	mg/kg	Compliance averaging used.
Pest/PCBs				
4,4'-DDD	AREA PESTPCB-1	3	mg/kg	Compliance averaging used.
4,4'-DDE	AREA PESTPCB-1	2	mg/kg	Compliance averaging used.
4,4'-DDT	AREA PESTPCB-1	2	mg/kg	Compliance averaging not allowed due to exceedance of the ceiling limit of 10X (for criterion<10 ppm).

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls.
Site Specific Maximum Concentrations were developed by Weston (1995) and may apply to arsenic and thallium in determining whether compliance averaging can be used per NJDEP (Spring 1995).

Table 4-4
Compliance Analysis Method Summary
M-5 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Average Area	RDCSCC	Units	Compliance Analysis Decision
Arochlor 1254	AREA PESTPCB-1	0.49	mg/kg	Compliance averaging used.
Dieldrin	AREA PESTPCB-1	0.042	mg/kg	Compliance averaging used.
Metals				
Arsenic	AREA METALS-1	20	mg/kg	Compliance averaging not allowed due to exceedance of RDCSCC and site-specific maximum (22.9 mg/kg, Weston-1995).
Beryllium	AREA METALS-1	2	mg/kg	Compliance averaging not allowed due to exceedance of 2 mg/kg limit for Beryllium.
Copper	AREA METALS-1	600	mg/kg	Compliance averaging not allowed due to exceedance of the ceiling limit of 2X (for criterion>100 ppm).
Lead	AREA METALS-1	400	mg/kg	Compliance averaging not allowed due to exceedance of the ceiling limit of 2X (for criterion>100 ppm).
Mercury	AREA METALS-1	14	mg/kg	Compliance averaging used.
Nickel	AREA METALS-2	250	mg/kg	Compliance averaging used.
Thallium	AREA METALS-1	2	mg/kg	Compliance averaging not allowed due to exceedance of 2 mg/kg limit for Thallium.
Zinc	AREA METALS-1	1500	mg/kg	Compliance averaging not allowed due to exceedance of the ceiling limit of 2X (for criterion>100 ppm).

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls.
Site Specific Maximum Concentrations were developed by Weston (1995) and may apply to arsenic and thallium in determining whether compliance averaging can be used per NJDEP (Spring 1995).

Table 4-5
Compliance Averaging Results
M-5 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Area	RDCSCC	Boring ID	Result	Units	Exceeds Criteria	MDL	Dilution Factor	Result Used for Average
VOCs									
Tetrachloroethene									
	AREA VOC-1								
Tetrachloroethene	AREA VOC-1	4	B15	5	mg/kg	yes			5
Tetrachloroethene	AREA VOC-1	4	B23	4.8	mg/kg	yes			4.8
Tetrachloroethene	AREA VOC-1	4	B24	3.2	mg/kg	no			3.2
Tetrachloroethene	AREA VOC-1	4	B32	ND	mg/kg	no	0.27		0.135
Tetrachloroethene	AREA VOC-1	4	B40	3.1	mg/kg	no			3.1
						Compliance Average Result:			**3.247**

Notes:
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VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls; ND = Not Detected.
MDL = Method Detction Limit (shown only for "ND" Results); 0.5*MDL used for calculating average.
For samples with dilution factors greater than 1, "ND" results were not used (Dilution factors shown only for these cases).

Table 4-5
Compliance Averaging Results
M-5 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Area	RDCSCC	Boring ID	Result	Units	Exceeds Criteria	MDL	Dilution Factor	Result Used for Average
SVOCs									
Benzo(b)fluoranthene									
	AREA SVOC-1								
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B07	0.89	mg/kg	no			0.89
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B08	0.16J	mg/kg	no			0.16
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B09	0.6	mg/kg	no			0.6
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B16	0.27	mg/kg	no			0.27
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B17	ND	mg/kg	no	0.27		0.135
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B24	ND	mg/kg	no	0.26		0.13
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B25	0.29	mg/kg	no			0.29
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B26	0.69	mg/kg	no			0.69
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B27	1.6	mg/kg	yes			1.6
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B32	0.16J	mg/kg	no			0.16
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B33	0.35	mg/kg	no			0.35
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B34	0.42	mg/kg	no			0.42
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B35	0.84	mg/kg	no			0.84
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B39	ND	mg/kg	no	0.3		0.15
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B40	ND	mg/kg	no	0.26		0.13
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B41	0.25J	mg/kg	no			0.25
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B42	0.72	mg/kg	no			0.72
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B43	ND	mg/kg	no	0.31		0.155
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B44	1.6	mg/kg	yes			1.6
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B67	0.41	mg/kg	no			0.41
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B68	ND	mg/kg	no			
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B69	0.74	mg/kg	no			0.74
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B70	ND	mg/kg	no	0.26		0.13
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B71	2.4	mg/kg	yes			2.4
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B72	1.2	mg/kg	yes			1.2
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B75	0.11J	mg/kg	no			0.11
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B76	0.2J	mg/kg	no			0.2
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B77	ND	mg/kg	no			
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B78	ND	mg/kg	no	0.26		0.13
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B79	ND	mg/kg	no	0.28		0.14
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B80	ND	mg/kg	no	0.28		0.14
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B83	ND	mg/kg	no	0.24		0.12
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B84	9.2	mg/kg	yes			9.2
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B85	ND	mg/kg	no			
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B86	ND	mg/kg	no	0.26		0.13

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For samples with dilution factors greater than 1, "ND" results were not used (Dilution factors shown only for these cases).

Table 4-5
Compliance Averaging Results
M-5 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Area	RDCSCC	Boring ID	Result	Units	Exceeds Criteria	MDL	Dilution Factor	Result Used for Average
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B87	ND	mg/kg	no			
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B92	5.6	mg/kg	yes			5.6
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B93	ND	mg/kg	no	0.26		0.13
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B94	ND	mg/kg	no			
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B95	ND	mg/kg	no			
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B96	ND	mg/kg	no			
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B159	ND	mg/kg	no	0.28		0.14
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B160	0.14J	mg/kg	no			0.14
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B161	ND	mg/kg	no			
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B162	ND	mg/kg	no			
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B163	0.61	mg/kg	no			0.61
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B165	ND	mg/kg	no			
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B166	0.17J	mg/kg	no			0.17
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B167	0.2J	mg/kg	no			0.2
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B168	ND	mg/kg	no			
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B169	ND	mg/kg	no			
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B179	ND	mg/kg	no			
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B181	ND	mg/kg	no			
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B197	ND	mg/kg	no			
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B200	0.16J	mg/kg	no			0.16
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B201	0.36	mg/kg	no			0.36
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B202	3.1	mg/kg	yes			3.1
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B203	0.23J	mg/kg	no			0.23
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B204	ND	mg/kg	no			
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B205	ND	mg/kg	no			
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B206	ND	mg/kg	no			
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B207	ND	mg/kg	no	0.26		0.13
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B209	0.53	mg/kg	no			0.53
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B210	ND	mg/kg	no	0.24		0.12
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B211	ND	mg/kg	no	0.26		0.13
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B212	0.18J	mg/kg	no			0.18
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B213	0.19J	mg/kg	no			0.19
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B216	ND	mg/kg	no			
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B217	ND	mg/kg	no	1		0.5
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B218	1.1	mg/kg	yes			1.1
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B219	0.17J	mg/kg	no			0.17
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B220	9.5	mg/kg	yes			9.5
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B223	0.67J	mg/kg	no			0.67
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B226	0.31J	mg/kg	no			0.31
Benzo(b)fluoranthene	AREA SVOC-1	0.9	B227	ND	mg/kg	no	1.2		0.6

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Table 4-5
Compliance Averaging Results
M-5 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Area	RDCSCC	Boring ID	Result	Units	Exceeds Criteria	MDL	Dilution Factor	Result Used for Average
						Compliance Average Result:			**0.885**
Benzo(k)fluoranthene									
	AREA SVOC-1								
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B07	0.86	mg/kg	no			0.86
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B08	ND	mg/kg	no	0.23		0.115
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B09	0.69	mg/kg	no			0.69
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B16	0.26	mg/kg	no			0.26
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B17	ND	mg/kg	no	0.2		0.1
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B24	ND	mg/kg	no	0.19		0.095
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B25	0.26	mg/kg	no			0.26
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B26	0.56	mg/kg	no			0.56
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B27	1.4	mg/kg	yes			1.4
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B32	0.15J	mg/kg	no			0.15
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B33	0.36	mg/kg	no			0.36
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B34	0.34	mg/kg	no			0.34
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B35	0.7	mg/kg	no			0.7
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B39	ND	mg/kg	no	0.98		0.49
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B40	ND	mg/kg	no	0.19		0.095
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B41	0.18J	mg/kg	no			0.18
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B42	0.59	mg/kg	no			0.59
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B43	ND	mg/kg	no	0.23		0.115
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B44	1.5	mg/kg	yes			1.5
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B67	0.53	mg/kg	no			0.53
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B68	ND	mg/kg	no			
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B69	0.7	mg/kg	no			0.7
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B70	ND	mg/kg	no	0.2		0.1
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B71	2.4	mg/kg	yes			2.4
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B72	1.2	mg/kg	yes			1.2
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B75	0.13J	mg/kg	no			0.13
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B76	0.22	mg/kg	no			0.22
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B77	ND	mg/kg	no	0.2		0.1
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B78	ND	mg/kg	no	0.2		0.1
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B79	ND	mg/kg	no	0.2		0.1
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B80	ND	mg/kg	no	0.2		0.1
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B83	ND	mg/kg	no	0.18		0.09
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B84	8.8	mg/kg	yes			8.8
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B85	ND	mg/kg	no	0.18		0.09
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B86	ND	mg/kg	no	0.2		0.1

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Table 4-5
Compliance Averaging Results
M-5 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Area	RDCSCC	Boring ID	Result	Units	Exceeds Criteria	MDL	Dilution Factor	Result Used for Average
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B87	ND	mg/kg	no			
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B92	3.9	mg/kg	yes			3.9
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B93	ND	mg/kg	no	0.2		0.1
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B94	ND	mg/kg	no	0.18		0.09
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B95	ND	mg/kg	no			
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B96	ND	mg/kg	no			
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B159	ND	mg/kg	no	0.2		0.1
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B160	0.13J	mg/kg	no			0.13
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B161	ND	mg/kg	no			
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B162	ND	mg/kg	no			
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B163	0.63	mg/kg	no			0.63
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B165	ND	mg/kg	no			
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B166	0.14J	mg/kg	no			0.14
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B167	0.22	mg/kg	no			0.22
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B168	ND	mg/kg	no			
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B169	ND	mg/kg	no			
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B179	ND	mg/kg	no			
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B181	ND	mg/kg	no			
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B197	ND	mg/kg	no			
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B200	0.17J	mg/kg	no			0.17
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B201	0.36	mg/kg	no			0.36
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B202	2.8	mg/kg	yes			2.8
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B203	0.25	mg/kg	no			0.25
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B204	ND	mg/kg	no			
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B205	ND	mg/kg	no			
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B206	ND	mg/kg	no			
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B207	ND	mg/kg	no	0.2		0.1
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B209	ND	mg/kg	no			
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B210	ND	mg/kg	no	0.18		0.09
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B211	ND	mg/kg	no	0.2		0.1
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B212	0.22J	mg/kg	no			0.22
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B213	0.24J	mg/kg	no			0.24
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B216	ND	mg/kg	no			
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B217	ND	mg/kg	no	1		0.5
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B218	1.2	mg/kg	yes			1.2
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B219	ND	mg/kg	no	1.1		0.55
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B220	1.3	mg/kg	yes			1.3
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B223	0.72J	mg/kg	no			0.72
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B226	0.36J	mg/kg	no			0.36
Benzo(k)fluoranthene	AREA SVOC-1	0.9	B227	ND	mg/kg	no	1.2		0.6

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Table 4-5
Compliance Averaging Results
M-5 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Area	RDCSCC	Boring ID	Result	Units	Exceeds Criteria	MDL	Dilution Factor	Result Used for Average
						Compliance Average Result:			**0.664**
Chrysene									
	AREA SVOC-1								
Chrysene	AREA SVOC-1	9	B07	1.5	mg/kg	no			1.5
Chrysene	AREA SVOC-1	9	B08	0.49	mg/kg	no			0.49
Chrysene	AREA SVOC-1	9	B09	0.28J	mg/kg	no			0.28
Chrysene	AREA SVOC-1	9	B16	0.46	mg/kg	no			0.46
Chrysene	AREA SVOC-1	9	B17	0.25J	mg/kg	no			0.25
Chrysene	AREA SVOC-1	9	B24	ND	mg/kg	no	0.26		0.13
Chrysene	AREA SVOC-1	9	B25	0.41	mg/kg	no			0.41
Chrysene	AREA SVOC-1	9	B26	0.83	mg/kg	no			0.83
Chrysene	AREA SVOC-1	9	B27	2.3	mg/kg	no			2.3
Chrysene	AREA SVOC-1	9	B32	0.3	mg/kg	no			0.3
Chrysene	AREA SVOC-1	9	B33	0.6	mg/kg	no			0.6
Chrysene	AREA SVOC-1	9	B34	0.57	mg/kg	no			0.57
Chrysene	AREA SVOC-1	9	B35	1.2	mg/kg	no			1.2
Chrysene	AREA SVOC-1	9	B39	ND	mg/kg	no	1.4		0.7
Chrysene	AREA SVOC-1	9	B40	ND	mg/kg	no	0.27		0.135
Chrysene	AREA SVOC-1	9	B41	0.41	mg/kg	no			0.41
Chrysene	AREA SVOC-1	9	B42	0.98	mg/kg	no			0.98
Chrysene	AREA SVOC-1	9	B43	0.13J	mg/kg	no			0.13
Chrysene	AREA SVOC-1	9	B44	2.4	mg/kg	no			2.4
Chrysene	AREA SVOC-1	9	B67	1.2	mg/kg	no			1.2
Chrysene	AREA SVOC-1	9	B68	0.18J	mg/kg	no			0.18
Chrysene	AREA SVOC-1	9	B69	0.97	mg/kg	no			0.97
Chrysene	AREA SVOC-1	9	B70	ND	mg/kg	no			
Chrysene	AREA SVOC-1	9	B71	5.0	mg/kg	no			5
Chrysene	AREA SVOC-1	9	B72	1.7	mg/kg	no			1.7
Chrysene	AREA SVOC-1	9	B75	0.3	mg/kg	no			0.3
Chrysene	AREA SVOC-1	9	B76	0.52	mg/kg	no			0.52
Chrysene	AREA SVOC-1	9	B77	ND	mg/kg	no	0.28		0.14
Chrysene	AREA SVOC-1	9	B78	ND	mg/kg	no			
Chrysene	AREA SVOC-1	9	B79	ND	mg/kg	no			
Chrysene	AREA SVOC-1	9	B80	ND	mg/kg	no			
Chrysene	AREA SVOC-1	9	B83	ND	mg/kg	no	0.26		0.13
Chrysene	AREA SVOC-1	9	B84	21E	mg/kg	yes			21
Chrysene	AREA SVOC-1	9	B85	0.12J	mg/kg	no			0.12
Chrysene	AREA SVOC-1	9	B86	ND	mg/kg	no			

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MDL = Method Detction Limit (shown only for "ND" Results); 0.5*MDL used for calculating average.
For samples with dilution factors greater than 1, "ND" results were not used (Dilution factors shown only for these cases).

Table 4-5
Compliance Averaging Results
M-5 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Area	RDCSCC	Boring ID	Result	Units	Exceeds Criteria	MDL	Dilution Factor	Result Used for Average
Chrysene	AREA SVOC-1	9	B87	ND	mg/kg	no			
Chrysene	AREA SVOC-1	9	B92	9.7	mg/kg	yes			9.7
Chrysene	AREA SVOC-1	9	B93	ND	mg/kg	no	0.28		0.14
Chrysene	AREA SVOC-1	9	B94	ND	mg/kg	no	0.26		0.13
Chrysene	AREA SVOC-1	9	B95	ND	mg/kg	no			
Chrysene	AREA SVOC-1	9	B96	ND	mg/kg	no			
Chrysene	AREA SVOC-1	9	B159	ND	mg/kg	no	0.28		0.14
Chrysene	AREA SVOC-1	9	B160	0.34	mg/kg	no			0.34
Chrysene	AREA SVOC-1	9	B161	ND	mg/kg	no			
Chrysene	AREA SVOC-1	9	B162	ND	mg/kg	no			
Chrysene	AREA SVOC-1	9	B163	1.1	mg/kg	no			1.1
Chrysene	AREA SVOC-1	9	B165	ND	mg/kg	no			
Chrysene	AREA SVOC-1	9	B166	0.16J	mg/kg	no			0.16
Chrysene	AREA SVOC-1	9	B167	0.58	mg/kg	no			0.58
Chrysene	AREA SVOC-1	9	B168	ND	mg/kg	no			
Chrysene	AREA SVOC-1	9	B169	ND	mg/kg	no			
Chrysene	AREA SVOC-1	9	B179	ND	mg/kg	no			
Chrysene	AREA SVOC-1	9	B181	ND	mg/kg	no			
Chrysene	AREA SVOC-1	9	B197	ND	mg/kg	no			
Chrysene	AREA SVOC-1	9	B200	0.29	mg/kg	no			0.29
Chrysene	AREA SVOC-1	9	B201	0.67	mg/kg	no			0.67
Chrysene	AREA SVOC-1	9	B202	4.9	mg/kg	no			4.9
Chrysene	AREA SVOC-1	9	B203	0.49	mg/kg	no			0.49
Chrysene	AREA SVOC-1	9	B204	0.24J	mg/kg	no			0.24
Chrysene	AREA SVOC-1	9	B205	ND	mg/kg	no			
Chrysene	AREA SVOC-1	9	B206	ND	mg/kg	no			
Chrysene	AREA SVOC-1	9	B207	ND	mg/kg	no			
Chrysene	AREA SVOC-1	9	B209	ND	mg/kg	no			
Chrysene	AREA SVOC-1	9	B210	0.24J	mg/kg	no			0.24
Chrysene	AREA SVOC-1	9	B211	ND	mg/kg	no			
Chrysene	AREA SVOC-1	9	B212	0.36J	mg/kg	no			0.36
Chrysene	AREA SVOC-1	9	B213	0.46J	mg/kg	no			0.46
Chrysene	AREA SVOC-1	9	B216	0.28J	mg/kg	no			0.28
Chrysene	AREA SVOC-1	9	B217	ND	mg/kg	no			
Chrysene	AREA SVOC-1	9	B218	2.5	mg/kg	no			2.5
Chrysene	AREA SVOC-1	9	B219	0.28J	mg/kg	no			0.28
Chrysene	AREA SVOC-1	9	B220	25D	mg/kg	yes			25
Chrysene	AREA SVOC-1	9	B223	1.5	mg/kg	no			1.5
Chrysene	AREA SVOC-1	9	B226	0.61J	mg/kg	no			0.61
Chrysene	AREA SVOC-1	9	B227	ND	mg/kg	no	1.2		0.6

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For samples with dilution factors greater than 1, "ND" results were not used (Dilution factors shown only for these cases).

Table 4-5
Compliance Averaging Results
M-5 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Area	RDCSCC	Boring ID	Result	Units	Exceeds Criteria	MDL	Dilution Factor	Result Used for Average
						Compliance Average Result:			**1.812**
Indeno(1,2,3-cd)pyrene									
	AREA SVOC-1								
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B07	0.58	mg/kg	no			0.58
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B08	ND	mg/kg	no	0.26		0.13
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B09	0.39	mg/kg	no			0.39
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B16	0.2J	mg/kg	no			0.2
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B17	ND	mg/kg	no	0.23		0.115
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B24	ND	mg/kg	no	0.21		0.105
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B25	0.19J	mg/kg	no			0.19
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B26	0.58	mg/kg	no			0.58
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B27	1.2	mg/kg	yes			1.2
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B32	0.12J	mg/kg	no			0.12
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B33	0.26	mg/kg	no			0.26
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B34	0.3	mg/kg	no			0.3
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B35	0.49	mg/kg	no			0.49
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B39	ND	mg/kg	no	1.1		0.55
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B40	ND	mg/kg	no	0.22		0.11
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B41	0.13J	mg/kg	no			0.13
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B42	0.58	mg/kg	no			0.58
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B43	ND	mg/kg	no	0.26		0.13
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B44	1.3	mg/kg	yes			1.3
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B67	0.43	mg/kg	no			0.43
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B68	ND	mg/kg	no			
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B69	0.47	mg/kg	no			0.47
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B70	ND	mg/kg	no	0.2		0.1
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B71	1.9	mg/kg	yes			1.9
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B72	0.76	mg/kg	no			0.76
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B75	ND	mg/kg	no	0.2		0.1
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B76	0.16J	mg/kg	no			0.16
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B77	ND	mg/kg	no	0.24		0.12
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B78	ND	mg/kg	no	0.22		0.11
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B79	ND	mg/kg	no	0.24		0.12
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B80	ND	mg/kg	no	0.22		0.11
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B83	ND	mg/kg	no	0.2		0.1
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B84	4.9	mg/kg	yes			4.9
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B85	ND	mg/kg	no	0.2		0.1
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B86	ND	mg/kg	no	0.22		0.11

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Table 4-5
Compliance Averaging Results
M-5 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Area	RDCSCC	Boring ID	Result	Units	Exceeds Criteria	MDL	Dilution Factor	Result Used for Average
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B87	ND	mg/kg	no			
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B92	3	mg/kg	yes			3
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B93	ND	mg/kg	no	0.22		0.11
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B94	ND	mg/kg	no	0.22		0.11
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B95	ND	mg/kg	no			
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B96	ND	mg/kg	no			
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B159	ND	mg/kg	no	0.24		0.12
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B160	ND	mg/kg	no	0.22		0.11
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B161	ND	mg/kg	no			
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B162	ND	mg/kg	no			
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B163	0.29	mg/kg	no			0.29
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B165	ND	mg/kg	no			
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B166	0.12J	mg/kg	no			0.12
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B167	0.12J	mg/kg	no			0.12
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B168	ND	mg/kg	no			
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B169	ND	mg/kg	no			
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B179	ND	mg/kg	no			
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B181	ND	mg/kg	no			
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B197	ND	mg/kg	no			
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B200	ND	mg/kg	no			
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B201	ND	mg/kg	no	0.24		0.12
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B202	2.1	mg/kg	yes			2.1
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B203	0.15J	mg/kg	no			0.15
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B204	ND	mg/kg	no			
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B205	ND	mg/kg	no			
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B206	ND	mg/kg	no			
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B207	ND	mg/kg	no	0.24		0.12
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B209	0.19J	mg/kg	no			0.19
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B210	ND	mg/kg	no			
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B211	ND	mg/kg	no			
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B212	0.12J	mg/kg	no			0.12
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B213	0.14J	mg/kg	no			0.14
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B216	ND	mg/kg	no			
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B217	ND	mg/kg	no			
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B218	0.55J	mg/kg	no			0.55
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B219	ND	mg/kg	no	1.1		0.55
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B220	2	mg/kg	yes			2
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B223	0.55J	mg/kg	no			0.55
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B226	0.2J	mg/kg	no			0.2
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	B227	ND	mg/kg	no	1.2		0.6

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For samples with dilution factors greater than 1, "ND" results were not used (Dilution factors shown only for these cases).

Table 4-5
Compliance Averaging Results
M-5 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Area	RDCSCC	Boring ID	Result	Units	Exceeds Criteria	MDL	Dilution Factor	Result Used for Average
								Compliance Average Result:	**0.517**

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MDL = Method Detction Limit (shown only for "ND" Results); 0.5*MDL used for calculating average.
For samples with dilution factors greater than 1, "ND" results were not used (Dilution factors shown only for these cases).

Table 4-5
Compliance Averaging Results
M-5 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Area	RDCSCC	Boring ID	Result	Units	Exceeds Criteria	MDL	Dilution Factor	Result Used for Average
Pest/PCBs									
4,4'-DDD									
	AREA PESTPCB-1								
4,4'-DDD	AREA PESTPCB-1	3	B201	ND	mg/kg	no			
4,4'-DDD	AREA PESTPCB-1	3	B207	ND	mg/kg	no			
4,4'-DDD	AREA PESTPCB-1	3	B212	ND	mg/kg	no			
4,4'-DDD	AREA PESTPCB-1	3	B213	0.814	mg/kg	no			0.814
4,4'-DDD	AREA PESTPCB-1	3	B220	0.021	mg/kg	no			0.021
4,4'-DDD	AREA PESTPCB-1	3	B221	2.225	mg/kg	no			2.225
4,4'-DDD	AREA PESTPCB-1	3	B227	0.276	mg/kg	no			0.276
4,4'-DDD	AREA PESTPCB-1	3	B228	0.419	mg/kg	no			0.419
4,4'-DDD	AREA PESTPCB-1	3	B233	0.068	mg/kg	no			0.068
4,4'-DDD	AREA PESTPCB-1	3	B234	0.143	mg/kg	no			0.143
4,4'-DDD	AREA PESTPCB-1	3	B235	0.209	mg/kg	no			0.209
4,4'-DDD	AREA PESTPCB-1	3	B239	0.779	mg/kg	no			0.779
4,4'-DDD	AREA PESTPCB-1	3	B240	0.287	mg/kg	no			0.287
4,4'-DDD	AREA PESTPCB-1	3	B241	0.077	mg/kg	no			0.077
4,4'-DDD	AREA PESTPCB-1	3	B242	0.056	mg/kg	no			0.056
4,4'-DDD	AREA PESTPCB-1	3	B244	0.178	mg/kg	no			0.178
4,4'-DDD	AREA PESTPCB-1	3	B245	0.08	mg/kg	no			0.08
4,4'-DDD	AREA PESTPCB-1	3	B246	0.171	mg/kg	no			0.171
4,4'-DDD	AREA PESTPCB-1	3	B247	0.145	mg/kg	no			0.145
4,4'-DDD	AREA PESTPCB-1	3	B248	0.045	mg/kg	no			0.045
4,4'-DDD	AREA PESTPCB-1	3	B249	0.378	mg/kg	no			0.378
4,4'-DDD	AREA PESTPCB-1	3	B250	0.729	mg/kg	no			0.729
4,4'-DDD	AREA PESTPCB-1	3	B251	0.046	mg/kg	no			0.046
4,4'-DDD	AREA PESTPCB-1	3	B252	0.041	mg/kg	no			0.041
4,4'-DDD	AREA PESTPCB-1	3	B253	0.043	mg/kg	no			0.043
4,4'-DDD	AREA PESTPCB-1	3	B254	3.787	mg/kg	yes			3.787
						Compliance Average Result:			**0.479**
4,4'-DDE									
	AREA PESTPCB-1								
4,4'-DDE	AREA PESTPCB-1	2	B201	0.047	mg/kg	no			0.047
4,4'-DDE	AREA PESTPCB-1	2	B207	ND	mg/kg	no			
4,4'-DDE	AREA PESTPCB-1	2	B212	ND	mg/kg	no			
4,4'-DDE	AREA PESTPCB-1	2	B213	0.473	mg/kg	no			0.473

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Table 4-5
Compliance Averaging Results
M-5 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Area	RDCSCC	Boring ID	Result	Units	Exceeds Criteria	MDL	Dilution Factor	Result Used for Average
4,4'-DDE	AREA PESTPCB-1	2	B220	0.104	mg/kg	no			0.104
4,4'-DDE	AREA PESTPCB-1	2	B221	0.433	mg/kg	no			0.433
4,4'-DDE	AREA PESTPCB-1	2	B227	0.241	mg/kg	no			0.241
4,4'-DDE	AREA PESTPCB-1	2	B228	0.262	mg/kg	no			0.262
4,4'-DDE	AREA PESTPCB-1	2	B233	0.104	mg/kg	no			0.104
4,4'-DDE	AREA PESTPCB-1	2	B234	0.08	mg/kg	no			0.08
4,4'-DDE	AREA PESTPCB-1	2	B235	0.204	mg/kg	no			0.204
4,4'-DDE	AREA PESTPCB-1	2	B239	0.592	mg/kg	no			0.592
4,4'-DDE	AREA PESTPCB-1	2	B240	0.445	mg/kg	no			0.445
4,4'-DDE	AREA PESTPCB-1	2	B241	0.195	mg/kg	no			0.195
4,4'-DDE	AREA PESTPCB-1	2	B242	0.036	mg/kg	no			0.036
4,4'-DDE	AREA PESTPCB-1	2	B244	1.003	mg/kg	no			1.003
4,4'-DDE	AREA PESTPCB-1	2	B245	0.164	mg/kg	no			0.164
4,4'-DDE	AREA PESTPCB-1	2	B246	0.33	mg/kg	no			0.33
4,4'-DDE	AREA PESTPCB-1	2	B247	0.408	mg/kg	no			0.408
4,4'-DDE	AREA PESTPCB-1	2	B248	0.083	mg/kg	no			0.083
4,4'-DDE	AREA PESTPCB-1	2	B249	0.903	mg/kg	no			0.903
4,4'-DDE	AREA PESTPCB-1	2	B250	3.33	mg/kg	yes			3.33
4,4'-DDE	AREA PESTPCB-1	2	B251	0.742	mg/kg	no			0.742
4,4'-DDE	AREA PESTPCB-1	2	B252	1.104	mg/kg	no			1.104
4,4'-DDE	AREA PESTPCB-1	2	B253	0.23	mg/kg	no			0.23
4,4'-DDE	AREA PESTPCB-1	2	B254	4.185	mg/kg	yes			4.185
						Compliance Average Result:			**0.654**

Arochlor 1254

AREA PESTPCB-1

Arochlor 1254	AREA PESTPCB-1	0.49	B201	1.499	mg/kg	yes			1.499
Arochlor 1254	AREA PESTPCB-1	0.49	B207	0.165	mg/kg	no			0.165
Arochlor 1254	AREA PESTPCB-1	0.49	B212	ND	mg/kg	no			
Arochlor 1254	AREA PESTPCB-1	0.49	B213	ND	mg/kg	no			
Arochlor 1254	AREA PESTPCB-1	0.49	B220	ND	mg/kg	no			
Arochlor 1254	AREA PESTPCB-1	0.49	B221	ND	mg/kg	no			
Arochlor 1254	AREA PESTPCB-1	0.49	B227	ND	mg/kg	no			
Arochlor 1254	AREA PESTPCB-1	0.49	B228	ND	mg/kg	no			
Arochlor 1254	AREA PESTPCB-1	0.49	B233	ND	mg/kg	no			
Arochlor 1254	AREA PESTPCB-1	0.49	B234	ND	mg/kg	no			
Arochlor 1254	AREA PESTPCB-1	0.49	B235	ND	mg/kg	no			
Arochlor 1254	AREA PESTPCB-1	0.49	B239	ND	mg/kg	no			
Arochlor 1254	AREA PESTPCB-1	0.49	B240	ND	mg/kg	no			

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
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Pest/PCBs = Pesticides/Polychlorinated-Biphenyls; ND = Not Detected.
MDL = Method Detction Limit (shown only for "ND" Results); 0.5*MDL used for calculating average.
For samples with dilution factors greater than 1, "ND" results were not used (Dilution factors shown only for these cases).

Table 4-5
Compliance Averaging Results
M-5 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Area	RDCSCC	Boring ID	Result	Units	Exceeds Criteria	MDL	Dilution Factor	Result Used for Average
Arochlor 1254	AREA PESTPCB-1	0.49	B241	ND	mg/kg	no			
Arochlor 1254	AREA PESTPCB-1	0.49	B242	ND	mg/kg	no			
Arochlor 1254	AREA PESTPCB-1	0.49	B244	ND	mg/kg	no			
Arochlor 1254	AREA PESTPCB-1	0.49	B245	ND	mg/kg	no			
Arochlor 1254	AREA PESTPCB-1	0.49	B246	ND	mg/kg	no			
Arochlor 1254	AREA PESTPCB-1	0.49	B247	ND	mg/kg	no			
Arochlor 1254	AREA PESTPCB-1	0.49	B248	ND	mg/kg	no			
Arochlor 1254	AREA PESTPCB-1	0.49	B249	ND	mg/kg	no			
Arochlor 1254	AREA PESTPCB-1	0.49	B250	ND	mg/kg	no			
Arochlor 1254	AREA PESTPCB-1	0.49	B251	ND	mg/kg	no			
Arochlor 1254	AREA PESTPCB-1	0.49	B252	ND	mg/kg	no			
Arochlor 1254	AREA PESTPCB-1	0.49	B253	ND	mg/kg	no			
Arochlor 1254	AREA PESTPCB-1	0.49	B254	ND	mg/kg	no			
						Compliance Average Result:			**0.832**

Dieldrin

AREA PESTPCB-1

Dieldrin	AREA PESTPCB-1	0.042	B201	ND	mg/kg	no			
Dieldrin	AREA PESTPCB-1	0.042	B207	ND	mg/kg	no			
Dieldrin	AREA PESTPCB-1	0.042	B212	ND	mg/kg	no			
Dieldrin	AREA PESTPCB-1	0.042	B213	ND	mg/kg	no			
Dieldrin	AREA PESTPCB-1	0.042	B220	ND	mg/kg	no			
Dieldrin	AREA PESTPCB-1	0.042	B221	ND	mg/kg	no			
Dieldrin	AREA PESTPCB-1	0.042	B227	ND	mg/kg	no			
Dieldrin	AREA PESTPCB-1	0.042	B228	ND	mg/kg	no			
Dieldrin	AREA PESTPCB-1	0.042	B233	ND	mg/kg	no			
Dieldrin	AREA PESTPCB-1	0.042	B234	ND	mg/kg	no			
Dieldrin	AREA PESTPCB-1	0.042	B235	ND	mg/kg	no			
Dieldrin	AREA PESTPCB-1	0.042	B239	0.049	mg/kg	yes			0.049
Dieldrin	AREA PESTPCB-1	0.042	B240	ND	mg/kg	no			
Dieldrin	AREA PESTPCB-1	0.042	B241	ND	mg/kg	no			
Dieldrin	AREA PESTPCB-1	0.042	B242	ND	mg/kg	no			
Dieldrin	AREA PESTPCB-1	0.042	B244	ND	mg/kg	no			
Dieldrin	AREA PESTPCB-1	0.042	B245	ND	mg/kg	no			
Dieldrin	AREA PESTPCB-1	0.042	B246	ND	mg/kg	no			
Dieldrin	AREA PESTPCB-1	0.042	B247	ND	mg/kg	no			
Dieldrin	AREA PESTPCB-1	0.042	B248	ND	mg/kg	no			
Dieldrin	AREA PESTPCB-1	0.042	B249	ND	mg/kg	no			
Dieldrin	AREA PESTPCB-1	0.042	B250	ND	mg/kg	no			

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
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Pest/PCBs = Pesticides/Polychlorinated-Biphenyls; ND = Not Detected.
MDL = Method Detction Limit (shown only for "ND" Results); 0.5*MDL used for calculating average.
For samples with dilution factors greater than 1, "ND" results were not used (Dilution factors shown only for these cases).

Table 4-5
Compliance Averaging Results
M-5 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Area	RDCSCC	Boring ID	Result	Units	Exceeds Criteria	MDL	Dilution Factor	Result Used for Average
Dieldrin	AREA PESTPCB-1	0.042	B251	ND	mg/kg	no			
Dieldrin	AREA PESTPCB-1	0.042	B252	ND	mg/kg	no			
Dieldrin	AREA PESTPCB-1	0.042	B253	ND	mg/kg	no			
Dieldrin	AREA PESTPCB-1	0.042	B254	ND	mg/kg	no			
						Compliance Average Result:			**0.049**

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls; ND = Not Detected.
MDL = Method Detction Limit (shown only for "ND" Results); 0.5*MDL used for calculating average.
For samples with dilution factors greater than 1, "ND" results were not used (Dilution factors shown only for these cases).

Table 4-5
Compliance Averaging Results
M-5 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Area	RDCSCC	Boring ID	Result	Units	Exceeds Criteria	MDL	Dilution Factor	Result Used for Average
Metals									
Mercury									
	AREA METALS-1								
Mercury	AREA METALS-1	14	B03	0.949	mg/kg	no			0.949
Mercury	AREA METALS-1	14	B04	ND	mg/kg	no	0.011		0.0055
Mercury	AREA METALS-1	14	B05	0.228	mg/kg	no			0.228
Mercury	AREA METALS-1	14	B06	ND	mg/kg	no	0.011		0.0055
Mercury	AREA METALS-1	14	B07	0.687	mg/kg	no			0.687
Mercury	AREA METALS-1	14	B08	1.257	mg/kg	no			1.257
Mercury	AREA METALS-1	14	B09	0.236	mg/kg	no			0.236
Mercury	AREA METALS-1	14	B13	0.467	mg/kg	no			0.467
Mercury	AREA METALS-1	14	B15	0.012	mg/kg	no			0.012
Mercury	AREA METALS-1	14	B16	0.437	mg/kg	no			0.437
Mercury	AREA METALS-1	14	B17	0.062	mg/kg	no			0.062
Mercury	AREA METALS-1	14	B18	0.133	mg/kg	no			0.133
Mercury	AREA METALS-1	14	B23	ND	mg/kg	no	0.012		0.006
Mercury	AREA METALS-1	14	B24	ND	mg/kg	no	0.011		0.0055
Mercury	AREA METALS-1	14	B25	0.201	mg/kg	no			0.201
Mercury	AREA METALS-1	14	B26	0.485	mg/kg	no			0.485
Mercury	AREA METALS-1	14	B27	0.512	mg/kg	no			0.512
Mercury	AREA METALS-1	14	B32	0.025	mg/kg	no			0.025
Mercury	AREA METALS-1	14	B33	0.979	mg/kg	no			0.979
Mercury	AREA METALS-1	14	B34	0.662	mg/kg	no			0.662
Mercury	AREA METALS-1	14	B35	1.562	mg/kg	no			1.562
Mercury	AREA METALS-1	14	B40	0.013	mg/kg	no			0.013
Mercury	AREA METALS-1	14	B41	0.891	mg/kg	no			0.891
Mercury	AREA METALS-1	14	B42	0.754	mg/kg	no			0.754
Mercury	AREA METALS-1	14	B43	0.085	mg/kg	no			0.085
Mercury	AREA METALS-1	14	B44	0.164	mg/kg	no			0.164
Mercury	AREA METALS-1	14	B45	10.194	mg/kg	no			10.194
Mercury	AREA METALS-1	14	B46	5.04	mg/kg	no			5.04
Mercury	AREA METALS-1	14	B47	0.039	mg/kg	no			0.039
Mercury	AREA METALS-1	14	B48	0.51	mg/kg	no			0.51
Mercury	AREA METALS-1	14	B49	5.141	mg/kg	no			5.141
Mercury	AREA METALS-1	14	B50	0.074	mg/kg	no			0.074
Mercury	AREA METALS-1	14	B51	0.225	mg/kg	no			0.225
Mercury	AREA METALS-1	14	B55	0.213	mg/kg	no			0.213
Mercury	AREA METALS-1	14	B56	0.9	mg/kg	no			0.9

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MDL = Method Detction Limit (shown only for "ND" Results); 0.5*MDL used for calculating average.
For samples with dilution factors greater than 1, "ND" results were not used (Dilution factors shown only for these cases).

Table 4-5
Compliance Averaging Results
M-5 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Area	RDCSCC	Boring ID	Result	Units	Exceeds Criteria	MDL	Dilution Factor	Result Used for Average
Mercury	AREA METALS-1	14	B57	0.459	mg/kg	no			0.459
Mercury	AREA METALS-1	14	B58	0.039	mg/kg	no			0.039
Mercury	AREA METALS-1	14	B59	17.584	mg/kg	yes			17.584
Mercury	AREA METALS-1	14	B60	0.671	mg/kg	no			0.671
Mercury	AREA METALS-1	14	B61	0.058	mg/kg	no			0.058
Mercury	AREA METALS-1	14	B62	0.161	mg/kg	no			0.161
Mercury	AREA METALS-1	14	B63	0.115	mg/kg	no			0.115
Mercury	AREA METALS-1	14	B69	ND	mg/kg	no			
Mercury	AREA METALS-1	14	B70	ND	mg/kg	no			
Mercury	AREA METALS-1	14	B71	0.079	mg/kg	no			0.079
Mercury	AREA METALS-1	14	B72	0.115	mg/kg	no			0.115
Mercury	AREA METALS-1	14	B77	0.029	mg/kg	no			0.029
Mercury	AREA METALS-1	14	B78	ND	mg/kg	no			
Mercury	AREA METALS-1	14	B79	ND	mg/kg	no			
Mercury	AREA METALS-1	14	B80	ND	mg/kg	no			
Mercury	AREA METALS-1	14	B86	ND	mg/kg	no			
Mercury	AREA METALS-1	14	B87	0.034	mg/kg	no			0.034
Mercury	AREA METALS-1	14	B88	0.044	mg/kg	no			0.044
Mercury	AREA METALS-1	14	B97	0.099	mg/kg	no			0.099
Mercury	AREA METALS-1	14	B98	0.34	mg/kg	no			0.34
Mercury	AREA METALS-1	14	B99	4.465	mg/kg	no			4.465
Mercury	AREA METALS-1	14	B197	0.063	mg/kg	no			0.063
Mercury	AREA METALS-1	14	B198	0.029	mg/kg	no			0.029
Mercury	AREA METALS-1	14	B199	0.153	mg/kg	no			0.153
Mercury	AREA METALS-1	14	B243	0.255	mg/kg	no			0.255
						Compliance Average Result:			**1.073**

Nickel

AREA METALS-2

Nickel	AREA METALS-2	250	B235	4.77	mg/kg	no			4.77
Nickel	AREA METALS-2	250	B236	6.44	mg/kg	no			6.44
Nickel	AREA METALS-2	250	B241	5	mg/kg	no			5
Nickel	AREA METALS-2	250	B242	431	mg/kg	yes			431
Nickel	AREA METALS-2	250	B243	8.64	mg/kg	no			8.64
Nickel	AREA METALS-2	250	B247	4.52	mg/kg	no			4.52
Nickel	AREA METALS-2	250	B248	6.14	mg/kg	no			6.14
						Compliance Average Result:			**66.644**

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls; ND = Not Detected.
MDL = Method Detction Limit (shown only for "ND" Results); 0.5*MDL used for calculating average.
For samples with dilution factors greater than 1, "ND" results were not used (Dilution factors shown only for these cases).

Table 4-6
Compliance Analysis Results Summary
M-5 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Average Area	RDCSCC	Units	Compliance Averaging Performed	Compliance Average Result	Compliance Analysis Result
VOCs						
Tetrachloroethene	AREA VOC-1	4	mg/kg	Yes	3.247	Compliance average below RDCSCC. No Further Action is warranted.

Notes:
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VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls.
DER = Declaration of Environmental Restriction.

Table 4-6
Compliance Analysis Results Summary
M-5 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Average Area	RDCSCC	Units	Compliance Averaging Performed	Compliance Average Result	Compliance Analysis Result
SVOCs						
Benzo(a)anthracene	AREA SVOC-1	0.9	mg/kg	No		Given the scattered distribution of exceedances,site conditions, and limited public access to the site, No Further Action is warranted. The DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan.
Benzo(a)pyrene	AREA SVOC-1	0.66	mg/kg	No		Given the scattered distribution of exceedances,site conditions, and limited public access to the site, No Further Action is warranted. The DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan.
Benzo(b)fluoranthene	AREA SVOC-1	0.9	mg/kg	Yes	0.885	Compliance average below RDCSCC. No Further Action is warranted.
Benzo(k)fluoranthene	AREA SVOC-1	0.9	mg/kg	Yes	0.664	Compliance average below RDCSCC. No Further Action is warranted.
Chrysene	AREA SVOC-1	9	mg/kg	Yes	1.812	Compliance average below RDCSCC. No Further Action is warranted.
Dibenz(a,h)anthracene	AREA SVOC-1	0.66	mg/kg	No		Given the scattered distribution of exceedances,site conditions, and limited public access to the site, No Further Action is warranted. The DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan.
Indeno(1,2,3-cd)pyrene	AREA SVOC-1	0.9	mg/kg	Yes	0.517	Compliance average below RDCSCC. No Further Action is warranted.

Notes:
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VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls.
DER = Declaration of Environmental Restriction.

Table 4-6
Compliance Analysis Results Summary
M-5 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Average Area	RDCSCC	Units	Compliance Averaging Performed	Compliance Average Result	Compliance Analysis Result
Pest/PCBs						
4,4'-DDD	AREA PESTPCB-1	3	mg/kg	Yes	0.479	Compliance average below RDCSCC. No Further Action is warranted.
4,4'-DDE	AREA PESTPCB-1	2	mg/kg	Yes	0.654	Compliance average below RDCSCC. No Further Action is warranted.
4,4'-DDT	AREA PESTPCB-1	2	mg/kg	No		Given the scattered distribution of exceedances,site conditions, and limited public access to the site, No Further Action is warranted. The DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan.
Arochlor 1254	AREA PESTPCB-1	0.49	mg/kg	Yes	0.832	Compliance average marginally above RDCSCC (within 1 to 2 mg/kg). No Further Action is warranted.
Dieldrin	AREA PESTPCB-1	0.042	mg/kg	Yes	0.049	Compliance average marginally above RDCSCC (within 1 to 2 mg/kg). No Further Action is warranted.

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls.
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Table 4-6
Compliance Analysis Results Summary
M-5 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Average Area	RDCSCC	Units	Compliance Averaging Performed	Compliance Average Result	Compliance Analysis Result
Metals						
Arsenic	AREA METALS-1	20	mg/kg	No		Given the scattered distribution of exceedances,site conditions, and limited public access to the site, No Further Action is warranted. The DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan.
Beryllium	AREA METALS-1	2	mg/kg	No		Given the scattered distribution of exceedances,site conditions, and limited public access to the site, No Further Action is warranted. The DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan.
Copper	AREA METALS-1	600	mg/kg	No		Given the scattered distribution of exceedances,site conditions, and limited public access to the site, No Further Action is warranted. The DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan.
Lead	AREA METALS-1	400	mg/kg	No		Given the scattered distribution of exceedances,site conditions, and limited public access to the site, No Further Action is warranted. The DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan.
Mercury	AREA METALS-1	14	mg/kg	Yes	1.073	Compliance average below RDCSCC. No Further Action is warranted.
Nickel	AREA METALS-2	250	mg/kg	Yes	66.644	Compliance average below RDCSCC. No Further Action is warranted.
Thallium	AREA METALS-1	2	mg/kg	No		Given the scattered distribution of exceedances,site conditions, and limited public access to the site, No Further Action is warranted. The DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan.

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls.
DER = Declaration of Environmental Restriction.

Table 4-6
Compliance Analysis Results Summary
M-5 Landfill
Fort Monmouth, New Jersey

Analyte Name	Compliance Average Area	RDCSCC	Units	Compliance Averaging Performed	Compliance Average Result	Compliance Analysis Result
Zinc	AREA METALS-1	1500	mg/kg	No		Given the scattered distribution of exceedances,site conditions, and limited public access to the site, No Further Action is warranted. The DPW will incorporate a document equivalent to a DER into the Fort Monmouth Master Plan.

Notes:
RDCSCC = Residential Direct Contact Cleanup Criteria pre N.J.A.C. 7:26D.
VOCs = Volatile Organic Compounds; SVOCs = Semi-Volatile Organic Compounds.
Pest/PCBs = Pesticides/Polychlorinated-Biphenyls.
DER = Declaration of Environmental Restriction.

FIGURES

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Geologic Map of New Jersey

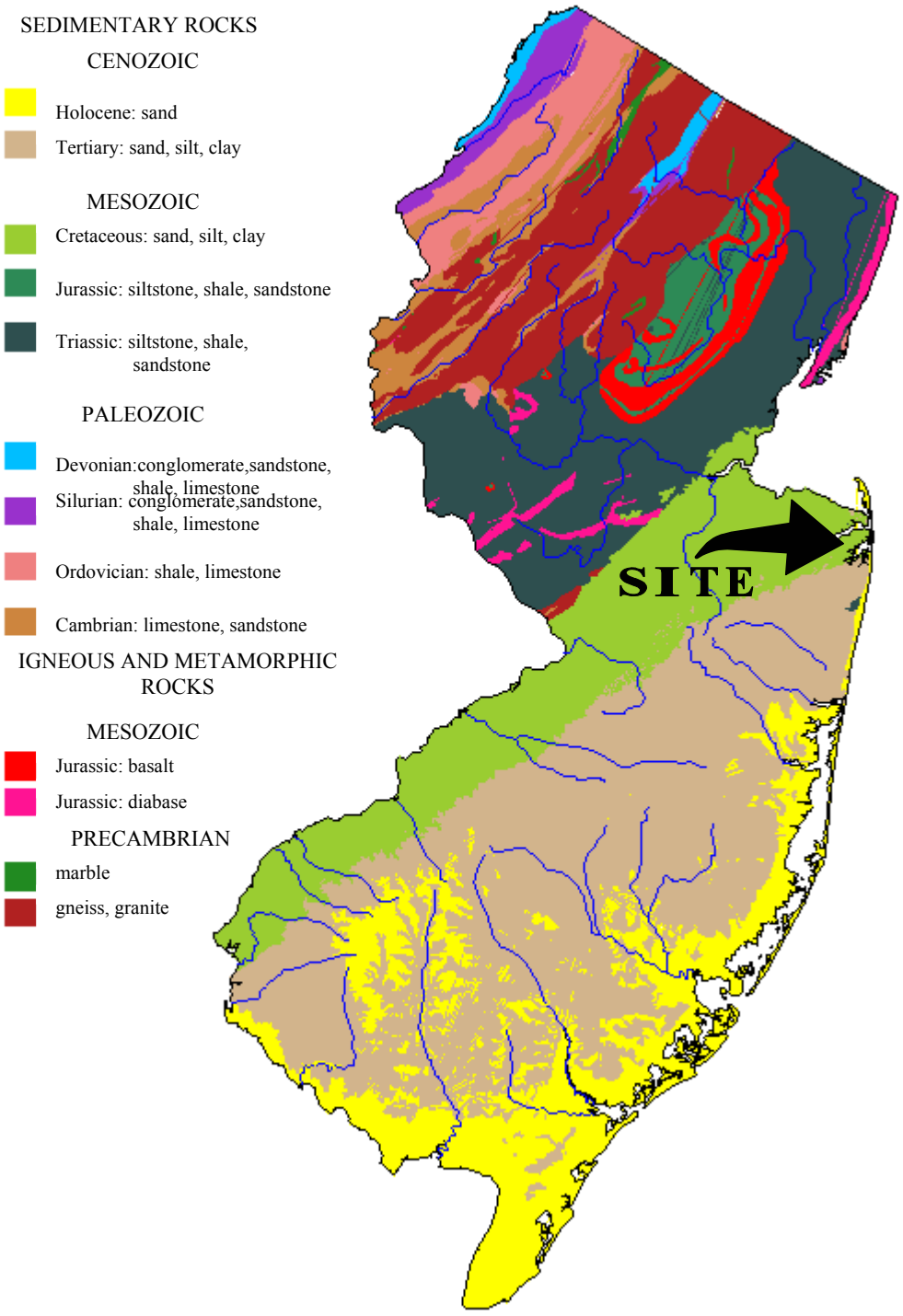
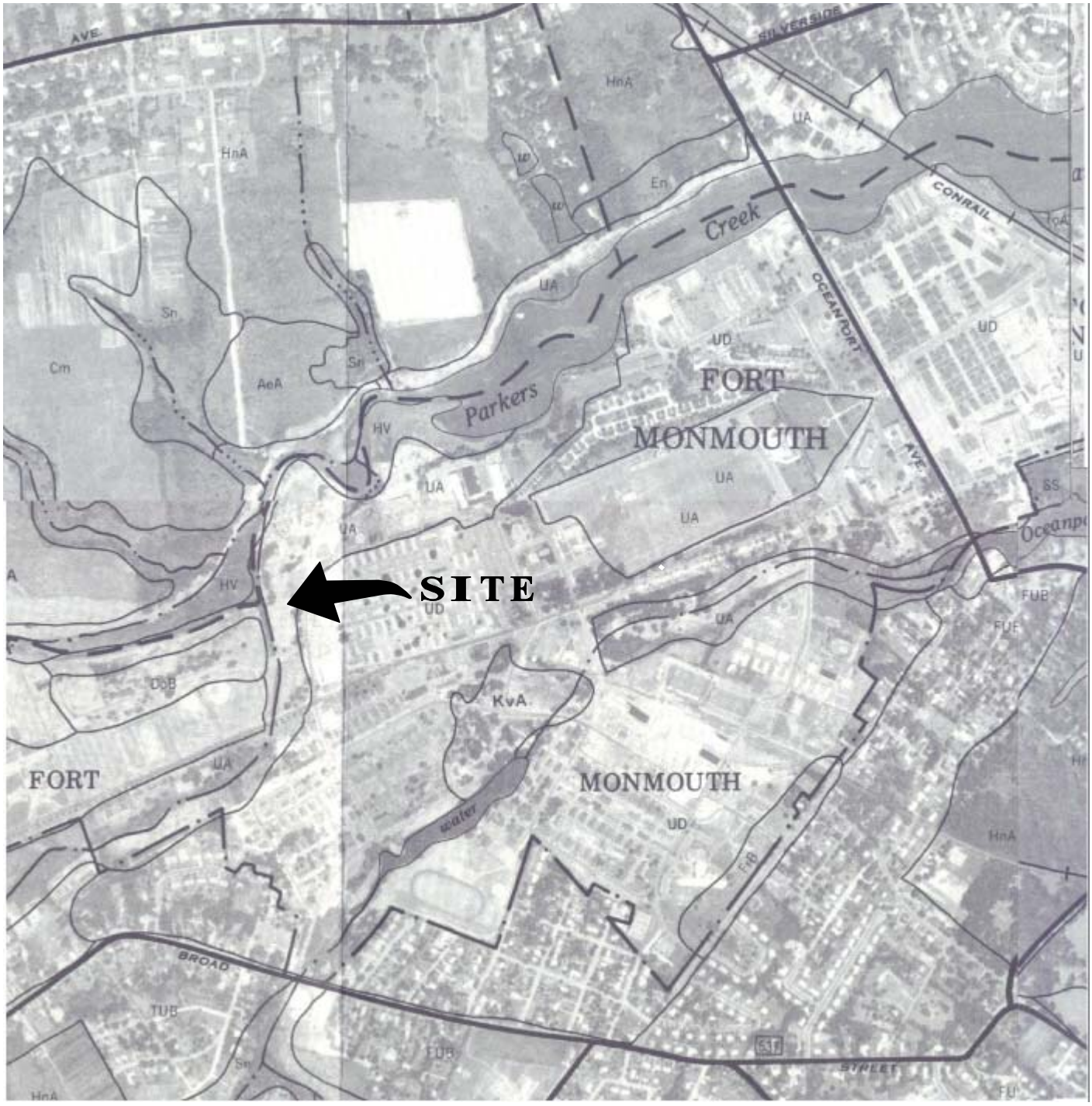


Figure 2-2
Geologic Map of New Jersey
M-5 Landfill Site
Fort Monmouth, New Jersey

Versar INC.
201 Gibraltar Road, Suite 100
Horsham, PA 19044
(215) 957-0955

Source: New Jersey Gelolgic Survey, 1994, *Geologic Map of New Jersey*.



US Department of Agriculture
Soil Conservation Service
Soil Survey of Monmouth County, NJ
April 1989

Figure 2-3
Soil Map of Monmouth County
M-5 Landfill Site
Fort Monmouth, New Jersey

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Horsham, PA 19044
(215) 957-0955

BRUSH

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M-5 LANDFILL
BOUNDARY

T-198

T-676

T-677

T-675

T-682

678

802

SHRUBS

NORTH DRIVE

SYNGER DR

N

LEGEND

1
● = SOIL BORING LOCATION

NOTES:

B	REVIEW EDITS		06 SEPT 02	TJW
REV.	REVISIONS	APPROVED	DATE	DRAWN BY

TITLE:

FIGURE 3-1
SOIL BORING LOCATION MAP
M-5 LANDFILL SITE
FORT MONMOUTH, NEW JERSEY

DRAWN BY: TJW	DATE DRAWN: 23 AUG 00
CHECKED BY:	DATE CHECKED:
APPROVED BY:	DATE APPROVED:
	DRAWING No.:M5-SOIL BORING
	FILE No.: M5-SOIL BORING
	SCALE: 1" = 30'
	SHEET OF REV.: B

Versar INC.
201 GIBRALTAR ROAD, SUITE 100
HORSHAM, PA 19044
(215) 957-0955

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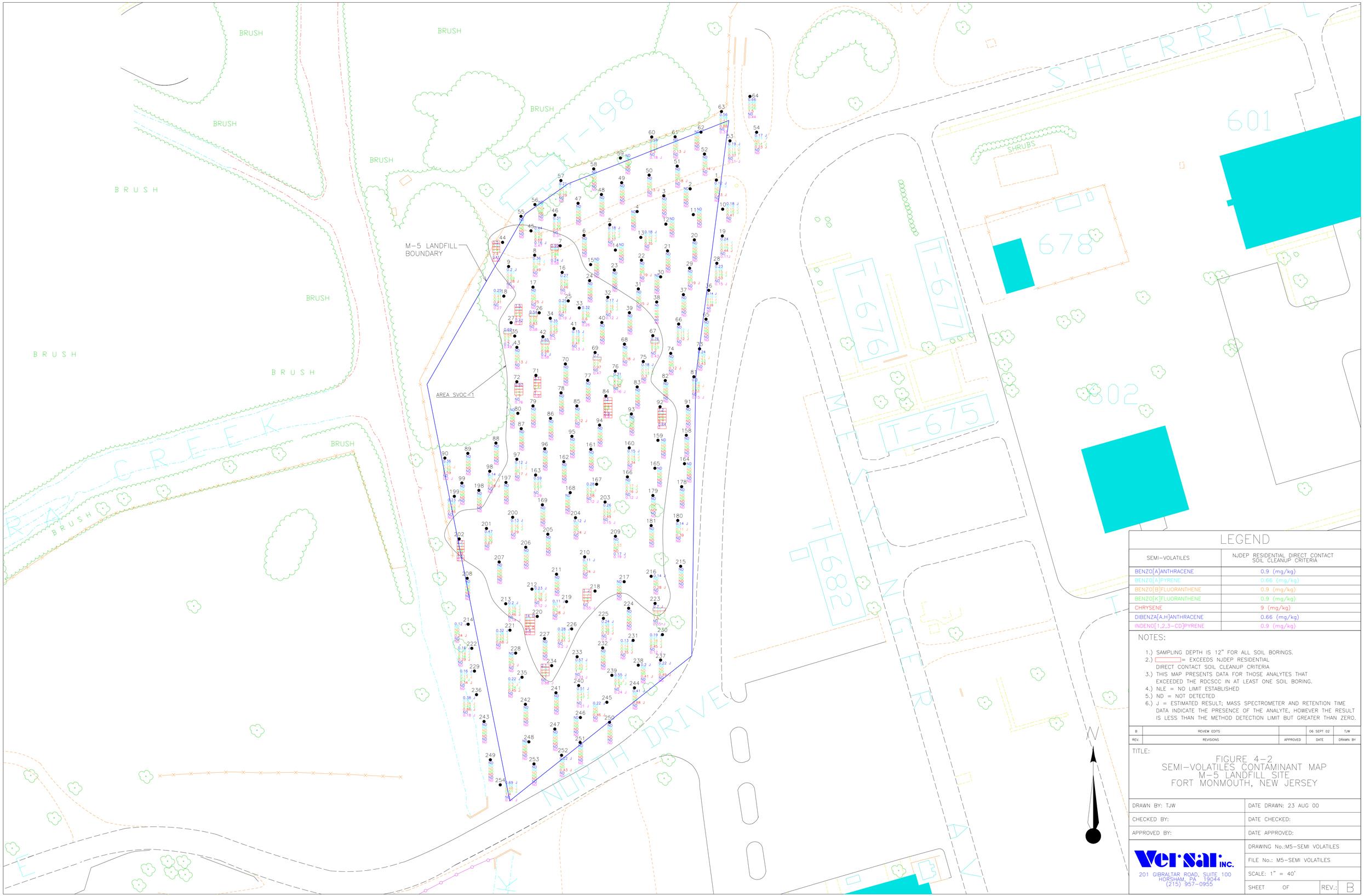
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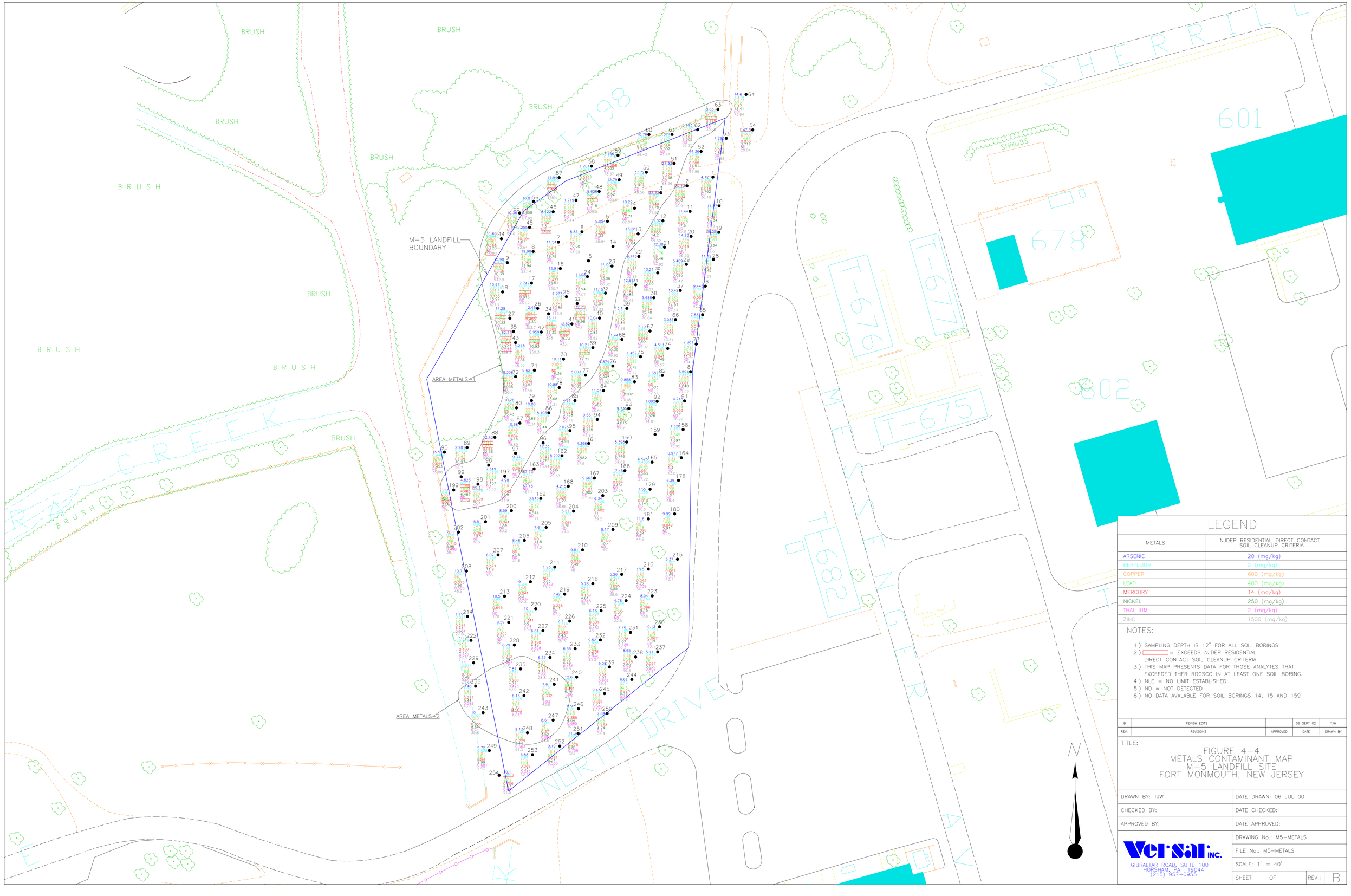
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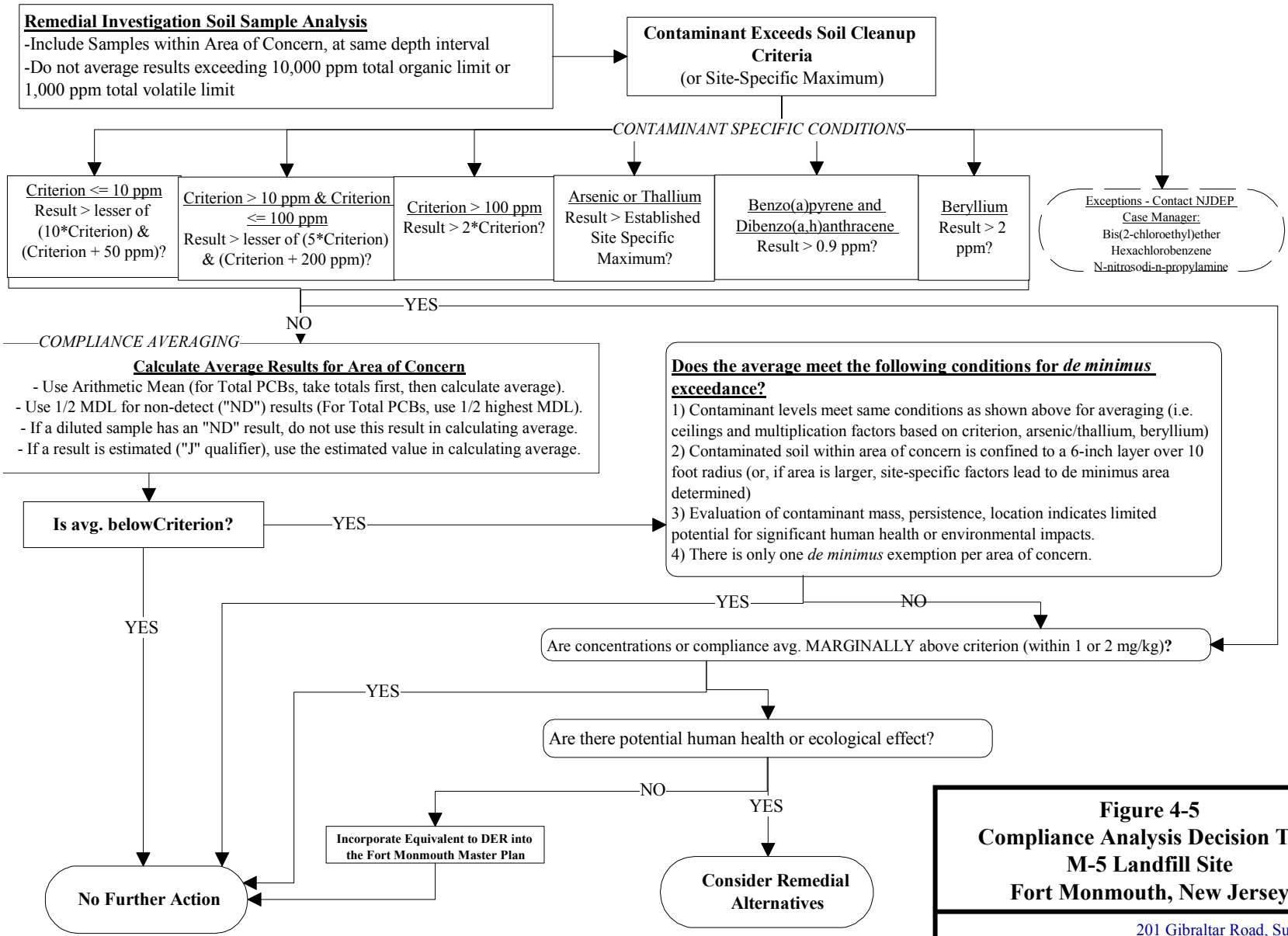

Source: NJDEP *Site Remediation News*, Spring 1995 (Vol 7, No 2) - Article 08

Figure 4-5
Compliance Analysis Decision Tree
M-5 Landfill Site
Fort Monmouth, New Jersey

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February 5, 2015

Wanda Green
BRAC Environmental Coordinator
OACSIM – U.S. Army Fort Monmouth
PO Box 148
Oceanport, NJ 07757

Approval

Re: *November 26, 2014 Response to Comments –on the Final Baseline Ground Water Sampling Report (August 2013)*
Fort Monmouth
Monmouth County
PI # G000000032
Activity Number: RPC000001

Dear Ms. Green:

The New Jersey Department of Environmental Protection (Department) has completed a review of the referenced Response to Comments dated November 26, 2014, submitted in response to the Department's comment letter dated July 3, 2014 regarding the Final Baseline Ground Water Sampling Report.

The *Response to Comments* agrees with or acknowledges the Department's comments for areas FTMM-03, FTMM-04, FTMM-05, FTMM-08, FTMM-12, FTMM-14, FTMM-22, FTMM-25, FTMM-53, FTMM-54, FTMM-55, FTMM-56, FTMM-57, FTMM-58, FTMM-59, FTMM-61, FTMM-64, and FTMM-66.

FTMM-18
The Department had indicated low-flow sampling must also be performed if Passive Diffusion Bag Sampling (PDBS) is conducted, for comparison purposes. The *Response to Comments* submittal contends as low-flow sampling has been historically conducted at this area, PDBS sampling only is appropriate. Based upon this reasoning, the Department agrees the performance via PDBS only is acceptable for the ensuing round of ground water sampling. The PDBS results are to be compared to the previous low-flow sampling results and presented in the forthcoming sampling report.

FTMM-68
The Department had expressed concern regarding the use of PDBS for long-term monitoring. FTMM-68 has not been fully characterized, and the use of PDBS for longer term monitoring is acceptable only for well characterized sites, as per the DEP's Field Sampling Procedures

Manual. As per information provided in the *Response to Comments* submittal, a Remedial Investigation to fully characterize the area is to be conducted in the near future using low-flow sampling methodology, and request approval for the use of PDBS to characterize contaminant concentrations in the interim. This is acceptable based on the stipulation that a full remedial investigation is to be performed. The November '14 *Response to Comments* (Section V), however, indicated the Remedial Investigation Workplan for FTMM-68 was awaiting DEP approval. Although some clarification was requested, the proposed remedial activities, soil and ground water, were approved for the FTMM-68 area via letter dated *January 8, 2014*, which addressed the RI/FS Workplan for FTMM-22, FTMM-53, FTMM-59 & FTMM-68.

If you have any questions, please contact me at (609)984-6606, or via email at Linda.Range@dep.nj.gov.

Sincerely,

Linda Range

Linda Range
Bureau of Case Management

cc: Joe Pearson, Calibre
Rick Harrison, FMERA
Joe Fallon, FMERA
Frank Barricelli, RAB

United States Army
Fort Monmouth, New Jersey

BACKGROUND METALS EVALUATION

U.S. Army Garrison Fort Monmouth, Main Post
Fort Monmouth, New Jersey

Prepared by

BRINKERHOFF
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Brinkerhoff Project No. 09BR116

May 2011

TABLE OF CONTENTS

1.0 INTRODUCTION 1

2.0 SITE LOCATION AND DESCRIPTION 2

3.0 METALS DETECTED AT CONCENTRATIONS EXCEEDING GWQS 3

4.0 FACTORS AFFECTING RESULTS 4

4.1 NATURALLY-OCCURRING CONSTITUENTS 4
4.2 SAMPLING TECHNIQUES 4
4.3 WELL CONSTRUCTION 5
4.4 LABORATORY ERRORS 5
4.5 FACTORS AFFECTING SOLUBILITY 5

5.0 PUBLISHED DOCUMENTS 6

5.1 U.S. ARMY GARRISON FORT MONMOUTH, MARCH 2011, BASE-WIDE GLAUCONITIC SOIL SAMPLING REPORT – FORT MONMOUTH – MAIN POST AREA 6
5.2 PUBLISHED REFERENCES 6

6.0 CONCLUSIONS AND RECOMMENDATIONS 9

7.0 SAMPLING STRATEGY DEVELOPMENT 10

7.1 90TH PERCENTILE ANALYSIS 10
7.2 CONCENTRATION RANKING AND WELL SELECTION PROTOCOL 11
7.3 SAMPLE COLLECTION METHODOLOGY 11
7.4 SAMPLE COLLECTION FREQUENCY 12

8.0 REFERENCES 13

FIGURES	
Figure 1	Site Location Map - Main Post
Figure 2	Site Location Map - Charles Wood Area
Figure 3	Contaminated Site Location Map - Main Post
Figure 4	Contaminated Site Location Map - Charles Wood Area

EXHIBITS	
Exhibit A	US Army Garrison Fort Monmouth, March 2011, Base-Wide Glauconitic Soil Sampling Report - Main Post Area
Exhibit B	Site Specific Evaluations

1.0 INTRODUCTION

A natural attenuation program with long-term monitoring (LTM) to remediate ground water concentrations exceeding the New Jersey Department of Environmental Protection's (NJDEP's) Ground Water Quality Standards (GWQS) for Class II-A Aquifers at Fort Monmouth, New Jersey is being conducted in accordance with the Remedial Action Work Plans (RAWPs) prepared specifically for individual Sites.

During the performance of LTM, various metals have been detected at concentrations exceeding the NJDEP GWQS. It has been suspected that most of these exceedances are likely due to naturally-occurring background conditions and represent a combination of a natural, dissolved component, along with input from sample turbidity. The lack of a specific source area for the detected contaminants provides confidence that metals detected in ground water are not from contaminants discharged at the site.

The objectives of this evaluation are to (1) document the presence of naturally-occurring metals; (2) identify various conditions which are likely to have resulted in the exceedances identified in the ground water LTM program; and (3) develop a meaningful strategy for determining which sites, and which individual metals, represent site contamination for which the Fort remains responsible.

Specifically, this evaluation encompassed the following:

- Determine factors potentially contributing to exceedances;
- Reference published data sources which documents metals naturally occurring in soils;
- Identify which sites have metal concentrations exceeding the NJDEP GWQS;
- Evaluate site-specific conditions which may impact results; and
- Identify and discuss recommendations for the future sampling and analysis of metals on the Fort, and establish ground water Classification Exception Areas (CEAs).

This evaluation was conducted in general accordance with the NJDEP's *Technical Requirements for Site Remediation* (*TRSR*), N.J.A.C. (New Jersey Administrative Code) 7:26E et seq.

2.0 SITE LOCATION AND DESCRIPTION

Fort Monmouth is located in the central-eastern portion of Monmouth County, New Jersey, approximately 45 miles south of New York City and 70 miles northeast of Philadelphia (Figures 1 and 2). This report covers 23 sections of the base, identified as the following sites: Buildings 80 and 166 (FTMM–56), 108 (FTMM–57), 283 (FTMM–61), 287, 290 (FTMM–55), 296 (FTMM–54), 699 (FTMM–53), 750, 812 (FTMM-64), 886 (FTMM–66), 2567 (FTMM–58), M-2 (FTMM-02), M-3 (FTMM-03), M-4 (FTMM–04), M-5 (FTMM–05), M-8 (FTMM-08), M-12 (FTMM-12), M-14 (FTMM–14), M-18 (FTMM–18), CW-1 (FTMM–22), CW-3A (FTMM–25), and CW-6. These individual sites can be separated into four general usage areas as listed below. This document is not meant to provide detailed historical accounts for the individual sites, as these are provided in site-specific remedial progress documents.

- Historical Landfills – M-2, M-3, M-4, M-5, M-8, M-12, M-14, MP-18, and CW-3A;
- Various Office, Research, Storage, and General Use Buildings – Buildings CW-1, and CW-6 (former pesticide storage facility);
- Underground Storage Tank Sites – Buildings 80 and 166, 108, 283, 287, 290, 296, 750 (motor pool), and 886; and
- Gasoline Service Stations – Buildings 699 and 2567.

Individual sites are shown on the Contaminated Site Location Maps for Main Post and Charles Wood Areas provided as Figures 3 and 4, respectively.

3.0 METALS DETECTED AT CONCENTRATIONS EXCEEDING GWQS

Roy F. Weston, Inc. (Weston) prepared a *Site Investigation Report* (SIR) in December of 1995 entitled *Final Site Investigation, Main Post and Charles Wood Areas, Fort Monmouth, New Jersey*. As part of the SIR for the Fort Monmouth military installation, Weston conducted soil sampling, monitoring well installation activities, ground water sampling, and geophysical surveying. In addition to soil and ground water sampling at different sites throughout the Main Post and Charles Wood Areas of Fort Monmouth, Weston established background concentrations for soil and ground water for the Fort Monmouth installation. These background concentrations have been referenced in various technical submittals and used by the DPW for comparing sampling results for native constituents of soil and ground water.

In the ground water results tables included in the 1995 Weston SIR, Weston identified aluminum (Al), arsenic (As), iron (Fe), manganese (Mn), sodium (Na) and lead (Pb) at concentrations greater than the NJDEP GWQS. Lead was the only constituent which was considered a COC; the remaining metal exceedances were considered background concentrations.

On-going LTM conducted at Fort Monmouth indicated several other metals were detected in ground water at concentrations greater than the GWQS across individual sites on the Fort. Those metals include antimony (Sb), beryllium (Be), cadmium (Cd), chromium (Cr), nickel (Ni), selenium (Se), and thallium (Tl). [Although commonly detected in ground water, barium (Ba) and copper (Cu) rarely exceed the GWQS.]

4.0 FACTORS AFFECTING RESULTS

Numerous factors were identified which could have contributed to the elevated concentrations of metals in ground water samples. These factors are discussed in the sections below.

4.1 Naturally-Occurring Constituents

Metals are naturally-occurring in the environment in rocks, soil, and ground water. Natural background levels are concentrations present in the environment of the region of the site and have not been influenced by anthropogenic activities.

Metals such as antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, nickel, selenium, and thallium have all been documented as being naturally-occurring constituents in soil and ground water in the Fort Monmouth area (refer to Section 5.0).

4.2 Sampling Techniques

Prior to 2010, metals at Fort Monmouth were sampled via standard-purge, which evacuates three to five monitoring well volumes prior to sampling. This sampling method potentially increases turbidity in the water column through agitation, and generally results in the introduction of fine particulates (turbidity) into the samples. Resulting analytical concentrations tend to increase as turbidity increases due to sorption of metals on particulates in the water. Metals are also contained within the mineral composition of soils.

Low-flow purging (also known slow-purge) is a method utilized to collect ground water samples from monitoring wells that are more representative of ambient ground water conditions in the aquifer. Essentially, the rate at which water is evacuated from the well is reduced, minimizing the drawdown inside of the well, thereby minimizing disturbance of sediment on the bottom of the well, and within the well gravel pack and surrounding formation. At certain sites, the slow-purge technique effectively reduces turbidity in the resulting samples.

Fort Monmouth sampling personnel have reported highly turbid samples being collected regardless of the sampling technique used. This is most likely as a result of the high percentage of fines present in the formations containing silt and clays.

Regardless of sampling technique, any metals introduced into the sample via turbidity become represented in the analytical results due to the nitric acid preservation required by the laboratory analytical method.

4.3 Well Construction

Similar to the effects of sampling techniques, the quality of individual monitoring well construction can influence analytical results. For example, well screening and filter pack conditions affect the amount of sediment introduced into the ground water sample. The age of the well, number of times sampled, construction materials/techniques, and formation characteristics can affect the amount of fine particulates that are ultimately introduced into the samples.

4.4 Laboratory Errors

During the 2009 ground water sampling events, it was discovered that the Fort Monmouth Environmental Testing Laboratory (FMETL) experienced difficulties in quantifying certain metal results. Specifically, selenium and thallium were not reported due to data quality objectives that were not met in low-range detection of these elements.

As reported by Fort Monmouth DPW, prior to the first quarter 2009, thallium was not identified as a COC in ground water. However, in 2009, thallium was detected in nearly all monitoring wells throughout Fort Monmouth at similar concentrations. Thallium concentrations exceeding the GWQS are thought to be falsely positive due to laboratory instrumentation issues. The results for thallium were not identified in the laboratory non-conformance report since blank samples associated with these results reported thallium concentrations less than the GWQS.

4.5 Factors Affecting Solubility

The pH of soil and ground water may have contributed to increased solubility of metals. Lower pHs (more acidic) could potentially increase the solubility of metals in ground water. As an example, samples collected for metals analysis are preserved with nitric acid to lower the pH to ensure that all of the metals are dissolved and, therefore, reflected in the laboratory analysis.

Temperature, aeration, mineral levels, redox parameters and biological conditions of the soil and ground water are amongst the many variable factors which can affect the solubility of soils in ground water. All of these factors can be dependent upon many other variables (such as pH) and thus it is difficult to quantify how individual site factors can influence metals results at Fort Monmouth.

5.0 PUBLISHED DOCUMENTS

Brinkerhoff reviewed various published documents regarding metals naturally-occurring in the environment. Fort Monmouth conducted their own study under the direction of the NJDEP regarding glauconitic soils to investigate a possible connection to the elevated metal detections in ground water on the installation. This report, including several other sources, are discussed below. Metals in New Jersey soils and ground water, particularly areas with glauconite-rich soils, are prevalent.

5.1 U.S. Army Garrison Fort Monmouth, March 2011, Base-Wide Glauconitic Soil Sampling Report – Fort Monmouth – Main Post Area

The U.S. Army Fort Monmouth, Directorate of Public Works wanted to assess if naturally-occurring glauconitic soils were attributing to the elevated metals detections observed in ground water collected from wells throughout the installation since no documented or confirmed source was identified. This report is included in Appendix A.

Six soil samples were collected from three locations (near Buildings 108, and 296 and historic landfill M-2). Soil results indicate the following metals were detected, however, were below the NJDEP Residential Direct Contact Soil Remediation Standards: aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, selenium, silver, sodium, thallium, vanadium, and zinc.

Six ground water samples were collected from three monitoring wells at a shallow and deep interval via slow-purge sampling technique. Of the six samples, three samples had arsenic concentrations exceed the GWQS and four had lead concentrations exceed the GWQS.

The study found that no direct correlation could be established between the metals concentrations detected in soil and ground water at the sites. However, the highest detections of arsenic and lead concentrations in ground water were detected adjacent to a glauconite-rich soil layer. The Fort Monmouth DPW concluded that arsenic and other trace metals were due to naturally-occurring conditions and not due to a site- specific source based on the lack of a clear distribution gradient and correlation between soil results and ground water results. Additionally, the DPW concluded that sample turbidity was a contributing factor in ground water concentrations in excess of the GWQS, and recommended the inclusion of filtered samples to evaluate the input from sample turbidity.

5.2 Published References

Brinkerhoff reviewed several other reference documents to confirm the natural presence of metals in soils and ground water in New Jersey. Documents reviewed and brief summaries are included below:

- Dooley, 2001, *Baseline Concentrations of Arsenic, Beryllium and Associated Elements in Glauconite and Glauconitic Soils in the New Jersey Coastal Plain*

This study describes how glauconite - a green, iron-rich, mineral occurs in significant concentrations in sedimentary formations of marine origin. These deposits form glauconitic soils from chemical weathering which underlie the New Jersey Coastal Plain physiographic providence.

These soils have been found to contain high concentrations of arsenic and beryllium. Additionally, high median concentrations of antimony, boron, and chromium were observed in glauconite-containing soils.

- Paul F. Sanders, Ph.D., May 2003, *Ambient Levels of Metals in New Jersey Soils*

Three studies conducted between 1996 and 2001 for a research project study by the Environmental Assessment and Risk Analysis Element at the NJDEP determined the ambient levels of extractable metals in New Jersey soils. This project was initiated to assist in the development of soil cleanup criteria, which could not be more stringent than background concentrations.

Aluminum, calcium, iron, magnesium, manganese, potassium, and sodium were abundant with concentrations measured at several hundred to several thousand milligrams per kilogram (mg/kg). Arsenic, barium, chromium, mercury, vanadium, and zinc were common with concentrations ranging between 10 to 100 mg/kg. Beryllium, cobalt, copper, nickel and lead were less common, and antimony, cadmium, selenium, silver, and thallium were detected at trace concentrations.

This study demonstrates that most metals are found in New Jersey soils at detectable concentrations. The metals arsenic and beryllium are the only two metals with soil criterion set by ambient levels in soil, indicating they are commonly encountered.

- Michael Serfes for the New Jersey Geological Survey, 2004, *Arsenic in New Jersey Ground Water*

This article introduces arsenic as a common constituent to New Jersey ground water. Arsenic becomes mobilized in ground water under chemically alkaline and reducing conditions. Certain natural minerals stored in bedrock can weather and be introduced into ground water.

Arsenical pesticides are not very mobile in soils and are not a major source in ground water because they are not very water-soluble and bind tightly to soil particles. However, arsenic naturally found in soils could become water-soluble depending on pH and other factors.

- Princeton Geosciences, Inc., 2007, *Trace Metals Characterization in Glauconitic Coastal Plain Soil and Associated Ground water*

A project by Princeton Geosciences identified arsenic concentrations in soil as great as 100 mg/kg for a site located in the New Jersey Coastal Plain. Samples were collected within a glauconite-containing soil matrix, leading to high concentrations of arsenic. Ground water samples contained trace metals such as aluminum, beryllium, chromium, iron, lead, and manganese. Princeton Geosciences concluded that the elevated concentrations of trace metals were attributed to turbidity in the samples. Further research and statistical evaluation led Princeton Geosciences to conclude that metals were naturally-occurring.

6.0 CONCLUSIONS AND RECOMMENDATIONS

The metals most often reported as exceedances of the applicable GWQS have the following aspects in common:

- They are common in soils, as documented through site-specific analysis and published sources; and
- have very low GWQS, ranging from 1 µg/L for beryllium, upwards to 6 µg/L for antimony.

More than any other factor, turbidity in ground water samples has the capability to result in analytical results exceeding the published GWQS. Due to the interference from sample turbidity, exceedances of the GWQS by dissolved-phase metals is not certain. As the GWQS were developed based on dissolved-phase contaminants, direct comparison to the GWQS frequently results in "false positives" when evaluating site data.

In consideration of the impending closure of Fort Monmouth, the following general recommendations are provided:

- Based on data from the current reporting period (through 3rd Quarter 2010), establish interim ground water Classification Exception Areas (CEAs) for each applicable site. Each CEA should clearly indicate that elevated results are suspected due to sample turbidity.
- The sampling strategy described in Section 7.0 herein should be implemented to reduce the input from sample turbidity, and thus better represent the actual concentrations of dissolved-phase metals. Upon completion of each sampling event, the data should be compared to the GWQS. Metals concentrations laboratory-determined to be in compliance with the GWQS should be removed from further consideration.
- Data generated should be evaluated during the performance of the 2012 CEA Biennial Certification, with metals concentrations laboratory-determined to be in compliance with the GWQS removed from each CEA as needed. Dissolved-phase metals remaining in excess of the GWQS should be evaluated on a site-specific basis to determine whether sources of contamination exist, or the dissolved-phase component is from a natural background condition.

7.0 SAMPLING STRATEGY DEVELOPMENT

In order to reduce the input from sample turbidity, and thus better-represent the actual concentrations of dissolved-phase metals, the following strategy was developed:

- Removal of extreme outliers from the data set using a 90th Percentile Analysis;
- Comparison of 90th percentile values to the applicable GWQS, with parameters exceeding the GWQS retained for further field investigation;
- Selection of monitoring wells at each site for further field investigation, biased towards those with previous elevated results; and
- Development of sample collection methodology, using a combination of slow purge well evacuation, and the use of raw and filtered sample pairs to reduce sample turbidity and enable the comparison between the raw (traditional) and filtered samples to evaluate the contribution from sample turbidity.

Site-specific results of the comparisons and recommended sampling protocol are provided in the Site Specific Evaluations included in Exhibit B of this report. Each Site Specific Evaluation includes a statistical summary of the 90th Percentile Analysis, 90th Percentile Data Summary Table (Table 1), discussion of the recommended sampling protocol, and Concentration Ranking and Recommended Well Sampling Table (Table 2).

7.1 90^{th} Percentile Analysis

Procedure

The 90^{th} Percentile Analysis is a statistical approach which removes data outliers from a data group in order to present a more representative data set. Fort Monmouth personnel assembled the data sets for each applicable site and provided the calculations to Brinkerhoff. Only detections were used in calculations. By only including the detections and not the multitude of samples that were non-detect, this approach provided a more conservative outcome.

Utilizing an Excel spreadsheet, the 90^{th} percentile and mean were calculated for each metal. Concentrations exceeding the 90^{th} percentile were determined to be extreme outliers and were excluded from the data set. An adjusted mean was then calculated.

Metals values were compared to the GWQS at the 90^{th} percentile, then to the mean and finally to the adjusted mean. This data set included various timeframes of sampling events, various numbers of monitoring wells at each site, and various metals. Timeframes were chosen by a Fort Monmouth representative based on a manageable and representative data set starting in the first quarter 2005 through to the third quarter 2010. If data were not available back to the first quarter 2005, the earliest available date was

used. Some sites did not have enough metals data to conduct statistical analysis and were not utilized in this study. These sites included Buildings 707, 745, 1104 and 1122.

Data Evaluation

The data evaluation performed for each site consists of the identification of the following:

- Metals for which the 90th percentile values meet the GWQS;
- Metals for which mean values meet the GWQS; and
- Metals for which the adjusted mean values meet the GWQS.

For the purposes of this analysis, metals with 90th percentile values meeting the GWQS were excluded from further evaluation. Although metals with mean values, or adjusted mean values meeting the GWQS are identified, this comparison is not considered sufficient to exclude these parameters from further investigation.

Note that due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS for these metals.

Site-specific results of the comparisons are discussed in the Site Specific Evaluations included in Exhibit B of this report.

7.2 Concentration Ranking and Well Selection Protocol

For future sampling events, the monitoring wells recommended for sampling were selected with a bias towards those wells demonstrating the highest concentrations as follows.

For the available data (generally from 4th Quarter 2008 through 3rd Quarter 2010), the highest observed concentrations for the site monitoring wells were ranked for each metal of concern. For larger sites, such as landfills, the highest four concentrations were listed; for smaller sites, the highest two concentrations were deemed adequate. (Each well was counted only once for each parameter of concern.)

The above procedure resulted in a small group of monitoring wells for each applicable site to be sampled using the prescribed protocol.

7.3 Sample Collection Methodology

The proposed sample collection methodology consists of a combination of slow purge well evacuation, and the use of raw and filtered sample pairs to reduce sample turbidity. This approach also enables a comparison between the raw (traditional) and filtered samples to evaluate the contribution from sample turbidity.

Specifically, for future sampling events, raw and filtered water sample pairs should be collected from select wells, to evaluate the input from sample turbidity. Samples should be analyzed by a NJ certified laboratory for the metals for which the 90th Percentile values do not meet the GWQS. (Refer to the Site Specific Evaluations in Exhibit B for the individual site evaluation and monitoring well selection.)

Slow-purge methodology should be followed for all sampling events which include metals analyses.

7.4 Sample Collection Frequency

Sample collection should generally be performed on a semiannual basis, targeting the times of the year typically exhibiting elevated precipitation amounts, and increased likelihood of infiltration to ground water (generally Spring and Fall).

Although precipitation in New Jersey is generally well distributed throughout the year, winter is considered less desirable due to the potential for snow along with a frozen ground surface. Likewise, summer is less desirable due to increased evaporation, increased absorption capacity due to dry soil conditions, and increase use by vegetation.

The semiannual collection protocol is intended to generate sufficient dissolved-phase data to draw meaningful conclusions prior to the 2012 CEA Biennial Certification.

8.0 REFERENCES

Dooley, 2001, *Baseline Concentrations of Arsenic, Beryllium and Associated Elements in Glauconite and Glauconitic Soils in the New Jersey Coastal Plain*

NJDEP, 2009, *Technical Requirements for Site Remediation* (*TRSR*), NJAC (New Jersey Administrative Code) 7:26E et seq.

Princeton Geosciences, Inc., 2007, *Trace Metals Characterization in Glauconitic Coastal Plain Soil and Associated Groundwater*

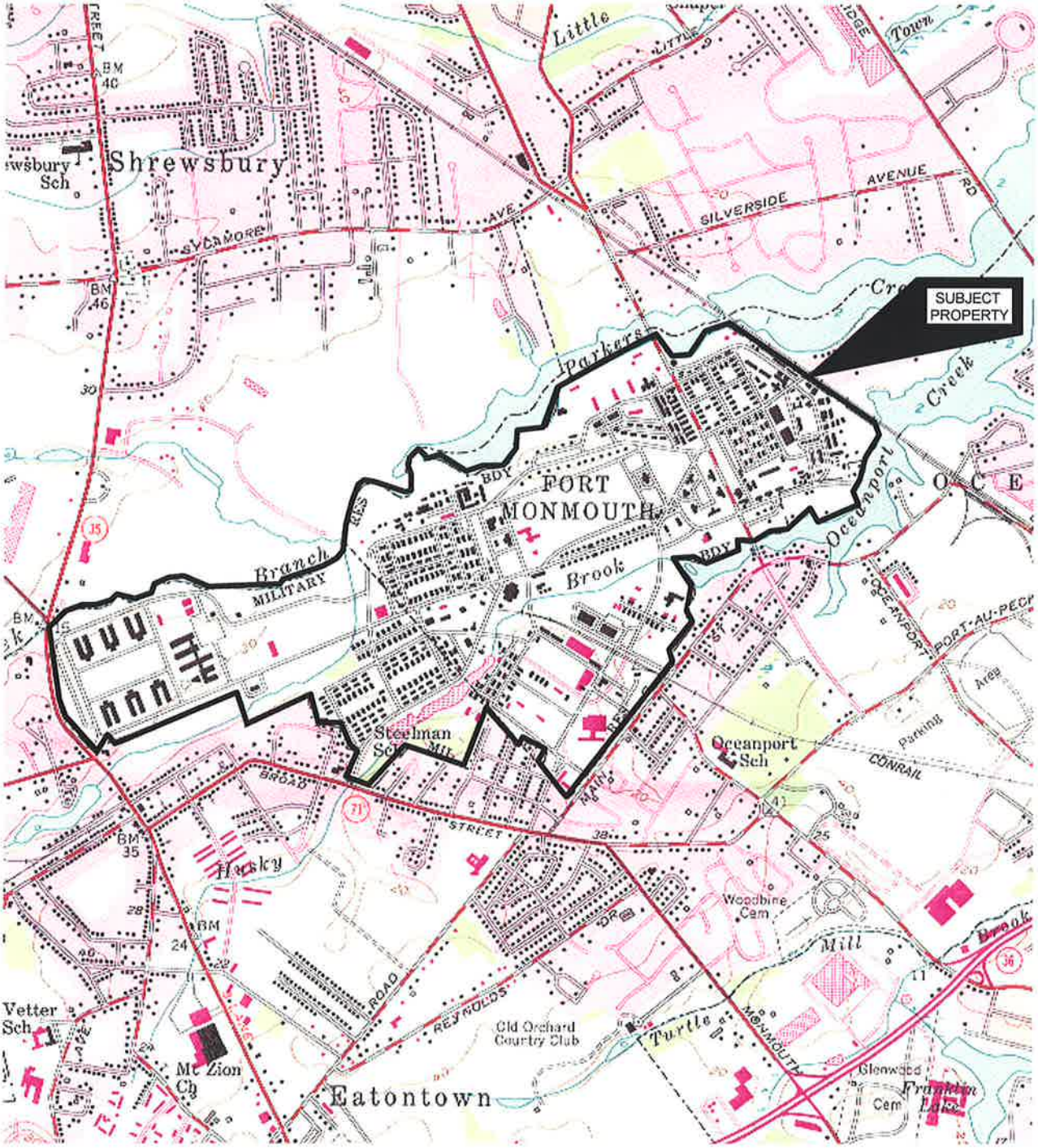
Paul F. Sanders, Ph.D., May 2003, *Ambient Levels of Metals in New Jersey Soils*

Michael Serfes for the New Jersey Geological Survey, 2004, *Arsenic in New Jersey Ground Water*

US Army Garrison Fort Monmouth, March 2011, *Base-Wide Glauconitic Soil Sampling Report – Fort Monmouth – Main Post Area*

Roy F. Weston, Inc., December 1995, *Final Site Investigation, Main Post and Charles Wood Areas, Fort Monmouth, New Jersey*

Figures



LONG BRANCH, N. J.
40073-C8-TF-024

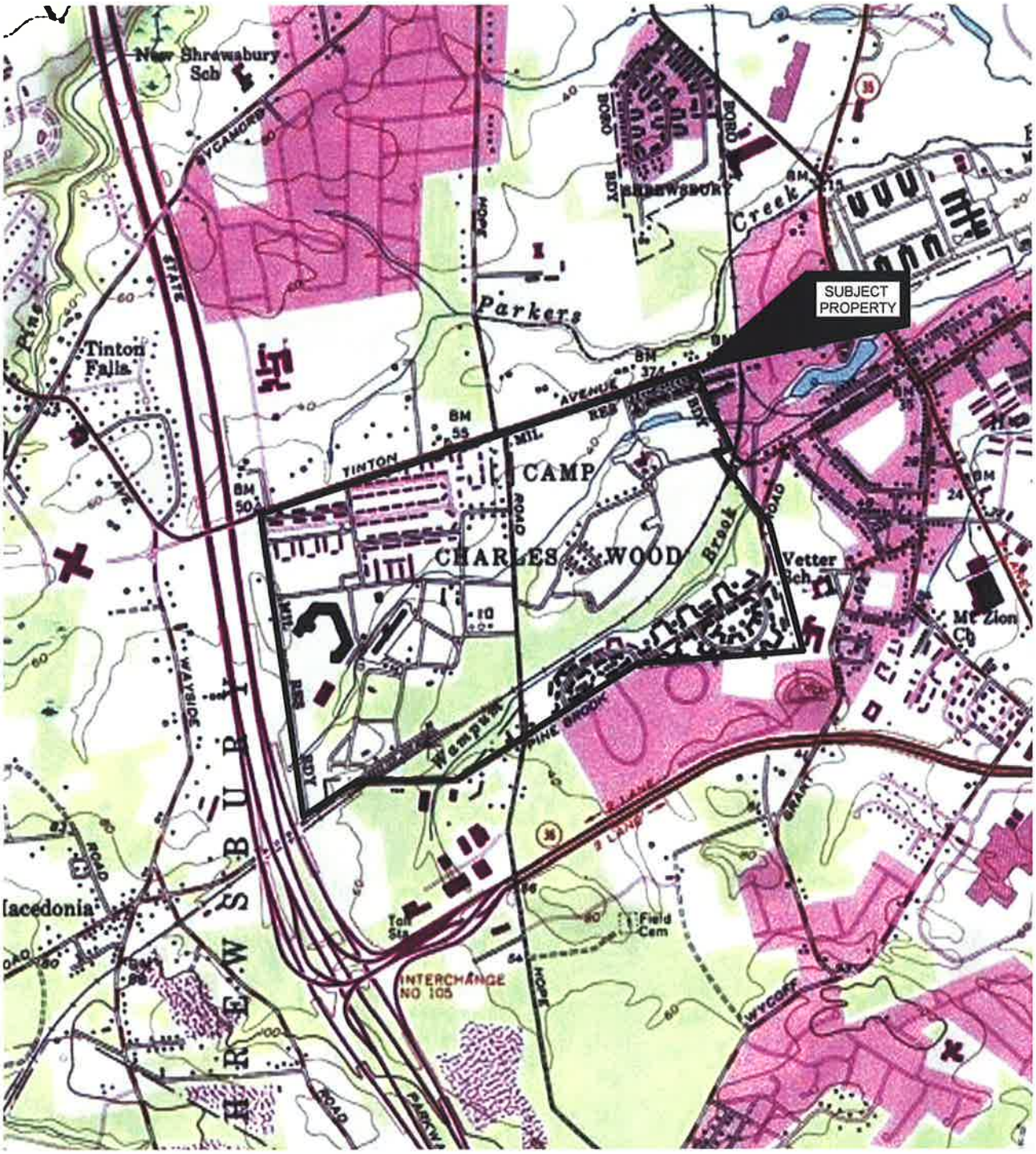
1954
PHOTOREVISED 1981
DMA 6164 I SE-SERIES V822

QUADRANGLE LOCATION

BRINKERHOFF
ENVIRONMENTAL SERVICES, INC.

FIGURE 1 - SITE LOCATION MAP
U.S.G.S. TOPOGRAPHIC LONG BRANCH, NJ QUAD
US ARMY FORT MONMOUTH
MAIN POST
FORT MONMOUTH, NEW JERSEY

DATE: 5/4/11	JOB NO.: 09BR116	SCALE: 1′ = 2000′



0′ 1000′ 2000′

SCALE: 1"=2000′

LONG BRANCH, N. J.
40073-C8-TF-024

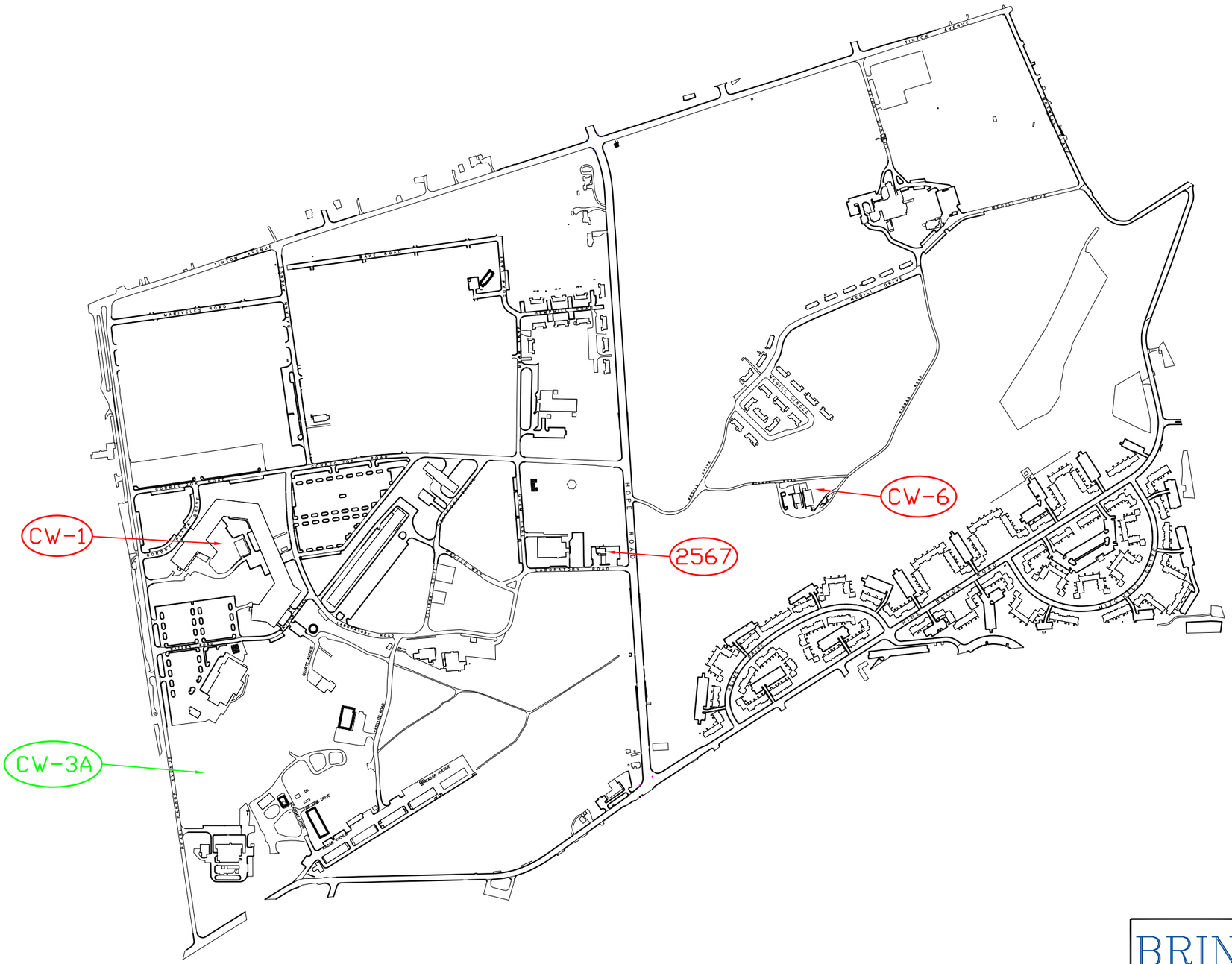
1954
PHOTOREVISED 1981
DMA 6164 I SE-SERIES V822

QUADRANGLE LOCATION

BRINKERHOFF
ENVIRONMENTAL SERVICES, INC.

FIGURE 2 - SITE LOCATION MAP
U.S.G.S. TOPOGRAPHIC LONG BRANCH, NJ QUAD
US ARMY FORT MONMOUTH
CHARLES WOOD AREA
FORT MONMOUTH, NEW JERSEY

DATE: 5/4/11	JOB NO.: 09BR116	SCALE: 1" = 2000′



LEGEND

(2567) - BUILDING NUMBER/CONTAMINATED AREA LOCATION

(CW-3A) - HISTORIC LANDFILL LOCATION

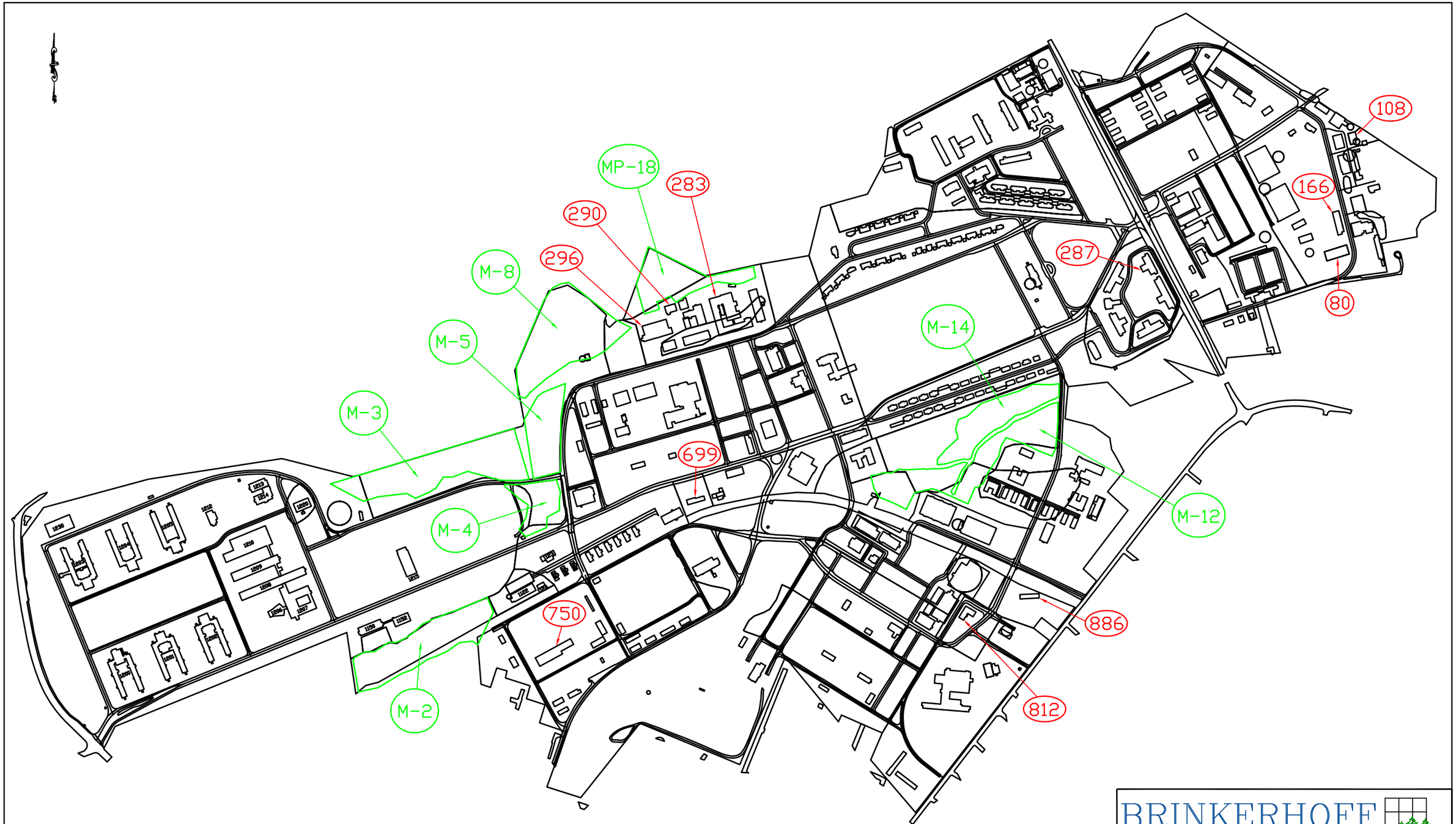
0′ 350′ 700′

SCALE: 1"=700′

BRINKERHOFF ENVIRONMENTAL SERVICES, INC.

FIGURE 4
CONTAMINATED SITE LOCATION MAP
US ARMY FORT MONMOUTH
CHARLES WOOD AREA
FORT MONMOUTH, NEW JERSEY

DATE: 5/4/11	JOB NO.: 09BR116	SCALE: 1" = 700′



LEGEND

(886) - BUILDING NUMBER/CONTAMINATED AREA LOCATION

(M-2) - HISTORIC LANDFILL LOCATION

0′ 350′ 700′

SCALE: 1"=700′

BRINKERHOFF
ENVIRONMENTAL SERVICES, INC.

FIGURE 3
CONTAMINATED SITE LOCATION MAP
US ARMY FORT MONMOUTH
MAIN POST
FORT MONMOUTH, NEW JERSEY

DATE: 5/4/11	JOB NO.: 09BR116	SCALE: 1" = 700′

Exhibit A
Base-Wide Glauconitic Soil Sampling Report

DEPARTMENT OF THE ARMY
HEADQUARTERS, U.S. ARMY GARRISON FORT MONMOUTH
FORT MONMOUTH, NEW JERSEY 07703-5000

REPLY TO
ATTENTION OF

Directorate of Public Works

March 9, 2011

Larry Quinn, Site Manager
New Jersey Department of Environmental Protection
Bureau of Investigation, Design and Construction
401 East State Street, P.O Box 413
Trenton, New Jersey 08625-0413

Subject: Base-Wide Glauconitic Soil Sampling Report
Fort Monmouth – Main Post Area
Fort Monmouth, New Jersey 07703

Dear Mr. Quinn:

On October 13, 2010, the U.S. Army Fort Monmouth, Directorate of Public Works (DPW) submitted a *Base-Wide Glauconitic Soil Sampling Plan* to determine if selected Target Analyte List (TAL) metals detected in groundwater at concentrations exceeding the New Jersey Department of Environmental Protection (NJDEP) Ground Water Quality Standards (GWQS) are naturally occurring in soils containing high amounts of glauconite. On October 29, 2010, the NJDEP provided written approval of the *Base-Wide Glauconitic Soil Sampling Plan* **(Attachment 1).**

Background

TAL metals which have been detected in samples collected from onsite groundwater monitoring wells at concentrations exceeding the GWQS include, but are not limited to: arsenic, antimony, beryllium, cadmium, lead, and zinc. There is no documented or confirmed source identified for the detections of these metals in groundwater. Several sites at Fort Monmouth are solid waste landfills containing various materials but most sites are associated with petroleum hydrocarbons resulting from leaking underground storage tanks (USTs).

Dooley (2001) analyzed the composition of naturally-occurring glauconitic soils at seven locations within the New Jersey Coastal Plain physiographic province. This study revealed that glauconitic soils contained arsenic at concentrations ranging from 7 to 31 milligrams per kilogram (mg/kg). There is evidence for a relationship between the type of geologic unit and concentrations of arsenic in the soil found in the New Jersey Coastal Plain (Rutgers, 2002). The geologic creation of arsenic-bearing glauconite is the result of depositions of algae that take up, metabolize, and retain arsenic in surface waters. When the algae dies and settles to the bottom, the arsenic in the dead algae becomes part of the deposit. When this process occurs over thousands of years, arsenic accumulates in estuaries, which are now geologically mapped as glauconite or "greensands". Glauconite is a dull-green, iron-silicate mica mineral found in shallow marine sediments.

Layers of glauconite have been identified in the New Jersey Coastal Plain, southern New Castle County, Delaware, and in the deeper units in southern Delaware. The soils that form over these glauconite-containing units, called greensands, are highly productive agriculturally and have

been determined to contain naturally-occurring arsenic and beryllium as reported by Dooley (2001).

The United States Geological Survey (USGS) reported arsenic concentrations ranging from 4.8 to 23 mg/kg in sediments collected from the Lower Susquehanna River. Similar concentrations of arsenic were found in another USGS study in which the average arsenic soil concentrations were reported as 8.3 mg/kg for New Castle County, Delaware, 4.6 mg/kg for Kent County, Delaware, and 4.9 mg/kg for Sussex County, New Jersey (USGS, 1984).

These studies indicate that the presence of arsenic and other TAL metals (e.g., beryllium, lead) detected in soil and sediment samples are attributed to natural (lithogenic) sources rather than from anthropogenic activities. In an effort to confirm and document that select TAL metals detected in groundwater on the Main Post are naturally associated with glauconitic soils, the DPW conducted a soil sampling investigation. This investigative study was necessary because the DPW believes the presence of naturally-occurring TAL metals in onsite glauconitic soils are adversely affecting groundwater quality conditions as defined by the NJDEP GWQS.

The DPW conducted an exhaustive review of all logs for monitoring wells installed at the Main Post to identify locations where the word 'glauconitic' or variations thereof (e.g. glauconite, green sands) were recorded. Glauconitic sands, silts, and/or clays were positively identified at sites 108, 296, and the M-2 Landfill. A brief summary of each site as described in the U.S. Army's *Environmental Condition of Property Report* (2007) is provided as follows:

- **Site 108** is near Riverside Avenue in the eastern section of the Main Post. The DPW removed five USTs in this area in November 1993. The site was reported to the NJDEP as a discharge to the environment and Incident No. 93-04-12-1939-29 was assigned.

- **Site 296** a former fuel distribution facility on Sherrill Avenue which was abandoned and then rediscovered during a renovation project at Building 296. The facility dates back to the 1940s. The UST system was comprised of ten 1,000-gallon USTs which stored various types of fuel products. These products were distributed from remote pumping islands located >450 feet from the UST field and within 50 feet of Parkers Creek.

- **M-2 Landfill**. The 6.5-acre landfill operated from 1964 until 1968. Materials disposed at the landfill reportedly included: construction debris, scrap metal, asbestos containing materials, vegetative waste, unwashed containers which previously held hazardous materials/wastes, outdated photographic chemicals, small quantities of outdated drugs, sludge from the STP, soot and boiler scale, incinerator ash, oil spill debris, oil filters, batteries, fluorescent tubes, and electronic components.

At each of the above locations, arsenic and lead were detected in groundwater at concentrations exceeding the GWQS of 3 and 5 micrograms per liter (µg/L), respectively. It is important to note that glauconitic-rich soils are more prevalent on the Main Post than the well logs would indicate because the well logs were not properly completed by trained personnel, e.g., soil scientist, geologist, etc. The majority of the well logs were prepared by the well drillers who have little to no training properly classifying soils using an accepted classification scheme (i.e. Unified Soil Classification System, Burmister, etc.).

According to Jablonski (1968), the Cretaceous-age Red Bank and Tinton Sands outcrop at the Main Post. The Red Bank sand conformably overlies the Navesink Formation. The upper member of the Red Bank Sand (Shrewsbury) is a yellowish-gray to reddish-brown, clayey, medium to coarse-grained sand that contains abundant rock fragments, muscovite, and glauconite. The lower member (Sandy Hook) is a dark gray to black, medium to fine-grained sand with abundant clay, muscovite and glauconite.

The Tinton Sand conformably overlies the Red Bank sand and ranges from a clayey medium to very coarse-grained feldspathic quartz and glauconitic coarse sand. The color varies from a yellowish-orange or light brown to light olive to grayish-olive. Glauconite may comprise 60 to 80% of the sand fraction in the upper portion of the Tinton Sand (Minard, 1969).

Soil and Groundwater Investigation

The soil investigation included the collection of soil samples at locations depicted on **Figure 1**. Each soil boring was advanced proximate, but not less than five feet, to the selected groundwater monitoring well where glauconite was observed during well installation activities. Geologic logs, including construction details, for the selected groundwater monitoring wells (108MW04, 296MW04, M2MW13, M2MW18, and M2MW24) are provided in **Attachment 2.**

At each soil boring, a direct-push rig (Geoprobe®) was used to advance a borehole to the depth of the proximate groundwater monitoring well. Continuous soil cores were collected by advancing dedicated acetate sleeves from the ground surface to the depth of the proximate groundwater monitoring well. Discrete soil samples from the saturated zone (water table to the bottom of the well screen as determined from the proximate monitoring well) were collected for laboratory analysis. Additional discrete soil samples were collected from the saturated zone for laboratory analysis based on lithology differing from that containing greenish glauconitic sands and silts. Prior to sample collection, any twigs, roots, and miscellaneous debris (e.g. glass, bricks, etc.) were removed from the soil sample using a decontaminated stainless steel spoon. Soil boring logs and maps showing locations of the soil borings are provided in **Attachment 3.**

All method(s)/procedure(s) for collecting grab soil samples were consistent with the methodology for obtaining Non-Volatile Organic Compound Sample Collection for Soils as per NJDEP's August 2005 *Field Sampling Procedures Manual* (Section 6.2.8). Decontamination of field sampling equipment was conducted in accordance with the DPW's *Standard Operating Procedures* (SOP) and NJDEP's August 2005 *Field Sampling Procedures Manual* (FSPM).

Subsequent to the collection of soil samples, groundwater samples were collected from the proximate monitoring well via the low-flow purging and sampling method. Applicable protocols regarding sampling, handling, storage, preservation, reporting, decontamination of field equipment, and other procedures adhered to the DPW's latest SOP for low-flow groundwater sampling (**Attachment 4**), which complies with the NJDEP FSPM.

All soil and groundwater samples were analyzed at DPW's NJDEP certified laboratory (NJDEP Certification Number 13461) for Target Analyte List (TAL) metals and Accutest Laboratories (NJDEP Certification Number 12129) for Organic Carbon (OC) using United States Environmental Protection Agency approved test methods. Soil samples were analyzed for OC not as part of the glauconitic study. Rather the OC data was used to support the fate and transport modeling effort being conducted by Brinkerhoff Environmental Services, Inc. on the Main Post.

Summary of Soil Results

A total of six soil samples were collected at three locations, namely at locations proximate to groundwater monitoring wells M2MW13, 108MW04, and 296MW06 (**Table 1**). Soil samples were not collected as proposed at M2MW18 and M2MW24 due to refusal at each location.

A review of analytical results indicates that the following metals were detected in the soil samples: aluminum (Al), antimony (Sb), arsenic (As), barium (Ba), beryllium (Be), cadmium (Cd), calcium, chromium (Cr), cobalt, copper, iron, lead, magnesium, manganese (Mn), mercury, nickel (Ni), potassium, silver (Ag), vanadium (V), and zinc (Zn). Selenium, sodium, and thallium were not detected in all soil samples.

Arsenic concentrations were detected at all locations and sample depths. Concentrations of arsenic in samples collected from Sites M-2 and 296 were consistent. Concentrations of arsenic at M-2 and 296 in the shallow (non-glauconitic layer) soil samples were 7 and 5 milligrams/kilogram (mg/kg), respectively. Similarly, concentrations of arsenic at M-2 and 296 in the deeper (glauconite-rich layer) soil samples were 7 and 6 mg/kg, respectively. At Site 108, the concentration of arsenic in the soil sample collected 7.0-8.0 feet below ground surface (bgs) was five times greater than the arsenic concentration in the shallower sample (**Table 1**). Concentrations of TAL metals in the shallow soil samples were within an order of magnitude of concentrations of TAL metals detected in the deeper soil samples (**Table 1**). All TAL metal concentrations were compliant with the NJDEP Soil Remediation Standards (SRS) as promulgated by the NJDEP in June 2008 (New Jersey Administrative Code 7:26D). The laboratory analytical reports are included in **Attachment 5**.

Table 1. Concentrations of Selected TAL Metals and OC in Soil

Sample Depth (feet bgs)	Ag	Al	As	Ba	Be	Cd	Cr	Mn	Ni	Pb	Sb	V	Zn	OC
	mg/kg (dry weight)													
Site M-2														
8.0–12.0	6	9550	7	70	2	2	106	27	15	9	2	45	63	87700
16.0–20.0*	14	11500	7	17	2	4	134	13	10	10	1	25	67	762
Site 108														
6.5–7.0	1	2540	3	5	0.3	0.6	18	9	2	16	ND	11	13	558
7.0–8.0*	2	8110	15	16	0.8	2	65	23	4	16	1	36	29	365
Site 296														
3.5–4.0	1	3560	5	4	0.5	1	73	3	2	11	3	65	13	500
12.0–12.5*	2	4860	6	27	0.8	2	69	17	5	12	2	39	27	1010
NJDEP SRS	390	78000	19	16000	16	78	—	11000	1600	400	31	78	23000	—

* – Glauconitic-rich layer; ND: not detected.

Summary of Groundwater Results

Six groundwater samples were collected from three monitoring wells, namely M2MW13, 108MW04, and 296MW06. Aqueous samples were collected at two different depths as noted in **Table 2**.

A comparison of TAL metal concentrations in the shallow and deep sampling depths show variations but are within an order of magnitude. Arsenic concentrations were detected at all three locations and sample depths. Concentrations of arsenic detected in groundwater samples ranged from 2.21 to 8.77 µg/L. The GWQS for arsenic is 3 µg/L. Arsenic concentrations exceeded the GWQS in three of the six groundwater samples. Concentrations of arsenic were nearly consistent

at both sampling depth intervals at M2MW13 (**Table 2**). The concentration of arsenic reported in the water sample collected from 296MW06 at 3.7 feet bgs (4.38 µg/L) was greater than the arsenic concentration detected in the deeper sample (2.69 µg/L at 12.25 feet bgs). Conversely, the arsenic concentration detected at 6.75 feet bgs at 108MW04 (4.94 µg/L) was less than the arsenic concentration detected in the water sample collected from 7.5 feet bgs (8.77 µg/L). The laboratory analytical reports are included in **Attachment 6**.

Table 2. Concentrations of Selected TAL Metals in Groundwater

Sample Intake (feet bgs)	Ag	Al	As	Ba	Be	Cd	Cr	Mn	Ni	Pb	Sb	V	Zn	OC
						µg/L								
Site M-2 – MW13														
10	3.95	ND	2.21	82.8	ND	1.07	0.87	155	3.07	4.84	5.58	1.80	31.2	—
18	4.24	ND	2.57	70.7	ND	1.13	0.62	149	ND	4.09	ND	1.42	15.3	—
Site 108 – MW04														
6.75	ND	1160	**4.94**	28.8	ND	1.09	7.82	14.6	4.04	**8.76**	ND	5.13	49.6	—
7.5	ND	3630	**8.77**	39.4	ND	1.35	23.0	39.5	7.64	**26.0**	5.48	13.0	118	—
Site 296 – MW06														
3.7	9.71	ND	**4.38**	250	ND	2.65	ND	2220	1.43	**7.96**	ND	1.80	ND	—
12.25	7.56	ND	2.69	202	ND	2.12	ND	1940	ND	**7.83**	ND	2.11	ND	—
NJDEP GWQS	40	200	3	6000	1	4	70	50	100	5	6	—	2000	—

ND: not detected. Concentrations in **bold** type exceed the GWQS.

It appears a correlation exists between the concentrations of arsenic and lead in groundwater, i.e., the concentrations of arsenic and lead are directly proportional to each other. To determine if the concentrations of arsenic and lead are related to each other, a geochemical association was conducted. To illustrate this, the concentration of arsenic in each groundwater sample was plotted against the corresponding concentration of lead to generate an "Arsenic-Lead" scatter plot (**Figure 1**).

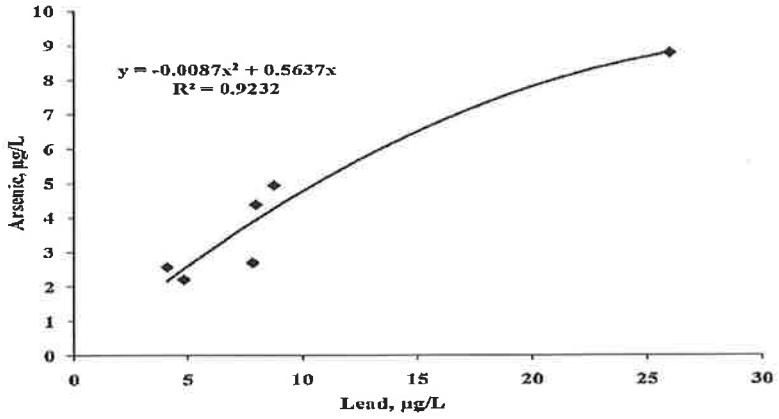


Figure 1. Scatter plot of arsenic and lead concentrations detected in groundwater.
As this figure shows, the concentration of arsenic increases with increases in the lead concentration. A second-order trendline was fitted to the data. The goodness of fit result of R^2 = 0.9232 demonstrates a strong relationship between arsenic and lead given the limited data set.

Thus, it appears that arsenic and lead co-exist as naturally occurring TAL metals, i.e. both metals are non-site related COCs.

Comparison of Arsenic and Lead in Soil and Groundwater

A comparison of TAL metals concentrations in soil and groundwater was completed and no relationship or correlation could be established. In other words, arsenic and lead concentrations in soil are not proportional or inversely proportional to the concentrations of TAL metals identified in groundwater.

Similar to DPW's investigation, Princeton Geoscience, Inc. (PGI) performed a soil and groundwater remedial investigation at a site in the New Jersey Coastal Plain (http://www.princetongeoscience.com/geonew.html). PGI identified natural arsenic concentrations in soil at concentrations up to 100 mg/kg. The elevated metals concentrations in collected groundwater samples resulted mainly from turbidity introduced into the monitoring wells during purging. Low-flow purging and monitoring well redevelopment did not eliminate turbidity in the groundwater samples.

After employing a different approach/technique, PGI compared groundwater concentrations of the trace metals to trace metal concentrations in soil NJDEP acknowledged were of naturally-occurring and identified a correlation for each of the trace metals in question. PGI states that "no remediation has been required to address this issue and Princeton Geoscience has indicated an intention not to include metals as groundwater contaminants in the Classification Exception Area information to be submitted for this site."

Summary

- Arsenic was detected in groundwater at concentrations exceeding the GWQS of 3 µg/L in three of six samples (50%).
- Lead was detected in groundwater at concentrations exceeding the GWQS of 5 µg/L in four of six samples (67%).
- The greatest concentrations of arsenic and lead in groundwater were detected adjacent to the glauconite-rich soil layer at monitoring well 108MW04 (7.5 feet bgs).
- Similarly, the greatest concentrations of arsenic (15 mg/kg) and lead (16 mg/kg) in soil were detected in a sample collected from the glauconitic-rich soil layer proximate to monitoring well 108MW04 (15 mg/kg at 7.0-8.0 feet bgs). Lead was also detected at the same concentration in the shallower soil sample depth (6.5-7.0 feet bgs).
- The greatest concentrations of arsenic in soil were identified at Site 108 where underground storage tanks used to store petroleum products were removed. Arsenic is not associated with refined petroleum products.
- A comparison of TAL metals concentrations in soil and groundwater was completed and no relationship or correlation could be established.

Conclusions

- Given that arsenic was detected at concentrations exceeding the GWQS, this confirms DPW's conclusion in Versar's *Remedial Investigation Report* (2004) that "... arsenic is likely attributable to the native soil characteristics or a non-point source distributed throughout the subsurface soils at Site 108."
- Based on a general knowledge of site historical operations and geology of the Fort Monmouth area, the presence of arsenic and lead co-exist as naturally-occurring TAL metals that are unrelated to anthropogenic activities at the three sites that were investigated.

- It appears arsenic and lead co-exist as naturally occurring TAL metals, i.e. neither metal has been detected and confirmed or documented from a source at any site.
- It appears that the source of arsenic in groundwater is due to natural conditions rather than man-made/anthropogenic sources. Vowinkel et al. (2001) reported that arsenic concentrations greater than 50 µg/L are typically are associated with known contaminated sites. The greatest concentration of arsenic identified in this study is 8.77 µg/L.

Recommendations

- To determine if suspended particles (turbidity) is proportional to detectable concentrations of metals in aqueous samples, filtered and unfiltered samples should be collected and analyzed for TAL metals by a NJ certified laboratory. Filtered samples should provide more consistent analytical results and be more representative of the water quality moving within a water-bearing zone.
- Samples of the glauconite should be collected and chemically analyzed by a certified laboratory for TAL metals to determine if arsenic and other TAL metals are present in its chemical makeup (source material).

References

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If you have any questions or require additional information, please contact John H. Montgomery, Senior Hydrogeologist, at 732-532-7979 or email: john.h.montgomery@us.army.mil.

Sincerely,

Joseph M. Fallon

Joseph M. Fallon, CHMM
Chief, Environmental Division

c: file
Attachments

Attachment 1

Base-Wide Glauconitic Soil Sampling Plan Approval Letter from NJDEP

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
SITE REMEDIATION, PUBLICLY FUNDED REMEDIATION ELEMENT
P.O. BOX 413
TRENTON, NEW JERSEY 08625-0413

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

BOB MARTIN
Commissioner

October 29, 2010

Mr. Joseph Fallon, CHMM
Directorate of Public Works
ATTN: IMNE-MON-PWE
167 Riverside Ave.
Fort Monmouth, NJ 07703

RE: Base-Wide Glauconitic Soil Sampling Plan
Fort Monmouth, NJ

Dear Mr. Fallon:

The NJDEP Site Remediation Program (SRP) has received and reviewed the revised Base-Wide Glauconitic Soil Sampling Plan dated October 13, 2010. The stated intent of the Base-Wide Glauconitic Soil Sampling Plan is to "confirm and document that select TAL metals detected in groundwater on the Main Post are naturally associated with glauconitic soils".

As you know, SRP reviewed prior versions of the sampling plan and provided comments, primarily about the compositing of soil samples. We have also discussed the sampling plan with Chuck Appleby and John Montgomery of your staff. SRP believes that the proposed soil and ground water sampling procedures and methodologies are now technically correct. As such, we are willing to take the results of the proposed sampling into consideration. However, that is not an assurance that we will concur with the conclusions that Fort Monmouth draws from the investigation, or that the results of the proposed glauconitic soil sampling will be a significant factor in any remedial decisions.

You or your staff may contact me at 609-633-0766 with any questions on the enclosed comments, or any other site remediation matters at Fort Monmouth.

Sincerely,

Larry Quinn

Larry Quinn, P.E., Site Manager
Bureau of Investigation, Design and Construction

Attachment 2

Well Logs for 108-MW04, 296-MW04, M2-MW13, M2-MW18, and M2-MW24

Exhibit B
Site Specific Evaluations

SITE SPECIFIC EVALUATION
BUILDINGS 80 AND 166 (FTMM-56)

Sites 80 and 166 were grouped together because their close proximity to each other and minimal number of wells. Site data and 90th Percentile calculations are provided on Table 1 (attached), and summarized as follows:

90th Percentile Analysis Summary
Buildings 80 and 166

80-166	Sb	As	Ba	Be	Cd	Cr	Cu	Pb	Ni	Se*	Tl*
Feb '05 - Aug '10	n=42	n=96	n=157	n=53	n=104	n=80	n=116	n=37	n=108	n=68	n=3
90th Percentile	12.3	28.7	124.1	2.2	5.1	9.4	9.0	9.1	10.9	27.3	3.4
Mean	8.1	12.4	69.5	1.1	3.9	4.7	5.9	5.8	5.9	13.7	2.4
Adjusted Mean	7.05	9.06	48.0	0.76	1.4	2.0	4.7	4.0	4.3	9.2	1.6
NJDEP GWQS (ug/L)	**6**	**3**	**6000**	**1**	**4**	**70**	**1300**	**5**	**100**	**40**	**2**

Results reported in µg/L or parts per billion. Shaded cells indicate values that exceed the GWQS. "n" = population size in the statistical analysis. As a conservative measure, non-detectable results were not included in the statistical analysis, and thus the population size may be biased low when compared to the total number of data points. * Due to possible laboratory inaccuracies, the 90th Percentile Analysis was not used in developing sampling recommendations for these parameters.

90th Percentile Values Meet GWQS:

The 90th percentile values for barium, chromium, copper, nickel, and selenium are below their respective GWQS.

Note that due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Mean Values, or Adjusted Mean Values, Meet GWQS:

The mean value for cadmium is below its GWQS.

The adjusted mean values for beryllium, lead, and thallium are below their respective GWQS.

Recommendations:

In consideration of the above, the following sampling protocol is recommended for this site:

1. Selenium and Thallium - Due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Evaluation of the 4th Quarter 2010 and 1st Quarter 2011 sampling should be performed to determine compliance with the GWQS. If exceedances of the GWQS are identified, the sampling protocol specified under item 3 below should be followed.

2. With the exception of selenium and thallium (addressed above), no further sampling/analysis is recommended for metals with 90th percentile values below their respective GWQS.

3. For remaining metals, the collection of ground water samples using the following sampling protocol is recommended.

Collection of samples on a semiannual basis, targeting the times of the year typically exhibiting elevated precipitation amounts (generally 2nd and 4th quarters).

For future sampling events, raw and filtered water sample pairs should be collected from select wells (identified below), to evaluate the input from sample turbidity. Samples should be analyzed by a NJ certified laboratory. Slow-purge methodology should be followed for all sampling events which include metals analyses. Refer to the Concentration Ranking and Monitoring Well Selection Protocol described below.

Concentration Ranking and Monitoring Well Selection Protocol

For the specified sampling events, the monitoring wells recommended for sampling were selected with a bias towards those wells demonstrating the highest concentrations as follows.

For the available data from 4th Quarter 2008 through 3rd Quarter 2010, the highest observed concentrations for the site monitoring wells were ranked for each metal of concern. For larger sites, such as landfills, the highest four concentrations were listed; for smaller sites, the highest two concentrations were deemed adequate. Concentration Rankings and Recommended Well Sampling are summarized in Table 2 (attached).

Based on the specified protocol, monitoring wells 80MW01, 80MW02, and 80MW05 are recommended for sampling with laboratory analysis for antimony, arsenic, beryllium, cadmium, and lead, along with selenium and thallium as required.

Table 1. Summary of Select Metal Concentrations in Groundwater from February 2005 to August 2010 at Site 80_166

SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)			6	3	6000	1	4	70	1300	5	100	40	2
80MW04	02/10/05	50082.06			26.8								
80MW03	02/10/05	50082.05			29.7								
MW03Duplicate	02/10/05	50082.02			28.8								
80MW02	02/10/05	50082.04			43	0.748					5.39		
80MW05*	02/10/05	50082.07		27.9	759	10.1		66.5		11.3	21.3		
80MW01	02/10/05	50082.03											
166MW01	02/10/05	50082.08			13.5								
80MW05	05/09/05	50248.07		11.3	32.5	0.58		52.6	7.14	9.93			
80MW03	05/09/05	50248.05			48.9			16.1					
80MW02	05/09/05	50248.04			44.4	1.26		5.28		6.4	6.2		
80MW04*	05/09/05	50248.06			184	***3.64***	3.8			***19.4***	14.5		
80MW01	05/09/05	50248.03											
MW01Duplicate	05/09/05	50248.02											
166MW01	05/09/05	50248.08			17.1				11.3				
80MW04	08/23/05	50418.07			202								
80MW03	08/23/05	50418.06			36.5								
80MW05	08/23/05	50418.08		***6.87***	47.3		2.7	10.3					
80MW02	08/23/05	50418.05			40.8	***1.07***					5.35		
80MW01	08/23/05	50418.03											
MW01Duplicate	08/23/05	50418.02											
166MW01*	08/23/05	50418.04			33.7		3.76		10.5				
80MW01	11/28/05	50617.04		12.2	57.1								
80MW03	11/28/05	50617.06			24.6			5.04	6.58				
80MW05	11/28/05	50617.08		8.67	54.8			20.7					
MW05Duplicate	11/28/05	50617.02		8.32	58.3			14.4					
80MW02	11/28/05	50617.05			67.9	1.87					7.24		
80MW04	11/28/05	50617.07			78.3						11.5		
166MW01	11/28/05	50617.03			16.8								
80MW05	02/23/06	60089.08			44								
80MW01	02/23/06	60089.04		8.73	75.5				5.15				
80MW03	02/23/06	60089.06			25.8			12.1	7.61				
80MW02	02/23/06	60089.05			49.6	1.42					7.21		
80MW04	02/23/06	60089.07			38.6				5.82		5.81		
166MW01	02/23/06	60089.03			12.5		2.31		6.96				
MW01Duplicate	02/23/06	60089.02			16.2		2.75		8.99				
80MW01	04/27/06	60183.04	4.09		32.1		0.535		1.72				
80MW03	04/27/06	60183.06	4.19		21.3			1.15	3.65				

Table 1. Summary of Select Metal Concentrations in Groundwater from February 2005 to August 2010 at Site 80_166

SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
80MW02	04/27/06	60183.05			48.7	0.885	0.461		0.92		5.74		
80MW04	04/27/06	60183.07	3.69		27.1			2.49	8.24		4.63		
80MW05	04/27/06	60183.08	4.38	4.34	50.6			5.71	4.28		1.04		
MW01Duplicate	04/27/06	60183.02	5.09		9.18		2.01		4.75				
166MW01	04/27/06	60183.03	4.5		11		2.44	0.942	5.82				
MW02Duplicate	09/08/06	60391.02			74.3	2.05	0.736		1.91			7.32	
80MW02	09/08/06	60391.05		1.94	73.5	1.97	0.732		2.45		8.42	4.3	
80MW04	09/08/06	60391.07		3.06	60.5		0.31	2.1	7.5		8.14		
80MW05*	09/08/06	60391.08		8.34	176	0.276		42.5	14	1.5	4.28		
80MW03	09/08/06	60391.06		2.03	40.5		0.323	1.38	8.17		1.51		
80MW01	09/08/06	60391.04		5.36	36.7		0.778		2.65		1.14		
166MW01	09/08/06	60391.03		5.67	12.8	0.168	2.4	0.949	7.37		2.53		
MW01Duplicate	12/29/06	60551.02		16.3	54.8		4.66					6.2	
80MW01	12/29/06	60551.04		15.9	55.7		4.57					4.01	
80MW03	12/29/06	60551.06		2.26	14.8				6.56			3.98	
80MW04	12/29/06	60551.07			26.1		0.382		3.92		6.39		
80MW02	12/29/06	60551.05			62.5	1.31	0.593	1.17	1.53		6.37	5.65	
80MW05	12/29/06	60551.08		19	124	0.365	7.25	6.68			2.72	8.4	
166MW01	12/29/06	60551.03			14.1		1.45		3.7			5.01	
80MW03	03/14/07	70094.05			38.2		0.216	0.602	6.98			9.55	
80MW02	03/14/07	70094.04			66.1	0.606	1.25	1.77	6.17		8.62	8.25	
80MW04	03/14/07	70094.06			29.2			0.828	7.8		7.33	7.69	
80MW05	03/14/07	70094.07	1.03	9.09	59.2		1.17	2.83	6.17		2.03	8.12	
MW01Duplicate	03/14/07	70094.02		24.9	77.6		4.26	0.875	3.95	3.03	0.66	10.2	
80MW01	03/14/07	70094.03		22.5	68.9		3.66	0.741	2.06	1.33	0.504	11.7	
166MW01	03/14/07	70094.08			14.8		1.64		9.16		0.437	13.1	
80MW01	05/23/07	70189.04		25	107		3.93	2.2	7.59	7.64		5.88	
80MW02	05/23/07	70189.05		3.4	71.9	1.34	1.13	2.02	3.7	1.29	9.17	6.68	
80MW05*	05/23/07	70189.08		18	197	1.29	6.39	25.9		21	7.86	14.8	
80MW04	05/23/07	70189.07		6.45	39.4		1.12	0.985	3.57	0.737	11.9	6.87	
MW01Duplicate	05/23/07	70189.02		24.1	107		4.02	3.05	7.42	7.63	1.77	12.7	
80MW03	05/23/07	70189.06		5.68	35.3		0.498	0.768	5.05		0.704	8	
166MW01	05/23/07	70189.03		5.62	26.1		2.01	0.847	6.62		1.14	13.4	
MW01Duplicate	09/14/07	70341.02		16.2	125		0.558	0.327	2.4				
80MW01	09/14/07	70341.03		15.8	121		0.968	0.249	3.05				
80MW02	09/14/07	70341.04			90.3	1.62	1.14		1.58		9.47	4.83	
80MW04	09/14/07	70341.06		6.71	43.8			1.52	2.32		6.64		
80MW05	09/14/07	70341.07			196		0.457	3.22	4.25		4.83		

Table 1. Summary of Select Metal Concentrations in Groundwater from February 2005 to August 2010 at Site 80_166

SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
80MW03	09/14/07	70341.05			30.4		0.429	1.08	5.91		0.71		
166MW01	09/14/07	70341.08			16.7		0.764	0.571			1.3		
80MW01	12/12/07	70529.04		9.01	73.7		0.385		0.709				
80MW03	12/12/07	70529.06			22.5		0.232	0.604	5.65			5.01	
80MW05	12/12/07	70529.08		4.81	266		0.405	5.56	3.89		4.11		
80MW02	12/12/07	70529.05			123	2.14	1.22		1.26		10.1	3.93	
80MW04	12/12/07	70529.07			50.7		0.605	0.223	4.14		10	4.31	
166MW01	12/12/07	70529.03			21.3		0.738		3.99				
MW01Duplicate	12/12/07	70529.02			26.5		0.86		4.95				
80MW01	03/31/08	80102.04		8.34	52.9	0.117	1.46	0.229	1.7	1.53		4.64	
80MW04	03/31/08	80102.07			23.6	0.176	0.36	0.791	6.41		7.64	8.87	
80MW05	03/31/08	80102.08		23.3	45.2		8.05	3.62		2.37	2.75	5.56	
80MW02	03/31/08	80102.05			120	2.3	1.48	1.62			13	11.6	
80MW03	03/31/08	80102.06	0.937	4.07	17.8	0.109	0.356	0.717	6.53		0.91	8.32	
MW01Duplicate	03/31/08	80102.02		4.94	15.5	0.102	1.39	0.307	5.21		0.69	8.13	
166MW01	03/31/08	80102.03			14	0.128	1.29	0.203	4.05		0.419	10.3	
80MW03	06/12/08	80198.06		4.36	23.9		0.246	2.89	5.47	1.72		8.77	
MW01Dulpicate	06/12/08	80198.02		14.6	61.1		0.796	0.54		2.62		3.67	
80MW01	06/12/08	80198.04		11.8	60.4		0.907	0.432		1.71		5.23	
80MW04	06/12/08	80198.07			32.5			0.951	3.99		9.68	7.09	
80MW02	06/12/08	80198.05			55.1	0.586		2.5	4.39		5.33	5.88	
80MW05*	06/12/08	80198.08		19.7	207		7.44	3.91		8.2	3.52		
166MW01	06/12/08	80198.03		3.38	10.9		1.14	0.318	8.09				
80MW01	08/15/08	80300.04		26.9	75.8		2.12					3.28	
80MW05*	08/15/08	80300.08		12.5	237		9.86	4.58			4.12		
80MW04	08/15/08	80300.07		5.46	50.4	0.247	1.46	0.633			24.3	3.93	
80MW02	08/15/08	80300.05		2.42	109	1.9	1.28	1.43			11.6	5.92	
80MW03	08/15/08	80300.06		3.65	26.7	0.18	0.387	1.41	1.48		1.34	4.05	
166MW01	08/15/08	80300.03		3.44	25.3		1.28	0.448	1.49		1.91	5.41	
MW01Duplicate	08/15/08	80300.02		2.65	25.1	0.124	1.11				1.85	5.24	
80MW05	12/30/08	80483.05		8.74	64.5		4.85	1.63	4.28				
80MW04	12/30/08	80483.04			36.8	0.148	0.528	0.709	3.86		6.79		
80MW03	12/30/08	80483.03		4.21	18.3		0.263	2.77	7.36		0.728	4.78	
80MW01	12/31/08	80484.04	3.57		80.5				6.12				
80MW02	12/31/08	80484.05		4.98	123	2.51	1.26		1.85		10.1		
MW01Duplicate	12/31/08	80484.02		5.79	14.9		1.7		4.92				
166MW01	12/31/08	80484.03			15.6		1.79		6.7		0.644		
80MW04	02/09/09	90040.07			33.6		0.654	1.34	3.78		9.96	9.61	

Table 1. Summary of Select Metal Concentrations in Groundwater from February 2005 to August 2010 at Site 80_166

SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
80MW05	02/09/09	90040.08			68.7		8.98	1.86	6.88		2.8	13	
80MW02	02/09/09	90040.05			111	1.91	1.59		1.17		13.7	12.7	
80MW03	02/09/09	90040.06			27.8		0.384	1.86	3.72		1.98	13.3	1.91
80MW01	02/09/09	90040.04			66				3.71		1.32		3.81
166MW01	02/09/09	90040.03			19.2		1.8		5.51		3.06	15.9	
MW01Duplicate	02/09/09	90040.02			18.1		1.68	0.502	5.57		2.72	16.8	1.38
80MW02	06/26/09	90266.08	4.73	25.5	81.7	1.78	1.2	0.452	2.01	2.92	9.88	12.4	
80MW05*	06/26/09	90266.07	1.98	53.9	729	9.47	193	89.6	2.38	28.4	80.1		
MW01Duplicate*	06/26/09	90266.02	2.85	46.7	54.8		1.84	4.21	19.5	3.37	3.09	12.9	
80MW03*	06/26/09	90266.04	4.15	32.3	83		0.383	1.84	17.9	3.3	3.02	8.86	
80MW01*	06/26/09	90266.03	5.49	43.9	53		1.34	4.1	20.8	2.63	2.98	11.1	
80MW04	06/26/09	90266.05		22	48.8	0.105	0.333		4.16		10.2	13.3	
166MW01	06/26/09	90266.06	2.45	30.3	23.6		0.626		8.24		2.38	10.4	
80MW02	08/20/09	90350.05		21.4	87.5	1.88	1		2.33	2.82	9.75	49.6	
80MW05*	08/20/09	90350.08	6.91	29.5	48.1	0.143	5.16	4.77	14.9		5.13	43.7	
80MW01*	08/20/09	90350.04	9.15	63.7	125	0.057	8.53	2.52	8.86	7.53	3.39	17.8	
MW01Duplicate*	08/20/09	90350.02	9.89	61.3	126	0.06	7.79	2.32	7.94	8.83	2.74	33.4	
80MW03*	08/20/09	90350.06	10.5	34.3	110	0.098		1.85	16.7	7.01	2.34	95.3	
80MW04*	08/20/09	90350.07		17.6	65.7	0.119			4.49		15.4	40.7	
166MW01*	08/20/09	90350.03	5.85	33.9	52.5		2.97	3.21	38.1	7.25	2.56	75.1	
80MW01	11/10/09	90442.04		11.2	115								
80MW04	11/10/09	90442.07		2.18	56.9				1.23		7.78	23.9	
80MW03	11/10/09	90442.06		6.53	53.2				6.41		5.58	25.6	
80MW05	11/10/09	90442..08		22.62	101	0.111	13	2.78		9.32	4.37		
80MW02	11/10/09	90442.05		2.33	103	2.19	0.665				10.1		
MW03Duplicate	11/10/09	90442.02		3.29	50.6				3.96		1.34	31.1	
166MW01	11/10/09	90442.03		2.76	22.5						1.27	23	
LF1(1)	03/23/10	10103.04	7.57	1.73	81.3	1.14	0.515		1.06		9.05		
LF3(1)	03/23/10	10102.06	10.5	0.94	33.3				3.07		6.1		
LF3(1)	03/23/10	10102.04	11.6	4.58	24.1		1.62	2.59	5.79	2.96	2.24		
LF3(1) Duplicate	03/23/10	10102.02	10.8	1.72	39.8				7		1.47		
LF1(1)	03/23/10	10102.05	8.19	6.55	442		2.35			4.57	1.05		
LF3(1)	03/23/10	10102.03	10.9	1.01	39.2				7.07		0.554		
LF3(1) Duplicate	03/24/10	10103.02	11.9	1.47	20.6		0.87		4.88		1.84		
LF3(1)	03/24/10	10103.03	10.1	1.31	20.5		0.524		5.09		1.43		
LF2(1)*	06/23/10	10282.05	13.8	9.71	416	0.051	1.71		6.43	3			
LF2(1)	06/23/10	10282.08	9	0.98	76.8	1.23	0.696		4.18		8.68		
LF4(1)	06/23/10	10282.04	8.3	12.66	24.4		1.88	1.47	6.72	2.7	3.28		

Table 1. Summary of Select Metal Concentrations in Groundwater from February 2005 to August 2010 at Site 80_166

SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
LF4(1)	06/23/10	10282.06	9.18	3.78	26.3	0.054			6.21		13.8		
LF4(1) Duplicate	06/23/10	10282.02	10.6	0.83	28.4				8.89		1.63		
LF4(1)	06/23/10	10282.03	8.63	1.03	29.8				9.15		1.6		
LF4(1)	06/23/10	10282.07	10.1	2.71	40.8	0.069	0.943		6.03		2.4		
LF5(1)	08/31/10	10374.04	12.6	12.84	39.7	0.066	1.03	9.21	5.08	5.15	4.45		
LF5(1) Duplicate	08/31/10	10374.02	10.8	2.37	28.3				8.12		2.23		
LF5(1)	08/31/10	10374.03	12.3	1.85	26.9				7.44		2.04		
LF5(1)	08/31/10	10374.05	8.29	5.14	28	0.088			2.27	2.84	16.4		
LF3(1)	08/31/10	10374.07	9.03	1.26	95.4	2.42	0.6		1.77		10.3		
LF3(1)*	08/31/10	10374.06	19.7	22.48	193		2		2.4	6.43	1.01		
LF5(1)*	08/31/10	10374.08	20	3.94	40.2				2.65	3.4	1.46		
		Mean	8.1	12.4	69.5	1.1	3.9	4.7	5.9	5.8	5.9	13.7	2.4
		90th Percentile	12.3	28.7	124.1	2.2	5.1	9.4	9.0	9.1	10.9	27.3	3.4
		Adjusted Mean	7.05	9.06	48.0	0.76	1.4	2.0	4.7	4.0	4.3	9.2	1.6

Notes:

Adjusted mean does not include metal concentrations that exceed the 90th Percentile

1) Concentrations bolded and italicized exceed applicable Ground Water Quality Standard (GWQS)
2) Concentrations bolded and italicized in red exceed applicable GWQS and the 90th Percentile
3) Concentrations highlighted in red cells exceed exceed the 90th Percentile and are deemed to be extreme outliers
4) Samples highlighted in yellow contain two or more metal concentrations that exceed the 90th Percentile
5) Blank cells indicate metals were not detected, not analyzed, or not reported due to instrument errors

M: Metal detected in method blank

* Sample contains two or more metals at concentrations exceeding the 90th Percentile

Table 2
Building 80-166
Concentration Rankings and Recommended Monitoring Well Sampling
4th Quarter 2008 - 3rd Quarter 2010

Well ID	Antimony	Arsenic	Beryllium	Cadmium	Lead	Selenium	Thallium
	NJDEP GWQS	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*
	6	*3*	*1*	*4*	*5*	*40*	*2*
80MW01	19.7	63.7		8.53	8.83	*	*
80MW02			2.51			*	*
80MW03							
80MW04							
80MW05	12.6	53.9	9.47	193	28.4	*	*
166MW01							

Notes:

Results reported in µg/L.

Within the reporting period, the two highest concentrations are listed for each parameter.

Shaded rows indicate monitoring wells recommended for metals analysis.

Metals were analyzed during the entire reporting period, 4th Quarter 2008 through 3rd Quarter 2010.

*Based on results from the 4th Quarter 2010 and 1st Quarter 2011 sampling events, analysis of Selenium and Thallium may be required.

SITE SPECIFIC EVALUATION
BUILDING 108 (FTMM-57)

Site data and 90th Percentile calculations are provided on Table 1 (attached), and summarized as follows:

90th Percentile Analysis Summary
Building 108

108	Sb	As	Ba	Be	Cd	Cr	Cu	Pb	Ni	Se*	Tl*
Jan 05 - Aug 10	n=41	n=86	n=112	n=41	N=49	n=90	n=103	n=79	n=68	n=55	n=0
90th Percentile	11.4	32.0	55.1	0.4	1.6	24.0	29.7	16.1	5.6	80.0	NR
Mean	6.8	13.8	34.2	0.3	0.8	9.8	13.1	7.7	2.5	23.8	NR
Adjusted Mean	5.8	8.9	30.0	0.2	0.6	5.7	9.4	6.1	2.1	14.6	NR
NJDEP GWQS (ug/L)	**6**	**3**	**6000**	**1**	**4**	**70**	**1300**	**5**	**100**	**40**	**2**

Results reported in µg/L or parts per billion. Shaded cells indicate values that exceed the GWQS. "n" = population size in the statistical analysis. As a conservative measure, non-detectable results were not included in the statistical analysis, and thus the population size may be biased low when compared to the total number of data points. * Due to possible laboratory inaccuracies, the 90th Percentile Analysis was not used in developing sampling recommendations for these parameters.

90th Percentile Values Meet GWQS:

The 90th percentile values for barium, beryllium, cadmium, chromium, copper, and nickel are below their respective GWQS.

Note that due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Mean Values, or Adjusted Mean Values, Meet GWQS:

The mean value for selenium is below its GWQS.

The adjusted mean value for antimony is below its GWQS.

Recommendations:

In consideration of the above, the following sampling protocol is recommended for this site:

1. Selenium and Thallium - Due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Evaluation of the 4th Quarter 2010 and 1st Quarter 2011 sampling should be performed to determine compliance with the GWQS. If exceedances of the GWQS are identified, the sampling protocol specified under item 3 below should be followed.

2. With the exception of selenium and thallium (addressed above), no further sampling/analysis is recommended for metals with 90th percentile values below their respective GWQS.

3. For remaining metals, the collection of ground water samples using the following sampling protocol is recommended.

Collection of samples on a semiannual basis, targeting the times of the year typically exhibiting elevated precipitation amounts (generally 2nd and 4th quarters).

For future sampling events, raw and filtered water sample pairs should be collected from select wells (identified below), to evaluate the input from sample turbidity. Samples should be analyzed by a NJ certified laboratory. Slow-purge methodology should be followed for all sampling events which include metals analyses. Refer to the Concentration Ranking and Monitoring Well Selection Protocol described below.

Concentration Ranking and Monitoring Well Selection Protocol

For the specified sampling events, the monitoring wells recommended for sampling were selected with a bias towards those wells demonstrating the highest concentrations as follows.

For the available data from 4th Quarter 2008 through 3rd Quarter 2010, the highest observed concentrations for the site monitoring wells were ranked for each metal of concern. For larger sites, such as landfills, the highest four concentrations were listed; for smaller sites, the highest two concentrations were deemed adequate. Concentration Rankings and Recommended Well Sampling are summarized in Table 2 (attached).

Based on the specified protocol, monitoring wells 108MW01, 108MW02, 108MW03, and 108MW04 are recommended for sampling with laboratory analysis for antimony, arsenic, and lead, along with selenium and thallium as required.

Table 1. Summary of Select Metal Concentrations in Groundwater from January 2005 to August 2010 at Site 108

SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium
NJDEP Ground Water Quality Standard (µg/L)			6	3	6000	1	4	70	1300	5	100	40
MW01 Duplicate	01/31/05	50054.02			41.7			22	6.43	15.7		
108MW01	01/31/05	50054.03			41.5			21.2	6.03	13.7		
108MW02	01/31/05	50054.04		*7.15*	37.8			15.7	10.1	7.91		
108MW04*	01/31/05	50054.06		*13.9*	50.7	[redacted]		118	26.6	40.5	9.93	
108MW03	05/02/05	50233.05			11.4							
108MW01	05/02/05	50233.03			21.5							
MW01 Duplicate	05/02/05	50233.02			20.1							
108MW02	05/02/05	50233.04			44.7			21.4	13	9		
108MW03	08/12/05	50400.05		*18.9*	36.1		2.39					
108MW02	08/12/05	50400.04		*5.9*	49.7				39.1			
108MW01	08/12/05	50400.03			44			9	6.28			
MW01 Duplicate	08/12/05	50400.02		*5.88*	51.6			17.4	9.04	14.7		
108MW04	08/12/05	50400.06			25.9			13.8				
108MW01	11/14/05	50593.03			44.1				6.21	5.43		
MW01 Duplicate	11/14/05	50593.02			43.9				37.1	5.19		
108MW04	11/14/05	50593.06		*9.26*	31.6			60.8	12.6	12.1		
108MW03	11/14/05	50593.05		*9.22*	18.8			6.72	11	6.16		
108MW02*	11/14/05	50593.04		*12.4*	54.8		2.15	23.7	9.76	6.44	5.66	
108MW03	01/20/06	60039.05		*7.03*	14.3							
108MW01	01/20/06	60039.03			21.2							
108MW02	01/20/06	60039.04			39.5			8.12	16.7			
108MW04	01/20/06	60039.06			10.7			7.06	20.9			
MW03 Duplicate	01/20/06	60039.02		*8.17*	17.1			5.51	7.31			
108MW01	04/18/06	60163.03	*6.52*		32	0.172		3.46	2.15			
108MW02*	04/18/06	60163.04		*27*	83.2	0.641	1.41	43.5	36.4	16.1	4.11	
MW02 Duplicate*	04/18/06	60163.02	4.32	*18.3*	69.3	0.453	1.14	33.3	24.1	10.1	3.39	
108MW03*	04/18/06	60163.05	3.08	*4.12*	66.5	0.187	1.74	4.9	38.5	4.38	2.53	
108MW04	04/18/06	60163.06	2.99		19.9	0.324	0.37	13.2	14.5	1.98	1.02	
108MW04	07/19/06	60325.06	5.95	*5.69*	27.3			4.86	33.5	4.37		
108MW03	07/19/06	60325.05	4.25	*15.8*	25.1			3.29	30.8			
108MW01	07/19/06	60325.03	4.91	*7.68*	53.3			12.2	9.59	9.55		
108MW02	07/19/06	60325.04	4.34	*13.2*	53.8	0.11		26.4	11.2	16.1	2.3	
MW01 Duplicate*	07/19/06	60325.02	5.68	*12.1*	58.6	0.122		27.2	12.4	12.8	1.33	
108MW04	10/27/06	60468.06		2.99	19.8	0.312	0.54	6.57	20.9	5.78		7.7
108MW01	10/27/06	60468.03		*5.12*	40	0.324		5.56	0.92	2.32		10.1
108MW03	10/27/06	60468.05		*4.23*	16.6	0.28	0.73	4.93	11.3	3.41		3.57
108MW02	10/27/06	60468.04		*5.96*	50.1	0.318	0.64	4.55	6.97	1.27		7.25
108MW03	01/09/07	70013.05			13.6	0.145	1.01	4.51	15.7	1.85		3.37
108MW01	01/09/07	70013.03		*3.49*	25.1	0.104	0.35	3.79	2.66	1.57		9.58
MW01 Duplicate	01/09/07	70013.02		2.69	25.1		0.41	2.35	3.2	1.7		11.2
108MW04	01/09/07	70013.06			11.6		0.39	1.33	5.79	1.64		5.4
108MW02	01/09/07	70013.04		*3.26*	26.5	0.154	0.7	6.05	9.81	3.07	1.4	6.75

Table 1. Summary of Select Metal Concentrations in Groundwater from January 2005 to August 2010 at Site 108

SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium
NJDEP Ground Water Quality Standard (ug/L)			6	3	6000	1	4	70	1300	5	100	40
108MW02	04/25/07	70148.04		***3.49***	35.3	0.321	0.78	0.765	10.4	3.16	2.75	11.4
MW02 Duplicate	04/25/07	70148.02			41.3	0.359	0.87	1.47	13.3	5.26	2.69	10.3
108MW03	04/25/07	70148.05			16.1	0.243	1.36	2.07	3.45		2.51	8.61
108MW04	04/25/07	70148.06			17.4	0.325	0.93	2.85	18.1	14.3	2.25	7.44
108MW01	04/25/07	70148.03		***4.55***	23.4	0.288	0.65	1.11		0.8	1.62	14.1
108MW01	08/03/07	70293.03	0.955	***10.1***	41.8			0.917	3.49			9.86
108MW03	08/03/07	70293.05		***10.6***	24.7		0.23	0.758	11.3			5.3
108MW02	08/03/07	70293.04		***6.33***	42.3		0.48	1.12	9.9	2.05	1.84	7.23
108MW04	08/03/07	70293.06		***6.59***	36.5				30.4		0.665	9.78
MW01 Duplicate	08/03/07	70293.02		***7.67***	40.8			0.259	2.77		0.336	10.3
108MW04	12/03/07	70502.06		***4.17***	9.99			1.81	29.8	6.49		3.9
108MW01	12/03/07	70502.03			22.3			1.29	1.58	0.96		
MW01 Duplicate	12/03/07	70502.02			21.7		0.32	1.19	1.93	1.47		5.03
108MW02	12/03/07	70502.04			26.4			1.15	6.92	3.07		
108MW03	12/03/07	70502.05		***3.13***	13.9		0.39	0.877	18.7	2.69		3.68
108MW02	03/06/08	80070.04	M	***5.52***	38.5		0.41	1.14	19.5	6.73	7.11	
MW01 Duplicate	03/06/08	80070.02	M		29		0.24	1.13	9.91	4.25	6.71	
108MW03	03/06/08	80070.05	0.804 M	***5.86***	31.8		1.33	1.96	29.5	1.19	6.37	
108MW01	03/06/08	80070.03	M	***4.32***	29.6		0.23	1.47	9.84	4.85	6.12	
108MW04	03/06/08	80070.06	M	***4.54***	7.68			1.2	18.3		5.78	
108MW01	04/30/08	80144.03	3.13 M	***3.82***	29.7	0.237 M	0.41	5.39	2.82	5.43	2.74 M	10.2 M
108MW03	04/30/08	80144.05	M	2.47	14.7	0.111 M	0.61	1.32	19.4	5.26	2.55 M	3.92 M
108MW02	04/30/08	80144.04	M		39.5	0.133 M	0.33	0.969	7.75	2.54	2.54 M	6.63 M
MW01 Duplicate	04/30/08	80144.02	1.57 M		3.13	0.282 M	0.35	1.42	4.49	10.9	1.97 M	8.67 M
108MW04	04/30/08	80144.06	M	***9.53***	8.87	0.147 M		0.613	5.25		1.58 M	3.12 M
108MW02	08/06/08	80282.04		***13.8***	53		1.57	1.9	3.5	5.59	2.55	4.6 M
MW01 Duplicate	08/06/08	80282.02		***5.03***	47.6		0.45	0.96	2.35	4.41	0.993	11.2 M
108MW01	08/06/08	80282.03	1.69	***4.5***	46.8		0.37	0.962	1.49	2.45	0.931	11.5 M
108MW04	08/06/08	80282.06		***4.92***	9.76		0.32	1.91	7.9		0.824	3.68 M
108MW03	08/06/08	80282.05		***6.6***	16		0.63	2.52	5.32	1.39	0.631	4 M
108MW03*	10/15/08	80370.05		***13.8***	35.7	0.411 M	1.97	26.8	60.3	12.5	5.43	3.38 M
108MW02	10/15/08	80370.04	1.65	***19.6***	74.3	0.236 M	0.46	14.3	18.1	7.42	2.51	M
108MW01*	10/15/08	80370.03		***7.7***	62.5	0.41 M	0.64	15.8	13.3	30.8	2.12	5.63 M
108MW04	10/15/08	80370.06		***3.23***	18	0.281 M	0.35	9.47	25.3	5.38	1.32	6.99 M
MW01 Duplicate*	10/15/08	80370.02		***6.93***	56.1	0.379 M	0.58	6.62	9.61	20.9	1.18	4.33 M
108MW02*	02/17/09	90057.04	***18.2*** M	***81.2*** M	40.1		M	3.28	9.93	12.6 M		***85.1*** M
108MW04	02/17/09	90057.06	***7.85*** M	***52.9*** M	14.6		M	1.57	18.5	9.74 M		***71.8*** M
108MW01	02/17/09	90057.03	***11.4*** M	***11.7*** M	41.8		M	1.07	7.85	16.1 M		***113*** M
108MW03*	02/17/09	90057.05	***19.5*** M	***124*** M	36.5		0.57 M	0.583	9.81	4.98 M		***107*** M
MW04 Duplicate*	02/17/09	90057.02	***14*** M	***72.9*** M	13.8		0.7 M	2.76	11.7	1.71 M	1.96	***43.4*** M
MW04 Duplicate*	06/30/09	90270.02	***7.37*** M	***22.6***	36.9	0.669	0.38	72.5	59.4	22.7	5.58 M	10.4 M
108MW04*	06/30/09	90270.06	1.35 M	***19.2***	33.1	0.418	0.63	30.4	81.8	25.1	5.16 M	17 M

Table 1. Summary of Select Metal Concentrations in Groundwater from January 2005 to August 2010 at Site 108

SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium
NJDEP Ground Water Quality Standard (µg/L)			6	3	6000	1	4	70	1300	5	100	40
108MW02	06/30/09	90270.04	4.62 M	***25.1***	55.1			6.1	11.7	6.2	4.56 M	35.5 M
108MW01	06/30/09	90270.03	***6.94*** M	***28.2***	34.5				5.68	2.9	2.78 M	***40.8*** M
108MW03*	06/30/09	90270.05	***8.73*** M	***35.7***	105		0.54		8.49	1.61	2.48 M	***46.4*** M
108MW02*	08/28/09	90362.04	5.71	***58.2***	94.1	0.337	2.25	5.34	2.72	16	4.69 M	***116***
108MW01	08/28/09	90362.03	***7.06***	***32.1***	43.7	0.06			6.23	10.4	1.01 M	***77.9***
108MW03	08/28/09	90362.05		***37.7***	41.3				2.22	2.43	0.617 M	***73.1***
MW04 Duplicate*	08/28/09	90362.02	***7.4***	***36.1***	44.8			5.85	11.9	4.04	0.572 M	***81.4***
108MW04	08/28/09	90362.06	***7.58***	***31.9***	40.8			6.02	19.1	5.26	0.42 M	***89.2***
108MW01	11/06/09	90439.03	***6.34***	***10.3***	44.7	0.108		5.77	7.58	26	2.32 M	13.6 M
108MW03	11/06/09	90439.05		***6.54***	27.6						1.95 M	M
108MW02	11/06/09	90439.04		***6.42***	67.8				3.25	2.82	1.66 M	9.21 M
MW04 Duplicate	11/06/09	90439.02		***8.69***	11.2			8.51	8.03	2.98	1.58 M	9.61 M
108MW04	11/06/09	90439.06		***9.73***	10.8			3.41	11.7	3.55	1.37 M	8.1 M
LF3(1)	02/19/10	10062.04	***6.48***	***9.18***	50.2	0.11	0.51	16.2	9.64	7.6	2.89	
LF3(1)	02/19/10	10062.05	***8.66***	2.31	32.7				4.27		1.12	
LF3(1)	02/19/10	10062.06		***7.23***	5.72			3.35	7.5		0.89	
LF3(1) Duplicate	02/19/10	10062.02		***6.5***	6.03			3.92	7.22		0.796	
LF3(1)	02/19/10	10062.03		2.33	14.3			2.88	3.11		0.779	
LF4(1) Duplicate	05/07/10	10178.02	***6.41***	***5.19***	17.4	0.07		10.7	10.6 M	4.7	2.46 M	
LF4(1)	05/07/10	10178.03		***5.02***	14.8			7.14	8.56 M	3.72	1.65 M	
LF4(1)	05/07/10	10178.04	***6.32***	2.64	47.3			2.61	4.26 M		1.58 M	
LF4(1)	05/07/10	10178.05	***7.64***	***4.13***	33.4				2.55 M		1.27 M	
LF4(1) Duplicate	05/10/10	10180.02	***10.7***	2.91	23.9			1.75	1.85 M		1.27 M	
LF4(1)	05/10/10	10180.03	***12.1***	2.61	23.7			1.8	1.95 M		1.02 M	
LF5(1)	08/19/10	10352.02	***9.33***	***6.68***	62.1		1.33		7.72	5	4.45	M
LF5(1)	08/19/10	10352.04	***7.97***	***9.1***	27.4				4.7		1.23	M
LF5(1)	08/19/10	10352.03	***8.82***	***3.16***	46.2				3.95	6.91	1.21	M
LF5(1)	08/19/10	10352.01	***7.91***	1.79	29				5.26		1.05	M
		Mean	6.8	13.8	34.2	0.3	0.8	9.8	13.1	7.7	2.5	23.8
		90th Percentile	11.4	32.0	55.1	0.4	1.6	24.0	29.7	16.1	5.6	80.0
		Adjusted Mean	5.8	8.9	30.0	0.2	0.6	5.7	9.4	6.1	2.1	14.6

Notes: Adjusted mean does not include metal concentrations that exceed the 90th Percentile
1) Concentrations bolded and italicized exceed applicable Ground Water Quality Standard (GWQS)
2) Concentrations bolded and italicized in red exceed applicable GWQS and the 90th Percentile
3) Concentrations highlighted in red cells exceed exceed the 90th Percentile and are deemed to be extreme outliers
4) Samples highlighted in yellow contain two or more metal concentrations that exceed the 90th Percentile
5) Blank cells indicate metals were not detected, not analyzed, or not reported due to instrument errors
M: Metal detected in method blank
* Sample contains two or more metals at concentrations exceeding the 90th Percentile

Table 2
Building 108
Concentration Rankings and Recommended Monitoring Well Sampling
4th Quarter 2008 - 3rd Quarter 2010

Well ID	Antimony	Arsenic	Lead	Selenium	Thallium
	NJDEP GWQS	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*
	6	*3*	*5*	*40*	*2*
108MW01			30.8	*	*
108MW02	18.2	81.2		*	*
108MW03	19.5	124		*	*
108MW04			25.1	*	*

Notes:

Results reported in µg/L.

Within the reporting period, the two highest concentrations are listed for each parameter.

Shaded rows indicate monitoring wells recommended for metals analysis.

Metals were analyzed during the entire reporting period, 4th Quarter 2008 through 3rd Quarter 2010.

*Based on results from the 4th Quarter 2010 and 1st Quarter 2011 sampling events, analysis of Selenium and Thallium may be required.

SITE SPECIFIC EVALUATION
BUILDING 283 (FTMM-61)

Site data and 90th Percentile calculations are provided on Table 1 (attached), and summarized as follows:

90th Percentile Analysis Summary
Building 283

283	Sb	As	Ba	Be	Cd	Cr	Cu	Pb	Ni	Se*	Tl*
Jan 05 - Sept 10	n=32	n=98	n=152	n=101	n=68	n=120	n=82	n=76	n=122	n=73	n=7
90th Percentile	10.84	32.23	172.60	1.37	2.07	30.62	11.86	14.49	15.46	20.04	1.87
Mean	5.54	13.68	85.11	0.58	0.82	18.60	4.87	7.28	7.30	11.27	1.55
Adjusted Mean	4.32	9.98	64.56	0.45	0.58	5.36	3.51	5.88	5.90	6.65	1.47
NJDEP GWQS (ug/L)	**6**	**3**	**6000**	**1**	**4**	**70**	**1300**	**5**	**100**	**40**	**2**

Results reported in µg/L or parts per billion. Shaded cells indicate values that exceed the GWQS. "n" = population size in the statistical analysis. As a conservative measure, non-detectable results were not included in the statistical analysis, and thus the population size may be biased low when compared to the total number of data points. * Due to possible laboratory inaccuracies, the 90th Percentile Analysis was not used in developing sampling recommendations for these parameters.

90th Percentile Values Meet GWQS:

The 90th percentile values for barium, cadmium, chromium, copper, nickel, selenium, and thallium are below their respective GWQS.

Note that due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Mean Values, or Adjusted Mean Values, Meet GWQS:

The mean value for antimony and beryllium are below their respective GWQS.

Recommendations:

In consideration of the above, the following sampling protocol is recommended for this site:

1. Selenium and Thallium - Due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Evaluation of the 4th Quarter 2010 and 1st Quarter 2011 sampling should be performed to determine compliance with the GWQS. If exceedances of the GWQS are identified, the sampling protocol specified under item 3 below should be followed.

2. With the exception of selenium and thallium (addressed above), no further sampling/analysis is recommended for metals with 90th percentile values below their respective GWQS.

3. For remaining metals, the collection of ground water samples using the following sampling protocol is recommended.

Collection of samples on a semiannual basis, targeting the times of the year typically exhibiting elevated precipitation amounts (generally 2nd and 4th quarters).

For future sampling events, raw and filtered water sample pairs should be collected from select wells (identified below), to evaluate the input from sample turbidity. Samples should be analyzed by a NJ certified laboratory. Slow-purge methodology should be followed for all sampling events which include metals analyses. Refer to the Concentration Ranking and Monitoring Well Selection Protocol described below.

Concentration Ranking and Monitoring Well Selection Protocol

For the specified sampling events, the monitoring wells recommended for sampling were selected with a bias towards those wells demonstrating the highest concentrations as follows.

For the available data from 4th Quarter 2008 through 3rd Quarter 2010, the highest observed concentrations for the site monitoring wells were ranked for each metal of concern. For larger sites, such as landfills, the highest four concentrations were listed; for smaller sites, the highest two concentrations were deemed adequate. Concentration Rankings and Recommended Well Sampling are summarized in Table 2 (attached).

Based on the specified protocol, monitoring wells 283MW01, 283MW02, 283MW03, 283MW04, and 283MW05 are recommended for sampling with laboratory analysis for antimony, arsenic, beryllium, and lead, along with selenium and thallium as required.

NOTE: Above sampling does not include additional wells recommended for installation.

Table 1. Summary of Select Metal Concentrations in Groundwater from January 2005 to September 2010 at Site 283

SiteWELL_ID	Date_Collected	Lab_ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)			6	3	6000	1	4	70	1300	5	100	40	2
283MW06	1/20/2005	50041.09			52.2								
283MW02	1/20/2005	50041.05		6.91	32					17.7			
283MW05	1/20/2005	50041.08		7.36	73.7			74.4		5.63			
MW04 Duplicate*	1/20/2005	50041.03		28.6	258	1.4		160	7.9	14	9.87		
283MW03	1/20/2005	50041.06			137						7.55		
283MW01*	1/20/2005	50041.04			170	1.39					20.7		
283MW04*	1/20/2005	50041.07		53.5	493	2.71		302	14.5	26	18.2		
283MW02	4/20/2005	50210.05		13.5	34.8			21.3		18.4			
MW02-Duplicate	4/20/2005	50210.03		13.9	34.9			16.4		19.5			
283MW06	4/20/2005	50210.09			54.2			11.8					
283MW03	4/20/2005	50210.06			79.4						7.49		
283MW04	4/20/2005	50210.07		16.4	162	0.934		93	5.02	5.78	6.13		
283MW05	4/20/2005	50210.08		10.7	83.8	0.515		78.9			5.52		
283MW01	4/20/2005	50210.04			141	1.23					17.1		
MW02-Duplicate	8/9/2005	50388.03		19.5	41.1			17.1	5.06	17.1			
283MW02	8/9/2005	50388.05		15.3	40.3			15.2		17.1			
283MW03	8/9/2005	50388.06		6.53	180						8.16		
283MW01*	8/9/2005	50388.04			234	2.17			8.93		23.2		
283MW06*	8/9/2005	50388.09		39.6	98.1	1.15	4.42	176	19.7	6.32	19.7		
283MW05*	8/9/2005	50388.08		23.2	126	0.637		86	12.7		16.5		
283MW04*	8/9/2005	50388.07		40.9	290	1.49	3.29	150	19.5	9	15		
283MW06	11/2/2005	50573.09			58.8								
283MW05	11/2/2005	50573.08			17.1								
283MW04	11/2/2005	50573.07			14.1								
283MW02	11/2/2005	50573.05		6.82	34.5			9.73		12.1			
MW02-Duplicate	11/2/2005	50573.03		6.04	37.7			11.8		12.3			
283MW03	11/2/2005	50573.06			83.3						7.15		
283MW01	11/2/2005	50573.04			143	1.11					13.9		
283MW06	1/13/2006	60030.09			52.5								
283MW02	1/13/2006	60030.05		5.97	34.3					9.2			
MW02-Duplicate	1/13/2006	60030.03		5.34	35.5			6.58		9.76			
283MW04	1/13/2006	60030.07			27.5			13.4					
283MW05	1/13/2006	60030.08			29.9			10.6					
283MW03	1/13/2006	60030.06			107						7.47		
283MW01*	1/13/2006	60030.04			205	1.96			6.81		24.4		

Table 1. Summary of Select Metal Concentrations in Groundwater from January 2005 to September 2010 at Site 283

SiteWELL_ID	Date_Collected	Lab_ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
283MW06*	4/18/2006	60161.09		26	109	0.918		145	13.2	1.74	9.59		
283MW03	4/18/2006	60161.06	2.3	2.67	164	0.13		1.62			7.78		
MW02-Duplicate	4/18/2006	60161.03		12.6	39.2	0.237	0.377	30.8	3.86	7.49	4.56	4.39	
283MW05	4/18/2006	60161.08		7.29	74.9	0.279		29.9	4.58		4.06		
283MW02	4/18/2006	60161.05		13.2	38.6	0.228		27.9	3.94	7.72	3.53	4.76	
283MW01*	4/18/2006	60161.04	3.13		181	1.59	0.93	1.46	3.33		22.2	3.78	
283MW04	4/18/2006	60161.07		5.87	94.3	0.493		42.8	7.77		2.94		
283MW05	7/25/2006	60335.08	2.46		19.6			1.21	1.67				
283MW03	7/25/2006	60335.06	4.73	2.49	150				1.14		6.74		
283MW02	7/25/2006	60335.05		16.2	36.6	0.202	0.863	27.7	7.94	10.4	5.48	5.91	
283MW06*	7/25/2006	60335.09		14.7	121	0.551	0.393	87.9	13.1		4.95		
MW02-Duplicate	7/25/2006	60335.03		13.1	30.2	0.144	0.574	13.2	4.47	7.84	3	4.47	
283MW01*	7/25/2006	60335.04	3.83		173	1.66	0.647	1.99	6.83		17.9		
283MW04	7/25/2006	60335.07			17.8			1.91	2.32		1.08		
283MW04	10/30/2006	60470.07			11.3	0.212	0.469	1.96				3.47	
283MW05	10/30/2006	60470.08			18.2	0.235	0.346	1.96				4.85	
283MW06	10/30/2006	60470.09			37.7	0.21	0.319	1.77				5.98	
283MW03	10/30/2006	60470.06		2.71	91.8	0.189	1.48				6.72	4.13	
283MW01	10/30/2006	60470.04			144	1.71	0.412	0.956	1.39		14.5		
283MW02	10/30/2006	60470.05		14.4	31.4	0.302	0.931	6.99	0.663	5.12	1.59	7.04	
MW02-Duplicate	10/30/2006	60470.03		13.9	30.4	0.377	0.532	5.26		5.57	1.05	7.92	
283MW06	2/1/2007	70042.09		3.91	41	0.155	0.575	2.38	2.38			3.7	
283MW02	2/1/2007	70042.05		26.9	35.7	0.133	1.54	1.87		8.78		7.82	
283MW03*	2/1/2007	70042.06		6.82	280	0.267	3.87				7.93		
283MW05	2/1/2007	70042.08		4.06	75.1	0.277	0.827	2.94	3.45		2.84		
283MW01	2/1/2007	70042.04			114	1.1		0.94	2.58		13.1		
MW02 Duplicate	2/1/2007	70042.03		29.5	37.2	0.133	2.18	2.16	0.813	9.79	1.45	6.05	
283MW04	2/1/2007	70042.07			21.1	0.203	0.958	2.32	1.51		1.27	5.3	
283MW06	5/3/2007	70161.09			22.3			1.21	1.46			4.85	
283MW03	5/3/2007	70161.06		5.2	139		1.52	1.32			7.47	3.03	
283MW01	5/3/2007	70161.04			106	0.897	0.206	0.609	2.77		12.7	5.59	
283MW05	5/3/2007	70161.08			47.1	0.159	0.41	9.88	4.29	0.93	1.61	4.74	
MW02 Duplicate	5/3/2007	70161.03		11.8	44		0.712	1.63	2.26	11.3	1.41	9.44	
283MW02	5/3/2007	70161.05		12.4	45.7		0.562	1.91	2.07	11.8	1.21	8.04	
283MW04	5/3/2007	70161.07			11.5		0.372	0.886	2.49		0.576	3.53	
283MW03	7/27/2007	70283.06		3.98	166		2.06				7.43		

Table 1. Summary of Select Metal Concentrations in Groundwater from January 2005 to September 2010 at Site 283

SiteWELL_ID	Date_Collected	Lab_ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
283MW01	7/27/2007	70283.04			117	1.15		1.02	3.39		12.4	4.07	
283MW05	7/27/2007	70283.08		4.19	45	0.149	0.608	4.68	4.04	1.37	1.98	3.77	
283MW02	7/27/2007	70283.05	3.13	9.41	29.8		0.373	8.61	4.23	5.54	1.7	5.84	
MW02 Duplicate	7/27/2007	70283.03		9.31	29.9		0.392	6.16	4.03	6.68	1.31	4.1	
283MW04	7/27/2007	70283.07			10.7		0.433	1.6	0.905		0.717		
283MW06	7/27/2007	70283.09			21.7			0.387	0.908		0.323		
283MW03	11/20/2007	70477.06			163	0.198				1.06	7.71		
283MW05	11/20/2007	70477.08	1.22	3.18	94.8	0.291	0.375	1.49	3.82	0.9	4.75	5.77	
283MW04	11/20/2007	70477.07	1.8	3.01	54.8	0.283	0.243	5.85	4.25	1.85	3.14	5.49	
283MW01*	11/20/2007	70477.04	3.08		138	1.52	0.927	1.16	2.84	1.72	15.5	4.86	
283MW06	11/20/2007	70477.09			42.5	0.183	0.203	1.16		0.79	1.53	5.73	
283MW02	11/20/2007	70477.05	1.37	4.8	40.2	0.176		1.87		4.13	1.26	7.61	
MW02 Duplicate	11/20/2007	70477.03		6.2	39.6	0.131		2.32		4.05	0.734	8.27	
283MW05	3/6/2008	80069.08			54.7	0.146	0.294	8.56	4.09		6.42		
283MW02	3/6/2008	80069.05		7.67	41.3			4.89	2.04	7.86	5.16	9.64	
283MW04	3/6/2008	80069.07			21.4	0.107		6.84	3.47		4.98		
283MW06	3/6/2008	80069.09			49.6	0.101	0.249	6.07	1.99		4.9	3.65	
283MW01	3/6/2008	80069.04			133	1.14	0.624	0.949	5.77		21.4		
MW01 Duplicate	3/6/2008	80069.03			134	1.16	0.581	1.1	4.08		20	4.2	
283MW03	3/6/2008	80096.06		5.62	227		0.226		1.38		12.3		
283MW05	5/2/2008	80150.08		2.76	41.8	0.224		1.09			3.16	4.24	
283MW02	5/2/2008	80150.05		23.2	38.7	0.205	0.304	2.98		8.05	2.18	9.33	
283MW04	5/2/2008	80150.07			11.8	0.214		2.03			2.15	6.65	
MW01 Duplicate	5/2/2008	80150.03			110	1.15	0.287	0.802	2.01		15.1	6.32	
283MW01	5/2/2008	80150.04			112	1.23		0.532	1.53		14.9	5.65	
283MW03	5/2/2008	80150.06		5.45	168	0.238	2.87			1.43	10.6		
283MW06	5/2/2008	80150.09		4.45	46.3	0.222	0.392	2.57	0.733		1.83	5.86	
283MW05	8/6/2008	80280.08			84	0.204	0.544	3.25	4.96		4.34	3.67	
283MW04	8/6/2008	80280.07			37.1	0.124	0.497	3.66	7.02		2.38	5.98	
283MW01	8/6/2008	80280.04			118	1.28	0.476	1.26	2.14		13.4	8.88	
MW01 Duplicate	8/6/2008	80280.03			117	1.27	0.357	1.23	2.39		12.9	3.9	
283MW03*	8/6/2008	80280.06		4.06	231		2.47				11		
283MW02	8/6/2008	80280.05		8.48	48.9		0.644	2.57		4.73	1.95	9.83	
283MW06	8/6/2008	80280.09			48		0.441	2.36	1.2		0.874	4.39	
283MW03	10/23/2008	80385.06			205	0.208					9.78		1.75
283MW02	10/23/2008	80385.05		13.3	29.7	0.203	0.28	1.8		7.34	2.45	8.33	1.48

Table 1. Summary of Select Metal Concentrations in Groundwater from January 2005 to September 2010 at Site 283

SiteWELL_ID	Date_Collected	Lab_ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
MW01 Duplicate	10/23/2008	80385.02		3.95	113	1.21	0.838	1.08	2.16	2.48	13	6.52	1.6
283MW01	10/23/2008	80385.04			111	1.2	0.866	1.05	1.98		12.9	6.58	
283MW05	10/23/2008	80385.08		6.81	20	0.266	0.326	0.72		2.13	1.34	4.95	1.4
283MW04	10/23/2008	80385.07			6.56	0.202	0.252	0.655		2.37	1.17	7.28	2.05
283MW06	10/23/2008	80385.09			24.8	0.24	0.232	0.659		1.8	0.96	7.72	1.55
283MW06	3/12/2009	90104.09			64.4	0.124	0.29	2.83	3.21	3.42			
283MW04	3/12/2009	90104.07			13.9		0.21	2.02	3.33			5.11	
283MW03	3/12/2009	90104.06	12.1	64	320	0.136		1.11		7.1	7.29	43.3	
MW01 Duplicate*	3/12/2009	90104.03	10.3	10.3	88.3	0.832		1.28	2.32		12.1	50.9	
283MW01	3/12/2009	90104.04		2.98	87.8	0.787		1.43	2.48	1.53	11.2	47.8	
283MW02*	3/12/2009	90104.05	1.29	39.1	37.3			14		10.4	1.64	30.3	
283MW05	3/12/2009	90104.08			49.5	0.151		1.61	2.11		0.985	20.1	
283MW01	5/19/2009	90203.04	1.2	1.2	72.6	0.713	0.606	0.663	2.49	2.62	9.8	5.02	
MW01 Duplicate	5/19/2009	90203.03	2.03	11.9	70.3	0.677	0.404	0.394	2.15		9.33		
283MW02	5/19/2009	90203.05		14.4	29.8		0.472	2.91		6.03	2.05	7.34	
283MW05	5/19/2009	90203.08	1.66	6.54	46.2	1.32	0.554	1.5	3.64		2.03	8.75	
283MW03	5/19/2009	90203.06	1.44	20.5	136		0.453			2.12	10.3	6.11	
283MW04	5/19/2009	90203.07	2.57		15.1	0.118	0.727	3.77	3.62	2.66	0.797	2.57	
283MW06	5/19/2009	90203.09	3.29	5.09	30.2		0.579	1.46	1.7		0.676	6.29	
283MW06	8/19/2009	90348.08		13.8	133	0.792	0.53	12.1	24	6.67	9.01	19.8	
283MW04	8/19/2009	90348.07		10.9	27.7	0.209		6.84	10.6		2.89		
MW06 Duplicate	8/19/2009	90348.03	4.87	11.2	91.9	0.541		11.7	16.8	3.76	2.64	18	
283MW03	8/19/2009	90348.06	4.97	20.9	407	0.279	1.23		1.09		12	8.19	
283MW01	8/19/2009	90348.04		5.48	90.2	1.01		1.58	2.78		11.6	19.3	
283MW02*	8/19/2009	90348.05	10.3	38.2	29.4			17.8	6.55	6.52	1.94	126	
283MW05*	9/17/2009	90387.01		41.6	172	1.48	2.19	272	13.2	14.7	15.4		
283MW02	11/5/2009	90437.05			49			13.5	2.11	5.53	7.75	50.7	
283MW06	11/5/2009	90437.09		30.76	106	0.461		19.2	5.7	5.25	5.3	21.4	
MW04 Duplicate	11/5/2009	90437.03		69.48	36.4	0.26		11.6	9.65		3.33		
283MW05	11/5/2009	90437.08		18.95	44.4	0.12		4.53			2.8		
283MW04	11/5/2009	90437.07		41.87	24	0.2		9.6	5		2		
283MW01	11/5/2009	90437.04		1.27	95.2	1					12.1	18	
283MW03	11/5/2009	90437.06		4.75	227	0.16					10.2		1.03
283MW02	1/26/2010	10035.05		8.38	26.3			6.12		6.95	5.12		
283MW04	1/26/2010	10035.07	5.43	38.13	22.2	0.116		4.96	6.41		4.17		
283MW06	1/26/2010	10035.09		14.32	57.4	0.198		7.7			3.76		

Table 1. Summary of Select Metal Concentrations in Groundwater from January 2005 to September 2010 at Site 283

SiteWELL_ID	Date_Collected	Lab_ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
MW04 Duplicate	1/26/2010	10035.03		26.55	21.5	0.093		8.28	1.32		3.46		
283MW05	1/26/2010	10035.08		4.24	17.6			1.24			2.58		
283MW01	1/26/2010	10035.04	5.09		97.8	0.901					15.5		
283MW03	1/26/2010	10035.06		3.69	307	0.12					11.1		
LF1(1)	5/17/2010	10194.08		1.15	18.5	0.053							
LF1(1)	5/17/2010	10194.07		1.44	3.76								
LF1(1)	5/17/2010	10194.06		2.22	19.1			4.11					
LF3(1)	5/17/2010	10194.04		3.59	92.8	0.054					7.5		
LF3(1) Duplicate	5/17/2010	10194.03		3.95	81.2	0.073					6.89		
LF3(1)	5/17/2010	10194.05		1.34	79.5	0.844			1.54		10.1		
LF3(1) Duplicate	5/20/2010	10204.03	10.2	23.28	23.5			1.44		10.2	2.37		
LF3(1)	5/20/2010	10204.04	6.27	22.61	23.4	0.043		1.44		11.5	2.07		
LF3(1)	9/29/2010	10416.01	14.3	3.69		0.074							
LF3(1)	9/29/2010	10416.02	8.19			0.551							
LF3(1)	9/30/2010	10419.03	10.9	0.67				8.67					
LF3(1)	9/30/2010	10419.04	9.65	1.2				8					
LF3(1)	9/30/2010	10419.06						3.38					
LF3(1)	9/30/2010	10419.07	19.1	12.98				2.84		4.13			
LF3(1)	9/30/2010	10419.05	5.14					2.68					
		Mean	5.54	13.68	85.11	0.58	0.82	18.60	4.87	7.28	7.30	11.27	1.55
		90th Percentile	10.84	32.23	172.60	1.37	2.07	30.62	11.86	14.49	15.46	20.04	1.87
		Adjusted Mean	4.32	9.98	64.56	0.45	0.58	5.36	3.51	5.88	5.90	6.65	1.47

Notes:

Adjusted mean does not include metal concentrations that exceed the 90th Percentile

1) Concentrations bolded and italicized exceed applicable Ground Water Quality Standard (GWQS)
2) Concentrations bolded and italicized in red exceed applicable GWQS and the 90th Percentile
3) Concentrations highlighted in red cells exceed exceed the 90th Percentile and are deemed to be extreme outliers
4) Samples highlighted in yellow contain two or more metal concentrations that exceed the 90th Percentile
5) Blank cells indicate metals were not detected, not analyzed, or not reported due to instrument errors

M: Metal detected in method blank

* Sample contains two or more metals at concentrations exceeding the 90th Percentile

Table 2
Building 283
Concentration Rankings and Recommended Monitoring Well Sampling
4th Quarter 2008 - 3rd Quarter 2010

Well ID	Antimony	Arsenic	Beryllium	Lead	Selenium	Thallium
	NJDEP GWQS	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*
	6	*3*	*1*	*5*	*40*	*2*
283MW01			1.32		*	*
283MW02	19.1			11.5	*	*
283MW03	14.3	64			*	*
283MW04		69.48			*	*
283MW05			1.48	14.7	*	*
283MW06						

Notes:

Results reported in µg/L.

Within the reporting period, the two highest concentrations are listed for each parameter.

Shaded rows indicate monitoring wells recommended for metals analysis.

Metals were analyzed during the following quarters: 4th Quarter 2008 through 3rd Quarter 2010.

*Based on results from the 4th Quarter 2010 and 1st Quarter 2011 sampling events, analysis of Selenium and Thallium may be required.

SITE SPECIFIC EVALUATION
BUILDING 287

Site data and 90th Percentile calculations are provided on Table 1 (attached), and summarized as follows:

90th Percentile Analysis Summary
Building 287

287	Sb	As	Ba	Be	Cd	Cr	Cu	Pb	Ni	Se*	Tl*
Feb 05 - Sept 10	n=4	n=5	n=5	n=0	n=0	n=0	n=5	n=2	n=4	n=1	n=0
90th Percentile	13.6	8.6	58.8	NR	NR	NR	4.9	NR	1.6	1.8	NR
Mean	10.2	5.7	41.9	NR	NR	NR	3.5	NR	1.2	1.8	NR
Adjusted Mean	9.0	5.0	34.0	NR	NR	NR	3.1	NR	1.1	1.8	NR
NJDEP GWQS (ug/L)	**6**	**3**	**6000**	**1**	**4**	**70**	**1300**	**5**	**100**	**40**	**2**

Results reported in µg/L or parts per billion. Shaded cells indicate values that exceed the GWQS. "n" = population size in the statistical analysis. As a conservative measure, non-detectable results were not included in the statistical analysis, and thus the population size may be biased low when compared to the total number of data points. * Due to possible laboratory inaccuracies, the 90th Percentile Analysis was not used in developing sampling recommendations for these parameters.

90th Percentile Values Meet GWQS:

The 90th percentile values for barium, copper, nickel, and selenium are below their respective GWQS.

Note that due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Recommendations:

In consideration of the above, the following sampling protocol is recommended for this site:

1. Selenium and Thallium - Due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Evaluation of the 4th Quarter 2010 and 1st Quarter 2011 sampling should be performed to determine compliance with the GWQS. If exceedances of the GWQS are identified, the sampling protocol specified under item 3 below should be followed.

2. With the exception of selenium and thallium (addressed above), no further sampling/analysis is recommended for metals with 90th percentile values below their respective GWQS.

3. For remaining metals, the collection of ground water samples using the following sampling protocol is recommended.

Collection of samples on a semiannual basis, targeting the times of the year typically exhibiting elevated precipitation amounts (generally 2nd and 4th quarters).

For future sampling events, raw and filtered water sample pairs should be collected from select wells (identified below), to evaluate the input from sample turbidity. Samples should be analyzed by a NJ certified laboratory. Slow-purge methodology should be followed for all sampling events which include metals analyses. Refer to the Concentration Ranking and Monitoring Well Selection Protocol described below.

Concentration Ranking and Monitoring Well Selection Protocol

For the specified sampling events, the monitoring wells recommended for sampling were selected with a bias towards those wells demonstrating the highest concentrations as follows.

For the available data from 4th Quarter 2008 through 3rd Quarter 2010, the highest observed concentrations for the site monitoring wells were ranked for each metal of concern. For larger sites, such as landfills, the highest four concentrations were listed; for smaller sites, the highest two concentrations were deemed adequate. Concentration Rankings and Recommended Well Sampling are summarized in Table 2 (attached).

Based on the specified protocol, monitoring well 287MW01 is recommended for sampling with laboratory analysis for antimony and arsenic, along with selenium and thallium as required.

Table 1. Summary of Select Metal Concentrations in Groundwater from February 2005 to September 2010 at Site 287

SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)			6	3	6000	1	4	70	1300	5	100	40	2
287MW01	02/18/05	50094.03											
287MW01	06/10/05	50300.03											
287MW01	09/29/05	50495.03											
287MW01	12/05/05	50630.03											
287MW01	02/17/06	60082.03											
287MW01	06/30/06	60297.04											
MW01 Duplicate	06/30/06	60297.03											
287MW01	09/29/06	60427.03											
287MW01	12/28/06	60550.01											
287MW01	03/14/07	70097.03											
287MW01	03/30/07	70119.01											
287MW01	05/31/07	70197.03											
287MW01	09/17/07	70348.01											
287MW01	12/20/07	70549.04											
MW01 Duplicate	12/20/07	70549.03											
287MW01	03/31/08	80103.04											
MW01 Duplicate	03/31/08	80103.03											
287MW01	06/27/08	80215.03											
287MW01	09/25/08	80344.04											
MW01 Duplicate	09/25/08	80344.03											
MW01 Duplicate	12/29/08	80479.04								2.45			
287MW01	12/29/08	80479.03								2.14			
287MW01	03/27/09	90130.03											
287MW01	06/11/09	90231.04											
MW01 Duplicate	06/11/09	90231.03											
MW01 Duplicate	06/18/09	90244.03											
287MW01	06/18/09	90244.02											
287MW01	09/28/09	90401.03											
MW01 Duplicate	09/28/09	90401.02											
287MW01	11/17/09	90449.04											
MW01 Duplicate	11/17/09	90449.03											
LF1(1) Duplicate	03/22/10	10099.03	***8.89***	***8.79***	31.3				1.1		1.64		
LF1(1)	03/22/10	10099.04	5.6	***8.19***	31.3				4.34		1.48		
LF2(1) Duplicate	06/22/10	10280.03	***14***	1.58	36.9				3.86				
LF2(1)	06/22/10	10280.04	***12.5***	1.99	36.4				5.19		0.847		
LF3(1) Duplicate	09/14/10	10390.02											
LF3(1)	09/14/10	10390.03		***8.04***	73.4				3.04		1.03	1.83	

Table 1. Summary of Select Metal Concentrations in Groundwater from February 2005 to September 2010 at Site 287

SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)			6	3	6000	1	4	70	1300	5	100	40	2
		Mean	10.2	5.7	41.9				3.5		1.2	1.8	
		90th Percentile	13.6	8.6	58.8				4.9		1.6	1.8	
		Adjusted Mean	9.0	5.0	34.0				3.1		1.1	1.8	

Notes:

Adjusted mean does not include metal concentrations that exceed the 90th Percentile

1) Concentrations bolded and italicized exceed applicable Ground Water Quality Standard (GWQS)
2) Concentrations bolded and italicized in red exceed applicable GWQS and the 90th Percentile
3) Concentrations highlighted in red cells exceed exceed the 90th Percentile and are deemed to be extreme outliers
4) Samples highlighted in yellow contain two or more metal concentrations that exceed the 90th Percentile
5) Blank cells indicate metals were not detected, not analyzed, or not reported due to instrument errors

M: Metal detected in method blank

* Sample contains two or more metals at concentrations exceeding the 90th Percentile

Table 2
Building 287
Concentration Rankings and Recommended Monitoring Well Sampling
4th Quarter 2008 - 3rd Quarter 2010

Well ID	Antimony	Arsenic	Selenium	Thallium
	NJDEP GWQS	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*
	6	*3*	*40*	*2*
287MW01	14	8.79	*	*

Notes:

Results reported in µg/L.

Within the reporting period, the highest concentrations are listed for each parameter.

Shaded rows indicate monitoring wells recommended for metals analysis.

Metals were analyzed during the entire reporting period, 4th Quarter 2008 through 3rd Quarter 2010.

*Based on results from the 4th Quarter 2010 and 1st Quarter 2011 sampling events, analysis of Selenium and Thallium may be required.

SITE SPECIFIC EVALUATION
BUILDING 296 (FTMM-54)

Site data and 90th Percentile calculations are provided on Table 1 (attached), and summarized as follows:

90th Percentile Analysis Summary
Building 296

296	Sb	As	Ba	Be	Cd	Cr	Cu	Pb	Ni	Se*	Tl*
June 09 - Sept 10	n=56	n=100	n=174	n=47	n=128	n=103	n=90	n=56	n=154	n=58	n=4
90th Percentile	23.7	53.0	90.0	0.85	8.27	8.72	22.0	19.9	19.3	54.1	2.2
Mean	9.06	16.7	45.1	0.55	4.68	11.8	69.4	28.0	13.1	17.3	1.7
Adjusted Mean	6.31	10.53	25.4	0.19	1.59	2.34	5.1	6.97	5.6	10.2	1.5
NJDEP GWQS (ug/L)	**6**	**3**	**6000**	**1**	**4**	**70**	**1300**	**5**	**100**	**40**	**2**

Results reported in µg/L or parts per billion. Shaded cells indicate values that exceed the GWQS. "n" = population size in the statistical analysis. As a conservative measure, non-detectable results were not included in the statistical analysis, and thus the population size may be biased low when compared to the total number of data points. * Due to possible laboratory inaccuracies, the 90th Percentile Analysis was not used in developing sampling recommendations for these parameters.

90th Percentile Values Meet GWQS:

The 90th percentile values for barium, beryllium, chromium, copper, and nickel are below their respective GWQS.

Note that due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Mean Values, or Adjusted Mean Values, Meet GWQS:

The mean values for selenium and thallium are below their respective GWQS.

The adjusted mean value for cadmium is below its GWQS.

Recommendations:

In consideration of the above, the following sampling protocol is recommended for this site:

1. Selenium and Thallium - Due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Evaluation of the 4th Quarter 2010 and 1st Quarter 2011 sampling should be performed to determine compliance with the GWQS. If exceedances of the GWQS are identified, the sampling protocol specified under item 3 below should be followed.

2. With the exception of selenium and thallium (addressed above), no further sampling/analysis is recommended for metals with 90th percentile values below their respective GWQS.

3. For remaining metals, the collection of ground water samples using the following sampling protocol is recommended.

Collection of samples on a semiannual basis, targeting the times of the year typically exhibiting elevated precipitation amounts (generally 2nd and 4th quarters).

For future sampling events, raw and filtered water sample pairs should be collected from select wells (identified below), to evaluate the input from sample turbidity. Samples should be analyzed by a NJ certified laboratory. Slow-purge methodology should be followed for all sampling events which include metals analyses. Refer to the Concentration Ranking and Monitoring Well Selection Protocol described below.

Concentration Ranking and Monitoring Well Selection Protocol

For the specified sampling events, the monitoring wells recommended for sampling were selected with a bias towards those wells demonstrating the highest concentrations as follows.

For the available data from 4th Quarter 2008 through 3rd Quarter 2010, the highest observed concentrations for the site monitoring wells were ranked for each metal of concern. For larger sites, such as landfills, the highest four concentrations were listed; for smaller sites, the highest two concentrations were deemed adequate. Concentration Rankings and Recommended Well Sampling are summarized in Table 2 (attached).

Based on the specified protocol, monitoring wells 296MW02, 296MW03, 296MW04, 296MW06, and 296MW08 are recommended for sampling with laboratory analysis for antimony, arsenic, cadmium, and lead, along with selenium and thallium as required.

Table 1. Summary of Select Metal Concentrations in Groundwater from June 2009 to September 2010 at Site 296

SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP GWQS (µg/L)			6	3	6000	1	4	70	1300	5	100	40	2
296MW07	02/02/05	50061.09			7.52								
296MW06	02/02/05	50061.08			5.18								
296MW04	02/02/05	50061.07			42.3					***5.47***			
296MW03	02/02/05	50061.06			11.6		2.89						
MW06 Duplicate	02/02/05	50061.03											
296MW02*	02/02/05	50061.05				***2.74***	***6.72***	13.6		***17.3***	46		
296MW08	02/02/05	50061.10		10.7	33.4					***14.9***	16.2		
296MW01	02/02/05	50061.04			49.6						13		
296MW06	05/03/05	50234.08							22				
296MW04	05/03/05	50234.07			22.6								
296MW03	05/03/05	50234.06			8.5		2						
296MW07	05/03/05	50234.09		9	9.7			7.3					
296MW01	05/03/05	50234.04			47.3						8		
296MW02*	05/03/05	50234.05		7		***2.3***	***37.3***	11.9		***52***	29		
296MW08	05/03/05	50234.10		21	49					***25***	16		
MW08 Duplicate	05/03/05	50234.03		20	40.4		2.9			***24***	13		
296MW07	08/11/05	50398.09			6.75								
MW06 Duplicate	08/11/05	50398.03			5.09				10.8				
296MW06	08/11/05	50398.08			8.45			8.77	14.9				
296MW02	08/11/05	50398.05					2.58	6.49	9.73				
296MW01	08/11/05	50398.04			52						9.62		
296MW04	08/11/05	50398.07			93.4						7.24		
296MW03	08/11/05	50398.06			11.4		3.71				6.02		
296MW08*	08/11/05	50398.10		58.2	37.6		***18.5***			***11.5***	5.68		
296MW03	11/10/05	50587.06											
MW06 Duplicate	11/10/05	50587.03							11.8				
296MW07	11/10/05	50587.09			9.74		3.15	5.34					
296MW06	11/10/05	50587.08						10.9	16				
296MW04	11/10/05	50587.07			121						6.84	20.1	
296MW02	11/10/05	50587.05			16.3		2.45	38.2	15.9	***5.98***	6.77		
296MW01	11/10/05	50587.04			57.5						5.77		
296MW08	11/10/05	50587.10		11.3	57.3	0.592	***7.41***		10	***16.6***	10.8		
296MW08	01/19/06	60035.10			9.77		2.3			***7.76***			
296MW04	01/19/06	60035.07			20.8					***5.28***			
296MW03	01/19/06	60035.06											
296MW06	01/19/06	60035.08			6.87			8.51					
MW06 Duplicate	01/19/06	60035.03			6.71			7.1					
296MW01	01/19/06	60035.04			37.1						7.61		
296MW07	01/19/06	60035.09			17.4		2.37				5.28		
296MW02	01/19/06	60035.05			61.3		***7.95***				16.2		

Table 1. Summary of Select Metal Concentrations in Groundwater from June 2009 to September 2010 at Site 296

SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
296MW04	04/19/06	60168.07	***9.4***		28.5				0.689				
296MW06	04/19/06	60168.08	4.76		5.13			1.5	13.1				
296MW03	04/19/06	60168.06	2.33		12.5	0.285	2.59	1.61			3.95		
296MW08	04/19/06	60168.10	2.17	13.1	21.5	0.118	0.502	1.3	5.77		2.43		
296MW07	04/19/06	60168.09	4.88		11.5	0.133	0.596	2.7			2.05		
296MW01	04/19/06	60168.04	2.81		69.7	0.235	0.873		0.786		17		
296MW02*	04/19/06	60168.05	4.86	5.04	106	0.787	***22.5***	6.05	14.7	***18.1***	15.4		
MW08 Duplicate	04/19/06	60168.03	***6.69***	9.76	21		0.607		5.88		1.6		
296MW01	08/11/06	60355.04	4.95		62.6		0.776				20.8		
296MW02	08/11/06	60355.05	3.56	6.28	4.87		0.487	4.8	3.29		2.09		
296MW04	08/11/06	60355.07	***7.64***		66.7		1.81	6.53	8.07	1.96	2.04		
296MW08	08/11/06	60355.10	2.9	45.6	27.6			1.59	4.2		1.32		
MW06 Duplicate	08/11/06	60355.03	4.45	4.17	4.12	0.12		17.4	11.7		1.31		
296MW03	08/11/06	60355.06	2.61		4.44		0.523	1.41			1.27		
296MW06	08/11/06	60355.08	3.89	3.3		0.145		20	14.7		1.22		
296MW07	08/11/06	60355.09	2.55	2.35	10.4		0.332	1.21			1.13		
MW06 Duplicate	12/13/06	60529.03			5.47		0.866	3.26	5.09			3.4	
296MW06	12/13/06	60529.06					0.56	2.4	3.7			4.51	
296MW04	12/13/06	60529.05		3.86	64.9		***4.86***				7.94	10.2	
296MW03	12/13/06	60529.04					2.17	1.33			2.5		
296MW02	12/15/06	60534.05		2.45	6		1.31		5.47		2.5		
296MW08	12/15/06	60534.07		36.8	46.1		***10.8***				14.8	4.16	
296MW01	12/15/06	60534.04			51.7		0.714		1.06		13.2	6.14	
MW07 Duplicate	12/15/06	60534.03		3.15	6.44		1				1.41	3.33	
296MW07	12/15/06	60534.06		2.25	7.65		1.68		0.663		1.38		
296MW04	03/05/07	70081.07	2.6		8.09		0.521	0.793	4.24			7.27	
296MW06	03/05/07	70081.08	0.912		7.71		0.789	0.765	4.23			6.06	
MW06 Duplicate	03/05/07	70081.03	1.91		8.51		0.809	10.7	6.39		6.85	5.18	
296MW01	03/05/07	70081.04			30.1		0.37	0.509	4.17		6.65	8.47	
296MW02*	03/05/07	70081.05			172		***28***	4.1	30.7		55.5	22.2	
296MW08	03/05/07	70081.10		3.09	11.1		3.92	4.48	5.13	***8.51***	2.65	4.02	
296MW07	03/05/07	70081.09		3.08	11.4		2.57	1.17	5.34		2.11	4.62	
296MW03	03/05/07	70081.06	0.755		5.97		1.6	0.948	2.26		1.82	4.9	
296MW01	06/07/07	70206.04		2.81	51.6		0.67	0.633	0.671		8.91	5.33	
296MW02	06/07/07	70206.05			9.66		3.2	1.87	5.48	1.91	7.07	3.86	
296MW08	06/07/07	70206.10		20.4	17		***8.16***	1.01		***10.9***	3.11		
296MW03	06/07/07	70206.06			11.4	0.172	2.61	1.06			3	3.51	
296MW06	06/07/07	70206.08		4.36	6.1		0.579	1.91	33.3	1.92	2.51		
MW06 Duplicate	06/07/07	70206.03		3.33	6.34		0.558	2.81	34.4	2.14	2.49	3.83	
296MW07	06/07/07	70206.09			9.86		1.21	2.12			1.66	5	
296MW04	06/07/07	70206.07		4.6	25.1		0.461	0.685	0.8		1.05	3.73	

Table 1. Summary of Select Metal Concentrations in Groundwater from June 2009 to September 2010 at Site 296

SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
296MW01	09/07/07	70327.04			44.8	0.119	0.962	1.53	0.543		7.68	5.8	
MW01 Duplicate	09/07/07	70327.03		3.68	44.5	0.114	1.23	2.38	1.01	1.29	7.45	5.92	
296MW08*	09/07/07	70327.08		75.3	29.8		***11.7***			***14.6***	7.13		
296MW02*	09/07/07	70327.05		12.3	356	***1.79***	***12.1***	15.4		***16.1***	***233***		
296MW03	09/07/07	70327.06			6.02	0.155	1.85	1.31			2.88		
296MW06	09/07/07	70327.07			6.09		0.545	1.31	3.57	1.47	0.898	4.14	
MW07 Duplicate	09/17/07	70346.03			12.1		0.886	2.97	2.26		2.34		
296MW04	09/17/07	70346.04			53.4		0.291	1.26	1.06		2.15		
296MW07	09/17/07	70346.05		2.93	14.6		0.9	3.35	1.91		1.88		
296MW01	11/14/07	70466.04			43.9	0.136	0.464				6.94	5.63	
296MW02	11/14/07	70466.05			80.2	0.687	1.21	6.37	1.87		50.4		
296MW03	11/14/07	70466.06			11.7	0.439	2.13	1.91	0.98		4.77		
296MW08	11/14/07	70466.10		8.36	19.9	0.11	1.51	0.735	4.59		3.62		
MW03 Duplicate	11/14/07	70466.03			6.53	0.192	1.9	1.09			3.39		
296MW04	11/14/07	70466.07			63.6		0.497		1.14		1.47		
296MW07	11/14/07	70466.09			8.56	0.104	0.677	2.16	0.615		1.19		
296MW06	11/14/07	70466.08			4.14		0.229	3.31	3.33		1.18		
MW03 Duplicate	03/04/08	80065.03			4.29	0.108	1.5	1.56	2		6.87		
296MW03	03/04/08	80065.06			3.53		1.22	1.76	1.31		5.61		
296MW06	03/04/08	80065.08			8.19			0.587	2.35		5.33		
296MW07	03/04/08	80065.09			7.29		0.819	1.35	1.75		5.22		
296MW02*	03/04/08	80065.05		5.75	106	0.716	***13.1***	5.21		***21.7***	44		1.69
296MW04	03/04/08	80065.07			11.2		0.59	0.609	1.19	1.1	4.03		
296MW08	03/04/08	80065.10		18.7	56.3	0.109	1.01		2.08		19.6		
296MW01	03/04/08	80065.04			40.2		0.374		1.39		12.8		
296MW01	05/14/08	80161.04	1.67 M		39.9	0.135	0.294	1.27			8.53 M	4.38 M	
296MW02	05/14/08	80161.05	1.89 M	4.59	7.46		1.58	0.986	10.5	1.96	4.82 M	4.8 M	
296MW03	05/14/08	80161.06	M			0.214	1.86	0.98			4 M	4.83 M	
296MW08	05/14/08	80161.10	M	48.8	40.6	0.193	***10.1***			***11.8***	11.2 M	M	
296MW07	05/14/08	80161.09	M	4.24	7.83	0.132	1	1.24			1.88 M	M	
MW06 Duplicate	05/14/08	80161.03	1.85 M		3.18		0.239	1.42	7.33		1.56 M	M	
296MW04	05/14/08	80161.07	1.29 M		27		0.579	0.758	1.4	4.2	1.49 M	M	
296MW06	05/14/08	80161.08	M		3.09		0.265	1.04	7.03		1.48 M	3.13 M	
MW01 Duplicate	08/13/08	80295.03	M		39.2		0.54	0.571			8.96	4.67 M	
296MW01	08/13/08	80295.04	M		39		0.743	0.47			8.64	5.41 M	
296MW08*	08/13/08	80295.10	M	135	23.7		***14.2***			***11.9***	7.24	M	
296MW03	08/13/08	80295.06	M		10.4	0.167	3.91	1.46			5.59	M	
296MW02	08/13/08	80295.05	M	3.15	7.59		0.654	1.63	12.3		3.16	3.58 M	
296MW04	08/13/08	80295.07	M	2.57	112		0.94				2.01	10.6 M	
296MW06	08/13/08	80295.08	M	2.51	4.73		0.395	4.35	3.06		1.56	M	
296MW07	08/13/08	80295.09	M	5.22	22.3		1.05	0.973			0.989	M	

Table 1. Summary of Select Metal Concentrations in Groundwater from June 2009 to September 2010 at Site 296

SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
296MW06	10/24/08	80386.08	M		49.6				0.959			M	
296MW08	10/24/08	80386.10	3.06 M	42.3	30.9				2.35		8.24	M	
296MW03	10/24/08	80386.06	M	3.55	5.71		1.71	1.85			2.81	M	
296MW02	10/24/08	80386.05	M	5.21	6.75		0.49	2.45	22.4		2.54	M	
MW01 Duplicate	10/24/08	80386.03	M		40.8		0.527	0.734			10.4	M	
296MW01	10/24/08	80386.04	M	2.66	40.6		0.479				10.3	M	
296MW04	10/24/08	80386.07	M		180		0.725		1.71		1.69	M	
296MW07	10/24/08	80386.09	M	3.82	41.6		0.773				0.874	M	
296MW06*	03/25/09	90122.05	***38.1*** M	67.6	102					***7.43*** M		68.9	
MW03 Duplicate	03/25/09	90122.03	***9.54*** M	19	3.42		1.41	1.57		***7.33*** M	2.01	51.5	
296MW03	03/25/09	90122.04	***9.1*** M	21.9	3.55		1.39	2.3		***5.51*** M	1.31	46.8	
296MW04*	03/26/09	90124.06	***19.4*** M	67	26.5			1.38 M	2.23	***7.39*** M		117 M	M
296MW07	03/26/09	90124.07	***21.2*** M	33.1	57.7		0.962	0.848 M		***8.39*** M		39.9 M	M
296MW02	03/26/09	90124.05	***7.54*** M	26.7	8.58		1.17	4.49 M	30.7	***7.34*** M	3.6	42.7 M	M
296MW08*	03/26/09	90124.08	***25*** M	54.3	56.2			M		***13.2*** M	17.2	45.1 M	M
MW01 Duplicate	03/26/09	90124.03	***14.6*** M	52.9	40.5		0.54	0.519 M		***7.06*** M	12.7	74.6 M	M
296MW01*	03/26/09	90124.04	***22.7*** M	56	42.2		0.206	0.342 M		***5.9*** M	12.1	92.7 M	M
MW01 Duplicate	06/02/09	90217.03	2.29	7.64	39.4	0.126			0.998		9.82		1.45 M
296MW02	06/02/09	90217.05	2.43	5.01	14.3		0.729	2.46	15.5		5.14		M
296MW08*	06/02/09	90217.10	2.53	57.1	64.5	0.178	1.03		0.921	4.25	22.6	4.46	M
296MW06	06/02/09	90217.08	2.94	6.66	4.97			2.24	17.6	1.81	2.44		M
296MW03	06/02/09	90217.06	3.05		2.09		0.689	1.98		2.56	2.1		M
296MW01	06/02/09	90217.04	1.89	11	38.8	0.101			1.34	***9.32***	10.1		1.36 M
296MW04	06/02/09	90217.07	4.06	20.3	33.3					3.92	1.91	4.8	M
296MW07*	06/02/09	90217.09	2.3	15.1	114	0.103	2.02	0.365	4.55	1.56	1.14		2.41 M
296MW03	09/17/09	90384.06	***6.05*** M	8.49	6.91	0.122	3.53	1.45	M		5.51	22.1	
296MW08	09/17/09	90384.10	M	81.1	63.5	0.083	3.88	2.63	M	***10***	16.7		
296MW01	09/17/09	90384.04	M	12.4	40.9				M		13.1	19.9	
296MW02*	09/17/09	90384.05	M	7.47	39.7	0.107	2.86	12.2	128 M	***36.1***	10.3		
296MW06*	09/17/09	90384.08	***11.0*** M	35.2	102		1.41	1.13	4.17 M	***6.43***	1.68	60.3	
MW07 Duplicate	09/17/09	90384.03	M	16.3	17.3		0.808	2.56	M		1.41		
296MW07	09/17/09	90384.09	M	11.1	14.4		0.524	2.33	M		0.925	13.4	
296MW04	09/17/09	90384.07	***7.82*** M	28	62.8				M		0.642	63.2	
296MW02	11/23/09	90456.05		2.6	15.9			1.86	62.3	2.73	6.45	11.8	
296MW03	11/23/09	90456.06		0.71	6.64		1.63				4.52		
MW07 Duplicate	11/23/09	90456.03		3.28	36.7						3.5		
296MW07	11/23/09	90456.09		2.91	37.4		0.556				3.12		
296MW08	11/23/09	90456.10		23.8	53	0.051				***6.1***	15.3		
296MW01	11/23/09	90456.04	5.41	0.74	32.9						10.9	8.29	
296MW04	11/23/09	90456.07		1.76	71.2						1.78		
296MW06	11/23/09	90456.08		1.34	10			3.21			1.21		

Table 1. Summary of Select Metal Concentrations in Groundwater from June 2009 to September 2010 at Site 296

SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
296MW02*	02/02/10	10045.05		75.08	1270	***9.99***	***184***	***840***	***5440***	***1060***	***514*** M		
296MW03	02/02/10	10045.06		0.72	4.73		1.18	1.93	1.4		4.17 M		
296MW08*	02/02/10	10045.10		22.53	107	0.11	2.57			***8.58***	38.4 M		
296MW04	02/02/10	10045.07		1.48	21.1			2.1		2.4	3.05 M		
296MW07	02/02/10	10045.09		2.61	24.8			3.2			3.01 M		
MW07 Duplicate	02/02/10	10045.03		2.69	29			3.58			2.72 M		
296MW06	02/02/10	10045.08			7.39				1.22		2.66 M		
296MW01	02/02/10	10045.04		1.3	38.2						11.8 M		
LF3(1)	05/20/10	10205.01		1.31	61.4	0.075 M	0.692				18.3		
LF3(1)	05/20/10	10205.02		3.01	7.47	M			1.52		0.61		
LF3(1)	05/21/10	10208.08	***10.7***	22.9	0.73	0.044 M	2.04			4.5			
LF3(1)*	05/21/10	10208.06	***10.0***	8.84	133	0.297 M	***4.02***				46.7		
LF3(1)*	05/21/10	10208.07	***11.8***	0.83	210	0.067 M	***8.51***		47.1	4.51	23		
LF3(1) Duplicate	05/21/10	10208.03			2.33	M	0.874				1.46		
LF3(1)	05/21/10	10208.04			2.1	M					0.974		
LF3(1)	05/21/10	10208.05		13.59	5.8	0.048 M		5.79	1.17		0.716		
LF4(1)	09/10/10	10385.01	***13.6***	0.93	53.9	0.077	0.908				18.6	M	
LF4(1)*	09/13/10	10386.08	***26.6***	7.05	102	0.946	***46.2*** M		3.84	M	56.7 M	1.93 M	
LF4(1)*	09/13/10	10386.07	***17.0***	2.92	122		1.78 M		11.6	4.83 M	20.8 M	2.13 M	
LF4(1)	09/13/10	10386.05	***9.95***	19.4	73.2	0.181	3.1 M		4.02	3.38 M	20.6 M	1.57 M	
LF4(1)*	09/13/10	10386.06	***40.1***	13.46	379		2.63 M	6.61	4.92	***7.24*** M	14 M	4.72 M	
LF4(1)	09/13/10	10386.04		2.29	7.79		M		1.11	M	1.78 M	1.57 M	
LF4(1)	09/13/10	10386.09	***24.6***	2.38	82.1		1.19 M		6.8	M	1.59 M	1.98 M	
LF4(1) Duplicate	09/13/10	10386.03	***37.5***	2.68	7.6		M		1.44	M	1.23 M	1.37 M	
		Mean	9.06	16.7	45.1	0.55	4.68	11.8	69.4	28.0	13.1	17.3	1.7
		90th Percentile	23.7	53.0	90.0	0.85	8.27	8.72	22.0	19.9	19.3	54.1	2.2
		Adjusted Mean	6.31	10.53	25.4	0.19	1.59	2.34	5.1	6.97	5.6	10.2	1.5

Notes: Adjusted mean does not include metal concentrations that exceed the 90th Percentile

1) Concentrations bolded and italicized exceed applicable Ground Water Quality Standard (GWQS)
2) Concentrations bolded and italicized in red exceed applicable GWQS and the 90th Percentile
3) Concentrations highlighted in red cells exceed exceed the 90th Percentile and are deemed to be extreme outliers
4) Samples highlighted in yellow contain two or more metal concentrations that exceed the 90th Percentile
5) Blank cells indicate metals were not detected, not analyzed, or not reported due to instrument errors

M: Metal detected in method blank

* Sample contains two or more metals at concentrations exceeding the 90th Percentile

Table 2
Building 296
Concentration Rankings and Recommended Monitoring Well Sampling
4th Quarter 2008 - 3rd Quarter 2010

Well ID	Antimony	Arsenic	Cadmium	Lead	Selenium	Thallium
	NJDEP GWQS	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*
	6	*3*	*4*	*5*	*40*	*2*
296MW01						
296MW02		75.08	184	1060	*	*
296MW03			46.2		*	*
296MW04	40.1				*	*
296MW05						
296MW06	38.1				*	*
296MW07						
296MW08		81.1		13.2	*	*

Notes:

Results reported in µg/L.

Within the reporting period, the two highest concentrations are listed for each parameter.

Shaded rows indicate monitoring wells recommended for metals analysis.

Metals were analyzed during the entire reporting period, 4th Quarter 2008 through 3rd Quarter 2010.

*Based on results from the 4th Quarter 2010 and 1st Quarter 2011 sampling events, analysis of Selenium and Thallium may be required.

SITE SPECIFIC EVALUATION
BUILDING 699 (FTMM-53)

Site data and 90th Percentile calculations are provided on Table 1 (attached), and summarized as follows:

90th Percentile Analysis Summary
Building 699

699	Sb	As	Ba	Be	Cd	Cr	Cu	Pb	Ni	Se*	Tl*
March 10 - Sept 10	n=31	n=32	n=17	n=37	n=31	n=20	n=12	n=11	n=44	n=5	n=0
90th Percentile	14.0	9.6	154.6	2.8	7.1	35.0	12.5	29.3	48.6	2.7	NR
Mean	9.2	3.9	84.5	1.4	3.2	14.2	6.7	12.0	72.9	2.2	NR
Adjusted Mean	8.5	2.2	56.8	0.9	1.9	7.0	5.3	10.1	15.8	2.1	NR
NJDEP GWQS (ug/L)	**6**	**3**	**6000**	**1**	**4**	**70**	**1300**	**5**	**100**	**40**	**2**

Results reported in µg/L or parts per billion. Shaded cells indicate values that exceed the GWQS. "n" = population size in the statistical analysis. As a conservative measure, non-detectable results were not included in the statistical analysis, and thus the population size may be biased low when compared to the total number of data points. * Due to possible laboratory inaccuracies, the 90th Percentile Analysis was not used in developing sampling recommendations for these parameters.

90th Percentile Values Meet GWQS:

The 90th percentile values for barium, chromium, copper, nickel, and selenium are below their respective GWQS.

Note that due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Mean Values, or Adjusted Mean Values, Meet GWQS:

The mean value for cadmium is below its GWQS.

The adjusted mean values for arsenic and beryllium are below their respective GWQS.

Recommendations:

In consideration of the above, the following sampling protocol is recommended for this site:

1. Selenium and Thallium - Due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Evaluation of the 4th Quarter 2010 and 1st Quarter 2011 sampling should be performed to determine compliance with the GWQS. If exceedances of the GWQS are identified, the sampling protocol specified under item 3 below should be followed.

2. With the exception of selenium and thallium (addressed above), no further sampling/analysis is recommended for metals with 90th percentile values below their respective GWQS.

3. For remaining metals, the collection of ground water samples using the following sampling protocol is recommended.

Collection of samples on a semiannual basis, targeting the times of the year typically exhibiting elevated precipitation amounts (generally 2nd and 4th quarters).

For future sampling events, raw and filtered water sample pairs should be collected from select wells (identified below), to evaluate the input from sample turbidity. Samples should be analyzed by a NJ certified laboratory. Slow-purge methodology should be followed for all sampling events which include metals analyses. Refer to the Concentration Ranking and Monitoring Well Selection Protocol described below.

Concentration Ranking and Monitoring Well Selection Protocol

For the specified sampling events, the monitoring wells recommended for sampling were selected with a bias towards those wells demonstrating the highest concentrations as follows.

For the available data from 4th Quarter 2008 through 3rd Quarter 2010, the highest observed concentrations for the site monitoring wells were ranked for each metal of concern. For larger sites, such as landfills, the highest four concentrations were listed; for smaller sites, the highest two concentrations were deemed adequate. Concentration Rankings and Recommended Well Sampling are summarized in Table 2 (attached).

Based on the specified protocol, monitoring wells 699MW01, 699MW02, 699MW04, 699MW05, 699MW06, 699MW08, 699MW15, 699RW03, 699RW05, 699RW11, and 616MW01 are recommended for sampling with laboratory analysis for antimony, arsenic, beryllium, cadmium, and lead, along with selenium and thallium as required.

Table 1. Summary of Select Metal Concentrations in Groundwater from March 2010 to September 2010 at Site 699

Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)				6	3	6000	1	4	70	1300	5	100	40	2
MW08	LF1 (1)	03/24/10	10105.06	***9.45***			0.885	3.16				42.9		
MW05	LF1 (1)	03/24/10	10105.04	5.38	1.76				1.87			4.49		
MW05	LF(1)	03/24/10	10105.03	***9.89***	0.84	59.5			1.77	9.08		4.17		
MW12	LF1 (1)	03/24/10	10105.05	5.04			***1.03***	1.68				37.5		
MW01	699MW01	03/25/10	10108.06	5.65	***4.49***		0.428	2.13				9.24		
MW15	699MW15	03/25/10	10108.04		***4.64***				32.9		***31.1***	8.68		
MW15	Duplicate	03/25/10	10108.03		***4.25***		0.26		53.8		***19.7***	6.39		
MW02	699MW02	03/26/10	10109.04		***4.64***			1.19				5.82		
MW02	MW02	03/26/10	10109.03	***7.2***	0.67			0.938				5.25		
MW04	LF (1)	03/26/10	10109.05	***7.88***	1.11		***1.46***	***7.09***				46.7		
MW16	LF1 (1)	03/26/10	10109.07				0.654					27.5		
MW06*	699MW06	03/26/10	10109.06	***7.69***	***10.16***		0.819	1.84	***104***		***8.68***	18.7		
MW09	LF1 (1)	03/26/10	10109.08		0.65		***1.02***		2.48			10.7		
RW03	699RW03	03/31/10	10116.01	5.94		11.4	0.063	0.548	5.28	12		4.35		
RW11*	699RW11	03/31/10	10116.02				***2.46***	***17.7***			2.85	***365***		
MW02	699 MW02	06/15/10	10265.05	***7.15***	1.92		0.158	0.572			3.05	9.75		
MW12	699MW12	06/15/10	10265.07	***6.01***			***1.88***	1.75	1.3			49.4		
MW15	699MW15	06/15/10	10265.06		2.06		0.469	0.649	1.46		3.5	2.14		
MW06	699MW06	06/16/10	10268.08		2.2		0.066		7.27			4.11		
MW08	699MW08	06/16/10	10268.04	***10.5***			***2.46***	2.77				30.4		
MW08	Duplicate	06/16/10	10268.03	***12.3***	1.5		***2.51***	2.88			2.74	30.2		
MW04	699MW04	06/16/10	10268.07	***9.37***	1.18		***1.33***	1.39				14		
MW01	699MW01	06/16/10	10268.06	***7.44***	***3.07***		***1.65***					12.4		
MW09	699MW09	06/16/10	10268.09		0.77		***1.31***	0.793				11.9		
MW05	699MW05	06/16/10	10268.05	***6.14***				0.579				1.37		
RW11*	699RW11	06/17/10	10271.06	***14***	2.34		***3.96***	***14.4***	22.8		***24.2***	***663***		
RW05	699RW05	06/17/10	10271.07	***7.85***	2.02		0.069		7.97			3.45		
MW16	Duplicate	06/17/10	10271.03		1.76		0.524		1.03			20.7		
MW16	LF2 (1)	06/17/10	10271.04		1.74		0.544		1.21			20.1		
RW03*	699RW03	06/17/10	10271.05	***7.49***	***19.42***	36.9	***10.5***	***13.5***	17.2		***29.3***	***1430***		
MW15	LF3(1)	09/16/10	10396.03	***8.17***	2.27	63.6	0.088		4.15	12.6		4.07		
MW08*	LF3(1)	09/16/10	10396.05	***14.6***	1.19	405	***3.31***	3.01				34.8		
MW05*	LF3(1)	09/16/10	10396.04	***10***	1.44	181	***3.59***	1.98		1.38		19.1		
MW02	LF3(1)	09/16/10	10396.01	***15.4***	2.77	15.1	0.157	1.44		2.11		12.2		
MW12	LF3(1)	09/17/10	10398.04	***6.33***		137	***1.98***	1.67				44.3		
MW12	LF3(1)	09/17/10	10398.03			128	***1.86***	1.07		2.89		42.7	1.8	
MW06	LF3(1)	09/17/10	10398.07	***13.2***	2.04	19.9		0.552	8.12	6.86		4.6	2.62	
MW16	LF3(1)	09/17/10	10398.09			19.7	0.682	0.981		2.31		25.6		
MW09	LF3(1)	09/17/10	10398.08	***6.6***		90.5	***1.35***	1.22	1.95			12.1		

Table 1. Summary of Select Metal Concentrations in Groundwater from March 2010 to September 2010 at Site 699

Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)				6	3	6000	1	4	70	1300	5	100	40	2
MW04	LF3(1)	09/17/10	10398.06	***12.8***	***4.18***	15.1	0.078	1.4				1.95	1.77	
MW01*	LF3(1)	09/17/10	10398.05	***6.88***	***11.79***	41.9	0.1	0.835		1.28		1.49	2.7	
RW11*	699RW11	09/27/10	10413.02	***17.6***	1.61	66.7	0.585	***4.39***		2.66		83.9		
RW03	699RW03	09/27/10	10413.01	***8.4***	1.74	111	0.86	3.71	2.21	12	2.82	16.4	2.07	
RW05*	699RW05	09/30/10	10420.01	***12.8***	***23.95***	35	0.214		5.08	15.6	4.12	3.37		
			Mean	9.2	3.9	84.5	1.4	3.2	14.2	6.7	12.0	72.9	2.2	
			90th percentile	14.0	9.6	154.6	2.8	7.1	35.0	12.5	29.3	48.6	2.7	
			Adjusted Mean	8.5	2.2	56.8	0.9	1.9	7.0	5.3	10.1	15.8	2.1	

Notes: Adjusted mean does not include metal concentrations that exceed the 90th Percentile

1) Concentrations bolded and italicized exceed applicable Ground Water Quality Standard (GWQS)
2) Concentrations bolded and italicized in red exceed applicable GWQS and the 90th Percentile
3) Concentrations highlighted in red cells exceed exceed the 90th Percentile and are deemed to be extreme outliers
4) Samples highlighted in yellow contain two or more metal concentrations that exceed the 90th Percentile
5) Blank cells indicate metals were not detected, not analyzed, or not reported due to instrument errors

M: Metal detected in method blank

* Sample contains two or more metals at concentrations exceeding the 90th Percentile

Table 2
Building 699
Concentration Rankings and Recommended Monitoring Well Sampling
4th Quarter 2008 - 3rd Quarter 2010

Well ID	Antimony	Arsenic	Beryllium	Cadmium	Lead	Selenium	Thallium
	NJDEP GWQS	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*
	6	*3*	*1*	*4*	*5*	*40*	*2*
699MW01		11.79				*	*
699MW02	15.4					*	*
699MW04				7.09		*	*
699MW05			3.59			*	*
699MW06	13.2	10.16				*	*
699MW08	14.6		3.31			*	*
699MW09							
699MW12							
699MW15					31.1	*	*
699MW16							
699RW03		19.42	10.5	13.5	29.3	*	*
699RW05		23.95			64.1	*	*
699RW11	17.6		3.96	17.7	24.2	*	*
616MW01				5.51		*	*

Notes:

Results reported in µg/L.

Within the reporting period, the four highest concentrations are listed for each parameter.

Shaded rows indicate monitoring wells recommended for metals analysis.

Metals were analyzed during the following quarters: 1st, 2nd, & 3rd Quarters 2010.

*Based on results from the 4th Quarter 2010 and 1st Quarter 2011 sampling events, analysis of Selenium and Thallium may be required.

SITE SPECIFIC EVALUATION
BUILDING 750

Site data and 90th Percentile calculations are provided on Table 1 (attached), and summarized as follows:

90th Percentile Analysis Summary
Building 750

750	Sb	As	Ba	Be	Cd	Cr	Cu	Pb	Ni	Se*	Tl*
Jan 05 - Aug 10	n=29	n=62	n=111	n=58	n=41	n=77	n=67	n=18	n=77	n=86	n=2
90th Percentile	10.64	21.05	156.00	0.89	5.43	40.62	21.14	49.26	19.70	28.58	5.28
Mean	6.72	9.47	85.59	0.82	1.90	26.80	18.84	24.85	8.35	16.98	3.62
Adjusted Mean	5.61	5.73	58.65	0.46	1.07	9.90	6.00	9.76	4.36	9.85	1.54
NJDEP GWQS (ug/L)	**6**	**3**	**6000**	**1**	**4**	**70**	**1300**	**5**	**100**	**40**	**2**

Results reported in µg/L or parts per billion. Shaded cells indicate values that exceed the GWQS. "n" = population size in the statistical analysis. As a conservative measure, non-detectable results were not included in the statistical analysis, and thus the population size may be biased low when compared to the total number of data points. * Due to possible laboratory inaccuracies, the 90th Percentile Analysis was not used in developing sampling recommendations for these parameters.

90th Percentile Values Meet GWQS:

The 90th percentile values for barium, beryllium, chromium, copper, nickel, and selenium are below their respective GWQS.

Note that due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Mean Values, or Adjusted Mean Values, Meet GWQS:

The mean value for cadmium is below its GWQS.

The adjusted mean values for antimony and thallium are below their respective GWQS.

Recommendations:

In consideration of the above, the following sampling protocol is recommended for this site:

1. Selenium and Thallium - Due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Evaluation of the 4th Quarter 2010 and 1st Quarter 2011 sampling should be performed to determine compliance with the GWQS. If exceedances of the GWQS are identified, the sampling protocol specified under item 3 below should be followed.

2. With the exception of selenium and thallium (addressed above), no further sampling/analysis is recommended for metals with 90th percentile values below their respective GWQS.

3. For remaining metals, the collection of ground water samples using the following sampling protocol is recommended.

Collection of samples on a semiannual basis, targeting the times of the year typically exhibiting elevated precipitation amounts (generally 2nd and 4th quarters).

For future sampling events, raw and filtered water sample pairs should be collected from select wells (identified below), to evaluate the input from sample turbidity. Samples should be analyzed by a NJ certified laboratory. Slow-purge methodology should be followed for all sampling events which include metals analyses. Refer to the Concentration Ranking and Monitoring Well Selection Protocol described below.

Concentration Ranking and Monitoring Well Selection Protocol

For the specified sampling events, the monitoring wells recommended for sampling were selected with a bias towards those wells demonstrating the highest concentrations as follows.

For the available data from 4th Quarter 2008 through 3rd Quarter 2010, the highest observed concentrations for the site monitoring wells were ranked for each metal of concern. For larger sites, such as landfills, the highest four concentrations were listed; for smaller sites, the highest two concentrations were deemed adequate. Concentration Rankings and Recommended Well Sampling are summarized in Table 2 (attached).

Based on the specified protocol, monitoring wells 750MW02, 750MW03, and 750MW04 are recommended for sampling with laboratory analysis for antimony, arsenic, cadmium, and lead, along with selenium and thallium as required.

Table 1. Summary of Select Metal Concentrations in Groundwater from January 2005 to August 2010 at Site 750

SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
** NJDEP Ground Water Quality Standards (µg/L)			6	3	6000	1	4	70	1300	5	100	40	2
750MW01	01/13/05	50023.04			108	0.65							
MW01 Duplicate	01/13/05	50023.03			106	0.665							
750MW03	01/13/05	50023.06			12.6			21.4					
750MW04	01/13/05	50023.07			13			13.1					
750MW02*	01/13/05	50023.05		*21.8*	441	*4.83*	*5.43*	*551*	106	*59.2*	36.6		
750MW01	04/15/05	50203.04			102	0.585							
750MW04	04/15/05	50203.07		*16.1*	83.6			*91.4*	20.1	*33.4*	7.2		
750MW03	04/15/05	50203.06		*14.6*	53.8	0.868		*126*	13.6	*22.7*	7.06		
750MW02	04/15/05	50203.05		*5.37*	75.3	0.697		*77.6*	15		6.3		
750MW01*	07/07/05	50339.04			236	*1.5*							
750MW02	07/07/05	50339.05			49				16				
750MW03	07/07/05	50339.06		*12*	13			28.4					
MW04 Duplicate	07/07/05	50339.03			28.6			19.2	7				
750MW04	07/07/05	50339.07			27.1			18.4	6				
750MW04	11/01/05	50571.07			24.9				7.31				
750MW03	11/01/05	50571.06			28.7								
750MW02	11/01/05	50571.05			86.4				12.3				
MW01 Duplicate*	11/01/05	50571.03			183	0.974					5.21		
750MW01*	11/01/05	50571.04			183	1					5.18		
750MW01	01/17/06	60032.04			111	0.785							
750MW04	01/17/06	60032.07			38.8								
MW04 Duplicate	01/17/06	60032.03			39.7								
750MW03	01/17/06	60032.06			19.7			31.8					
750MW02	01/17/06	60032.05		*12.6*	647	*3.04*	*5.97*	8.59		*45*	21.4		
750MW03	04/14/06	60155.06		*5.73*	10.5			44.1					
750MW04	04/14/06	60155.07	3.03		27.3			24.9	124	*14.4*			
750MW02	04/14/06	60155.05	2.63		13.4	0.356	0.378	31.3	36.5	*7.09*	5.21		
750MW01	04/14/06	60155.04	5.09		128	0.695		0.993			3.8		
MW01 Duplicate	04/14/06	60155.03	4.22		129	0.679					2.95		
750MW03	07/17/06	60320.06	2.86	*6*	14.4			19.4	3.71				
MW03 Duplicate	07/17/06	60320.03	4.78		14.2			19.2	3.78				
750MW04	07/17/06	60320.07	5.75	2.06	28.1			13.7	7.53				
750MW01	07/17/06	60320.04	*6.74*	2.26	138	0.511			2.8		3.11		
750MW02*	07/17/06	60320.05	*8.26*	*7.25*	197		0.779	3.46	30.8		23		
MW04 Duplicate	10/30/06	60471.03			24.3	0.201		5.3	3.12			9.44	
750MW02*	10/30/06	60471.05		*21.3*	275	0.346	*9.55*	12.6	11.2		57	10.9	*5.7*
750MW01	10/30/06	60471.04			111	0.743	0.623				2.07	5.13	
750MW04	10/30/06	60471.07			23	0.241	0.515	4.98	3.06		1.38	13.2	
750MW03	10/30/06	60471.06		2.41	17.5	0.247	0.457	14.6			1.21	11.9	

Table 1. Summary of Select Metal Concentrations in Groundwater from January 2005 to August 2010 at Site 750

SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
** NJDEP Ground Water Quality Standards (µg/L)			6	3	6000	1	4	70	1300	5	100	40	2
750MW01	02/28/07	70077.04			59.1	0.311						4.13	
MW01 Duplicate	02/28/07	70077.03			59.2	0.366			0.685			4.76	
750MW03	02/28/07	70077.06			13.1			14.9	2.36			8.76	
750MW02*	02/28/07	70077.05			264	0.859	2.94	1.7	22.7	1.74	40.6	8.91	
750MW04	02/28/07	70077.07			25.9			11.1	6.1		4.96	9.95	
750MW04	05/24/07	70191.07		*5.74*	24			9.86	3.02			11.5	
750MW02*	05/24/07	70191.05		*3.82*	207	0.752	2.3	1.05	17.9	2.05	32.7	7.41	
750MW01	05/24/07	70191.04			80.5	0.342	0.442	0.611	0.718		2.11	6.44	
MW01 Duplicate	05/24/07	70191.03		*3.42*	81.7	0.318	0.484	0.972	1.14		2.1	6.42	
750MW03	05/24/07	70191.06		*8.51*	16.9		0.412	27.9	12.3		0.743	7.78	
750MW04	07/26/07	70282.07			24.6			17.7	6.43			10.7	
750MW03	07/26/07	70282.06			122	0.467	1.42	0.942	7.6	0.712	20.3	5.6	
750MW01	07/26/07	70282.04			114	0.796	0.414	0.204			2.17	3.71	
MW01 Duplicate	07/26/07	70282.03	0.776		114	0.77	0.353	0.55			2.06		
750MW02	07/26/07	70282.05			13		1.17	1.68	3.9	1.01	0.726		
750MW04	01/02/08	80001.07			24.6		0.337	4.23	9.01		6.55	4.16	
750MW02	01/02/08	80001.05			77.7	0.228	0.68		9.31		11.7		
750MW01	01/02/08	80001.04			113	0.732	0.309		0.686		1.63	4.4	
750MW03	01/02/08	80001.06			18.6		0.403	3.22	3.08		1.22	4.55	
750MW01	04/30/08	80143.04			152	0.664	0.301	0.355			4.98		
MW01 Duplicate	04/30/08	80143.03		2.97	151	0.675	0.212	0.367			4.43		
750MW04	04/30/08	80143.07			22			9.59	4.64		2.17	10.5	
750MW03	04/30/08	80143.06		*4.26*	11.4			38.5	2.6		2.04	7.32	
750MW02	04/30/08	80143.05			82.3	0.228	0.671	1.88	60.1		11.4	4.45	
750MW03	08/12/08	80292.06		*6.54*	6.21			32.6	0.978			4.43	
750MW04	08/12/08	80292.07		*5.23*	17.7			19.9	1.45			6.55	
750MW02	08/12/08	80292.05			54.8		0.678	0.569	1.44		6.09		
MW01 Duplicate	08/12/08	80292.03		2.5	135	0.513	0.489	0.407			3.05		
750MW01	08/12/08	80292.04			138	0.505	0.373	0.41			2.97		
MW01 Duplicate	10/31/08	80396.03		*6.19*	125	0.768	0.288	15.1	3.52		4.08	4.79	
750MW03	10/31/08	80396.06		*3.71*	8.88		0.333	20	1.53		2.12	7.82	
750MW02*	10/31/08	80396.05	*10.5*	*18.2*	845	*12.9*	*13.6*	*367*	522	*232*	*110*		
750MW04	10/31/08	80396.07			28.8		0.418	3.93	2.43		0.864	7.04	
750MW03*	03/31/09	90135.06	*21.1*	*73*	16.7			9.83	19.7	*6.68*		*99.3*	
750MW04*	03/31/09	90135.07	*16.8*	*79.3*	31.9			2.73	6.32			*89.6*	
750MW02	03/31/09	90135.05	1.82	*8.63*	39.8			5.31	6.42	2.03	3.16	26.8	
750MW01	03/31/09	90135.04	*7.19*	*15.6*	94.5	0.342		1.18			2.25	28.9	
MW01 Duplicate	03/31/09	90135.03	*6.6*	*17.3*	96	0.368		2.21			1.9	27.3	
750MW02	05/22/09	90210.05	2.82	*8.11*	74.9	0.2	0.314	2.04	12.1	3.67	7.62		1.54

Table 1. Summary of Select Metal Concentrations in Groundwater from January 2005 to August 2010 at Site 750

SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
** NJDEP Ground Water Quality Standards (µg/L)			6	3	6000	1	4	70	1300	5	100	40	2
MW01 Duplicate	05/22/09	90210.03		***5.89***	65.6	0.327			0.839		2.42		
750MW03	05/22/09	90210.06	1.43	***18.8***	15.5			38.2	5.49		2.05	6.1	
750MW01	05/22/09	90210.04		***6.97***	63.1	0.318				1.75	2.02		
750MW04	05/22/09	90210.07		***22.4***	28.3			9.17	6.02	1.93	0.897	8.84	
750MW04*	08/28/09	90361.07	***6.94***	***28***	20.9			10.2	1.39			***63.7***	
750MW02	08/28/09	90361.05		***11.4***	74	0.192	***9.21***	14.7	6.86		7.83	16.2	
MW01 Duplicate	08/28/09	90361.03		***11.1***	77.7	0.251	2.36				3.2	24.1	
750MW01	08/28/09	90361.04		***11***	84.2	0.289	3.3				2.5	17.2	
750MW03*	08/28/09	90361.06	***7.72***	***25.7***	19.5			5.16	1.29		2.06	***74.4***	
750MW03	09/24/09	90397.06											
750MW02	09/24/09	90397.05											
750MW01	09/24/09	90397.04											
MW01 Duplicate	09/24/09	90397.03											
750MW04	09/24/09	90397.07											
MW05 Duplicate	11/03/09	90434.12											
750MW08	11/03/09	90434.11											
750MW07	11/03/09	90434.1											
750MW06	11/03/09	90434.09											
750MW05	11/03/09	90434.08											
750MW01	11/03/09	90434.04		1.66	97.1	0.497		4.97			5.59		
MW01 Duplicate	11/03/09	90434.03		2.22	97.2	0.408		3.1			4.94		
750MW02	11/03/09	90434.05		***3.84***	67.8	0.62	2.22	***80.1***	17.3	***5.5***	10.9		
750MW04	11/03/09	90434.07		1.31	21			6.38	1.22		1.46	21.1	
750MW03	11/03/09	90434.06	5.68	1.99	11.4			8.55	2.03		1.2	14	
750MW08	11/17/09	90447.07											
750MW07	11/17/09	90447.06											
750MW06	11/17/09	90447.05											
750MW05	11/17/09	90447.04											
MW05 Duplicate	11/17/09	90447.03											
MW01 Duplicate	01/27/10	10038.03		1.37	91.5	0.472					4.59		
750MW01	01/27/10	10038.04		1.79	86.4	0.449					3.61		
750MW03	01/27/10	10038.06		1.09	23.5			2.56			2.5		
750MW02	01/27/10	10038.05		***5.12***	128	0.402	2.65	6.54	15.8	***6.51***	14		
750MW04	01/27/10	10038.07	***7.21***		31.9						1.93		
LF1(1) Duplicate	05/04/10	10175.03		0.85	76.9	0.079					3.13		
LF1(1)	05/04/10	10175.04			72.5	0.049					2.3		
LF1(1)	05/04/10	10175.05	5.72	***3.15***	8.25			43.8	1.49		1.41		
750MW05	05/06/10	10176.06	***11.2***	2.43	62.1						4.55		
750MW06	05/06/10	10176.07	***9.05***	1.39	38.2						2.8		

Table 1. Summary of Select Metal Concentrations in Groundwater from January 2005 to August 2010 at Site 750

SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
** NJDEP Ground Water Quality Standards (µg/L)			6	3	6000	1	4	70	1300	5	100	40	2
750MW07	05/06/10	10176.08		0.72	109	0.442					19.3		
LF1(1) Duplicate	05/06/10	10176.03		1.06	157	0.324	1.62	1.29	3.99		16		
LF1(1)	05/06/10	10176.04		1.24	156	0.31	1.82	1.19	3.33		15.5		
LF1(1)	05/06/10	10176.05	***6.26***	2.13	15.2			2.72	1.33		0.911		
LF2(1)	08/18/10	10350.05	***9.15***	2.16	17.3			5.81	2.47				
LF2(1)	08/18/10	10350.06		1.61	107	0.143	0.641				4.16		
LF2(1)	08/18/10	10350.07		0.95	96.5	0.211	1.12		5.31		10.3		
LF2(1) Duplicate	08/18/10	10350.03	***7.33***	2.67	16.1			3.81	1.95		0.637		
LF2(1)	08/18/10	10350.04	***6.25***	2.4	17.1			3.62	1.87		0.526		
		AVG	6.72	9.47	85.59	0.82	1.90	26.80	18.84	24.85	8.35	16.98	3.62
		90th Percentile	10.64	21.05	156.00	0.89	5.43	40.62	21.14	49.26	19.70	28.58	5.28
		Adjusted Mean	5.61	5.73	58.65	0.46	1.07	9.90	6.00	9.76	4.36	9.85	1.54

Notes:

Adjusted mean does not include metal concentrations that exceed the 90th Percentile

1) Concentrations bolded and italicized exceed applicable Ground Water Quality Standard (GWQS)

2) Concentrations bolded and italicized in red exceed applicable GWQS and the 90th Percentile

3) Concentrations highlighted in red cells exceed exceed the 90th Percentile and are deemed to be extreme outliers

4) Samples highlighted in yellow contain two or more metal concentrations that exceed the 90th Percentile

5) Blank cells indicate metals were not detected, not analyzed, or not reported due to instrument errors

M: Metal detected in method blank

* Sample contains two or more metals at concentrations exceeding the 90th Percentile

Table 2
Building 750
Concentration Rankings and Recommended Monitoring Well Sampling
4th Quarter 2008 - 3rd Quarter 2010

Well ID	Antimony	Arsenic	Cadmium	Lead	Selenium	Thallium
	NJDEP GWQS	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*
	6	*3*	*4*	*5*	*40*	*2*
750MW01						
750MW02			13.6	232	*	*
750MW03	21.1	73		6.68	*	*
750MW04	16.8	79.3			*	*
750MW05						
750MW06						
750MW07						
750MW08						

Notes:

Results reported in µg/L.

Within the reporting period, the two highest concentrations are listed for each parameter.

Shaded rows indicate monitoring wells recommended for metals analysis.

Metals were analyzed during the entire reporting period, 4th Quarter 2008 through 3rd Quarter 2010.

*Based on results from the 4th Quarter 2010 and 1st Quarter 2011 sampling events, analysis of Selenium and Thallium may be required.

SITE SPECIFIC EVALUATION
BUILDING 812 (FTMM-64)

Site data and 90th Percentile calculations are provided on Table 1 (attached), and summarized as follows:

90th Percentile Analysis Summary
Building 812

812	Sb	As	Ba	Be	Cd	Cr	Cu	Pb	Ni	Se*	Tl*
May 10 - Aug 10	n=18	n=14	n=20	n=9	n=7	n=0	n=13	n=3	n=18	n=0	n=0
90th Percentile	11.88	4.85	185.30	1.57	29.82	NR	10.51	4.06	34.20	NR	NR
Mean	8.97	1.88	83.62	0.91	10.76	NR	4.61	3.37	14.24	NR	NR
Adjusted Mean	8.51	1.23	59.08	0.83	3.56	NR	2.99	2.95	9.92	NR	NR
NJDEP GWQS (ug/L)	**6**	**3**	**6000**	**1**	**4**	**70**	**1300**	**5**	**100**	**40**	**2**

Results reported in µg/L or parts per billion. Shaded cells indicate values that exceed the GWQS. "n" = population size in the statistical analysis. As a conservative measure, non-detectable results were not included in the statistical analysis, and thus the population size may be biased low when compared to the total number of data points. * Due to possible laboratory inaccuracies, the 90th Percentile Analysis was not used in developing sampling recommendations for these parameters.

90th Percentile Values Meet GWQS:

The 90th percentile values for barium, copper, lead, and nickel are below their respective GWQS.

Note that due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Mean Values, or Adjusted Mean Values, Meet GWQS:

The mean values for arsenic and beryllium are below their respective GWQS.

The adjusted mean value for cadmium is below its GWQS.

Recommendations:

In consideration of the above, the following sampling protocol is recommended for this site:

1. Selenium and Thallium - Due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Evaluation of the 4th Quarter 2010 and 1st Quarter 2011 sampling should be performed to determine compliance with the GWQS. If exceedances of the GWQS are identified, the sampling protocol specified under item 3 below should be followed.

2. With the exception of selenium and thallium (addressed above), no further sampling/analysis is recommended for metals with 90th percentile values below their respective GWQS.

3. For remaining metals, the collection of ground water samples using the following sampling protocol is recommended.

Collection of samples on a semiannual basis, targeting the times of the year typically exhibiting elevated precipitation amounts (generally 2nd and 4th quarters).

For future sampling events, raw and filtered water sample pairs should be collected from select wells (identified below), to evaluate the input from sample turbidity. Samples should be analyzed by a NJ certified laboratory. Slow-purge methodology should be followed for all sampling events which include metals analyses. Refer to the Concentration Ranking and Monitoring Well Selection Protocol described below.

Concentration Ranking and Monitoring Well Selection Protocol

For the specified sampling events, the monitoring wells recommended for sampling were selected with a bias towards those wells demonstrating the highest concentrations as follows.

For the available data from 4th Quarter 2008 through 3rd Quarter 2010, the highest observed concentrations for the site monitoring wells were ranked for each metal of concern. For larger sites, such as landfills, the highest four concentrations were listed; for smaller sites, the highest two concentrations were deemed adequate. Concentration Rankings and Recommended Well Sampling are summarized in Table 2 (attached).

Based on the specified protocol, monitoring wells 812MW01, 812MW04, 812MW05, 812MW08, and, 812MW14 are recommended for sampling with laboratory analysis for antimony, arsenic, beryllium, and cadmium, along with selenium and thallium as required.

Table 1. Summary of Select Metal Concentrations in Groundwater from May 2010 to August 2010 at Site 812

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	1300	5	100	40	2
812	MW07	LF1(1)	05/11/10	10186.07	5.97	1.61	154	0.483				38.4		
812	MW06	LF1(1) Duplicate	05/11/10	10186.03	***7.91***		96.5	0.462				17.8		
812	MW06	LF1(1)	05/11/10	10186.04			97	0.481				17.6		
812*	MW08	LF1(1)	05/11/10	10186.05	***12.3***	1.1	90.6	***1.34***	***54***	3.22	2.48	15.5		
812	MW14	LF1(1)	05/11/10	10186.06			27.5		***13.7***			1.32		
812	MW02	LF1(1)	05/13/10	10191.05	***9.56***	1.41	17							
812	MW05	LF1(1)	05/13/10	10191.06	***6.29***		287	***1.1***		8.54		31.9		
812	MW01	LF1(1)	05/13/10	10191.04	***11.7***	1.24	7.68			1.09		1.15		
812	MW04	LF1(1)	05/13/10	10191.07	***8.73***	***3.34***	23.2			16.1		1.06		
812	MW01	LF1(1) Duplicate	05/13/10	10191.03	***6.21***	0.78	6.78					0.855		
812	MW02	LF2(1)	07/28/10	10323.05	***9.96***	1.36	19.1			1.71				
812	MW06	LF2(1)	07/28/10	10323.07	*7*		102	0.5		2		17		
812	MW08	LF2(1)	07/28/10	10323.06	***8.69***	0.63	108	***1.59***	3.09	3.89	3.41	16.1		
812	MW01	LF2(1)	07/28/10	10323.04	***11***	0.91	8.6			3		1		
812	MW01	LF2(1) Duplicate	07/28/10	10323.03	***8.04***	***6.04***	6.84					0.712		
812*	MW07	LF2(1)	08/03/10	10326.05	***7.94***	1.12	174	0.702	1.09	1.58	4.22	59.1		
812	MW05	LF2(1)	08/03/10	10326.06	***8.09***		322	***1.56***		4.5		32.4		
812*	MW04	LF2(1)	08/03/10	10326.07	***13***	***5.49***	34.7		1.1	11		2.46		
812	MW14	LF2(1) Duplicate	08/03/10	10326.03	***9.31***	0.65	45.7		1.15	1.76		1		
812	MW14	LF2(1)	08/03/10	10326.04	***9.83***	0.65	44.2		1.22	1.55		0.928		
				Mean	8.97	1.88	83.62	0.91	10.76	4.61	3.37	14.24		
				90th Percentile	11.88	4.85	185.30	1.57	29.82	10.51	4.06	34.20		
				Adjusted Mean	8.51	1.23	59.08	0.83	3.56	2.99	2.95	9.92		

Notes: Adjusted mean does not include metal concentrations that exceed the 90th Percentile

1) Concentrations bolded and italicized exceed applicable Ground Water Quality Standard (GWQS)
2) Concentrations bolded and italicized in red exceed applicable GWQS and the 90th Percentile
3) Concentrations highlighted in red cells exceed exceed the 90th Percentile and are deemed to be extreme outliers
4) Samples highlighted in yellow contain two or more metal concentrations that exceed the 90th Percentile
5) Blank cells indicate metals were not detected, not analyzed, or not reported due to instrument errors

M: Metal detected in method blank

* Sample contains two or more metals at concentrations exceeding the 90th Percentile

Table 2
Building 812
Concentration Rankings and Recommended Monitoring Well Sampling
4th Quarter 2008 - 3rd Quarter 2010

Well ID	Antimony	Arsenic	Beryllium	Cadmium	Selenium	Thallium
	NJDEP GWQS	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*
	6	*3*	*1*	*4*	*40*	*2*
812MW01		6.04			*	*
812MW02						
812MW04	13	5.49			*	*
812MW05			1.56		*	*
812MW06						
812MW07						
812MW08	12.3		1.59	54	*	*
812MW14				13.7	*	*

Notes:

Results reported in µg/L.

Within the reporting period, the two highest concentrations are listed for each parameter.

Shaded rows indicate monitoring wells recommended for metals analysis.

Metals were analyzed during the following quarters: 2nd & 3rd Quarters 2010.

*Based on results from the 4th Quarter 2010 and 1st Quarter 2011 sampling events, analysis of Selenium and Thallium may be required.

SITE SPECIFIC EVALUATION
BUILDING 886 (FTMM-66)

Site data and 90th Percentile calculations are provided on Table 1 (attached), and summarized as follows:

90th Percentile Analysis Summary
Building 886

886	Sb	As	Ba	Be	Cd	Cr	Cu	Pb	Ni	Se*	Tl*
Feb 10 - Aug 10	n=26	n=37	n=46	n=30	n=28	n=29	n=33	n=18	n=40	n=0	n=0
90th Percentile	11.40	7.59	123.00	0.24	2.78	14.72	18.34	6.25	25.74	NR	NR
Mean	8.53	3.96	38.21	0.13	1.53	6.81	9.52	4.50	7.55	NR	NR
Adjusted Mean	8.01	3.27	26.24	0.11	1.16	5.00	7.37	4.02	4.86	NR	NR
NJDEP GWQS (ug/L)	**6**	**3**	**6000**	**1**	**4**	**70**	**1300**	**5**	**100**	**40**	**2**

Results reported in µg/L or parts per billion. Shaded cells indicate values that exceed the GWQS. "n" = population size in the statistical analysis. As a conservative measure, non-detectable results were not included in the statistical analysis, and thus the population size may be biased low when compared to the total number of data points. * Due to possible laboratory inaccuracies, the 90th Percentile Analysis was not used in developing sampling recommendations for these parameters.

90th Percentile Values Meet GWQS:

The 90th percentile values for barium, beryllium, cadmium, chromium, copper, and nickel are below their respective GWQS.

Note that due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Mean Values, or Adjusted Mean Values, Meet GWQS:

The mean value for lead is below its GWQS.

Recommendations:

In consideration of the above, the following sampling protocol is recommended for this site:

1. Selenium and Thallium - Due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Evaluation of the 4th Quarter 2010 and 1st Quarter 2011 sampling should be performed to determine compliance with the GWQS. If exceedances of the GWQS are identified, the sampling protocol specified under item 3 below should be followed.

2. With the exception of selenium and thallium (addressed above), no further sampling/analysis is recommended for metals with 90th percentile values below their respective GWQS.

3. For remaining metals, the collection of ground water samples using the following sampling protocol is recommended.

Collection of samples on a semiannual basis, targeting the times of the year typically exhibiting elevated precipitation amounts (generally 2nd and 4th quarters).

For future sampling events, raw and filtered water sample pairs should be collected from select wells (identified below), to evaluate the input from sample turbidity. Samples should be analyzed by a NJ certified laboratory. Slow-purge methodology should be followed for all sampling events which include metals analyses. Refer to the Concentration Ranking and Monitoring Well Selection Protocol described below.

Concentration Ranking and Monitoring Well Selection Protocol

For the specified sampling events, the monitoring wells recommended for sampling were selected with a bias towards those wells demonstrating the highest concentrations as follows.

For the available data from 4th Quarter 2008 through 3rd Quarter 2010, the highest observed concentrations for the site monitoring wells were ranked for each metal of concern. For larger sites, such as landfills, the highest four concentrations were listed; for smaller sites, the highest two concentrations were deemed adequate. Concentration Rankings and Recommended Well Sampling are summarized in Table 2 (attached).

Based on the specified protocol, monitoring wells 886MW02, 886MW03, 886RW01, 886RW02, and 886RW06 are recommended for sampling with laboratory analysis for antimony, arsenic, and lead, along with selenium and thallium as required.

Table 1. Summary of Select Metal Concentrations in Groundwater from February 2010 to August 2010 at Site 886

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100
886*	MW02	MW02 LF1(1)	2/22/2010	10063.03		2.73	141		*5.33*	1.68			34.3
886*	MW02	MW02 LF1(1)	2/22/2010	10063.04	*6.62*	2.8	130	0.0446	*5.53*	1.55			31.7
886	RW03	RW03 LF1(1)	2/22/2010	10063.06	*9.54*		128						3.04
886	RW06	RW06 LF1(1)	2/22/2010	10063.07		1.35	28.1			4.47	3.2		2.6
886	MW03	MW03 LF1(1)	2/22/2010	10063.05	*9.92*	1.77	47.2		1.72		9.33		1.81
886	MW05	MW05 LF1(1)	2/24/2010	10066.04			5.69	0.044		1.46			2.25
886	MW01	MW01 LF1(1)	2/24/2010	10066.05		*4*	15.7						1.9
886	MW05	MW05 LF1(1)	2/24/2010	10066.03			6.95			1.61			1.85
886	MW04	MW04 LF1(1)	2/24/2010	10066.06			4.38	0.091		5.52	4.38		1.66
886	RW05	RW05 LF1(1)	2/24/2010	10066.07	*6.21*		4.66	0.058		5.22	11.7		1.59
886	RW04	RW04 LF1(1)	3/2/2010	10068.06		*5.02*	28.5	0.104	1.36	5.99	6.12	3.7	6.01
886	RW01	RW01 LF1(1)	3/2/2010	10068.08		*4.39*	24.8		0.789	1.4	3.6		3.95
886	RW02	RW02 LF1(1)	03/02/10	10068.07		*4.46*	41	0.065		3.97	6.66		10.5
886	RW07	RW07 LF1(1)	03/02/10	10068.05		1.28	7.79		1.09	1.65	11.2		1.52
886	RW08	RW08 LF1(1)	03/02/10	10068.03		1.1	8.65		0.759		9.99		0.793
886	RW08	RW08 LF1(1)	03/02/10	10068.04		1.06	8.95		0.861		10.6		0.717
886	MW01	MW01 LF2(1)	05/24/10	10210.07	5.01	*9.1*	8.79	0.051	0.511		1.27	3.68	
886	MW05	MW05 LF2(1)	05/24/10	10210.06		2.78	3.83	0.053				2.82	
886	MW02	MW02 LF2(1)	05/24/10	10210.04	*10.6*	2.82	118	0.141	0.973			2.95	25.3
886	MW02	MW02 LF2(1)	05/24/10	10210.03	*12.1*	*3.01*	114	0.139	0.903		1.26		23.4
886	MW03	MW03 LF2(1)	05/24/10	10210.05	*9.76*	*5.86*	20.3	0.122	0.531	1.08	28.1	*5.09*	2.46
886	MW04	MW04 LF2(1)	05/24/10	10210.08	5.56	0.75	15	0.195					1.81
886	RW03	RW03 LF2(1)	05/25/10	10217.04	5.92	1.65	18.4						
886	RW03	RW03 LF2(1)	05/25/10	10217.03		1.61	17.6						
886	RW01	RW01 LF2(1)	05/25/10	10217.11	*8.67*	*10.75*	41.7	0.08	1.05	1.33		2.5	
886*	RW04	RW04 LF2(1)	05/25/10	10217.09		*6.6*	27.6	0.307	1.08	22.2	5.61	*5.56*	8.32
886	RW08	RW08 LF2(1)	05/25/10	10217.06	*8.41*	*3.59*	10.4	0.08	0.984	5.85	12	3.75	2.49
886	RW06	RW06 LF2(1)	05/25/10	10217.05		*4.14*	20.7	0.124		9.82	6.45	4.78	2.02
886	RW02	RW02 LF2(1)	05/25/10	10217.1	*8.76*	*9.68*	42.1	0.238	2.42	4.52	16.1	*5.42*	12.4
886	RW05	RW05 LF2(1)	05/25/10	10217.08		*5.28*	18.4	0.174	1.08	13.7	18.9	4.79	1.31
886	RW07	RW07 LF2(1)	05/25/10	10217.07	5.32	*3.16*	6.28	0.045	1.09	2.78	14.1		0.556
886	MW05	LF3(1)	08/04/10	10328.05		*3.57*	4.14				2.27		
886*	MW02	LF3(1) Duplicate	08/04/10	10328.03	*12.6*	*3.51*	144	0.092	1.21		1.27		31.2
886*	MW02	LF3(1)	08/04/10	10328.04	*10.5*	*3.01*	139	0.0887	1.28				29.7
886*	MW03	LF3(1)	08/05/10	10328.06	*10.7*	*9.07*	22.1	0.135	1.12	10.2	23	*7.09*	6.52
886*	RW08	LF3(1)	08/05/10	10328.08	*7.6*	*3.72*	22.8	0.261	1.39	18.8	30.4	*5.89*	5.43
886	MW04	LF3(1)	08/05/10	10328.11	5.1	1.2	34.8	0.229			1.31		5.28
886*	RW06	LF3(1)	08/05/10	10328.07		*5.3*	31.1	0.259		26.5	16.1	*9.54*	4.63
886	MW01	LF3(1)	08/05/10	10328.1	*9.32*	2.81	40.2				1.98		4.37
886	RW03	LF3(1)	08/05/10	10328.09	*6.76*	1.17	28			2.9	3.38		0.973

Table 1. Summary of Select Metal Concentrations in Groundwater from February 2010 to August 2010 at Site 886

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100
886	RW04	LF3(1)	08/09/10	10336.06			23.1	0.117	0.864	9.06	4.99	2.93	4.61
886	RW07	LF3(1)	08/09/10	10336.05	***7.46***		7.66	0.113	0.503	8.57	11.3	2.62	4.6
886	RW05	LF3(1)	08/09/10	10336.04	***6.83***	***6.5***	19.4	0.12	2.68	8.45	13.7		2.94
886	RW05	LF3(1) Duplicate	08/09/10	10336.03	***9.38***	***6***	21.6	0.124	3	9.68	15.4	2.91	2.87
886	RW02	LF3(1)	08/10/10	10336.07	***12.8***		45.7	0.085	2	5.72	5.82	4.96	11
886	RW01	LF3(1)	08/10/10	10336.08	***10.2***		59.8		0.812	1.87	2.68		1.61
				AVG	8.53	3.96	38.21	0.13	1.53	6.81	9.52	4.50	7.55
				90th Percentile	11.40	7.59	123.00	0.24	2.78	14.72	18.34	6.25	25.74
				Adjusted Mean	8.01	3.27	26.24	0.11	1.16	5.00	7.37	4.02	4.86

Notes: Adjusted mean does not include metal concentrations that exceed the 90th Percentile
1) Concentrations bolded and italicized exceed applicable Ground Water Quality Standard (GWQS)
2) Concentrations bolded and italicized in red exceed applicable GWQS and the 90th Percentile
3) Concentrations highlighted in red cells exceed exceed the 90th Percentile and are deemed to be extreme outliers
4) Samples highlighted in yellow contain two or more metal concentrations that exceed the 90th Percentile
5) Blank cells indicate metals were not detected, not analyzed, or not reported due to instrument errors
M: Metal detected in method blank
* Sample contains two or more metals at concentrations exceeding the 90th Percentile

Table 2
Building 886
Concentration Rankings and Recommended Monitoring Well Sampling
4th Quarter 2008 - 3rd Quarter 2010

Well ID	Antimony	Arsenic	Lead	Selenium	Thallium
	NJDEP GWQS	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*
	6	*3*	*5*	*40*	*2*
886MW01					
886MW02	12.6			*	*
886MW03			7.09	*	*
886MW04					
886MW05					
886RW01		10.75		*	*
886RW02	12.8	9.68		*	*
886RW03					
886RW04					
886RW05					
886RW06			9.54	*	*
886RW07					
886RW08					

Notes:

Results reported in µg/L.

Within the reporting period, the two highest concentrations are listed for each parameter.

Shaded rows indicate monitoring wells recommended for metals analysis.

Metals were analyzed during the following quarters: 1st, 2nd, & 3rd Quarters 2010.

*Based on results from the 4th Quarter 2010 and 1st Quarter 2011 sampling events, analysis of Selenium and Thallium may be required.

SITE SPECIFIC EVALUATION
BUILDING 2567 (FTMM-58)

Site data and 90th Percentile calculations are provided on Table 1 (attached), and summarized as follows:

90th Percentile Analysis Summary
Building 2567

2567	Sb	As	Ba	Be	Cd	Cr	Cu	Pb	Ni	Se*	Tl*
March 10 - Sept 10	n=17	n=20	n=27	n=19	n=3	n=6	n=17	n=3	n=18	n=4	n=0
90th Percentile	14.5	2.6	975.0	0.5	1.5	9.4	12.7	10.9	11.5	1.9	NR
Mean	9.7	1.8	347.6	0.2	1.1	5.7	4.7	8.4	7.1	1.7	NR
Adjusted Mean	8.7	1.3	251.5	0.2	1.0	4.5	3.4	6.6	6.3	1.7	NR
NJDEP GWQS (ug/L)	**6**	**3**	**6000**	**1**	**4**	**70**	**1300**	**5**	**100**	**40**	**2**

Results reported in µg/L or parts per billion. Shaded cells indicate values that exceed the GWQS. "n" = population size in the statistical analysis. As a conservative measure, non-detectable results were not included in the statistical analysis, and thus the population size may be biased low when compared to the total number of data points. * Due to possible laboratory inaccuracies, the 90th Percentile Analysis was not used in developing sampling recommendations for these parameters.

90th Percentile Values Meet GWQS:

The 90th percentile values for arsenic, barium, beryllium, cadmium, chromium, copper, nickel, and selenium are below their respective GWQS.

Note that due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Recommendations:

In consideration of the above, the following sampling protocol is recommended for this site:

1. Selenium and Thallium - Due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Evaluation of the 4th Quarter 2010 and 1st Quarter 2011 sampling should be performed to determine compliance with the GWQS. If exceedances of the GWQS are identified, the sampling protocol specified under item 3 below should be followed.

2. With the exception of selenium and thallium (addressed above), no further sampling/analysis is recommended for metals with 90th percentile values below their respective GWQS.

3. For remaining metals, the collection of ground water samples using the following sampling protocol is recommended.

Collection of samples on a semiannual basis, targeting the times of the year typically exhibiting elevated precipitation amounts (generally 2nd and 4th quarters).

For future sampling events, raw and filtered water sample pairs should be collected from select wells (identified below), to evaluate the input from sample turbidity. Samples should be analyzed by a NJ certified laboratory. Slow-purge methodology should be followed for all sampling events which include metals analyses. Refer to the Concentration Ranking and Monitoring Well Selection Protocol described below.

Concentration Ranking and Monitoring Well Selection Protocol

For the specified sampling events, the monitoring wells recommended for sampling were selected with a bias towards those wells demonstrating the highest concentrations as follows.

For the available data from 4th Quarter 2008 through 3rd Quarter 2010, the highest observed concentrations for the site monitoring wells were ranked for each metal of concern. For larger sites, such as landfills, the highest four concentrations were listed; for smaller sites, the highest two concentrations were deemed adequate. Concentration Rankings and Recommended Well Sampling are summarized in Table 2 (attached).

Based on the specified protocol, monitoring wells 2567MW01, 2567MW02, 2567MW03, and 2567MW05 are recommended for sampling with laboratory analysis for antimony and lead, along with selenium and thallium as required.

Table 1. Summary of Select Metal Concentrations in Groundwater from March 2010 to September 2010 at Site 2567

SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium
NJDEP Ground Water Quality Standards (µg/L)			6	3	6000	1	4	70	1300	5	100	40
MW02 LF1(1) Duplicate	3/4/2010	10069.03	6.13	0.91	407							
MW02 LF1(1)	3/4/2010	10069.04		1.01	377							
MW06 LF1(1)	3/4/2010	10069.06		0.89	67.1	0.558		3.18	1.35		9.8	
MW07 LF1(1)	3/4/2010	10069.07		0.64	223	0.218			4.06		15.6	
MW04 LF1(1)	3/4/2010	10069.05	5.51	2.37	74.3	0.378	0.581	1.78	1.39		11.4	
MW01 LF1(1)	3/4/2010	10069.08	6.88	1.14	845						1.02	
MW03 LF1(1)	3/5/2010	10073.05			195							
MW05 LF1(1) Duplicate	3/5/2010	10073.03		0.71	106	0.201	1.36		5.22		11.7	
MW05 LF1(1)	3/5/2010	10073.04			105	0.237	1.48		5.22		11.1	
MW02 LF2(1)	6/8/2010	10248.04	9.73	0.7	340	0.136						
MW02 LF2(1) Duplicate	6/8/2010	10248.03	9.89	1	339	0.149						
MW06 LF2(1)	6/8/2010	10248.06			64.5	0.499			1.21		8.18	
MW05 LF2(1)*	6/8/2010	10248.08		1.3	49.5	0.444		11.4	16.6	11.9	6.93	
MW07 LF2(1)	6/8/2010	10248.07	5.5	2.71	71.5	0.188			2.15		5.22	
MW04 LF2(1)	6/8/2010	10248.05	6.42	1.8	136	0.319					10.9	
MW03 LF2(1)	6/9/2010	10251.05	9.45		382	0.041						
MW01 LF2(1)	6/9/2010	10251.04	10.7		1120	0.059						
MW01 LF2(1) Duplicate	6/9/2010	10251.03	12.6	0.69	1110	0.065						
LF3(1)	9/15/2010	10392.07	7.47	8.2	172	0.043			2.39		9.89	1.43
LF3(1)	9/15/2010	10392.06		1.37	64.5	0.112		3.47	3.37		4.92	
LF3(1)	9/15/2010	10392.05	8.64	2.22	175	0.199			2.15		3.69	
LF3(1)*	9/15/2010	10392.08	16.5		1120				2.46		3.11	
LF3(1) Duplicate	9/15/2010	10392.03	11.1	1.06	443				2.32		1.63	1.8
LF3(1)	9/15/2010	10392.04	13.2	1.46	434				3.02		1.07	1.96
LF3(1)	9/16/2010	10395.05	18.7		885				1.54			
LF3(1)	9/16/2010	10395.04		2.57	41.5	0.357		7.39	13.1	7.02	6.07	1.74
LF3(1) Duplicate	9/16/2010	10395.03	7.31	2.41	38.1	0.332		6.77	12.5	6.19	5.34	
		Mean	9.7	1.8	347.6	0.2	1.1	5.7	4.7	8.4	7.1	1.7
		90th Percentile	14.5	2.6	975.0	0.5	1.5	9.4	12.7	10.9	11.5	1.9
		Adjusted Mean	8.7	1.3	251.5	0.2	1.0	4.5	3.4	6.6	6.3	1.7

Notes: Adjusted mean does not include metal concentrations that exceed the 90th Percentile

1) Concentrations bolded and italicized exceed applicable Ground Water Quality Standard (GWQS)

2) Concentrations bolded and italicized in red exceed applicable GWQS and the 90th Percentile

3) Concentrations highlighted in red cells exceed exceed the 90th Percentile and are deemed to be extreme outliers

4) Samples highlighted in yellow contain two or more metal concentrations that exceed the 90th Percentile

5) Blank cells indicate metals were not detected, not analyzed, or not reported due to instrument errors

M: Metal detected in method blank

* Sample contains two or more metals at concentrations exceeding the 90th Percentile

Table 2
Building 2567
Concentration Rankings and Recommended Monitoring Well Sampling
4th Quarter 2008 - 3rd Quarter 2010

Well ID	Antimony	Lead	Selenium	Thallium
	NJDEP GWQS	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*
	6	*5*	*40*	*2*
2567MW01	18.7		*	*
2567MW02		6.79	*	*
2567MW03	16.5		*	*
2567MW04				
2567MW05		59.9	*	*
2567MW06				
2567MW07				

Notes:

Results reported in µg/L.

Within the reporting period, the two highest concentrations are listed for each parameter.

Shaded rows indicate monitoring wells recommended for metals analysis.

Lead was analyzed during the following quarters: 4th Quarter 2008 through 3rd Quarter 2010.

Antimony was analyzed during the following quarters: 1st quarter through 3rd Quarter 2010.

*Based on results from the 4th Quarter 2010 and 1st Quarter 2011 sampling events, analysis of Selenium and Thallium may be required.

SITE SPECIFIC EVALUATION
M-2 Landfill (FTMM-02)

Site data and 90th Percentile calculations are provided on Table 1 (attached), and summarized as follows:

90th Percentile Analysis Summary
M-2 Landfill

M-2	Sb	As	Ba	Be	Cd	Cr	Cu	Pb	Ni	Se*	Tl*
March 09 - Sept 10	n=62	n=58	n=65	n=1	n=20	n=8	n=14	n=29	n=16	n=19	n=2
90th Percentile	22.6	74.1	275.4	0.0	1.65	0.81	3.47	10.94	3.40	112.2	1.70
Mean	14.0	24.1	111.5	0.0	0.96	0.54	1.81	5.49	1.40	86.5	1.18
Adjusted Mean	12.39	17.85	86.34	0.05	0.82	0.43	1.45	4.60	0.85	82.96	0.53
NJDEP GWQS (ug/L)	**6**	**3**	**6000**	**1**	**4**	**70**	**1300**	**5**	**100**	**40**	**2**

Results reported in µg/L or parts per billion. Shaded cells indicate values that exceed the GWQS. "n" = population size in the statistical analysis. As a conservative measure, non-detectable results were not included in the statistical analysis, and thus the population size may be biased low when compared to the total number of data points. * Due to possible laboratory inaccuracies, the 90th Percentile Analysis was not used in developing sampling recommendations for these parameters.

90th Percentile Values Meet GWQS:

The 90th percentile values for barium, beryllium, cadmium, chromium, copper, nickel, and thallium are below their respective GWQS.

Note that due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Mean Values, or Adjusted Mean Values, Meet GWQS:

The adjusted mean value for lead is below its GWQS.

Recommendations:

In consideration of the above, the following sampling protocol is recommended for this site:

1. Selenium and Thallium - Due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Evaluation of the 4th Quarter 2010 and 1st Quarter 2011 sampling should be performed to determine compliance with the GWQS. If exceedances of the GWQS are identified, the sampling protocol specified under item 3 below should be followed.

2. With the exception of selenium and thallium (addressed above), no further sampling/analysis is recommended for metals with 90th percentile values below their respective GWQS.

3. For remaining metals, the collection of ground water samples using the following sampling protocol is recommended.

Collection of samples on a semiannual basis, targeting the times of the year typically exhibiting elevated precipitation amounts (generally 2nd and 4th quarters).

For future sampling events, raw and filtered water sample pairs should be collected from select wells (identified below), to evaluate the input from sample turbidity. Samples should be analyzed by a NJ certified laboratory. Slow-purge methodology should be followed for all sampling events which include metals analyses. Refer to the Concentration Ranking and Monitoring Well Selection Protocol described below.

Concentration Ranking and Monitoring Well Selection Protocol

For the specified sampling events, the monitoring wells recommended for sampling were selected with a bias towards those wells demonstrating the highest concentrations as follows.

For the available data from 4th Quarter 2008 through 3rd Quarter 2010, the highest observed concentrations for the site monitoring wells were ranked for each metal of concern. For larger sites, such as landfills, the highest four concentrations were listed; for smaller sites, the highest two concentrations were deemed adequate. Concentration Rankings and Recommended Well Sampling are summarized in Table 2 (attached).

Based on the specified protocol, monitoring wells M2MW03, M2MW06, M2MW07, M2MW09, M2MW11, M2MW21, M2MW23, and M2MW24 are recommended for sampling with laboratory analysis for antimony, arsenic, and lead, along with selenium and thallium as required.

Table 1. Summary of Select Metal Concentrations in Groundwater from March 2009 to September 2010 at Site M-2

Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)				6	3	6000	1	4	70	1300	5	100	40	2
MW07	LF1(1)	03/28/09	90131.07	*18.5* M	84.3	85.7			M		5.47 M		85.6 M	M
MW11	LF1(1) Duplicate	03/28/09	90131.03	*15.8* M	66.1	28.1		0.344	M	0.9	14.4 M		84.9 M	M
MW06*	LF3(1)	03/28/09	90131.06	*23.5* M	74.1	95.4			M		3.11 M		117 M	M
MW11	LF1(1)	03/28/09	90131.05	*27* M	56.7	28.1			M	0.92	2.24 M		111 M	M
MW09*	LF3(1)	03/28/09	90131.04	*13.5* M	90.1	42.2			0.442 M	1.05	2.01 M		117 M	M
MW08	LF1(1)	03/30/09	90133.09	*21.9* M	62.7	121			M		7.38 M		96.3 M	M
MW21*	LF1(1)	03/30/09	90133.11	*30* M	81.5	324			M		13.1 M		78.2 M	M
MW13	LF1(1)	03/30/09	90133.04	*19.4* M	74.1	153			M		5.49 M		108 M	M
MW10	LF1(1)	03/30/09	90133.05	*19.8* M	70.4	56.8			M		4.78 M		102 M	M
MW12	LF1(1)	03/30/09	90133.06	*22* M	66	30.1			M	1.14	2.44 M		101 M	M
MW23	LF1(1) Duplicate	03/30/09	90133.03	*22.1* M	74	235			0.598 M		6.39 M		96.7 M	M
MW04	LF1(1)	03/30/09	90133.1	*18* M	56.9	74.7			0.538 M		6.55 M		85.6 M	M
MW03*	LF1(1)	03/30/09	90133.07	*28* M	101	96.1			0.395 M		4.59 M		102 M	M
MW23*	LF1(1)	03/30/09	90133.08	*26.3* M	93.9	227			0.365 M		10.7 M		84.2 M	M
MW24*	LF1(1)	03/30/09	90133.12	*26.8* M	71.9	279			0.346 M		11.9 M		76 M	M
MW05	LF1(1)	03/31/09	90137.04	*12.8* M	52	93.9			M		2.68 M		58.8	
MW22	LF1(1)	03/31/09	90137.06	*8.77* M	38.4	68.4			M		4.63 M		46.9	
MW02*	LF1(1) Duplicate	03/31/09	90137.03	*15.3* M	65.7	297			1.29 M		M		51.9	
MW02*	LF1(1)	03/31/09	90137.05	*20.3* M	65.3	285			0.353 M		7.16 M		41.2	
MW24	M2 MW24	06/19/09	90249.11											
MW09	MW09 LF4(1)	03/08/10	10075.07	5.73	1.04	56.9				M				
MW07	MW07 LF2(1)	03/08/10	10075.05	*6.06*		82.9				M				
MW10	MW10 LF2(1)	03/08/10	10075.08			27.1				M				
MW08	MW08 LF2(1)	03/08/10	10075.06			99.8				M				
MW05	MW05 LF2(1)	03/08/10	10075.04		1.44	149		0.677		M				
MW05	MW05 LF2(1)	03/08/10	10075.03		1.26	147		0.665		M		0.515		0.53
MW03	MW03 LF2(1)	03/09/10	10077.08	*6.21*	0.75	270		0.6		M				
MW06	MW06 LF4(1)	03/09/10	10077.06		0.66	205		0.614		M				
MW13	MW13 LF2(1)	03/09/10	10077.05		2.53	138				M				
MW12	MW12 LF2(1)	03/09/10	10077.04		0.69	30				M				
MW12	MW12 LF2(1)	03/09/10	10077.03			29.4				M				
MW02	MW02 LF2(1)	03/09/10	10077.07	5.19	1.05	266				M		5.64		
MW04	MW04 LF2(1)	03/10/10	10082.03			30.6							M	
MW04	MW04 LF2(1)	03/10/10	10082.04			51.8						0.786	M	
MW11	MW11 LF2(1)	03/10/10	10082.08	*7.22*		20.5						0.701	M	
MW22	MW22 LF2(1)	03/10/10	10082.09			58.4						0.634	M	
MW24	MW24 LF2(1)	03/10/10	10082.07										M	
MW23	MW23 LF2(1)	03/10/10	10082.06										M	
MW21	MW21 LF2(1)	03/10/10	10082.05										M	
MW07	MW07 LF3(1)	06/10/10	10259.07	*10.1*	0.9	131	M			M				
MW10	MW10 LF3(1)	06/10/10	10259.03	*12.7*	0.66	28	M			M				1.83
MW10	MW10 LF3(1)	06/10/10	10259.04	*7.21*	0.94	22.8	M			M				
MW08	MW08 LF3(1)	06/10/10	10259.06	*9.29*		67.4	M			M				
MW09	MW09 LF5(1)	06/10/10	10259.05	*6.82*		30.5	M			M		0.597		
MW06	MW06 LF5(1)	06/11/10	10261.06	*10.2*	1.01	125	M			M				

Table 1. Summary of Select Metal Concentrations in Groundwater from March 2009 to September 2010 at Site M-2

Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
MW03	MW03 LF3(1)	06/11/10	10261.07	***13***	0.71	74.7	M			M				
MW12	MW12 LF3(1)	06/11/10	10261.04	***6.79***	1.5	27.2	M			M				
MW12	MW12 LF3(1)	06/11/10	10261.03	***7.79***	0.7	26.6	M			M				
MW13	MW13 LF3(1)	06/11/10	10261.05	***8.58***	1.96	108	M			M				
MW21	MW21 LF3(1)	06/11/10	10261.08	***10.03***	1.3		M			M				
MW23	MW23 LF3(1)	06/11/10	10261.09	***10.4***	1.78		M			M				
MW05	MW05 LF3(1)	06/14/10	10264.04	***7.58***	1.94	115	M	0.991		M	2.74			
MW04	MW04 LF3(1)	06/14/10	10264.08	***8.09***	1.27	81	M			M				
MW11	MW11 LF3(1)	06/14/10	10264.09	***9.12***	0.93	26.1	M			M				
MW02	MW02 LF3(1)	06/14/10	10264.06	***9.56***	1.37	289	0.049 M	1.62		M	3.96	1.55		
MW22	MW22 LF3(1)	06/14/10	10264.05	***11.3***	0.94	71.2	M	0.802		M		1.55		
MW05	MW05 LF3(1)	06/14/10	10264.03	***10.4***	1.59	113	M	0.897		M		0.711		
MW24	MW24 LF3(1)	06/14/10	10264.07	***11.5***	0.83		M			M	2.85			
MW05	LF4(1) Duplicate	09/22/10	10404.03	***10.9***	1.26	86		0.822		1.56	3.19 M			
MW08	LF4(1)	09/22/10	10404.06	***13.1***		55.3		0.863		1.49	M			
MW05	LF4(1)	09/22/10	10404.04	***12***	1.35	88.2		0.981		1.58	M	0.953		
MW07	LF4(1)	09/22/10	10404.05	***12.6***		67.4		0.569		1.51	2.66 M	0.407		
MW09	LF6(1)	09/22/10	10404.07	***12.2***	6.82						M			
MW12	LF4(1)	09/23/10	10409.05	***11.1***	M	32.8								
MW10	LF4(1)	09/23/10	10409.04	***15.6***	0.87 M	29.1		0.503						
MW10	LF4(1) Duplicate	09/23/10	10409.03	***17.9***	M	29.9								
MW03*	LF4(1)	09/23/10	10409.08	***20.4***	2.91 M	137		0.529		4.02		5		
MW04	LF4(1)	09/23/10	10409.09	***11***	0.77 M	116		0.938		1.82		0.555		
MW13	LF4(1)	09/23/10	10409.06	***13.8***	1.57 M	111		1.04		1.45	3.84	0.452		
MW06	LF6(1)	09/23/10	10409.07	***10.3***	0.67 M									
MW22	LF4(1)	09/24/10	10410.09	***10.8***	M	77		1.32		1.54	2.56			
MW11	LF4(1)	09/24/10	10410.08	***15.4***	0.97 M	32.9								
MW21*	LF4(1)	09/24/10	10410.05	***22.6***	1.21 M	467		1.95		3.91	8.96	1.79		
MW24*	LF4(1)	09/24/10	10410.07	***16.7***	0.92 M	297		2.44		2.44	6.24	0.629		
MW02	LF4(1) Duplicate	09/24/10	10410.03	***11***	0.78 M									
MW23	LF4(1)	09/24/10	10410.06	***13.2***	1.18 M						3.75			
MW02	LF4(1)	09/24/10	10410.04	***14.4***	0.72 M						3.32			
			Mean	14.0	24.1	111.5	0.0	0.96	0.54	1.81	5.49	1.40	86.5	1.18
			90th Percentile	22.6	74.1	275.4	0.0	1.65	0.81	3.47	10.94	3.40	112.2	1.70
			Adjusted Mean	12.39	17.85	86.34	0.05	0.82	0.43	1.45	4.60	0.85	82.96	0.53

Adjusted mean does not include metal concentrations that exceed the 90th Percentile

Notes:
1) Concentrations bolded and italicized exceed applicable Ground Water Quality Standard (GWQS)
2) Concentrations bolded and italicized in red exceed applicable GWQS and the 90th Percentile
3) Concentrations highlighted in red exceed exceed the 90th Percentile and are deemed to be extreme outliers
4) Samples highlighted in yellow contain two or more metal concentrations that exceed the 90th Percentile
5) Blank cells indicate metals were not detected, not analyzed, or not reported due to instrument errors
M: Metal detected in method blank
* Sample contains two or more metals at concentrations exceeding the 90th Percentile

Table 2
M-2 Landfill
Concentration Rankings and Recommended Monitoring Well Sampling
4th Quarter 2008 - 3rd Quarter 2010

Well ID	Antimony	Arsenic	Lead	Selenium	Thallium
	NJDEP GWQS	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*
	6	*3*	*5*	*40*	*2*
M2MW02					
M2MW03	28	101		*	*
M2MW04					
M2MW05					
M2MW06	117			*	*
M2MW07		84.3		*	*
M2MW08					
M2MW09		90.1		*	*
M2MW10					
M2MW11	27		14.4	*	*
M2MW12					
M2MW13					
M2MW21	30		13.1	*	*
M2MW22					
M2MW23		93.9	10.7	*	*
M2MW24			11.9	*	*

Notes:
Results reported in µg/L.
Within the reporting period, the four highest concentrations are listed for each parameter.
Shaded rows indicate monitoring wells recommended for metals analysis.
Metals were analyzed during the following quarters: 1st Quarter 2009; 1st, 2nd, & 3rd Quarters 2010.
*Based on results from the 4th Quarter 2010 and 1st Quarter 2011 sampling events, analysis of Selenium and Thallium may be required.

SITE SPECIFIC EVALUATION
M-3 Landfill (FTMM-03)

Site data and 90th Percentile calculations are provided on Table 1 (attached), and summarized as follows:

90th Percentile Analysis Summary
M-3 Landfill

M-3	Sb	As	Ba	Be	Cd	Cr	Cu	Pb	Ni	Se	Tl
June 09 - Sept 10	n=21	n=16	n=32	n=13	n=21	n=3	n=23	n=16	n=30	n=0	n=1
90th Percentile	17.80	2.27	347.50	0.18	7.75	4.74	10.75	6.21	79.77	NR	0.79
Mean	13.09	1.41	203.01	0.13	3.38	3.15	5.46	4.31	20.36	NR	0.79
Adjusted Mean	12.40	1.13	160.94	0.12	2.47	2.11	3.41	3.89	13.45	NR	NA
NJDEP GWQS (ug/L)	**6**	**3**	**6000**	**1**	**4**	**70**	**1300**	**5**	**100**	**40**	**2**

Results reported in µg/L or parts per billion. Shaded cells indicate values that exceed the GWQS. "n" = population size in the statistical analysis. As a conservative measure, non-detectable results were not included in the statistical analysis, and thus the population size may be biased low when compared to the total number of data points. * Due to possible laboratory inaccuracies, the 90th Percentile Analysis was not used in developing sampling recommendations for these parameters.

90th Percentile Values Meet GWQS:

The 90th percentile values for arsenic, barium, beryllium, chromium, copper, nickel, and thallium are below their respective GWQS.

Note that due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Mean Values, or Adjusted Mean Values, Meet GWQS:

The mean values for cadmium and lead are below their respective GWQS.

Recommendations:

In consideration of the above, the following sampling protocol is recommended for this site:

1. Selenium and Thallium - Due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Evaluation of the 4th Quarter 2010 and 1st Quarter 2011 sampling should be performed to determine compliance with the GWQS. If exceedances of the GWQS are identified, the sampling protocol specified under item 3 below should be followed.

2. With the exception of selenium and thallium (addressed above), no further sampling/analysis is recommended for metals with 90th percentile values below their respective GWQS.

3. For remaining metals, the collection of ground water samples using the following sampling protocol is recommended.

Collection of samples on a semiannual basis, targeting the times of the year typically exhibiting elevated precipitation amounts (generally 2nd and 4th quarters).

For future sampling events, raw and filtered water sample pairs should be collected from select wells (identified below), to evaluate the input from sample turbidity. Samples should be analyzed by a NJ certified laboratory. Slow-purge methodology should be followed for all sampling events which include metals analyses. Refer to the Concentration Ranking and Monitoring Well Selection Protocol described below.

Concentration Ranking and Monitoring Well Selection Protocol

For the specified sampling events, the monitoring wells recommended for sampling were selected with a bias towards those wells demonstrating the highest concentrations as follows.

For the available data from 4th Quarter 2008 through 3rd Quarter 2010, the highest observed concentrations for the site monitoring wells were ranked for each metal of concern. For larger sites, such as landfills, the highest four concentrations were listed; for smaller sites, the highest two concentrations were deemed adequate. Concentration Rankings and Recommended Well Sampling are summarized in Table 2 (attached).

Based on the specified protocol, monitoring wells M3MW04, M3MW05, M3MW08, and M3MW09 are recommended for sampling with laboratory analysis for antimony, cadmium, and lead, along with selenium and thallium as required.

Table 1. Summary of Select Metal Concentrations in Groundwater from June 2009 to September 2010 at Site M-3

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	2
M3	MW04	LF1(1)	03/11/10	10086.04			65.2	0.181	0.781				22.1	
M3	MW04	LF1(1) Duplicate	03/11/10	10086.03			64.8	0.197					21.6	
M3	MW06	LF1(1)	03/11/10	10086.06			11.8			2.71			2.44	
M3	MW08	LF1(1)	03/11/10	10086.05			185		0.588				1.55	
M3	MW11	LF1(1)	03/16/10	10091.04			169				6.73		79.5	
M3	MW11	LF1(1) Duplicate	03/16/10	10091.03			141				8.25		64.1	
M3	MW09	LF1(1)	03/16/10	10091.07			281		1.54		11	2.56	4.66	
M3*	MW05	LF1(1)	03/16/10	10091.06	5.8	2.37	64			5.25	2.07	2.59	3.86	
M3	MW10	LF1(1)	03/16/10	10091.05			242						1.35	
M3	MW07	LF1(1)	03/16/10	10091.08	10.5		116						1.24	
M3	MW08	LF2(1)	06/18/10	10273.05	13.8		210	0.042	1.51		2.69	4.43		
M3	MW04	LF2(1) Duplicate	06/18/10	10273.03	10.6	0.96	243	0.159	7.75			3.68	83.3	
M3	MW04	LF2(1)	06/18/10	10273.04	10	1.53	224	0.171	7.07				77.8	
M3	MW07	LF2(1)	06/18/10	10273.07	15.8		145		0.616		2.38	3.34	2.26	
M3	MW06	LF2(1)	06/18/10	10273.06			11.9			1.5	1		2.22	
M3	MW10	LF2(1)	06/24/10	10285.05	13.7		527	0.125	3.56		4.49	6.17		
M3	MW11	LF2(1) Duplicate	06/24/10	10285.03	11.3	0.72	184	0.119	2.78		4.31	3.08	4.61	0.79
M3	MW11	LF2(1)	06/24/10	10285.04	9.9		189	0.143	2.32		4.58	3.41	4.1	
M3	MW09	LF2(1)	06/24/10	10285.07	9.34		280	0.134	4.28		9.77	4.08	0.889	
M3	MW05	LF2 (1)	06/24/10	10285.06	9.81		237	0.119	2.69		4.42	4.53	0.503	
M3	MW02	MW02 Duplicate	08/20/10	10355.03		1.31	36.9				21.7		26.4	
M3	MW02	M3MW02	08/20/10	10355.04		0.78	37.8	0.054			24.7		25.7	
M3	MW07A	M3MW07A	08/20/10	10355.05	12.9	1.82	96.3		0.595		1.89		1.26	
M3*	MW04	LF3(1) Duplicate	09/07/10	10377.03	12.7	1.09	302	0.1	12			3.37	82.3	
M3*	MW04	LF3(1)	09/07/10	10377.04	18.8	0.68	301	0.116	12		1.16		82.2	
M3	MW06	LF3(1)	09/07/10	10377.06	10.9	2.17	10.6		0.575		1.88	3.66	4.58	
M3*	MW08	LF3(1)	09/07/10	10377.05	16.9	4.31	485		3.68		2.64	8.37	3.08	
M3	MW11	LF3(1)	09/07/10	10377.07	16.4	0.87	201		0.752		1.3		2.23	
M3	MW07	LF3(1)	09/07/10	10377.11	17.8	0.72	150				1.19		1.52	
M3	MW09	LF3(1)	09/07/10	10377.1	10.6	0.67	307		1.9		3.25	3.29	1.42	
M3*	MW05	LF3 (1)	09/07/10	10377.09	20.4	1.44	352		1.89		2.1	6.21	1.1	
M3	MW10	LF3(1)	09/07/10	10377.08	16.9	1.04	626		2.01		2.18	6.2	0.952	

Table 1. Summary of Select Metal Concentrations in Groundwater from June 2009 to September 2010 at Site M-3

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	2
				Mean	13.09	1.41	203.01	0.13	3.38	3.15	5.46	4.31	20.36	0.79
				90th Percentile	17.80	2.27	347.50	0.18	7.75	4.74	10.75	6.21	79.77	0.79
				Adjusted Mean	12.40	1.13	160.94	0.12	2.47	2.11	3.41	3.89	13.45	

Notes: Adjusted mean does not include metal concentrations that exceed the 90th Percentile

1) Concentrations bolded and italicized exceed applicable Ground Water Quality Standard (GWQS)
2) Concentrations bolded and italicized in red exceed applicable GWQS and the 90th Percentile
3) Concentrations highlighted in red cells exceed exceed the 90th Percentile and are deemed to be extreme outliers
4) Samples highlighted in yellow contain two or more metal concentrations that exceed the 90th Percentile
5) Blank cells indicate metals were not detected, not analyzed, or not reported due to instrument errors

M: Metal detected in method blank

* Sample contains two or more metals at concentrations exceeding the 90th Percentile

Table 2
M-3 Landfill
Concentration Rankings and Recommended Monitoring Well Sampling
4th Quarter 2008 - 3rd Quarter 2010

Well ID	Antimony	Cadmium	Lead	Selenium	Thallium
	NJDEP GWQS	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*
	6	*4*	*5*	*40*	*2*
M3MW03					
M3MW04	18.8	12		*	*
M3MW05	20.4		6.21	*	*
M3MW06					
M3MW07					
M3MW07A					
M3MW08			8.37	*	*
M3MW09		4.28		*	*
M3MW10					
M3MW11					

Notes:

Results reported in µg/L.

Within the reporting period, the two highest concentrations are listed for each parameter.

Shaded rows indicate monitoring wells recommended for metals analysis.

Metals were analyzed during the following quarters: 1st Quarter 2009; 1st, 2nd, & 3rd Quarters 2010.

*Based on results from the 4th Quarter 2010 and 1st Quarter 2011 sampling events, analysis of Selenium and Thallium may be required.

SITE SPECIFIC EVALUATION
M-4 Landfill (FTMM-04)

Site data and 90th Percentile calculations are provided on Table 1 (attached), and summarized as follows:

90th Percentile Analysis Summary
M-4 Landfill

M-4	Sb	As	Ba	Be	Cd	Cr	Cu	Pb	Ni	Se*	Tl*
Jan 05 - Aug 10	n=43	n=40	n=120	n=53	n=47	n=19	n=12	n=19	n=53	n=39	n=2
90th Percentile	14.40	28.47	272.00	0.68	8.43	3.16	2.27	15.02	8.84	38.28	1.98
Mean	8.15	15.16	124.00	0.42	3.10	2.19	1.67	7.29	4.33	16.73	1.81
Adjusted Mean	6.10	6.89	66.31	0.32	2.05	0.92	1.46	4.63	3.41	9.95	1.59
NJDEP GWQS (ug/L)	**6**	**3**	**6000**	**1**	**4**	**70**	**1300**	**5**	**100**	**40**	**2**

Results reported in µg/L or parts per billion. Shaded cells indicate values that exceed the GWQS. "n" = population size in the statistical analysis. As a conservative measure, non-detectable results were not included in the statistical analysis, and thus the population size may be biased low when compared to the total number of data points. * Due to possible laboratory inaccuracies, the 90th Percentile Analysis was not used in developing sampling recommendations for these parameters.

90th Percentile Values Meet GWQS:

The 90th percentile values for barium, beryllium, chromium, copper, nickel, selenium, and thallium are below their respective GWQS.

Note that due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Mean Values, or Adjusted Mean Values, Meet GWQS:

The mean value for cadmium is below its GWQS.

The adjusted mean value for lead is below its GWQS.

Recommendations:

In consideration of the above, the following sampling protocol is recommended for this site:

1. Selenium and Thallium - Due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Evaluation of the 4th Quarter 2010 and 1st Quarter 2011 sampling should be performed to determine compliance with the GWQS. If exceedances of the GWQS are identified, the sampling protocol specified under item 3 below should be followed.

2. With the exception of selenium and thallium (addressed above), no further sampling/analysis is recommended for metals with 90th percentile values below their respective GWQS.

3. For remaining metals, the collection of ground water samples using the following sampling protocol is recommended.

Collection of samples on a semiannual basis, targeting the times of the year typically exhibiting elevated precipitation amounts (generally 2nd and 4th quarters).

For future sampling events, raw and filtered water sample pairs should be collected from select wells (identified below), to evaluate the input from sample turbidity. Samples should be analyzed by a NJ certified laboratory. Slow-purge methodology should be followed for all sampling events which include metals analyses. Refer to the Concentration Ranking and Monitoring Well Selection Protocol described below.

Concentration Ranking and Monitoring Well Selection Protocol

For the specified sampling events, the monitoring wells recommended for sampling were selected with a bias towards those wells demonstrating the highest concentrations as follows.

For the available data from 4th Quarter 2008 through 3rd Quarter 2010, the highest observed concentrations for the site monitoring wells were ranked for each metal of concern. For larger sites, such as landfills, the highest four concentrations were listed; for smaller sites, the highest two concentrations were deemed adequate. Concentration Rankings and Recommended Well Sampling are summarized in Table 2 (attached).

Based on the specified protocol, monitoring wells M4MW08, M4MW09, and M4MW10 are recommended for sampling with laboratory analysis for antimony, arsenic, cadmium, and lead, along with selenium and thallium as required.

Table 1. Summary of Select Metal Concentrations in Groundwater from January 2005 to August 2010 at Site M-4

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	40	2
M4	MW08	M4MW08	01/05/05	50005.06			56.4								
M4	MW09	M4MW09	01/05/05	50005.05			47.9								
M4	MW10	M4MW10	01/05/05	50005.04			147								
M4	MW07	M4MW07	01/05/05	50005.03			38.2						5.38		
M4	MW10	M4MW10	04/05/05	50185.06			49.5								
M4	MW09	M4MW09	04/05/05	50185.05			53.8								
M4	MW08	M4MW08	04/05/05	50185.04			58.6								
M4	MW07	M4MW07	04/05/05	50185.03			14.3								
M4	MW08	MW08 Duplicate	04/05/05	50185.02			81.9								
M4	MW10	M4MW10	07/07/05	50338.06			87.1		2.5						
M4	MW09	M4MW09	07/07/05	50338.05			40.8								
M4	MW08	M4MW08	07/07/05	50338.04			55.7								
M4	MW09	MW09 Duplicate	07/07/05	50338.02			41.7								
M4	MW07	M4MW07*	07/07/05	50338.03			106	0.7					13		
M4	MW10	M4MW10	10/18/05	50534.06			47.8								
M4	MW09	M4MW09	10/18/05	50534.05			39.1								
M4	MW08	M4MW08	10/18/05	50534.04			51.3								
M4	MW07	M4MW07	10/18/05	50534.03			25.3								
M4	MW08	MW08 Duplicate	10/18/05	50534.02			57.1								
M4	MW10	M4MW10	01/05/06	60011.06			73								
M4	MW09	M4MW09	01/05/06	60011.05			50.6								
M4	MW08	M4MW08	01/05/06	60011.04			63.4								
M4	MW07	M4MW07	01/05/06	60011.03			23.9								
M4	MW09	MW09 Duplicate	01/05/06	60011.02			52.8								
M4	MW10	M4MW10	04/05/06	60139.06			448	0.523	0.983						
M4	MW09	M4MW09	04/05/06	60139.05	2.55		56.4								
M4	MW08	MW08 Duplicate	04/05/06	60139.02	5.16		72.8		0.329						
M4	MW08	M4MW08	04/05/06	60139.04	5.85		116		0.331						
M4	MW07	M4MW07	04/05/06	60139.03			24.3	0.214	0.665				4.05		
M4	MW10	M4MW10	07/07/06	60302.06	3.99		244	0.469			2.02				
M4	MW09	M4MW09	07/07/06	60302.05	3.92	2.67	40.3				1.14				
M4	MW08	MW08 Duplicate	07/07/06	60302.02	5.68		66.5				1.51				
M4	MW08	M4MW08	07/07/06	60302.04	6.76		62.6				1.44				
M4	MW07	M4MW07	07/07/06	60302.03	3.54	2.87	81.6	0.501	1.6		1.12		10.5		
M4	MW10	MW10 Duplicate	10/11/06	60444.02			92.5	0.122	3.13					3.97	
M4	MW10	M4MW10	10/11/06	60444.06		2.55	150	0.261	4.01					3.17	
M4	MW08	M4MW08	10/11/06	60444.04		2.79	59.2		2.06					8.48	
M4	MW09	M4MW09	10/11/06	60444.05			56.9		1.56					6.8	
M4	MW07	M4MW07	10/11/06	60444.03			57.5	0.353	1.02		1.5		8.76	5.13	

Table 1. Summary of Select Metal Concentrations in Groundwater from January 2005 to August 2010 at Site M-4

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	40	2
M4	MW10	M4MW10	01/04/07	70003.06		4.51	453	0.571	6.56						
M4	MW08	MW08 Duplicate	01/04/07	70003.02	9.38	5.44	121		8.72					7.88	
M4	MW09	M4MW09	01/04/07	70003.05			55.6		1.09					5.66	
M4	MW07	M4MW07	01/04/07	70003.03			20	0.16					2.49		
M4	MW08	M4MW08	01/04/07	70003.04	7.76	4.89	106		8.24				1.13	8.85	
M4	MW08	MW08 Duplicate	04/03/07	70122.02	1.73	5.75	419	0.519	7.98	0.381		4.5		9.2	
M4	MW08	M4MW08*	04/03/07	70122.04		6.42	726	0.979	15.9	0.55	1.61	10.2	3.16	8.21	
M4	MW07	M4MW07	04/03/07	70122.03			10.4	0.146	0.346	0.335			1.89	4.71	
M4	MW10	M4MW10	04/03/07	70122.06		4.5	300	0.549	5.74			5.35	1.41	7.74	
M4	MW09	M4MW09	04/03/07	70122.05			49.3	0.25	1.03				1.24	10.6	1.59
M4	MW07	M4MW07	07/10/07	70249.03			45.7	0.183	0.664				4.69	4.73	
M4	MW08	M4MW08*	07/10/07	70249.04		6.42	689	0.666	10.8			7.06	1.29	13.2	
M4	MW09	M4MW09	07/10/07	70249.05			37.3		0.74				1.22	11	
M4	MW10	M4MW10	07/10/07	70249.06		5.14	186	0.345	5.6			2.23	0.923	12.5	
M4	MW08	MW08 Duplicate*	07/10/07	70249.02		9.9	1120	1	14.8	1.39	1.84	28.7	0.459	8.98	
M4	MW09	M4MW09	10/03/07	70369.05	2.69		40.9	0.14							
M4	MW10	M4MW10	10/03/07	70369.06			113	0.239							
M4	MW08	M4MW08	10/03/07	70369.04	10.3		92.7								
M4	MW08	MW08 Duplicate	10/03/07	70369.02	10.9		93.2								
M4	MW07	M4MW07	10/03/07	70369.03	3.96		87.4	0.673	0.903	0.407			10.1		
M4	MW08	M4MW08*	01/08/08	80010.04	48.8		81.1	0.171	0.508						
M4	MW09	M4MW09	01/08/08	80010.05			62.4	0.196	0.343						
M4	MW10	M4MW10*	01/08/08	80010.06			1330	2.65	5.74	0.529					
M4	MW07	M4MW07	01/08/08	80010.03			19.5	0.326	0.471				3.91		
M4	MW07	MW07 Duplicate	01/08/08	80010.02			20.9	0.329	0.678				3.76	5.43	
M4	MW08	M4MW08	04/03/08	80110.04	20.7		65.6		0.917						
M4	MW09	M4MW09	04/03/08	80110.05			50.7								
M4	MW07	M4MW07	04/03/08	80110.03			12.4	0.134					1.8		
M4	MW07	MW07 Duplicate	04/03/08	80110.02			11.4	0.122					1.79		
M4	MW10	M4MW10	04/03/08	80110.06		5.11	346	0.472	5.9			4.53	0.309		
M4	MW10	M4MW10	07/10/08	80228.06			129	0.398	2.9			2.13			
M4	MW09	M4MW09	07/10/08	80228.05			37.2		0.27					7.62	
M4	MW08	M4MW08	07/10/08	80228.04	1.73		150		1.78					7.43	
M4	MW07	M4MW07	07/10/08	80228.03			79.9	0.604	1.3	0.521			9.15	8.64	
M4	MW10	M4MW10	10/10/08	80361.06	2.52		88.7	0.342							
M4	MW08	MW08 Duplicate*	10/10/08	80361.02	10.2		207	0.591	0.204	5.56	3.16				
M4	MW08	M4MW08	10/10/08	80361.04	4.1		98	0.272		1.54					
M4	MW09	M4MW09	10/10/08	80361.05			65.9	0.188		0.561					
M4	MW07	M4MW07	10/10/08	80361.03			68.5	0.597	0.278	2.56			7.35	3.68	

Table 1. Summary of Select Metal Concentrations in Groundwater from January 2005 to August 2010 at Site M-4

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	40	2
M4	MW10	M4MW10*	01/06/09	40009.04			364	0.676							
M4	MW09	MW09 Duplicate*	03/12/09	90105.02	12	92	67.3					6.81		73.3	
M4	MW09	M4MW09*	03/12/09	90105.05	15	96	63.5			0.9		5		87	
M4	MW10	M4MW10*	03/12/09	90105.06	15.4	61.5	410	0.433		0.833		11.6		52.7	
M4	MW08	M4MW08*	03/12/09	90105.04	18.7	109	90.7			0.32		3.62		84.5	
M4	MW07	M4MW07	03/12/09	90105.03	5.24	9.05	15.7			0.495		4.46	1.28	32.1	
M4	MW10	M4MW10	05/20/09	90207.06	2	17.6	190	0.32				1.78		4.61	
M4	MW08	M4MW08	05/20/09	90207.04	2.28	20.2	77.8					2.58		3.55	
M4	MW07	MW07 Duplicate	05/20/09	90207.02	1.3	5.37	29.1	0.154		1.26		2.39	4.29	4.35	
M4	MW07	M4MW07	05/20/09	90207.03	2.88	7.36	27.2	0.15		1.79		2.5	3.96		
M4	MW09	M4MW09	05/20/09	90207.05	3.71	18.9	44.4					2.02	0.993	4.73	2.02
M4	MW07	M4MW07	07/20/09	90303.03	5.21	5.28	48.4	0.377	0.906				7.86	21.1	
M4	MW07	MW07 Duplicate	07/20/09	90303.02		14.8	50.9	0.35	0.519				7.5	28.8	
M4	MW09	M4MW09	07/20/09	90303.05		20.8	63						2.75	26.2	
M4	MW08	M4MW08	07/20/09	90303.04		24.8	79.6		0.914				1.32	13.3	
M4	MW10	M4MW10	07/21/09	90303.06		17.7	112	0.096	1.22				1.27		
M4	MW10	M4MW10	11/04/09	90436.06			109								
M4	MW08	M4MW08*	11/04/09	90436.04		4.36	883	0.151	9.23	20.5		31.1			
M4	MW07	MW07 Duplicate	11/04/09	90436.02			54.1	0.285					8.44		
M4	MW07	M4MW07	11/04/09	90436.03		0.68	54.8	0.29					8.44	8.37	
M4	MW09	M4MW09	11/04/09	90436.05			44						0.524	17.7	
M4	MW07	MW07 Duplicate	01/06/10	10005.02	7.58		24.1	0.108					5.45		
M4	MW07	M4MW07	01/06/10	10005.03			23.4	0.117					5.17		
M4	MW10	M4MW10	01/06/10	10005.06		1.4	114						4.32		
M4	MW08	M4MW08	01/06/10	10005.04	4.94	1.09	42.3						3.05		
M4	MW09	M4MW09	01/06/10	10005.05			60.2						1.21		
M4	MW07	LF3(1)	04/06/10	10124.04	11.6		32								
M4	MW10	LF3(1)	04/06/10	10124.06	7.3	0.83	41.8				1.34		3.54		
M4	MW08	LF3(1)	04/06/10	10124.05		1.11	12.4				1.07		2.19		
M4	MW09	LF3(1)	04/06/10	10124.03	11.6	3.61	18.8				2.3		1.71		
M4	MW09	LF3(1) Duplicate	04/06/10	10124.02	8.16		34.2						0.672		
M4	MW08	LF4(1)	07/21/10	10316.04	6.51	1.23	34.7		1.56						
M4	MW09	LF4(1)	07/21/10	10316.03	7.78		44.2								
M4	MW09	LF4(1) Duplicate	07/21/10	10316.02	9.64	0.98	44.1								
M4	MW07	LF4(1)*	07/21/10	10316.06	10.3		199	1.28	1.51				19.2		
M4	MW10	LF4(1)	07/21/10	10316.05	9.23	1.12	53.6		1.26				0.959		
M4	MW06	M4MW06	08/06/10	10333.01			23.2	0.198		1.19			7.51		
M4	MW06	M4MW06	08/20/10	10356.01		0.83	22.3	0.17					8.67		

Table 1. Summary of Select Metal Concentrations in Groundwater from January 2005 to August 2010 at Site M-4

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	40	2
				Mean	8.15	15.16	124.00	0.42	3.10	2.19	1.67	7.29	4.33	16.73	1.81
				90th Percentile	14.40	28.47	272.00	0.68	8.43	3.16	2.27	15.02	8.84	38.28	1.98
				Adjusted Mean	6.10	6.89	66.31	0.32	2.05	0.92	1.46	4.63	3.41	9.95	1.59

Notes: Adjusted mean does not include metal concentrations that exceed the 90th Percentile

1) Concentrations bolded and italicized exceed applicable Ground Water Quality Standard (GWQS)
2) Concentrations bolded and italicized in red exceed applicable GWQS and the 90th Percentile
3) Concentrations highlighted in red cells exceed exceed the 90th Percentile and are deemed to be extreme outliers
4) Samples highlighted in yellow contain two or more metal concentrations that exceed the 90th Percentile
5) Blank cells indicate metals were not detected, not analyzed, or not reported due to instrument errors

M: Metal detected in method blank

* Sample contains two or more metals at concentrations exceeding the 90th Percentile

Table 2
M-4 Landfill
Concentration Rankings and Recommended Monitoring Well Sampling
4th Quarter 2008 - 3rd Quarter 2010

Well ID	Antimony	Arsenic	Cadmium	Lead	Selenium	Thallium
	NJDEP GWQS	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*
	6	*3*	*4*	*5*	*40*	*2*
M4MW06						
M4MW07						
M4MW08	18.7	109	9.23	31.1	*	*
M4MW09		96		6.81	*	*
M4MW10	15.4			11.6	*	*

Notes:

Results reported in µg/L.

Within the reporting period, the two highest concentrations are listed for each parameter.

Shaded rows indicate monitoring wells recommended for metals analysis.

Metals were analyzed during the entire reporting period, 4th Quarter 2008 through 3rd Quarter 2010.

*Based on results from the 4th Quarter 2010 and 1st Quarter 2011 sampling events, analysis of Selenium and Thallium may be required.

SITE SPECIFIC EVALUATION
M-5 Landfill (FTMM-05)

Site data and 90th Percentile calculations are provided on Table 1 (attached), and summarized as follows:

90th Percentile Analysis Summary
M-5 Landfill

M-5	Sb	As	Ba	Be	Cd	Cr	Cu	Pb	Ni	Se*	Tl*
March 10 - Sept 10	n=22	n=23	n=33	n=6	n=18	n=9	n=21	n=8	n=15	n=0	n=1
90th Percentile	23.23	5.72	188.60	0.19	1.48	3.20	4.17	4.51	4.67	NR	1.30
Mean	10.72	2.85	72.89	0.13	0.92	1.88	2.72	3.54	2.59	NR	1.30
Adjusted Mean	8.12	2.36	47.26	0.11	0.83	1.71	2.52	3.38	1.96	NR	NA
NJDEP GWQS (ug/L)	**6**	**3**	**6000**	**1**	**4**	**70**	**1300**	**5**	**100**	**40**	**2**

Results reported in µg/L or parts per billion. Shaded cells indicate values that exceed the GWQS. "n" = population size in the statistical analysis. As a conservative measure, non-detectable results were not included in the statistical analysis, and thus the population size may be biased low when compared to the total number of data points. * Due to possible laboratory inaccuracies, the 90th Percentile Analysis was not used in developing sampling recommendations for these parameters.

90th Percentile Values Meet GWQS:

The 90th percentile values for barium, beryllium, cadmium, chromium, copper, lead, nickel, and thallium are below their respective GWQS.

Note that due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Mean Values, or Adjusted Mean Values, Meet GWQS:

The mean value for arsenic is below its GWQS.

Recommendations:

In consideration of the above, the following sampling protocol is recommended for this site:

1. Selenium and Thallium - Due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Evaluation of the 4th Quarter 2010 and 1st Quarter 2011 sampling should be performed to determine compliance with the GWQS. If exceedances of the GWQS are identified, the sampling protocol specified under item 3 below should be followed.

2. With the exception of selenium and thallium (addressed above), no further sampling/analysis is recommended for metals with 90th percentile values below their respective GWQS.

3. For remaining metals, the collection of ground water samples using the following sampling protocol is recommended.

Collection of samples on a semiannual basis, targeting the times of the year typically exhibiting elevated precipitation amounts (generally 2nd and 4th quarters).

For future sampling events, raw and filtered water sample pairs should be collected from select wells (identified below), to evaluate the input from sample turbidity. Samples should be analyzed by a NJ certified laboratory. Slow-purge methodology should be followed for all sampling events which include metals analyses. Refer to the Concentration Ranking and Monitoring Well Selection Protocol described below.

Concentration Ranking and Monitoring Well Selection Protocol

For the specified sampling events, the monitoring wells recommended for sampling were selected with a bias towards those wells demonstrating the highest concentrations as follows.

For the available data from 4th Quarter 2008 through 3rd Quarter 2010, the highest observed concentrations for the site monitoring wells were ranked for each metal of concern. For larger sites, such as landfills, the highest four concentrations were listed; for smaller sites, the highest two concentrations were deemed adequate. Concentration Rankings and Recommended Well Sampling are summarized in Table 2 (attached).

Based on the specified protocol, monitoring wells M5MW12, M5MW13, M5MW14, M5MW16, M5MW19, and M5MW20 are recommended for sampling with laboratory analysis for antimony and arsenic, along with selenium and thallium as required.

Table 1. Summary of Select Metal Concentrations in Groundwater from March 2010 to September 2010 at Site M-5

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	2
M5	MW16	MW16 LF1(1)	03/30/10	10113.03	***6.25***	1.26	66.7	0.079	0.667				2.27	
M5	MW20	MW20 LF1(1)	03/30/10	10113.04	***14.1***		13.7			3.22			2.12	
M5	MW11	MW11 LF1(1)	03/30/10	10113.01			8.74			1.7	2.42		1.47	
M5	MW23	MW23 LF1(1)	03/30/10	10113.02	***7.41***	2.46	15.1			1.97			0.514	
M5	MW10	MW10 LF1(1)	03/31/10	10115.04	5.45		24.6							
M5	MW19	MW19 LF1(1)	03/31/10	10115.01	***6.48***	1.98	45.2		0.724					
M5	MW18	MW18 LF1(1)	03/31/10	10115.02		***3.77***	131		1.23					
M5	MW14	MW14 LF1(1)	03/31/10	10115.06	***10.4***		26.9							
M5	MW13	MW13 LF1(1)	03/31/10	10115.05	***6.28***		114		0.514					
M5	MW12	MW12 LF1(1)	03/31/10	10115.03	***7.31***		64.3							
M5	MW23	MW23 LF2(1)	06/29/10	10294.02		***3.76***	19.1		0.764		4.45			
M5	MW20	MW20 LF2(1)	06/29/10	10294.03	5.07	0.78	28.7	0.108	0.719	1.46	3.83		8.27	1.3
M5	MW18	MW18 LF2(1)	06/29/10	10294.01		***3.26***	112		1.07		4.85	2.99	0.446	
M5	MW19	MW19 LF2(1)	06/30/10	10298.06		2.01	48.5		0.754		2.75			
M5	MW10	MW10 LF2(1)	06/30/10	10298.08			24			1.17	3.14			
M5	MW16	MW16 LF2(1)	06/30/10	10298.05		***4.51***	128	0.124	0.785		3.15		5.05	
M5	MW11	MW11 LF2(1)	06/30/10	10298.03	***6.9***	0.95	9.96		0.672		3.86	2.77	2.05	
M5	MW11	MW11 LF2(1)	06/30/10	10298.04		1.04	9.71		0.555		3.72		1.83	
M5	MW14	MW14 LF2(1)	06/30/10	10298.1	***6.04***	1.24	25.6				2.22			
M5	MW13	MW13 LF2(2)	06/30/10	10298.09	***6.32***		91.7				3.12			
M5	MW12	MW12 LF2(1)	06/30/10	10298.07	5.26	1.03	21.5		0.692	1.79	4.17			
M5	MW23	LF3(1)	09/26/10	10411.09	***11.5***	2.85	37.4		0.766		1.47	3.1		
M5	MW20	LF3(1)	09/26/10	10411.10	***6.68***	0.65	13.7	0.068		3.19	1.73	2.52	4.09	
M5	MW11	LF3(1)	09/26/10	10411.11	***9.99***	1.07	10.9		1.71	1.27	2.17	4.45	2.97	
M5	MW18	LF3(1)	09/26/10	10411.08	***9.81***	1.38	259		0.661				1.1	
M5	MW10	LF3(1)	09/26/10	10411.05	***7.59***		36.2			1.15			0.42	
M5	MW14	LF3(1)	09/26/10	10411.07	***15.4***		30.7				1.02			
M5*	MW12	LF3(1)	09/26/10	10411.03	***24.1***	***5.98***	203		1.44		2.57	4.66		
M5*	MW12	LF3(1)	09/26/10	10411.04	***27.5***	***6.08***	214		1.57		2.5	4.43		
M5*	MW13	LF3(2)	09/26/10	10411.06	***30.1***	***6.4***	359		1.25		1.94	3.4		
M5	MW19	LF3(1)	09/27/10	10412.05		***4***	29.7							
M5	MW16	LF3(1)	09/27/10	10412.04		***4.68***	91.2	0.171			1.09		3.12	
M5	MW16	LF3(1)	09/27/10	10412.03		***4.52***	91.7	0.213			1.05		3.07	

Table 1. Summary of Select Metal Concentrations in Groundwater from March 2010 to September 2010 at Site M-5

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	2
				Mean	10.72	2.85	72.89	0.13	0.92	1.88	2.72	3.54	2.59	1.30
				90th Percentile	23.23	5.72	188.60	0.19	1.48	3.20	4.17	4.51	4.67	1.30
				Adjusted Mean	8.12	2.36	47.26	0.11	0.83	1.71	2.52	3.38	1.96	1.30

Notes: Adjusted mean does not include metal concentrations that exceed the 90th Percentile

1) Concentrations bolded and italicized exceed applicable Ground Water Quality Standard (GWQS)
2) Concentrations bolded and italicized in red exceed applicable GWQS and the 90th Percentile
3) Concentrations highlighted in red cells exceed exceed the 90th Percentile and are deemed to be extreme outliers
4) Samples highlighted in yellow contain two or more metal concentrations that exceed the 90th Percentile
5) Blank cells indicate metals were not detected, not analyzed, or not reported due to instrument errors

M: Metal detected in method blank

* Sample contains two or more metals at concentrations exceeding the 90th Percentile

Table 2
M-5 Landfill
Concentration Rankings and Recommended Monitoring Well Sampling
4th Quarter 2008 - 3rd Quarter 2010

Well ID	Antimony	Arsenic	Selenium	Thallium
	NJDEP GWQS	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*
	6	*3*	*40*	*2*
M5MW10				
M5MW11				
M5MW12	27.5	6.08	*	*
M5MW13	30.1	6.4	*	*
M5MW14	15.4		*	*
M5MW16		4.68	*	*
M5MW19		4	*	*
M5MW20	14.1		*	*
M5MW23				

Notes:

Results reported in µg/L.

Within the reporting period, the four highest concentrations are listed for each parameter.

Shaded rows indicate monitoring wells recommended for metals analysis.

Metals were analyzed during the following quarters: 1st Quarter 2009; 1st, 2nd, & 3rd Quarters 2010.

*Based on results from the 4th Quarter 2010 and 1st Quarter 2011 sampling events, analysis of Selenium and Thallium may be required.

SITE SPECIFIC EVALUATION
M-8 Landfill (FTMM-08)

Site data and 90th Percentile calculations are provided on Table 1 (attached), and summarized as follows:

90th Percentile Analysis Summary
M-8 Landfill

M-8	Sb	As	Ba	Be	Cd	Cr	Cu	Pb	Ni	Se*	Tl*
March 10 - Sept 10	n=39	n=29	n=43	n=13	n=25	n=9	n=29	n=12	n=36	n=0	n=0
90th Percentile	28.62	8.55	383.00	0.11	1.70	8.12	9.66	3.87	9.88	NR	NR
Mean	15.89	2.86	160.68	0.08	1.21	4.17	5.28	3.34	4.78	NR	NR
Adjusted Mean	13.81	2.09	117.82	0.08	0.94	3.25	4.11	3.22	3.22	NR	NR
NJDEP GWQS (ug/L)	**6**	**3**	**6000**	**1**	**4**	**70**	**1300**	**5**	**100**	**40**	**2**

Results reported in µg/L or parts per billion. Shaded cells indicate values that exceed the GWQS. "n" = population size in the statistical analysis. As a conservative measure, non-detectable results were not included in the statistical analysis, and thus the population size may be biased low when compared to the total number of data points. * Due to possible laboratory inaccuracies, the 90th Percentile Analysis was not used in developing sampling recommendations for these parameters.

90th Percentile Values Meet GWQS:

The 90th percentile values for barium, beryllium, cadmium, chromium, copper, lead, and nickel are below their respective GWQS.

Note that due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Mean Values, or Adjusted Mean Values, Meet GWQS:

The mean value for arsenic is below its GWQS.

Recommendations:

In consideration of the above, the following sampling protocol is recommended for this site:

1. Selenium and Thallium - Due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Evaluation of the 4th Quarter 2010 and 1st Quarter 2011 sampling should be performed to determine compliance with the GWQS. If exceedances of the GWQS are identified, the sampling protocol specified under item 3 below should be followed.

2. With the exception of selenium and thallium (addressed above), no further sampling/analysis is recommended for metals with 90th percentile values below their respective GWQS.

3. For remaining metals, the collection of ground water samples using the following sampling protocol is recommended.

Collection of samples on a semiannual basis, targeting the times of the year typically exhibiting elevated precipitation amounts (generally 2nd and 4th quarters).

For future sampling events, raw and filtered water sample pairs should be collected from select wells (identified below), to evaluate the input from sample turbidity. Samples should be analyzed by a NJ certified laboratory. Slow-purge methodology should be followed for all sampling events which include metals analyses. Refer to the Concentration Ranking and Monitoring Well Selection Protocol described below.

Concentration Ranking and Monitoring Well Selection Protocol

For the specified sampling events, the monitoring wells recommended for sampling were selected with a bias towards those wells demonstrating the highest concentrations as follows.

For the available data from 4th Quarter 2008 through 3rd Quarter 2010, the highest observed concentrations for the site monitoring wells were ranked for each metal of concern. For larger sites, such as landfills, the highest four concentrations were listed; for smaller sites, the highest two concentrations were deemed adequate. Concentration Rankings and Recommended Well Sampling are summarized in Table 2 (attached).

Based on the specified protocol, monitoring wells M8MW15, M8MW16, M8MW18, M8MW19, M8MW20, M8MW22, and 697MW01 are recommended for sampling with laboratory analysis for antimony and arsenic, along with selenium and thallium as required.

Table 1. Summary of Select Metal Concentrations in Groundwater from March 2010 to September 2010 at Site M-8

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100
M8	MW22	MW22 LF1(1)	03/17/10	10094.08		***8.49***				1.08			
M8	MW13	MW13 LF1(1)	03/17/10	10094.04	***10.2***	0.73	52.3		0.991		6.21		6.94
M8	MW21	MW21 LF1(1)	03/17/10	10094.07			10.1			1.74	6.73		4.66
M8	MW19	MW19 LF1(1)	03/17/10	10094.06	***11.5***	1.71	48.8						1.31
M8	MW17	MW17 LF2(1)	03/17/10	10094.05	5.88		135						0.909
M8	MW20	MW20 LF1(1)	03/17/10	10094.09	***7.8***		110						0.624
M8*	MW15	MW15 LF1(1)	03/18/10	10095.05	5.54	***8.79***	144						30.1
M8	MW14	MW14 LF1(1) Duplicate	03/18/10	10095.03	***10.8***		575						2.1
M8	MW14	MW14 LF1(1)	03/18/10	10095.04	5.6	0.85	547		0.609				1.74
M8	MW23	MW23 LF3(1)	03/19/10	10097.07	***10.1***	0.67	7.51		1.22		12		5.26
M8	MW12	MW12 LF1(1)	03/19/10	10097.09		1.59	15.3	0.049		11.6			2.14
M8*	MW16	MW16 LF2(1)	03/19/10	10097.05	***9.81***		87.1		***5.98***				15.9
M8	MW18	MW18 LF1(1)	03/19/10	10097.04	***10.8***	0.88	277		0.728				1.88
M8	MW24	MW24 LF4(1)	03/19/10	10097.06	***14.4***	0.64	393						1.63
M8	MW17	MW17 LF3(1)	06/25/10	10287.05	***12.5***		138	0.072	0.521		1		
M8	MW13	MW13 LF2(1) Duplicate	06/25/10	10287.03	***11.9***		84.3	0.101	1.36		6.9		6.28
M8	MW13	MW13 LF2(1)	06/25/10	10287.04	***11***		78.2	0.094	1.24		6.71		6.02
M8	MW19	MW19 LF2(1)	06/28/10	10291.04	***9.6***		96.1	0.117	0.826		2.55		
M8	MW19	MW19 LF2(1) Duplicate	06/28/10	10291.03	***10.2***		98.3	0.118	0.932		2.14		
M8	MW16	MW16 LF3(1)	06/28/10	10291.11					0.516				
M8	MW20	MW20 LF2(1)	06/28/10	10291.07	***14.2***		148	0.073		7.25			
M8	MW22	MW22 LF2(1)	06/28/10	10291.06		***10.63***	1.31			3.99			
M8	MW21	MW21 LF2(1)	06/28/10	10291.05	***11***		36.2	0.067	1.55		5.27		7.83
M8	MW14	MW14 LF2(1)	06/28/10	10291.08	***12.7***		167	0.105	1.59		1.26	3.98	2.58
M8	MW18	MW18 LF2(1)	06/28/10	10291.1	***11.3***		278	0.105	1.77				2.3
M8	MW15	MW15 LF2(1)	06/28/10	10291.09	***14.8***	1.47	227	0.094	1.5		3.83	3	12.5
M8	MW23	MW23 LF4(1)	06/29/10	10293.05	***9.13***	***3.9***	33.5				6.11	3.06	10.6
M8	MW12	MW12 LF2(1)	06/29/10	10293.07		1	12.5			2.14	4.64		1.1
M8	MW24	MW24 LF5(1) Duplicate	06/29/10	10293.03	***9.04***	0.9	179	0.05	0.73		6.23	3.89	0.853
M8	MW24	MW24 LF5(1)	06/29/10	10293.04	***9.82***	0.7	182				5.7	3.31	0.846
M8	MW17	LF4(1)	09/28/10	10414.05	***25.2***	2.73	287						
M8*	MW19	LF3(1)	09/28/10	10414.07	***30.3***	***4.21***	511	0.057	1.29	3.68	2.69	3.34	
M8	MW21	LF3(1)	09/28/10	10414.08	***28.2***	0.99	72.4		1.81		9.08		9.15
M8	MW13	LF3(1)	09/28/10	10414.04	***15.6***	1.9	58.5		0.761		17.6	3.52	6.92

Table 1. Summary of Select Metal Concentrations in Groundwater from March 2010 to September 2010 at Site M-8

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100
M8	MW15	LF3(1)	09/28/10	10414.10	***22.4***	2.52	221		0.542		2.87	3.6	6.24
M8	MW13	LF3(1) Duplicate	09/28/10	10414.03	***15.2***		56.8		0.596		16.8	2.67	6.19
M8	MW14	LF3(1)	09/28/10	10414.09	***21***	2.2	196		1.09		3.66	3.68	3.37
M8	MW20	LF3(1)	09/28/10	10414.06	***34.1***	1.46	238			4.89	1.96		0.506
M8	MW23	LF5(1)	09/29/10	10415.08	***18.7***	0.77	37.9				1.61		3.82
M8	MW16	LF4(1)	09/29/10	10415.06	***39***	0.66	309		0.816	1.2	5.08		2.35
M8	MW22	LF3(1) Duplicate	09/29/10	10415.03	***26.9***	***7.79***	4.33				3.3		2.13
M8	MW12	LF3(1)	09/29/10	10415.10	***7.26***	2.11	2.93				1.32		1.9
M8	MW22	LF3(1)	09/29/10	10415.04	***26.8***	***9.23***	3.78				4.09		1.68
M8	MW24	LF6(1)	09/29/10	10415.07	***26.6***	0.84	343		0.651		2.59	2.92	1.1
M8*	MW18	LF3(1)	09/29/10	10415.05	***32.7***	2.61	406		0.618		3.22	3.07	0.565
				Mean	15.89	2.86	160.68	0.08	1.21	4.17	5.28	3.34	4.78
				90th Percentile	28.62	8.55	383.00	0.11	1.70	8.12	9.66	3.87	9.88
				Adjusted Mean	13.81	2.09	117.82	0.08	0.94	3.25	4.11	3.22	3.22

Notes: Adjusted mean does not include metal concentrations that exceed the 90th Percentile
1) Concentrations bolded and italicized exceed applicable Ground Water Quality Standard (GWQS)
2) Concentrations bolded and italicized in red exceed applicable GWQS and the 90th Percentile
3) Concentrations highlighted in red cells exceed exceed the 90th Percentile and are deemed to be extreme outliers
4) Samples highlighted in yellow contain two or more metal concentrations that exceed the 90th Percentile
5) Blank cells indicate metals were not detected, not analyzed, or not reported due to instrument errors
M: Metal detected in method blank
* Sample contains two or more metals at concentrations exceeding the 90th Percentile

Table 2
M-8 Landfill
Concentration Rankings and Recommended Monitoring Well Sampling
4th Quarter 2008 - 3rd Quarter 2010

Well ID	Antimony	Arsenic	Selenium	Thallium
	NJDEP GWQS	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*
	6	*3*	*40*	*2*
M8MW12				
M8MW13				
M8MW14				
M8MW15		8.79	*	*
M8MW16	39		*	*
M8MW17				
M8MW18	32.7		*	*
M8MW19	30.3	4.21	*	*
M8MW20	34.1		*	*
M8MW21				
M8MW22		10.63	*	*
M8MW23				
M8MW24				
697MW01		5.35	*	*

Notes:

Results reported in µg/L.

Within the reporting period, the four highest concentrations are listed for each parameter.

Shaded rows indicate monitoring wells recommended for metals analysis.

Metals were analyzed during the following quarters: 1st Quarter 2009; 1st, 2nd, & 3rd Quarters 2010.

*Based on results from the 4th Quarter 2010 and 1st Quarter 2011 sampling events, analysis of Selenium and Thallium may be required.

SITE SPECIFIC EVALUATION
M-12 Landfill (FTMM-12)

Site data and 90th Percentile calculations are provided on Table 1 (attached), and summarized as follows:

90th Percentile Analysis Summary
M-12 Landfill

M-12	Sb	As	Ba	Be	Cd	Cr	Cu	Pb	Ni	Se*	Tl*
Feb 05 - Sept 10	n=69	n=125	n=285	n=100	n=125	n=85	n=104	n=55	n=130	n=81	n=6
90th Percentile	16.18	81.08	169.00	1.23	3.82	2.28	9.65	11.44	20.36	65.90	2.05
Mean	8.34	31.80	75.47	0.61	2.25	1.46	7.59	5.38	8.09	19.44	1.58
Adjusted Mean	7.17	24.06	52.68	0.50	1.30	1.09	3.01	4.38	5.94	12.28	1.46
NJDEP GWQS (ug/L)	**6**	**3**	**6000**	**1**	**4**	**70**	**1300**	**5**	**100**	**40**	**2**

Results reported in µg/L or parts per billion. Shaded cells indicate values that exceed the GWQS. "n" = population size in the statistical analysis. As a conservative measure, non-detectable results were not included in the statistical analysis, and thus the population size may be biased low when compared to the total number of data points. * Due to possible laboratory inaccuracies, the 90th Percentile Analysis was not used in developing sampling recommendations for these parameters.

90th Percentile Values Meet GWQS:

The 90th percentile values for barium, cadmium, chromium, copper, and nickel are below their respective GWQS.

Note that due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Mean Values, or Adjusted Mean Values, Meet GWQS:

The mean values for beryllium, selenium, and thallium are below their respective GWQS.

The adjusted mean value for lead is below its GWQS.

Recommendations:

In consideration of the above, the following sampling protocol is recommended for this site:

1. Selenium and Thallium - Due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Evaluation of the 4th Quarter 2010 and 1st Quarter 2011 sampling should be performed to determine compliance with the GWQS. If exceedances of the GWQS are identified, the sampling protocol specified under item 3 below should be followed.

2. With the exception of selenium and thallium (addressed above), no further sampling/analysis is recommended for metals with 90th percentile values below their respective GWQS.

3. For remaining metals, the collection of ground water samples using the following sampling protocol is recommended.

Collection of samples on a semiannual basis, targeting the times of the year typically exhibiting elevated precipitation amounts (generally 2nd and 4th quarters).

For future sampling events, raw and filtered water sample pairs should be collected from select wells (identified below), to evaluate the input from sample turbidity. Samples should be analyzed by a NJ certified laboratory. Slow-purge methodology should be followed for all sampling events which include metals analyses. Refer to the Concentration Ranking and Monitoring Well Selection Protocol described below.

Concentration Ranking and Monitoring Well Selection Protocol

For the specified sampling events, the monitoring wells recommended for sampling were selected with a bias towards those wells demonstrating the highest concentrations as follows.

For the available data from 4th Quarter 2008 through 3rd Quarter 2010, the highest observed concentrations for the site monitoring wells were ranked for each metal of concern. For larger sites, such as landfills, the highest four concentrations were listed; for smaller sites, the highest two concentrations were deemed adequate. Concentration Rankings and Recommended Well Sampling are summarized in Table 2 (attached).

Based on the specified protocol, monitoring wells M12MW16, M12MW19, M12MW20, M12MW21, M12MW22, M12MW23, M12MW24, and M12MW25 are recommended for sampling with laboratory analysis for antimony, arsenic, beryllium, and lead, along with selenium and thallium as required.

Table 1. Summary of Select Metal Concentrations in Groundwater from February 2005 to September 2010 at Site M-12

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	40	2
M12	MW26	M12MW26	02/03/05	50070.07			23.8								
M12	MW22	M12MW22	02/03/05	50070.04		*67*	48.3					*11.2*			
M12	MW21	M12MW21	02/03/05	50070.03			134								
M12	MW22	MW22 Duplicate	02/03/05	50070.02		*65.4*	47.3					*9.59*			
M12	MW24	M12MW24	02/03/05	50070.06			83.8	*1.31*					18.4		
M12	MW25	M12MW25	02/09/05	50080.08			37.8								
M12	MW20	M12MW20	02/09/05	50080.07		*40*	40								
M12	MW19	M12MW19	02/09/05	50080.06			95.1								
M12	MW18	M12MW18	02/09/05	50080.05			11.4								
M12	MW17	M12MW17	02/09/05	50080.04			28.1								
M12	MW25	MW25 Duplicate	02/09/05	50080.02			33.1			9.13	5.75	*5.87*			
M12	MW16	M12MW16	02/09/05	50080.03			32.3			8.65	5.31	*5.5*			
M12	MW26	M12MW26	05/04/05	50237.1			41.1								
M12	MW25	M12MW25	05/04/05	50237.09			28.7								
M12	MW24	M12MW24	05/04/05	50237.08			34.1								
M12	MW22	M12MW22	05/04/05	50237.06		*56*	48								
M12	MW21	M12MW21	05/04/05	50237.05			222								
M12	MW20	M12MW20	05/04/05	50237.04			37.1								
M12	MW19	M12MW19	05/04/05	50237.03			12								
M12	MW25	MW25 Duplicate	05/04/05	50237.02			31.3								
M12	MW18	M12MW18	05/05/05	50239.05			84.61								
M12	MW17	M12MW17	05/05/05	50239.04			75.1								
M12	MW16	M12MW16	05/05/05	50239.03		*18.6*	35.4								
M12	MW16	MW16 Duplicate	05/05/05	50239.02		*20.8*	38.4								
M12	MW26	M12MW26	09/02/05	50442.1			25.6								
M12	MW25	M12MW25	09/02/05	50442.09			81.9								
M12	MW22	M12MW22	09/02/05	50442.06		*76.5*	43.3		*9.11*			*5.49*			
M12	MW21	M12MW21	09/02/05	50442.05			43.9								
M12	MW20	M12MW20	09/02/05	50442.04			80.2		3.36						
M12	MW19	M12MW19	09/02/05	50442.03			11								
M12	MW26	MW26 Duplicate	09/02/05	50442.02			28.7								
M12	MW24	M12MW24	09/02/05	50442.08			46.6	0.628					6.52		
M12	MW18	M12MW18	09/07/05	50445.05			71.3								
M12	MW17	M12MW17	09/07/05	50445.04			154		2.74						
M12	MW16	M12MW16	09/07/05	50445.03		*39.3*	64.4		2.2						
M12	MW16	MW16 Duplicate	09/07/05	50445.02		*37.5*	64.5								
M12	MW22	M12MW22	11/14/05	50594.05		*97.5*	65.1					*7.64*			
M12	MW21	M12MW21	11/14/05	50594.04			62.5								
M12	MW20	M12MW20	11/14/05	50594.03			44.7				14.6				
M12	MW20	MW20 Duplicate	11/14/05	50594.02			37				12.6				
M12	MW24	M12MW24	11/14/05	50594.07			70.9	*1.02*			5.24		14.2		
M12	MW23	M12MW23	11/14/05	50594.06		*7.6*	75.1						10.4		
M12	MW26	M12MW26	11/15/05	50595.08			34.1								

Table 1. Summary of Select Metal Concentrations in Groundwater from February 2005 to September 2010 at Site M-12

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	40	2
M12	MW25	M12MW25	11/15/05	50595.07			49.7								
M12	MW18	M12MW18	11/15/05	50595.05			93								
M12	MW17	M12MW17	11/15/05	50595.04			121								
M12	MW16	M12MW16	11/15/05	50595.03		*75.6*	61.1								
M12	MW18	MW18 Duplicate	11/15/05	50595.02			94.9								
M12	MW19	M12MW19	11/15/05	50595.06			18.3				9.78		14.6		
M12	MW26	M12MW26	01/26/06	60058.1			17.7				9.33				
M12	MW25	M12MW25	01/26/06	60058.09			22.2								
M12	MW23	M12MW23	01/26/06	60058.07			40.2								
M12	MW22	M12MW22	01/26/06	60058.06		*37.7*	47.3		3.28			*6.62*			
M12	MW21	M12MW21	01/26/06	60058.05			45.1								
M12	MW20	M12MW20	01/26/06	60058.04			82.4								
M12	MW19	M12MW19	01/26/06	60058.03			7.94								
M12	MW19	MW19 Duplicate	01/26/06	60058.02			8.27								
M12	MW24	M12MW24	01/26/06	60058.08			58.7	*1.02*					14.9		
M12	MW18	M12MW18	01/27/06	60060.05			130	0.545							
M12	MW17	M12MW17	01/27/06	60060.04			37.8								
M12	MW16	M12MW16	01/27/06	60060.03		*45.1*	42.1								
M12	MW16	MW16 Duplicate	01/27/06	60060.02		*46.7*	43.4								
M12	MW17	M12MW17	04/20/06	60169.04	2.03		87.2	0.106			1.67				
M12	MW20	M12MW20	04/20/06	60169.07			89.5	0.146			18.5				
M12	MW21	M12MW21	04/20/06	60169.08			336	0.165							
M12	MW22	M12MW22	04/20/06	60169.09		*68.5*	56.8				1.36				
M12	MW19	M12MW19	04/20/06	60169.06			8.13								
M12	MW16	M12MW16	04/20/06	60169.03		*25.2*	51.5	0.153		2.3					
M12	MW16	MW16 Duplicate	04/20/06	60169.02	2.34	*25.8*	51.4	0.118		1.95					
M12	MW25	M12MW25	04/20/06	60169.12			30.7			1.43	4.73				
M12	MW26	M12MW26	04/20/06	60169.13			48.7	0.132		0.854					
M12	MW24	M12MW24	04/20/06	60169.11			38.5	0.647		4.77	2.83		8.06		
M12	MW18	M12MW18	04/20/06	60169.05			115	0.449	0.375		1.25		3.85		
M12	MW23	M12MW23	04/20/06	60169.1			126	0.615	2.24	1.52	2.75		26.2		
M12	MW20	MW20 Duplicate	07/27/06	60341.02	2.02		64.9				12.8				
M12	MW22	M12MW22	07/27/06	60341.05		*86.1*	61.1				2.11				
M12	MW21	M12MW21	07/27/06	60341.04			43.5				3.02				
M12	MW20	M12MW20	07/27/06	60341.03			49.9				6.81				
M12	MW26	M12MW26	07/27/06	60341.08	2.68	1.94	30.7		1.11	1.46	1.45				
M12	MW23	M12MW23	07/27/06	60341.06	2.01	2.99	110	0.77	2.57		4.23		22.7		
M12	MW24	M12MW24	07/27/06	60341.07	3.13		44.3				2.95		2.82		
M12	MW19	M12MW19	07/28/06	60342.06	4.27	2.79	10.2		0.383		1.07				
M12	MW17	M12MW17	07/28/06	60342.04	*9.26*		134				2.51				
M12	MW25	M12MW25	07/28/06	60342.07	5.81	*3.8*	28.6			0.843	2.61				
M12	MW18	M12MW18	07/28/06	60342.05	5.01		104	0.18	0.877		2.53		3.62		
M12	MW16	M12MW16	07/28/06	60342.03	*7.79*	*36.7*	67.4			1.91	3.08		2.36		

Table 1. Summary of Select Metal Concentrations in Groundwater from February 2005 to September 2010 at Site M-12

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	40	2
M12	MW16	MW16 Duplicate	07/28/06	60342.02	4.84	***41.4***	66.2			2.26	1.7		1.5		
M12	MW19	M12MW19	11/03/06	60480.06			6.96							9.32	
M12	MW20	M12MW20	11/03/06	60480.07			58		2.08		15			7.38	
M12*	MW17	M12MW17	11/03/06	60480.04			314		***4.98***					5.43	
M12	MW25	M12MW25	11/03/06	60480.12			23.6							10.5	
M12	MW24	M12MW24	11/03/06	60480.11			60.6	0.713	0.427		1.51		9.88	7.16	
M12	MW21	M12MW21	11/03/06	60480.08			52.8		1.1				8		
M12	MW23	M12MW23	11/03/06	60480.1			67.4		0.971	1.2	0.794		7.01	5.42	
M12	MW18	M12MW18	11/03/06	60480.05			161	0.4	0.4				4	5	
M12	MW26	M12MW26	11/03/06	60480.13		***5.01***	15.3		2.25				3.56	4.53	
M12	MW16	M12MW16	11/03/06	60480.03		***68***	76.1	0.157	***4.06***	1.73			2.98	3.65	
M12	MW22	MW22 Duplicate	11/03/06	60480.02		***73.4***	46.6		***18***				1.9		
M12	MW22	M12MW22	11/03/06	60480.09		***72.8***	45.9		***17.8***				1.69		
M12	MW19	M12MW19	02/12/07	70055.06			7.84	0.116	0.342					5.08	
M12	MW20	M12MW20	02/12/07	70055.07			44.8	0.119	1.3		7.94	1.64		6.78	
M12	MW25	M12MW25	02/12/07	70055.12		***4.49***	31.6		0.369		2.05			6.62	
M12	MW26	M12MW26	02/12/07	70055.13			33.8		0.78					6.26	
M12	MW25	MW25 Duplicate	02/12/07	70055.02		***3.03***	31		0.316		1.39			5.74	
M12	MW17	M12MW17	02/12/07	70055.04		2.54	83.1		2.06					3.56	
M12	MW24	M12MW24	02/12/07	70055.11			47.6	0.72	0.742		0.916		9.42	3.05	
M12	MW18	M12MW18	02/12/07	70055.05			228	0.662	0.521		1.45		5.49	3.76	
M12	MW16	M12MW16	02/12/07	70055.03		***52.2***	77.9	0.203	3.76	1.45			3.22	3.37	
M12	MW23	M12MW23	02/12/07	70055.1			79.4	0.883	1.45	1.13	4.05		25.1	4.56	
M12*	MW21	M12MW21	02/12/07	70055.08		***11.4***	580	0.279	***17.8***				1.63		
M12*	MW22	M12MW22	02/12/07	70055.09		***94***	46.3		***15.3***				1.36		
M12	MW20	M12MW20	05/09/07	70168.07		***3.77***	162	0.132	3.41		1.39	4.41		3.88	
M12*	MW22	M12MW22	05/09/07	70168.09		***47.9***	46.2		***10***			***11.8***			
M12	MW19	M12MW19	05/09/07	70168.06			7.92							7.42	
M12	MW21	M12MW21	05/09/07	70168.08		***4.2***	348	0.166	2.94	2.22		1.79		5.49	
M12	MW25	M12MW25	05/09/07	70168.12			24.1			0.694	2.78			8.73	
M12	MW17	M12MW17	05/09/07	70168.04			89.6		2	0.548	4.59	2.27		5.88	
M12	MW18	M12MW18	05/09/07	70168.05			310	0.734	0.909		3.46		8.73	3.62	
M12	MW24	M12MW24	05/09/07	70168.11			34.3	0.211	0.255	0.539	1.3		3.16	5.08	
M12	MW23	M12MW23	05/09/07	70168.1			79.5	0.46	1.73	1.52	2.65	***15.3***	19.5	7.12	
M12	MW16	M12MW16	05/09/07	70168.03		***42.3***	66.4		3.86	1.81		4.14	1.77		
M12	MW16	MW16 Duplicate	05/09/07	70168.02		***38.5***	63		3.68	1.75		3.58	1.68	3.91	
M12	MW26	M12MW26	05/09/07	70168.13		***5.38***	58.1	0.388	1.72	0.469	3.86		1.3	2.87	
M12	MW21	M12MW21	08/07/07	70299.08		***5.52***	47		0.866						
M12	MW19	M12MW19	08/07/07	70299.06		***3.47***	9.73							6.95	
M12	MW17	M12MW17	08/07/07	70299.04		***3.77***	62.4		1.28					4.59	
M12*	MW22	M12MW22	08/07/07	70299.09		***63.8***	39.6		***11.4***	0.935		***12.7***			
M12	MW26	M12MW26	08/07/07	70299.13		***5.34***	34.6		0.632	0.397				3.47	
M12	MW20	M12MW20	08/07/07	70299.07		***4.34***	45.7		0.785	0.248	2.83			3.96	

Table 1. Summary of Select Metal Concentrations in Groundwater from February 2005 to September 2010 at Site M-12

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	40	2
M12	MW25	M12MW25	08/07/07	70299.12		***8.41***	28.5			0.22	1.24			7.4	
M12	MW18	M12MW18	08/07/07	70299.05			215	0.561	0.92		2.16		6.36		
M12	MW23	M12MW23	08/07/07	70299.1		2.98	85.9	***1.23***	2.23	1.35	1.05		24.4		
M12	MW24	M12MW24	08/07/07	70299.11		***5.53***	31.6				1.03		2.14	3.72	
M12	MW16	M12MW16	08/07/07	70299.03		***24.5***	68.3		2.01	1.06		0.863	1.31		
M12	MW16	MW16 Duplicate	08/07/07	70299.02		***29.5***	69.1		2.06	1.25			0.973		
M12	MW25	M12MW25	11/30/07	70499.12			36.8			0.703	1.14				
M12	MW20	M12MW20	11/30/07	70499.07			21.9			0.631	7.17				
M12	MW21	M12MW21	11/30/07	70499.08			69.2			0.459					
M12	MW17	M12MW17	11/30/07	70499.04			16.7			0.4					
M12	MW22	M12MW22	11/30/07	70499.09		***40.4***	48.6			0.396	1.5				
M12	MW19	M12MW19	11/30/07	70499.06			6.51		0.319	0.338					
M12	MW23	M12MW23	11/30/07	70499.1			42.1	0.324	0.86	1.01	2.31		9.24	4.33	
M12	MW24	M12MW24	11/30/07	70499.11			44.4	0.652	0.507		1.74		9.1		
M12	MW16	M12MW16	11/30/07	70499.03		***68.7***	210	0.559		1.42	0.561		8.79		
M12	MW16	MW16 Duplicate	11/30/07	70499.02		***77.5***	212	0.566		1.67	0.77		8.67		
M12	MW18	M12MW18	11/30/07	70499.05	0.718		340	0.984	0.81	0.4	3.38		8.61		
M12*	MW26	M12MW26	11/30/07	70499.13		2.84	39.1	0.177	0.488	6.48	12.7		1.34		
M12	MW16	M12MW16	03/07/08	80074.03		***45.1***	110	0.182		1.88	4.66		7.2		
M12	MW16	MW16 Duplicate	03/07/08	80074.02		***40.8***	113	0.173		1.85	4.29		6.92		
M12	MW25	M12MW25	03/07/08	80074.12			29.1			1.26	8.7		6.82		
M12	MW19	M12MW19	03/07/08	80074.06			9.88		0.301	0.215	2.91		5.28		
M12	MW26	M12MW26	03/07/08	80074.13		***6.37***	78.7	0.379	0.822	1.21	15.9		5.17		
M12	MW17	M12MW17	03/07/08	80074.04			33.2			0.24	4.31		3.54		
M12	MW20	M12MW20	03/07/08	80074.07		***3.11***	41.9			0.494	7.78		3.52		
M12	MW21	M12MW21	03/07/08	80074.08			61.3				3.54		3.22		
M12	MW22	M12MW22	03/07/08	80074.09		***25.5***	42.5			0.362	4.39		2.08		
M12	MW18	M12MW18	03/07/08	80074.05			424	***1.11***	1.18	0.417	7.92		15.2		
M12	MW24	M12MW24	03/07/08	80074.11			49.7	0.553	0.454		6.2		12.7		
M12	MW23	M12MW23	03/07/08	80074.1		2.8	44.9		0.741	1.71	6.07		10.7		
M12*	MW22	M12MW22	05/15/08	80165.09		***93.4***	50.3		***8.2***			***8.49***			
M12	MW17	MW17 Duplicate	05/15/08	80165.02			72.2		1.36	0.679					
M12	MW17	M12MW17	05/15/08	80165.04			73		1.37	0.486					
M12	MW23	M12MW23	05/15/08	80165.1			46.8		0.634	1.97	3.92		7.95	3.94	
M12	MW24	M12MW24	05/15/08	80165.11			33.5	0.203	0.689	0.473	1.35		5.51	6.05	
M12*	MW19	M12MW19	05/15/08	80165.06			27.4		0.374	1.06	10.9		23.8	7.82	
M12	MW25	M12MW25	05/15/08	80165.12			25.7			0.873	7.35		2.2	7.22	
M12	MW18	M12MW18	05/15/08	80165.05			313	0.87	0.946		3.09		10.3	5.85	
M12	MW26	M12MW26	05/15/08	80165.13		***4.06***	41.9	0.295	1.65	1.74	5.97	2.16	1.65		
M12	MW16	M12MW16	05/15/08	80165.03		***23.3***	53		2.84	2.02		2.66	0.934		
M12	MW21	M12MW21	05/15/08	80165.08			57.1		0.727				0.755	4.31	
M12	MW20	M12MW20	05/15/08	80165.07			44		0.979		0.953		0.538	5.85	
M12	MW17	M12MW17	08/07/08	80286.04			114		2.1			1.83			

Table 1. Summary of Select Metal Concentrations in Groundwater from February 2005 to September 2010 at Site M-12

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	40	2
M12	MW25	M12MW25	08/07/08	80286.12		***3.01***	66.8		0.578					8.74	
M12	MW18	M12MW18	08/07/08	80286.05			314	0.823	1.26		1.63		9.39	5.05	
M12	MW16	M12MW16	08/07/08	80286.03		***22***	118	0.131	3.11	0.901		2.97	3.59		
M12	MW16	MW16 Duplicate	08/07/08	80286.02		***21.6***	118	0.155	2.91	0.746		1.86	3.43		
M12*	MW23	M12MW23	08/07/08	80286.1			31.8	***1.84***	1.71	1.6	5.99		29.9	5.07	
M12	MW24	M12MW24	08/07/08	80286.11			30.1		0.359				2.29	6.31	
M12	MW20	M12MW20	08/07/08	80286.07			44.6		0.895	0.359	22.1		1.96	4.86	
M12	MW19	M12MW19	08/07/08	80286.06	2.89		12.3						1.72	8.01	
M12*	MW22	M12MW22	08/07/08	80286.09		***68.8***	60.8		***10.3***	0.84		***11.6***	1.38		
M12	MW21	M12MW21	08/07/08	80286.08		2.78	43.7						1.04	6.04	
M12	MW26	M12MW26	08/07/08	80286.13		***3.44***	46.1		0.454				0.65	6.88	
M12	MW22	M12MW22	10/27/08	80390.09	4.48	***55.8***	45.9								
M12	MW25	M12MW25	10/27/08	80390.12			256		0.404						***2.15***
M12	MW21	M12MW21	10/27/08	80390.08			55		0.321						
M12	MW20	M12MW20	10/27/08	80390.07			31		0.391						
M12	MW17	M12MW17	10/27/08	80390.04			42.6		0.294						1.69
M12	MW26	M12MW26	10/27/08	80390.13			41.4	0.117	1.24	2.32					
M12	MW18	M12MW18	10/27/08	80390.05			316	0.94	1.05				8.75		
M12*	MW23	M12MW23	10/27/08	80390.1		2.6	40.8	***1.87***	2.27	2.4	3.82	1.5	30.8		
M12*	MW24	M12MW24	10/27/08	80390.11			60	***1.44***	1.41		0.821		25.6		
M12	MW16	M12MW16	10/27/08	80390.03	1.39	***43.5***	286	***1.03***		0.732			11.6		
M12*	MW16	MW16 Duplicate	10/27/08	80390.02		***58.7***	282	***1.37***		1.92			10.2		
M12	MW19	M12MW19	10/27/08	80390.06			11.8		0.88	0.544	3.57		0.775		
M12*	MW22	M12MW22	03/13/09	90109.09	***11***	***113***	50.9					***12***			
M12*	MW20	M12MW20	03/13/09	90109.07	***18***	***87.4***	34.1					***6.82***		***86.4***	
M12	MW26	M12MW26	03/13/09	90109.13	***15.1***	***76.2***	38.5				1.15	***5.56***		***78.7***	
M12*	MW17	M12MW17	03/13/09	90109.04	***15.6***	***83***	112					***6.17***		***72.7***	
M12*	MW21	M12MW21	03/13/09	90109.08	***11.8***	***109***	71.6					2.4		***106***	
M12*	MW16	M12MW16	03/13/09	90109.03	***12.8***	***84.2***	102	0.109		1.82		***10.2***		29.6	
M12*	MW19	M12MW19	03/13/09	90109.06	***16.5***	***91.1***	9.24	***1.15***	0.836	1.07	404	***18***		***79.5***	
M12*	MW25	M12MW25	03/13/09	90109.12	***21***	***111***	31.4			0.438	0.746	2.77		***91.5***	
M12*	MW24	M12MW24	03/13/09	90109.11	***18.6***	***72.8***	43.6	0.765				4.67	7.94	***92.4***	
M12	MW18	M12MW18	03/13/09	90109.05	***15.5***	***32.3***	280	0.809	0.745		0.846	***5.67***	6.77	***63.7***	
M12	MW23	M12MW23	03/13/09	90109.1	***7.04***	***56.8***	36.5	0.931	1.14	1.17	3.7	4.83	20.1	***65.9***	
M12	MW17	MW17 Duplicate	03/13/09	90109.02	***10.9***	***80.6***	117			1.01		4.44	1.55	***70.8***	
M12	MW20	M12MW20	06/08/09	90221.07	1.48	***27***	30.9				1.32	1.47			
M12	MW17	M12MW17	06/08/09	90221.04	3.95	***27.7***	122				1.29	2.55			
M12	MW21	M12MW21	06/08/09	90221.08	***6.2***	***26.1***	65.1					3.45		8.14	
M12	MW22	M12MW22	06/08/09	90221.09	4.28	***110***	50.8			0.92				3.39	
M12	MW18	MW18 Duplicate	06/08/09	90221.02	2.53	***14.7***	238	0.767	0.7		2.41		8.85		
M12	MW18	M12MW18	06/08/09	90221.05	2.89	***14.3***	232	0.746	0.633		2.34		8.67		
M12	MW24	M12MW24	06/08/09	90221.11	2.37	***16.7***	27.1	0.193			0.928		4.86		
M12	MW19	M12MW19	06/08/09	90221.06	4.52	***28.3***	8.72	0.124	0.219	0.539	9.91	1.57	3.41		

Table 1. Summary of Select Metal Concentrations in Groundwater from February 2005 to September 2010 at Site M-12

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	40	2
M12	MW26	M12MW26	06/08/09	90221.13	3.69	***11.5***	19.7	0.114		1.12	3.84		2.27		
M12	MW23	M12MW23	06/08/09	90221.1	3.14	***17.9***	46.7	0.574	0.782	0.472	2.63	2.4	16.7		
M12	MW25	M12MW25	06/08/09	90221.12	2.79	***29.2***	38.2				1.04	1.33	1.38	5.85	
M12	MW16	M12MW16	06/25/09	90263.01	2.31	***57.5***	97.8	0.246	0.441	1.84	0.979		2.55	13.4	
M12	MW22	M12MW22	09/08/09	90370.09		***64.8***	50.3		***4.34***			***5.02***			
M12	MW25	M12MW25	09/08/09	90370.12		***29.2***	58.3							***48.8***	
M12	MW21	M12MW21	09/08/09	90370.08		***26.8***	56.7							***44.9***	
M12	MW20	M12MW20	09/08/09	90370.07		***25***	28.6							39.2	
M12	MW17	M12MW17	09/08/09	90370.04		***21.6***	80.7		1.54					36.7	
M12	MW19	M12MW19	09/08/09	90370.06		***25.4***	7.92				1.07			36.6	
M12	MW26	M12MW26	09/08/09	90370.13		***20.4***	31.8							36.2	
M12	MW18	MW18 Duplicate	09/08/09	90370.02		***6.83***	239	0.792	0.627		2.92		7.25	18	
M12	MW18	M12MW18	09/08/09	90370.05		***9.26***	239	0.767	0.739		2.53		7.06	27	
M12	MW16	M12MW16	09/08/09	90370.03		***55***	205	0.651	2.08				6.95	20.8	
M12	MW24	M12MW24	09/08/09	90370.11		***17.3***	39.9	0.432					5.57	35.3	
M12*	MW23	M12MW23	09/08/09	90370.1		***15***	31.6	***1.67***	1.95		4.32		25.7	30.2	
M12	MW22	M12MW22	11/18/09	90451.09		***96.1***	52					***6.04***			
M12	MW17	M12MW17	11/18/09	90451.04		0.77	39.3								
M12	MW18	M12MW18	11/18/09	90451.05		1.11	256	0.801					9.12	9.05	
M12	MW18	MW18 Duplicate	11/18/09	90451.02			258	0.819					9.03		
M12	MW19	M12MW19	11/18/09	90451.06		0.99	16.9						3.05		
M12	MW24	M12MW24	11/18/09	90451.11		0.82	53.3	***1.24***					19.2	13.6	
M12	MW23	M12MW23	11/18/09	90451.1		1.05	57	0.568	1.13				18	10.9	
M12	MW16	M12MW16	11/18/09	90451.03		***39.1***	213	0.628					10.6		
M12	MW26	M12MW26	11/18/09	90451.13		2.27	27.1						1.01		
M12	MW25	M12MW25	11/18/09	90451.12	5.87	0.7	78						0.821	11.5	
M12	MW21	M12MW21	11/18/09	90451.08	***7.79***	1.74	64.3						0.644		
M12	MW20	M12MW20	11/18/09	90451.07		0.8	30.4						0.632		
M12	MW18	M12MW18	02/04/10	10049.05			146	0.446			2.16		6.3		
M12	MW18	MW18 Duplicate	02/04/10	10049.02		0.88	140	0.437			1.16		6.26		
M12	MW16	M12MW16	02/04/10	10049.03		***25.3***	84.9	0.106				2.58	4.14		
M12	MW26	M12MW26	02/04/10	10049.09		1.85	23.1	0.163	0.856	1.74			2.99		
M12	MW24	M12MW24	02/04/10	10049.08			37.6	0.677	0.817		1.59		12.4		
M12	MW23	M12MW23	02/04/10	10049.07			27.7	0.271		2.59	2.22		10.8		
M12	MW20	M12MW20	02/04/10	10049.06		1.17	22				1.75		1.25		
M12	MW17	M12MW17	02/04/10	10049.04		0.66	33.2						0.996		
M12	MW25	M12MW25	02/05/10	10052.06	5.23	1.69	22.5				1.08				
M12	MW22	M12MW22	02/05/10	10052.05		***47.2***	24.2		0.565						
M12	MW19	M12MW19	02/05/10	10052.03		0.69	3.43								
M12	MW19	MW19 Duplicate	02/05/10	10052.02			2.8								
M12	MW21	M12MW21	02/05/10	10052.04		1.1	50.5						1.02		
M12	MW19	LF3(1)	06/02/10	10226.05	4.91		5.81								0.72
M12	MW17	LF3(1) Duplicate	06/02/10	10226.02	5.34		4.64								

Table 1. Summary of Select Metal Concentrations in Groundwater from February 2005 to September 2010 at Site M-12

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	40	2
M12	MW17	LF3(1)	06/02/10	10226.03	***7.94***		4.53								1.76
M12	MW20	LF3(1)	06/02/10	10226.06			25.6								
M12	MW18	LF3(1)	06/02/10	10226.04			137	0.554					5.44		1.94
M12	MW26	LF3(1)	06/03/10	10234.03	5.87		27.1								
M12	MW25	LF3(1)	06/03/10	10234.06	***6.44***		15.3								
M12	MW26	LF3(1) Duplicate	06/03/10	10234.02	***6.7***		24.9								
M12	MW21	LF3(1)	06/03/10	10234.04	***8.59***		50.6								
M12	MW24	LF3(1)	06/03/10	10234.05	***6.25***		56.7	***1.35***	1				18.7		1.21
M12	MW23	LF3(1)	06/04/10	10235.05	***6.75***	0.74	70.3	***1.23***	1.86		3.41	2.78	32.4		
M12	MW16	LF3(1)	06/04/10	10235.04	***7.81***	***19.92***	69.3	0.169	1.41				1.98		
M12	MW22	LF3(1)	06/04/10	10235.03	***9.83***	***136***	48.8	0.138	2.43			***7***	0.65		
M12	MW22	LF3(1) Duplicate	06/04/10	10235.02	***11.8***	***122***	51.6	0.143	2.72			4.83	0.579		
M12	MW15	M12MW15	08/20/10	10357.02	***10.2***	0.68	305	0.815	2.42		4.93	3.19			
M12	MW14	M12MW14	08/20/10	10357.01		0.68	83.6	0.8	0.68		3.46		28.9		
M12	MW20	MW20 LF4(1)	09/08/10	10379.06	***13.3***		26.1					4.09			
M12	MW19	MW19 LF4(1)	09/08/10	10379.05	***13.7***	0.97	6.08								
M12	MW17	MW17 LF4(1)	09/08/10	10379.04	***16.1***	0.67	4.35								
M12	MW18	MW18 LF4(1)	09/08/10	10379.03	5.49	1.2	169	0.655	0.749		2.26		5.66		
M12	MW18	MW18 LF4(1)	09/08/10	10319.02	***8.99***	0.99	169	0.651					5.52		
M12	MW25	MW25 LF4(1)	09/09/10	10382.06	***15.5***	0.89	14.3								
M12	MW22	MW22 LF4(1)	09/09/10	10382.07	***17.7***	***47.82***	43.6		3.65			***7.19***			
M12	MW21	MW21 LF4(1)	09/09/10	10382.03	***18.9***	1.3	57		0.799						
M12	MW21	MW21 LF4(1)	09/09/10	10382.02	***20.2***	1.17	60.9		0.776						
M12	MW26	MW26 LF4(1)	09/09/10	10382.04	***14.3***	1.92	38.3	0.105	0.808	3.05	1.7	2.8			
M12	MW16	MW16 LF4(1)	09/09/10	10382.08	***12.8***	***47.03***	135	0.231	2.46	1.78		***5.31***	3.75		
M12*	MW24	MW24 LF4(1)	09/09/10	10382.05	***13.9***	1.24	61.3	***1.78***	1.05		4.06		24.7		
M12*	MW23	MW23 LF4(1)	09/10/10	10384.01	***12.8***	***3.67***	46.5	***2.05***	2	2.04	2.49	***5.49***	36.3		
				Mean	8.34	31.80	75.47	0.61	2.25	1.46	7.59	5.38	8.09	19.44	1.58
				90th Percentile	16.18	81.08	169.00	1.23	3.82	2.28	9.65	11.44	20.36	65.90	2.05
				Adjusted Mean	7.17	24.06	52.68	0.50	1.30	1.09	3.01	4.38	5.94	12.28	1.46

Notes: Adjusted mean does not include metal concentrations that exceed the 90th Percentile
1) Concentrations bolded and italicized exceed applicable Ground Water Quality Standard (GWQS)
2) Concentrations bolded and italicized in red exceed applicable GWQS and the 90th Percentile
3) Concentrations highlighted in red cells exceed exceed the 90th Percentile and are deemed to be extreme outliers
4) Samples highlighted in yellow contain two or more metal concentrations that exceed the 90th Percentile
5) Blank cells indicate metals were not detected, not analyzed, or not reported due to instrument errors
M: Metal detected in method blank
* Sample contains two or more metals at concentrations exceeding the 90th Percentile

Table 2
M-12 Landfill
Concentration Rankings and Recommended Monitoring Well Sampling

Well ID	Antimony	Arsenic	Beryllium	Lead	Selenium	Thallium
	NJDEP GWQS	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*
	6	*3*	*1*	*5*	*40*	*2*
M12MW16			1.37	10.2	*	*
M12MW17						
M12MW18						
M12MW19		91.1	1.15	18	*	*
M12MW20	18			6.82	*	*
M12MW21	20.2	109			*	*
M12MW22		136		12	*	*
M12MW23			2.05		*	*
M12MW24	18.6		1.78		*	*
M12MW25	21	111			*	*
M12MW26						

Notes:

Results reported in µg/L.

Within the reporting period, the four highest concentrations are listed for each parameter.

Shaded rows indicate monitoring wells recommended for metals analysis.

Metals were analyzed during the entire reporting period, 4th Quarter 2008 through 3rd Quarter 2010.

*Based on results from the 4th Quarter 2010 and 1st Quarter 2011 sampling events, analysis of Selenium and Thallium may be required.

SITE SPECIFIC EVALUATION
M-14 Landfill (FTMM-14)

Site data and 90th Percentile calculations are provided on Table 1 (attached), and summarized as follows:

90th Percentile Analysis Summary
M-14 Landfill

M-14	Sb	As	Ba	Be	Cd	Cr	Cu	Pb	Ni	Se*	Tl*
Feb 05 - Aug 10	n=39	n=98	n=164	n=43	n=83	n=62	n=74	n=30	n=94	n=72	n=4
90th Percentile	**16.90**	**39.33**	123.80	0.31	3.02	3.38	15.23	**7.04**	17.93	**51.03**	**4.57**
Mean	**8.88**	**13.47**	58.18	0.20	3.26	1.73	7.85	3.88	9.78	22.09	**2.98**
Adjusted Mean	**7.46**	**8.89**	39.46	0.13	0.99	1.02	4.00	3.22	5.12	16.25	**2.49**
NJDEP GWQS (ug/L)	**6**	**3**	**6000**	**1**	**4**	**70**	**1300**	**5**	**100**	**40**	**2**

Results reported in µg/L or parts per billion. Shaded cells indicate values that exceed the GWQS. "n" = population size in the statistical analysis. As a conservative measure, non-detectable results were not included in the statistical analysis, and thus the population size may be biased low when compared to the total number of data points. * Due to possible laboratory inaccuracies, the 90th Percentile Analysis was not used in developing sampling recommendations for these parameters.

90th Percentile Values Meet GWQS:

The 90th percentile values for barium, beryllium, cadmium, chromium, copper, and nickel are below their respective GWQS.

Note that due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Mean Values, or Adjusted Mean Values, Meet GWQS:

The mean values for lead and selenium are below their respective GWQS.

Recommendations:

In consideration of the above, the following sampling protocol is recommended for this site:

1. Selenium and Thallium - Due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Evaluation of the 4th Quarter 2010 and 1st Quarter 2011 sampling should be performed to determine compliance with the GWQS. If exceedances of the GWQS are identified, the sampling protocol specified under item 3 below should be followed.

2. With the exception of selenium and thallium (addressed above), no further sampling/analysis is recommended for metals with 90th percentile values below their respective GWQS.

3. For remaining metals, the collection of ground water samples using the following sampling protocol is recommended.

Collection of samples on a semiannual basis, targeting the times of the year typically exhibiting elevated precipitation amounts (generally 2nd and 4th quarters).

For future sampling events, raw and filtered water sample pairs should be collected from select wells (identified below), to evaluate the input from sample turbidity. Samples should be analyzed by a NJ certified laboratory. Slow-purge methodology should be followed for all sampling events which include metals analyses. Refer to the Concentration Ranking and Monitoring Well Selection Protocol described below.

Concentration Ranking and Monitoring Well Selection Protocol

For the specified sampling events, the monitoring wells recommended for sampling were selected with a bias towards those wells demonstrating the highest concentrations as follows.

For the available data from 4th Quarter 2008 through 3rd Quarter 2010, the highest observed concentrations for the site monitoring wells were ranked for each metal of concern. For larger sites, such as landfills, the highest four concentrations were listed; for smaller sites, the highest two concentrations were deemed adequate. Concentration Rankings and Recommended Well Sampling are summarized in Table 2 (attached).

Based on the specified protocol, monitoring wells M14MW19, M14MW22, M14MW23, and M14MW24 are recommended for sampling with laboratory analysis for antimony, arsenic, and lead, along with selenium and thallium as required.

Table 1. Summary of Select Metal Concentrations in Groundwater from February 2005 to August 2010 at Site M-14

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	40	2
M14	MW22	M14MW22	02/14/05	50087.07		*5.65*	25.1								
M14	MW21	M14MW21	02/14/05	50087.06			58.9								
M14	MW20	M14MW20	02/14/05	50087.05			13.5								
M14	MW19	M14MW19	02/14/05	50087.04			18.7								
M14	MW24	MW24 Duplicate	02/14/05	50087.03		*12.3*	26.3							24.1	
M14	MW24	M14MW24	02/14/05	50087.09		*10.5*	27.6							23	
M14	MW23	M14MW23	02/14/05	50087.08		*7.01*	124						9.34		
M14	MW23	M14MW23	05/12/05	50256.08			95.4								
M14	MW22	M14MW22	05/12/05	50256.07			46.1								
M14	MW21	M14MW21	05/12/05	50256.06			27.5								
M14	MW20	M14MW20	05/12/05	50256.05			9.29				6.05				
M14	MW19	M14MW19	05/12/05	50256.04			23.5								
M14	MW19	MW19 Duplicate	05/12/05	50256.03			20.3							24.1	
M14	MW24	M14MW24	05/12/05	50256.09			27.8							22.8	
M14	MW23	M14MW23	08/18/05	50409.08		*8.01*	35.1								
M14	MW22	M14MW22	08/18/05	50409.07			62.4								
M14	MW21	M14MW21	08/18/05	50409.06			25.9								
M14	MW20	M14MW20	08/18/05	50409.05			21.2								
M14	MW19	M14MW19	08/18/05	50409.04			13.2		2						
M14	MW20	MW20Duplicate	08/18/05	50409.03			19.3								
M14	MW24	M14MW24	08/18/05	50409.09		*6.04*	31.4							22	
M14	MW21	M14MW21	11/25/05	50616.06			50.3								
M14	MW20	M14MW20	11/25/05	50616.05			13.5								
M14	MW19	M14MW19	11/25/05	50616.04			22								
M14	MW21	MW21 Duplicate	11/25/05	50616.03			47.2								
M14	MW24	M14MW24	11/25/05	50616.09			27.7						9.52	28	
M14	MW23	M14MW23	11/25/05	50616.08		*9.03*	82		2.04				35.9		
M14	MW22	M14MW22	11/25/05	50616.07		*14.5*	77.5				8.48		11.4		
M14	MW21	M14MW21	01/27/06	60063.06			70.9								
M14	MW20	M14MW20	01/27/06	60063.05			9.62								
M14	MW19	M14MW19	01/27/06	60063.04			44								
M14	MW22	M14MW22	01/27/06	60063.07			24.4						7.13		
M14*	MW24	MW24 Duplicate	01/27/06	60063.03		*16.7*	30.3	0.523	*4.31*				18.9	22.9	
M14	MW24	M14MW24	01/27/06	60063.09		*14.1*	29.2						18.2	21.9	
M14	MW23	M14MW23	01/27/06	60063.08			117				27		12.9		
M14	MW21	MW21 Duplicate	04/25/06	60172.03	5.05		44.7		0.364		0.821				
M14	MW19	M14MW19	04/25/06	60172.04	4.59		15.1	0.134		3.81	2.46				
M14	MW20	M14MW20	04/25/06	60172.05			11.8		0.423		4.02		7.79		
M14*	MW22	M14MW22	04/25/06	60172.07			63.1	0.261	1.16	9.52	20	3.52	14	3.38	

Table 1. Summary of Select Metal Concentrations in Groundwater from February 2005 to August 2010 at Site M-14

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	40	2
M14	MW24	M14MW24	04/25/06	60172.09		***18.5***	26.5	0.127	0.817		0.864	1.26	13.6		
M14	MW23	M14MW23	04/25/06	60172.08		2.37	60	0.183	2.08	1.3	7.64	1.72	10.3		
M14	MW21	M14MW21	04/25/06	60172.06			42.1		0.545				1.51	3.32	
M14	MW21	M14MW21	09/05/06	60384.06			106	0.106			0.996				
M14	MW23	M14MW23	09/05/06	60384.08		***4.84***	90.6	0.148			4.87		3.36		
M14*	MW22	M14MW22	09/05/06	60384.07	3.4	***8.36***	104	0.268	0.465	1.09	34.3		22.2		
M14	MW20	M14MW20	09/05/06	60384.05		***7.04***	29.3	0.242			6.65		12.6		
M14*	MW24	M14MW24	09/05/06	60384.09		***39.4***	33.7	0.2	***4.64***		6.93		12.3		
M14	MW19	M14MW19	09/05/06	60384.04			46.6	0.174		1.85	6.03	2.23	1.46		
M14	MW21	MW21 Duplicate	09/05/06	60384.03			106	0.133			1.03		1.1		
M14	MW21	M14MW21	11/07/06	60483.06			28.8		0.302					6.67	
M14	MW19	M14MW19	11/07/06	60483.04			43.6		2.05					5.32	
M14	MW20	M14MW20	11/07/06	60483.05		***3.32***	25.2		0.779	0.934	2.26		4.31	8.47	
M14	MW24	MW24 Duplicate	11/07/06	60483.03		***6.96***	35.6	0.124	0.949		3.15		3.56	20.8	
M14	MW24	M14MW24	11/07/06	60483.09		***7.41***	35.9		0.812		2.03		3.49	23.1	
M14	MW22	M14MW22	11/07/06	60483.07		***3.47***	82.9		3.07	1.15			3.21	10.2	
M14	MW23	M14MW23	11/07/06	60483.08		***4.56***	108		0.613		3.44		13.3	7.88	
M14	MW21	M14MW21	02/23/07	70068.06			28		0.449					6.37	
M14	MW19	M14MW19	02/23/07	70068.04			32.7		3.19					5.78	
M14	MW24	M14MW24	02/23/07	70068.09		***7.11***	30.2	0.119	1.35		0.672		7.45	22.6	
M14	MW24	MW24 Duplicate	02/23/07	70068.03		***8.55***	30.5	0.111	1.26		1.4		7.42	23.3	
M14*	MW22	M14MW22	02/23/07	70068.07		***5.76***	194		***6.58***	1.4			6.13	11	
M14	MW20	M14MW20	02/23/07	70068.05		***5.7***	17.5		0.825	0.851	4.48		2.63	5.06	
M14	MW23	M14MW23	02/23/07	70068.08		***9.7***	122		2.5	0.99	13.9		13.9	6.3	
M14	MW19	M14MW19	05/11/07	70172.04			11.6		1.72			1.14			
M14	MW21	M14MW21	05/11/07	70172.06			31			0.263				6.36	
M14	MW20	M14MW20	05/11/07	70172.05			16.5	0.12	0.367	1.19	6.43		5.06	7.52	
M14	MW23	M14MW23	05/11/07	70712.08		***4.51***	163	0.117	0.786	0.879	4.64		4.44	9.21	
M14	MW24	M14MW24	05/11/07	70172.09		***10.7***	25.9	0.165	0.304	0.304			3.41	22.5	
M14	MW24	MW24 Duplicate	05/11/07	70172.03		***10.6***	25.5		0.268	0.559	0.881		3.03	20.9	
M14	MW22	M14MW22	05/11/07	70172.07		***7.22***	46	0.102	2.56	1.38		2.7	2.88	6.09	
M14	MW20	M14MW20	08/23/07	70314.05		***7.66***	21.9		0.738	2.36	5.18		8.44	6.36	
M14	MW24	M14MW24	08/23/07	70314.09		***8.54***	23.9	0.148	1.38	1.98	3.55		5.79	20.7	
M14	MW24	MW24 Duplicate	08/23/07	70314.03		***9.97***	23.3	0.129	1.17	1.86	2.33		5.53	22.9	
M14	MW22	M14MW22	08/23/07	70314.07		***9.89***	73.1		2.82	1.97	2.48	5	5.04	6.01	
M14	MW23	M14MW23	08/23/07	70314.08		***4.87***	216		1.13	1.32	6.43	2.01	4.84	7.81	
M14	MW19	M14MW19	08/23/07	70314.04		***3.71***	75.8	0.125	1.29	5.39	3.29	3.99	2.28		
M14	MW21	M14MW21	08/23/07	70314.06		2.82	123			0.462	0.526		0.853	11.8	
M14	MW21	M14MW21	12/31/07	70574.06			14		0.375						

Table 1. Summary of Select Metal Concentrations in Groundwater from February 2005 to August 2010 at Site M-14

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	40	2
M14	MW19	M14MW19	12/31/07	70574.04			187		0.867	0.73	1.62				
M14	MW24	MW24 Duplicate	12/31/07	70574.03	2.2	***39.3***	33.6		0.957	0.553	0.925		9.88		
M14	MW24	M14MW24	12/31/07	70574.09		***40.4***	34.1		1	0.655	0.746		9.25		
M14	MW23	M14MW23	12/31/07	70574.08			80.7		0.91	0.224	23.2		5.03		
M14	MW20	M14MW20	12/31/07	70574.05			12.9		0.454	0.653	4.24		0.923		
M14	MW22	M14MW22	12/31/07	70574.07			76.9		0.922	0.751	1.69		0.729		
M14	MW22	M14MW22	03/18/08	80089.07			33.7				1.53				
M14	MW21	M14MW21	03/18/08	80089.06			39.7		0.227		0.908				
M14	MW19	M14MW19	03/18/08	80089.04			32.5				7.19				
M14*	MW23	M14MW23	03/18/08	80089.08		***7.63***	203		0.777	0.329	60.6	1.19	7.11		
M14*	MW24	M14MW24	03/18/08	80089.09	3.91	***44.5***	27.8		0.455	0.213	1.29		28.4		***2.45***
M14*	MW24	MW24 Duplicate	03/18/08	80089.03	5.93	***43.1***	28.9		0.613	0.561	2.11		25.6		1.73
M14	MW20	M14MW20	03/18/08	80089.05		2.74	18.8		0.902	0.315	4.99		1.92		
M14*	MW20	M14MW20	05/19/08	80167.05		***4.5***		***1.2***	0.586					6.8	***4.94***
M14	MW21	MW21 Duplicate	05/19/08	80167.03			32.8		0.381	1.04				5.44	
M14	MW21	M14MW21	05/19/08	80167.06		2.88	34.8		0.307	0.692				4.88	
M14	MW23	M14MW23	05/19/08	80167.08		***4.2***	249		1.7	1.38	3.59	2.09	8.35		
M14	MW24	M14MW24	05/19/08	80167.09		***8.43***	25	0.165		0.424			6.2	15.5	
M14*	MW19	M14MW19	05/19/08	80167.04			25.3	0.253	1.08	17.8	4.4	***10.2***	1.71		
M14	MW22	M14MW22	05/19/08	80167.07		***3.33***	41.7		0.665	0.814			1.11		
M14	MW21	M14MW21	08/14/08	80299.06		***3.87***	27		0.523	1.16				3.57	
M14	MW23	M14MW23	08/14/08	80299.08		***14.2***	59.2		0.971	0.861				5.75	
M14	MW19	MW19 Duplicate	08/14/08	80299.03			17.5		1.42	0.511					
M14	MW24	M14MW24	08/14/08	80299.09		***4.64***	32.7	0.136		0.508			1.72	16.4	
M14	MW20	M14MW20	08/14/08	80299.05		***6.1***	92.1	0.145	2.13	4.07			1.68		
M14	MW22	M14MW22	08/14/08	80299.07		***4.02***	143		2.5	0.561			0.643		
M14	MW19	M14MW19	08/14/08	80299.04		2.97	16.8		1.51	0.372			0.506		
M14	MW21	M14MW21	10/30/08	80395.06			97.9								
M14	MW20	M14MW20	10/30/08	80395.05		***3.27***	19.8								
M14	MW24	M14MW24	10/30/08	80395.09			35.6		1.63				6.15		***4.02***
M14*	MW23	M14MW23	10/30/08	80395.08		***4.85***	360	***1.09***	***15.3***		15.8		50.7		
M14	MW22	M14MW22	10/30/08	80395.07	2.93		346						11.3		
M14	MW19	M14MW19	10/30/08	80395.04			61.1	0.112		2.08	6.21	2.73	1		
M14	MW19	MW19 Duplicate	10/30/08	80395.03			61.2			1.49	4.79	2.01	0.729		
M14	MW19	M14MW19	03/31/09	90139.04	***12***	***32.4***	47.7			1.32		***6.67***		33.6	
M14*	MW21	M14MW21	03/31/09	90139.06	***9.71***	***47.3***	71.9			1.25				***72.6***	
M14*	MW20	M14MW20	03/31/09	90139.05	***9.38***	***54.2***	25.4			1.22	2.9	***5.46***		***51.2***	
M14*	MW22	M14MW22	03/31/09	90139.07	***21.8***	***52.1***	184			1.05		***9.96***		***42.5***	
M14*	MW20	MW20 Duplicate	03/31/09	90139.03	***8.68***	***47.5***	42.3			0.873	2.18			***60.2***	

Table 1. Summary of Select Metal Concentrations in Groundwater from February 2005 to August 2010 at Site M-14

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	40	2
M14*	MW24	M14MW24	03/31/09	90139.09	***23.1***	***95.6***	23.7		1.05	0.629	11.8		7.79	***62.7***	
M14*	MW23	M14MW23	03/31/09	90139.08	***17.7***	***74***	73.2	0.332	1.9	0.696	20.8		7.03	***73.3***	
M14	MW21	M14MW21	06/17/09	90242.06		***21.7***	29.3		0.332					6.51	
M14	MW24	M14MW24	06/17/09	90242.09	4.81	***21.3***	28.4	0.103	0.891			***5.41***	3.94	4.42	
M14	MW19	MW19 Duplicate	06/17/09	90242.03	1.67	***16.3***	58.1		0.227	2.36	7.5	***6.79***	3.62	7.08	
M14	MW19	M14MW19	06/17/09	90242.04	3.05	***14.6***	52.4			2.23	7.03	3.97	3.55		
M14	MW23	M14MW23	06/17/09	90242.08		***29.5***	42.9	0.182	0.502		6.94	1.3	1.86	9.39	
M14	MW20	M14MW20	06/17/09	90242.05	1.88	***24.6***	15.9		0.621	0.476	11.8	1.79	1.64	8.42	
M14	MW22	M14MW22	06/17/09	90242.07	4.92	***28.1***	213		0.743		1.39		0.518	9.71	
M14	MW22	M14MW22	09/10/09	90375.06		***22.7***	156		1.21					33.2	
M14	MW21	M14MW21	09/10/09	90375.05		***17.8***	29							31.1	
M14	MW20	M14MW20	09/10/09	90375.04		***22.7***	18.9							24.1	
M14	MW19	M14MW19	09/10/09	90375.03		***11.2***	45		0.573					12.7	
M14	MW19	MW19 Duplicate	09/10/09	90375.02		***9.69***	55.7		1.08			4.72		10.2	
M14	MW24	M14MW24	09/10/09	90375.08	***6.59***	***30.9***	20.9						1.25	***58***	
M14	MW23	M14MW23	09/10/09	90375.07		***23***	61.6						0.582	28.6	
M14	MW20	M14MW20	11/20/09	90452.05		1.92	96.9					2.93	8.11		
M14	MW22	M14MW22	11/20/09	90452.07		0.97	393		0.521			2.41	6.02		
M14*	MW23	M14MW23	11/20/09	90452.08		2.6	208		***5.82***				40.1	12.9	
M14	MW19	M14MW19	11/20/09	90452.04		1.03	72.2			1.81			2.62		
M14	MW24	M14MW24	11/20/09	90452.09	4.9	***3.41***	25.9						2.61	10.7	
M14	MW19	MW19 Duplicate	11/20/09	90452.03		0.68	90.7			1.09		3.11	2.42		
M14	MW21	M14MW21	11/20/09	90452.06		0.75	51.9						0.745		
M14	MW22	LF3(1)	03/31/10	10114.09	***14.3***		29.4							***47.6***	1.74
M14	MW20	LF3(1)	03/31/10	10114.08	***6.67***		8.84							38.1	
M14	MW24	LF3(1)	03/31/10	10114.04	***6.94***		30.9							***49.5***	
M14	MW23	LF3(1)	03/31/10	10114.06	***9.93***	2.85	40.8	0.056		7.66	10.5	4.22	6.97	37	
M14	MW21	LF3(1)	03/31/10	10114.05	***12.2***	1.04	14.4		0.622		3.29		17.3	***86.7***	
M14	MW24	LF3(1) Duplicate	03/31/10	10114.03	***13.9***	0.9	13.9		0.713		2.96		16.2	***85.8***	
M14	MW19	LF3(1)	03/31/10	10114.07	4.94	0.89	12.1	0.047		3.64	1.09	3.65	1.61	17.8	
M14	MW19	LF4(1) Duplicate	06/04/10	10237.03	***8.64***		8.56	0.086	0.527						
M14	MW19	LF4(1)	06/04/10	10237.04			9.41	0.108							
M14	MW22	LF4(1)	06/07/10	10240.08			16.6	0.052							
M14	MW20	LF4(1) Duplicate	06/07/10	10240.03	***7.12***		10.3	0.058							
M14	MW20	LF4(1)	06/07/10	10240.04	4.97		10.2	0.065							
M14	MW21	LF4(1)	06/07/10	10240.05	***6.5***		26.7	0.065							
M14	MW24	LF4(1)	06/07/10	10240.07	***13.2***	***4.74***	21.8	0.135	0.624				2.05		
M14	MW23	LF4(1)	06/07/10	10240.06	***8.43***	***5.01***	22.4	0.069					0.699		
M14	MW21	M14MW21	08/26/10	10363.06			29.3				2.14				

Table 1. Summary of Select Metal Concentrations in Groundwater from February 2005 to August 2010 at Site M-14

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	40	2
M14*	MW23	M14MW23	08/26/10	10363.07	***16.7***	***3.49***	165		***9.73***		6.66	3.02	44.2		
M14	MW19	M14MW19	08/26/10	10363.04		1.83	13.1		0.663		1.6		0.828		
M14	MW19	MW19 Duplicate	08/26/10	10363.03	4.91	1.49	14.7				1.81		0.799		
M14	MW20	M14MW20	08/26/10	10363.05		1.75	11.3				2.51		0.471		
M14	MW18	M14MW18	08/27/10	10366.01		***10.25***	10.1			1.05	3.94		3.8		
M14*	MW22	M14MW22	08/27/10	10365.05	***22.5***	1.71	219	0.324	***145***		115	***9.32***	***205***		
M14	MW24	M14MW24	08/27/10	10365.04	***13.5***	1.58	19.6				3.02		2.14		
M14	MW24	MW24 Duplicate	08/27/10	10365.03	***12.8***	1.63	20.5				2.98		1.28		
				Mean	8.88	13.47	58.18	0.20	3.26	1.73	7.85	3.88	9.78	22.09	2.98
				90th Percentile	16.90	39.33	123.80	0.31	3.02	3.38	15.23	7.04	17.93	51.03	4.57
				Adjusted Mean	7.46	8.89	39.46	0.13	0.99	1.02	4.00	3.22	5.12	16.25	2.49

Notes: Adjusted mean does not include metal concentrations that exceed the 90th Percentile

1) Concentrations bolded and italicized exceed applicable Ground Water Quality Standard (GWQS)
2) Concentrations bolded and italicized in red exceed applicable GWQS and the 90th Percentile
3) Concentrations highlighted in red cells exceed exceed the 90th Percentile and are deemed to be extreme outliers
4) Samples highlighted in yellow contain two or more metal concentrations that exceed the 90th Percentile
5) Blank cells indicate metals were not detected, not analyzed, or not reported due to instrument errors

M: Metal detected in method blank

* Sample contains two or more metals at concentrations exceeding the 90th Percentile

Table 2
M-14 Landfill
Concentration Rankings and Recommended Monitoring Well Sampling
4th Quarter 2008 - 3rd Quarter 2010

Well ID	Antimony	Arsenic	Lead	Selenium	Thallium
	NJDEP GWQS	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*
	6	*3*	*5*	*40*	*2*
M14MW19			6.79	*	*
M14MW20					
M14MW21					
M14MW22	22.5		9.96	*	*
M14MW23		74		*	*
M14MW24	23.1	95.6		*	*

Notes:

Results reported in µg/L.

Within the reporting period, the two highest concentrations are listed for each parameter.

Shaded rows indicate monitoring wells recommended for metals analysis.

Metals were analyzed during the entire reporting period, 4th Quarter 2008 through 3rd Quarter 2010.

*Based on results from the 4th Quarter 2010 and 1st Quarter 2011 sampling events, analysis of Selenium and Thallium may be required.

SITE SPECIFIC EVALUATION
MP-18 Landfill (FTMM-18)

Site data and 90th Percentile calculations are provided on Table 1 (attached), and summarized as follows:

90th Percentile Analysis Summary
MP-18 Landfill

MP-18	Sb	As	Ba	Be	Cd	Cr	Cu	Pb	Ni	Se*	Tl*
Feb 05 - Aug 10	n=16	n=35	n=49	n=8	n=27	n=20	n=13	n=20	n=24	n=24	n=11
90th Percentile	29.95	48.36	356.8	0.5513	5.772	3.939	8.186	11.14	10.714	48.96	9.89
Mean	14.36	19.42	216.50	0.30	5.09	2.40	4.68	8.94	4.55	27.70	7.57
Adjusted Mean	11.78	8.86	170.29	0.18	2.38	1.66	2.38	4.49	3.03	23.14	4.67
NJDEP GWQS (ug/L)	**6**	**3**	**6000**	**1**	**4**	**70**	**1300**	**5**	**100**	**40**	**2**

Results reported in µg/L or parts per billion. Shaded cells indicate values that exceed the GWQS. "n" = population size in the statistical analysis. As a conservative measure, non-detectable results were not included in the statistical analysis, and thus the population size may be biased low when compared to the total number of data points. * Due to possible laboratory inaccuracies, the 90th Percentile Analysis was not used in developing sampling recommendations for these parameters.

90th Percentile Values Meet GWQS:

The 90th percentile values for barium, beryllium, chromium, copper, and nickel are below their respective GWQS.

Note that due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Mean Values, or Adjusted Mean Values, Meet GWQS:

The mean value for selenium is below its GWQS.

The adjusted mean values for cadmium and lead are below their respective GWQS.

Recommendations:

In consideration of the above, the following sampling protocol is recommended for this site:

1. Selenium and Thallium - Due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Evaluation of the 4th Quarter 2010 and 1st Quarter 2011 sampling should be performed to determine compliance with the GWQS. If exceedances of the GWQS are identified, the sampling protocol specified under item 3 below should be followed.

2. With the exception of selenium and thallium (addressed above), no further sampling/analysis is recommended for metals with 90th percentile values below their respective GWQS.

3. For remaining metals, the collection of ground water samples using the following sampling protocol is recommended.

Collection of samples on a semiannual basis, targeting the times of the year typically exhibiting elevated precipitation amounts (generally 2nd and 4th quarters).

For future sampling events, raw and filtered water sample pairs should be collected from select wells (identified below), to evaluate the input from sample turbidity. Samples should be analyzed by a NJ certified laboratory. Slow-purge methodology should be followed for all sampling events which include metals analyses. Refer to the Concentration Ranking and Monitoring Well Selection Protocol described below.

Concentration Ranking and Monitoring Well Selection Protocol

For the specified sampling events, the monitoring wells recommended for sampling were selected with a bias towards those wells demonstrating the highest concentrations as follows.

For the available data from 4th Quarter 2008 through 3rd Quarter 2010, the highest observed concentrations for the site monitoring wells were ranked for each metal of concern. For larger sites, such as landfills, the highest four concentrations were listed; for smaller sites, the highest two concentrations were deemed adequate. Concentration Rankings and Recommended Well Sampling are summarized in Table 2 (attached).

Based on the specified protocol, monitoring wells MP18MW24 and MP18MW25 are recommended for sampling with laboratory analysis for antimony, arsenic, and lead, along with selenium and thallium as required.

Table 1. Summary of Select Metal Concentrations in Groundwater from February 2005 to August 2010 at Site M-18

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	40	2
MP18	MW24	MP18MW24	2/2/2005	50062.01			209							***56.1***	
MP18	MW25	MP18MW25	2/2/2005	50062.02			135					***6.1***		27.1	
MP18	MW25	MP18MW25	5/3/2005	50235.02		***9.06***	30.2								
MP18	MW24	MP18MW24	5/3/2005	50235.01			132							39	
MP18	MW25	MP18MW25	8/12/2005	50401.05			287								
MP18	MW24	MW24 Duplicate	8/12/2005	50401.03			260		***5.76***					***49.5***	
MP18	MW24	MP18MW24	8/12/2005	50401.04			272		***5.79***					***47.7***	
MP18	MW24	MP18MW24	11/10/2005	50588.01		***6.67***	133					***11.1***	9.58	28.9	
MP18	MW25	MP18MW25	11/10/2005	50588.02		***15.9***	108		3.27				6.3	21.8	
MP18	MW25	MP18MW25	1/19/2006	60036.02		***6.16***	38.4								
MP18	MW24	MP18MW24	1/19/2006	60036.01		***8.74***	52								
MP18	MW25	MP18MW25	4/19/2006	60167.02	2.55	***7.42***	95.3				0.917		5.03		***3.31***
MP18	MW24	MP18MW24	4/19/2006	60167.01	2.32		163		0.544	1.66	0.659	1.45	3.77		***4.94***
MP18	MW25	MP18MW25	8/11/2006	60357.02	2.49		249				0.999				
MP18	MW24	MP18MW24	8/11/2006	60357.01	2.93		225			1.87					***4.1***
MP18	MW25	MP18MW25	12/13/2006	60530.02		***12.3***	125		***5.69***	1.6			1.74	23.4	***9.89***
MP18	MW24	MP18MW24	12/13/2006	60530.01		***9.4***	152		1.28	0.94			1.02	29.3	
MP18	MW25	MP18MW25	3/5/2007	70083.02		***10.4***	34		1.85	1.55			6.41	12.8	***3.66***
MP18	MW24	MP18MW24	3/5/2007	70083.01		***6.24***	87.5		0.741				3.22	19.4	
MP18	MW25	MP18MW25	6/7/2007	70207.02		***12.8***	105		***4.26***	1.14		4.2		20.6	
MP18	MW24	MP18MW24	6/7/2007	70207.01		***15.2***	216	0.201	3.37	0.922		3.36		***45.5***	
MP18*	MW25	MP18MW25	9/7/2007	70328.02		***101***	1380	***1.21***	***65.7***	13.9		***86.5***	13.6		
MP18	MW24	MP18MW24	9/7/2007	70328.01		***15***	250	0.231	***4.34***	1.31		4.8	0.779	***47.1***	
MP18	MW24	MP18MW24	11/14/2007	70462.01			274		0.494	2.38	2.22		2.15		***2.31***
MP18	MW25	MP18MW25	11/14/2007	70462.02		***3.25***	188				2.18		1.42		
MP18*	MW25	MP18MW25	3/4/2008	80067.02		***4.61***	43.9		0.262		9.21		20.8		***3.31***
MP18	MW24	MP18MW24	3/4/2008	80067.01			108		0.519	1.2	1.93	2.48	11.2		***5.8***
MP18	MW24	MP18MW24	5/14/2008	80162.01		***6.41***	115	0.195		0.942		3.01	5.25	24.2	
MP18	MW25	MP18MW25	5/14/2008	80162.02		***7***	39.3	0.1	2.4	2.2		3	3		
MP18	MW25	MP18MW25	8/13/2008	80296.02		***13.5***	295	0.12	***8.83***			***6.89***		7.79	
MP18	MW24	MP18MW24	8/13/2008	80296.01		***13.2***	243	0.269	***5.04***	1.61		3.11		17.9	
MP18*	MW25	MP18MW25	10/24/2008	80387.02	***11.7***		376			4.29	3.43				***2.21***
MP18	MW24	MP18MW24	10/24/2008	80387.01			310		0.568	2			3.6		***7.19***
MP18*	MW24	MP18MW24	3/25/2009	90121.01	***28.2***	***140***	279			3.9	25.5	***5.87***		36.7	***36.5***
MP18*	MW25	MP18MW25	3/25/2009	90121.02	***22.7***	***112***	147			0.923	2.37	***11.5***		***73.4***	
MP18	MW25	MP18MW25	6/2/2009	90219.02	***6.19***	***15.4***	133							6.19	
MP18	MW24	MP18MW24	6/2/2009	90219.01	***8***		225	0.113		1.85		3.07			
MP18	MW24	MP18MW24	9/17/2009	90385.01		***42.9***	289		3.17						

Table 1. Summary of Select Metal Concentrations in Groundwater from February 2005 to August 2010 at Site M-18

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	40	2
MP18	MW25	MP18MW25	9/17/2009	90385.02		***52***	352		2.05				0.824	24.6	
MP18	MW25	MP18MW25	11/23/2009	90458.02		2.98	170								
MP18	MW24	MP18MW24	11/23/2009	90458.01		1.33	460								
MP18	MW25	MP18MW25	2/2/2010	10046.02	***6.43***	***8.11***	44						2.2		
MP18	MW24	MP18MW24	2/2/2010	10046.01		1.86	182						1.88		
MP18	MW25	LF3(1) Duplicate	5/14/2010	10193.03	***14.7***	1.28	109		0.953			3.08			
MP18	MW25	LF3(1)	5/14/2010	10193.04	***16.3***	2.15	118		1.2			3.31			
MP18	MW24	LF3(1)	5/14/2010	10193.05	***15.9***	1.25	158		0.942			3.58	0.898		
MP18	MW24	LF4(1)	9/14/2010	10389.05	***24.5***	1.64	312		3.99	1.89	3.45	***8.89***	2.19	1.91	
MP18*	MW25	LF4(1)	9/14/2010	10389.04	***33.1***	***7.58***	459		2.09		4.09		1.33	1.61	
MP18*	MW25	LF4(1) Duplicate	9/14/2010	10389.03	***31.7***	***4.82***	441		2.32		3.9	3.56	1.03	2.34	
				Mean	14.36	19.42	216.50	0.30	5.09	2.40	4.68	8.94	4.55	27.70	7.57
				90th Percentile	29.95	48.36	356.8	0.5513	5.772	3.939	8.186	11.1	10.714	48.96	9.89
				Adjusted Mean	11.78	8.86	170.29	0.18	2.38	1.66	2.38	4.49	3.03	23.14	4.67

Notes: Adjusted mean does not include metal concentrations that exceed the 90th Percentile

1) Concentrations bolded and italicized exceed applicable Ground Water Quality Standard (GWQS)
2) Concentrations bolded and italicized in red exceed applicable GWQS and the 90th Percentile
3) Concentrations highlighted in red cells exceed exceed the 90th Percentile and are deemed to be extreme outliers
4) Samples highlighted in yellow contain two or more metal concentrations that exceed the 90th Percentile
5) Blank cells indicate metals were not detected, not analyzed, or not reported due to instrument errors

M: Metal detected in method blank

* Sample contains two or more metals at concentrations exceeding the 90th Percentile

Table 2
MP-18 Landfill
Concentration Rankings and Recommended Monitoring Well Sampling
4th Quarter 2008 - 3rd Quarter 2010

Well ID	Antimony	Arsenic	Lead	Selenium	Thallium
	NJDEP GWQS	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*
	6	*3*	*5*	*40*	*2*
MP18MW24	28.2	140	8.89	*	*
MP18MW25	33.1	112	11.5	*	*

Notes:

Results reported in µg/L.

Within the reporting period, the two highest concentrations are listed for each parameter.

Shaded rows indicate monitoring wells recommended for metals analysis.

Metals were analyzed during the entire reporting period, 4th Quarter 2008 through 3rd Quarter 2010.

*Based on results from the 4th Quarter 2010 and 1st Quarter 2011 sampling events, analysis of Selenium and Thallium may be required.

SITE SPECIFIC EVALUATION
Building CW-1 (FTMM-22)

Site data and 90th Percentile calculations are provided on Table 1 (attached), and summarized as follows:

90th Percentile Analysis Summary
Building CW-1

CW-1	Sb	As	Ba	Be	Cd	Cr	Cu	Pb	Ni	Se*	Tl*
April 10 - Sept 10	n=18	n=22	n=43	n=33	n=16	n=13	n=19	n=9	n=41	n=0	n=2
90th Percentile	12.90	10.16	191.40	0.43	1.89	3.16	5.06	5.30	18.60	NR	1.07
Mean	8.99	5.33	81.42	0.23	1.49	2.08	3.36	3.84	7.09	NR	1.01
Adjusted Mean	8.72	2.35	60.06	0.16	1.33	1.66	1.86	3.65	5.12	NR	0.93
NJDEP GWQS (ug/L)	**6**	**3**	**6000**	**1**	**4**	**70**	**1300**	**5**	**100**	**40**	**2**

Results reported in µg/L or parts per billion. Shaded cells indicate values that exceed the GWQS. "n" = population size in the statistical analysis. As a conservative measure, non-detectable results were not included in the statistical analysis, and thus the population size may be biased low when compared to the total number of data points. * Due to possible laboratory inaccuracies, the 90th Percentile Analysis was not used in developing sampling recommendations for these parameters.

90th Percentile Values Meet GWQS:

The 90th percentile values for barium, beryllium, cadmium, chromium, copper, nickel, and thallium are below their respective GWQS.

Note that due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Mean Values, or Adjusted Mean Values, Meet GWQS:

The mean value for lead is below its GWQS.

The adjusted mean value for arsenic is below its GWQS.

Recommendations:

In consideration of the above, the following sampling protocol is recommended for this site:

1. Selenium and Thallium - Due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Evaluation of the 4th Quarter 2010 and 1st Quarter 2011 sampling should be performed to determine compliance with the GWQS. If exceedances of the GWQS are identified, the sampling protocol specified under item 3 below should be followed.

2. With the exception of selenium and thallium (addressed above), no further sampling/analysis is recommended for metals with 90th percentile values below their respective GWQS.

3. For remaining metals, the collection of ground water samples using the following sampling protocol is recommended.

Collection of samples on a semiannual basis, targeting the times of the year typically exhibiting elevated precipitation amounts (generally 2nd and 4th quarters).

For future sampling events, raw and filtered water sample pairs should be collected from select wells (identified below), to evaluate the input from sample turbidity. Samples should be analyzed by a NJ certified laboratory. Slow-purge methodology should be followed for all sampling events which include metals analyses. Refer to the Concentration Ranking and Monitoring Well Selection Protocol described below.

Concentration Ranking and Monitoring Well Selection Protocol

For the specified sampling events, the monitoring wells recommended for sampling were selected with a bias towards those wells demonstrating the highest concentrations as follows.

For the available data from 4th Quarter 2008 through 3rd Quarter 2010, the highest observed concentrations for the site monitoring wells were ranked for each metal of concern. For larger sites, such as landfills, the highest four concentrations were listed; for smaller sites, the highest two concentrations were deemed adequate. Concentration Rankings and Recommended Well Sampling are summarized in Table 2 (attached).

Based on the specified protocol, monitoring wells CW1MW29, CW1MW36, CW1MW37, CW1MW38, CW1MW39, and CW1MW40 are recommended for sampling with laboratory analysis for antimony, arsenic, and lead, along with selenium and thallium as required.

Table 1. Summary of Select Metal Concentrations in Groundwater from April 2010 to September 2010 at Site CW-1

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	2
CW1	MW26	LF1(1) Duplicate	4/19/2010	10150.03			67.9	0.987					4.41	
CW1	MW26	LF1(1)	4/19/2010	10150.04		0.72	60.4	0.892					3.59	
CW1	MW27	LF1(1)	4/19/2010	10150.05			68.4	0.236					3.57	
CW1	MW29	LF1(1)	4/19/2010	10150.06		1.02	13.9	0.043	3.29	1.33			1.48	
CW1	MW30	LF1(1)	4/19/2010	10150.07			10			1.13			0.919	
CW1	MW31	LF1(1)	4/20/2010	10154.04			106	0.23		1.01			3.91	
CW1	MW31	LF1(1) Duplicate	4/20/2010	10154.03			117	0.245					3.75	
CW1	MW33	LF1(1)	4/20/2010	10154.06			22.9	0.219		1.33			2.04	
CW1	MW32	LF1(1)	4/20/2010	10154.05			185	0.252	0.65				11.2	
CW1	MW34	LF1(1)	4/20/2010	10154.07			17.1	0.111					1.92	
CW1*	MW38	LF1(1)	4/22/2010	10160.08	***10.3***	2.67	242		1.9			***5.33***	6.18	
CW1*	MW39	LF1(1)	4/22/2010	10160.07	***12.4***	***25.92***	54.9	0.219	1.75			3.67	32.2	
CW1*	MW36	LF1(1)	4/22/2010	10160.04	***12.9***		265	0.102	1.52		16.8		12	
CW1	MW35	LF1(1)	4/22/2010	10160.05			58.4	0.201		5.56	2.12		12	
CW1*	MW36	LF1(1) Duplicate	4/22/2010	10160.03	***13.6***	0.78	256	0.121	1.85		15.4	2.66	11.5	
CW1	MW282	LF1(1)	4/22/2010	10160.06			4.89						0.463	
CW1	MW291	LF1(1)	4/23/2010	10162.05			15.9							
CW1	MW281	CW1MW281	4/23/2010	10162.06	***7.07***	1.06	94.3		1.77			4.88	5.38	
CW1	MW40	LF1(1)	4/23/2010	10162.04	***7***	***9.69***	57.8	0.138	0.932				19.5	
CW1	MW40	LF1(1) Duplicate	4/23/2010	10162.03	***8.99***	***9.61***	55.4	0.095	1.18				19.4	
CW1	MW37	LF1(1)	4/23/2010	10162.08	***10.7***		57.6		0.565				13.8	
CW1	MW28	LF1(1)	4/23/2010	10162.07			31.2	0.173		1.09			0.915	
CW1	MW26	LF2(1) Duplicate	8/10/2010	10338.03	5.09		18.2	0.216		2.67	1.43		1.33	
CW1	MW26	LF2(1)	8/10/2010	10338.04			17.7	0.223		2.4	1.51		0.804	
CW1	MW282	LF2(1)	8/11/2010	10338.07			142	0.139			1.66		8.53	0.93
CW1*	MW31	LF1(1)	8/11/2010	10338.08	***7.66***		263	0.783			1.96		6.51	
CW1	MW29	LF2(1)	8/11/2010	10338.09	***10.3***	0.81	35.6	0.06	1.55	1.81	2.3		1.83	
CW1	MW27	LF2(1)	8/11/2010	10338.05			20.1	0.179		3.23	1.94		1.39	
CW1	MW30	LF2(1)	8/11/2010	10338.06			11	0.09			1.69		0.636	1.09
CW1	MW35	LF2(1)	8/17/2010	10346.05		0.68	59.8	0.283		1.4			5.76	
CW1	MW36	LF2(1)	8/17/2010	10346.07	5.87	0.86	104	0.108			2.47		4.34	
CW1	MW33	LF2(1) Duplicate	8/17/2010	10346.03		0.89	47.4	0.442		2.86			4.19	
CW1	MW291	LF2(1)	8/17/2010	10346.08		0.68	135	0.12			1.22		3.67	
CW1	MW33	LF2(1)	8/17/2010	10346.04		1.27	45.3	0.401		1.22			3.4	
CW1	MW34	CW1MW34	8/17/2010	10346.06		0.09	23	0.05					2.13	
CW1	MW37	LF2(1)	8/17/2010	10346.09	***6.58***	1.13	45.6						11.5	
CW1	MW38	LF2(1)	8/24/2010	10362.04	***9.16***	***5.06***	176		1.48		1.9	***5.29***	4.91	
CW1	MW38	LF2(1) Duplicate	8/24/2010	10362.03	***8.65***	***5.06***	193		1.87		2.09	3.58	4.88	

Table 1. Summary of Select Metal Concentrations in Groundwater from April 2010 to September 2010 at Site CW-1

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	2
CW1	MW281	CW1MW281	8/25/2010	10362.07	5.7	1.54	115		1.13		1.79	2.45		
CW1*	MW39	LF2(1)	8/25/2010	10362.05	***12.9***	***36.4***	42.2	0.118	1.3		2.31	3.83	30.4	
CW1	MW40	LF2(1)	8/25/2010	10362.06	***6.94***	***10.21***	41.9	0.045	1.11		2.09	2.86	18.6	
CW1	MW28	LF2(1)	8/25/2010	10362.08		1	18.1	0.095			1.02		1.2	
CW1	MW32	LF2(1)	8/27/2010	10367.01			85.2	0.07			2.18		4.74	
				Mean	8.99	5.33	81.42	0.23	1.49	2.08	3.36	3.84	7.09	1.01
				90th Percentile	12.90	10.16	191.40	0.43	1.89	3.16	5.06	5.30	18.60	1.07
				Adjusted Mean	8.72	2.35	60.06	0.16	1.33	1.66	1.86	3.65	5.12	0.93

Notes: Adjusted mean does not include metal concentrations that exceed the 90th Percentile

1) Concentrations bolded and italicized exceed applicable Ground Water Quality Standard (GWQS)
2) Concentrations bolded and italicized in red exceed applicable GWQS and the 90th Percentile
3) Concentrations highlighted in red cells exceed exceed the 90th Percentile and are deemed to be extreme outliers
4) Samples highlighted in yellow contain two or more metal concentrations that exceed the 90th Percentile
5) Blank cells indicate metals were not detected, not analyzed, or not reported due to instrument errors

M: Metal detected in method blank

* Sample contains two or more metals at concentrations exceeding the 90th Percentile

Table 2
Building CW-1
Concentration Rankings and Recommended Monitoring Well Sampling
4th Quarter 2008 - 3rd Quarter 2010

Well ID	Antimony	Arsenic	Lead	Selenium	Thallium
	NJDEP GWQS	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*
	6	*3*	*5*	*40*	*2*
CW1MW26					
CW1MW27					
CW1MW28					
CW1MW281					
CW1MW29	10.3			*	*
CW1MW30					
CW1MW31					
CW1MW32					
CW1MW34					
CW1MW35					
CW1MW36	13.6			*	*
CW1MW37	10.7			*	*
CW1MW38		5.06	5.33	*	*
CW1MW39	12.9	36.4		*	*
CW1MW40		10.21		*	*

Notes:

Results reported in µg/L.

Within the reporting period, the four highest concentrations are listed for each parameter.

Shaded rows indicate monitoring wells recommended for metals analysis.

Metals were analyzed during the following quarters: 2nd & 3rd Quarters 2010.

*Based on results from the 4th Quarter 2010 and 1st Quarter 2011 sampling events, analysis of Selenium and Thallium may be required.

SITE SPECIFIC EVALUATION
Landfill CW-3A (FTMM-25)

Site data and 90th Percentile calculations are provided on Table 1 (attached), and summarized as follows:

90th Percentile Analysis Summary
Landfill CW-3A

CW-3A	Sb	As	Ba	Be	Cd	Cr	Cu	Pb	Ni	Se*	Tl*
Jan 05 - July 10	n=47	n=58	n=104	n=30	n=62	n=64	n=36	n=39	n=69	n=37	n=4
90th Percentile	17.75	71.14	557.20	0.30	5.52	10.24	36.15	9.57	9.70	84.88	3.68
Mean	7.67	27.33	200.80	0.25	2.21	5.28	15.58	5.45	5.61	29.01	2.20
Adjusted Mean	6.31	16.69	146.51	0.18	1.69	1.91	8.56	4.68	3.90	20.02	1.50
NJDEP GWQS (ug/L)	**6**	**3**	**6000**	**1**	**4**	**70**	**1300**	**5**	**100**	**40**	**2**

Results reported in µg/L or parts per billion. Shaded cells indicate values that exceed the GWQS. "n" = population size in the statistical analysis. As a conservative measure, non-detectable results were not included in the statistical analysis, and thus the population size may be biased low when compared to the total number of data points. * Due to possible laboratory inaccuracies, the 90th Percentile Analysis was not used in developing sampling recommendations for these parameters.

90th Percentile Values Meet GWQS:

The 90th percentile values for barium, beryllium, chromium, copper, and nickel are below their respective GWQS.

Note that due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Mean Values, or Adjusted Mean Values, Meet GWQS:

The mean values for cadmium and selenium are below their respective GWQS.

The adjusted mean values for lead and thallium are below their respective GWQS.

Recommendations:

In consideration of the above, the following sampling protocol is recommended for this site:

1. Selenium and Thallium - Due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Evaluation of the 4th Quarter 2010 and 1st Quarter 2011 sampling should be performed to determine compliance with the GWQS. If exceedances of the GWQS are identified, the sampling protocol specified under item 3 below should be followed.

2. With the exception of selenium and thallium (addressed above), no further sampling/analysis is recommended for metals with 90th percentile values below their respective GWQS.

3. For remaining metals, the collection of ground water samples using the following sampling protocol is recommended.

Collection of samples on a semiannual basis, targeting the times of the year typically exhibiting elevated precipitation amounts (generally 2nd and 4th quarters).

For future sampling events, raw and filtered water sample pairs should be collected from select wells (identified below), to evaluate the input from sample turbidity. Samples should be analyzed by a NJ certified laboratory. Slow-purge methodology should be followed for all sampling events which include metals analyses. Refer to the Concentration Ranking and Monitoring Well Selection Protocol described below.

Concentration Ranking and Monitoring Well Selection Protocol

For the specified sampling events, the monitoring wells recommended for sampling were selected with a bias towards those wells demonstrating the highest concentrations as follows.

For the available data from 4th Quarter 2008 through 3rd Quarter 2010, the highest observed concentrations for the site monitoring wells were ranked for each metal of concern. For larger sites, such as landfills, the highest four concentrations were listed; for smaller sites, the highest two concentrations were deemed adequate. Concentration Rankings and Recommended Well Sampling are summarized in Table 2 (attached).

Based on the specified protocol, monitoring wells CW3AMW02, CW3AMW03, and CW3AMW04 are recommended for sampling with laboratory analysis for antimony, arsenic, cadmium, and lead, along with selenium and thallium as required.

Table 1. Summary of Select Metal Concentrations in Groundwater from January 2005 to July 2010 at Site CW-3A

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	40	2
CW3A	MW03	CW3AMW03	1/11/2005	50013.05			124				10.3				
CW3A	MW02	CW3AMW02	1/11/2005	50013.04			588					*5.66*			
CW3A	MW01	CW3AMW01	1/11/2005	50013.03											
CW3A	MW01	MW01 Duplicate	1/11/2005	50013.02											
CW3A	MW04	CW3AMW04	1/11/2005	50013.06			149			12.7		*5.17*	5.94		
CW3A	MW04	CW3AMW04	4/7/2005	50191.06			101								
CW3A	MW03	CW3AMW03	4/7/2005	50191.05			129								
CW3A	MW02	CW3AMW02	4/7/2005	50191.04			226								
CW3A	MW01	CW3AMW01	4/7/2005	50191.03			14.9				6.39				
CW3A	MW02	MW02 Duplicate	4/7/2005	50191.02			218								
CW3A	MW04	CW3AMW04	7/12/2005	50343.06			166		*4.8*						
CW3A	MW03	CW3AMW03	7/12/2005	50343.05			114								
CW3A*	MW02	CW3AMW02	7/12/2005	50343.04		*231*	562		*5.81*						
CW3A	MW01	CW3AMW01	7/12/2005	50343.03											
CW3A	MW02	CW3AMW02	10/19/2005	50541.04											
CW3A	MW01	CW3AMW01	10/19/2005	50541.03			522		3.28						
CW3A	MW04	CW3AMW04	10/19/2005	50541.06			111		2.68				5.76		
CW3A*	MW03	MW03 Duplicate	10/19/2005	50541.02			133				37.2	*5.56*	16.1		
CW3A	MW03	CW3AMW03	10/19/2005	50541.05			128				31		15.4		
CW3A	MW04	CW3AMW04	1/4/2006	60003.06			143					*5.09*			
CW3A	MW02	CW3AMW02	1/4/2006	60003.04			440					*9.44*			
CW3A	MW01	CW3AMW01	1/4/2006	60003.03			8.94								
CW3A	MW03	CW3AMW03	1/4/2006	60003.05			131				16.6		7.67		
CW3A	MW02	CW3AMW02	4/6/2006	60140.04	2.41		493		0.974						
CW3A	MW03	CW3AMW03	4/6/2006	60140.05	2.85	*3.6*	117		0.425	1.41	9.24		7.67		
CW3A	MW04	CW3AMW04	4/6/2006	60140.06	2.05		134		0.85				3.43		
CW3A	MW03	MW03 Duplicate	4/6/2006	60140.02	*6.4*	*4.62*	129	0.168	0.758	2.33	26		2.45		
CW3A	MW01	CW3AMW01	4/6/2006	60140.03			5.96	0.108		6.56			1.73		
CW3A	MW02	CW3AMW02	7/7/2006	60301.04	2.6		538				1.89				
CW3A	MW03	CW3AMW03	7/7/2006	60301.05	3.82		120				2.95				
CW3A	MW03	MW03 Duplicate	7/7/2006	60301.02	5.07		123				4.25				
CW3A	MW04	CW3AMW04	7/7/2006	60301.06		2.07	159				2				
CW3A	MW01	CW3AMW01	7/7/2006	60301.03	4.48					3.55	1.66				
CW3A	MW01	CW3AMW01	10/12/2006	60449.03						1.07				4.12	
CW3A	MW04	CW3AMW04	10/12/2006	60449.06		2.43	125		0.792	1.04				10.2	
CW3A	MW03	CW3AMW03	10/12/2006	60449.05		2.11	112		1.09	0.95	2.63		7.23	8.68	
CW3A	MW03	MW03 Duplicate	10/12/2006	60449.02	2.61	*3.77*				0.913	3.3		6.77	11.4	
CW3A*	MW02	CW3AMW02	10/12/2006	60449.04			528		*5.58*	3.54			1.18	10.5	*4.32*

Table 1. Summary of Select Metal Concentrations in Groundwater from January 2005 to July 2010 at Site CW-3A

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	40	2
CW3A	MW01	CW3AMW01	1/5/2007	70004.03											
CW3A	MW03	CW3AMW03	1/5/2007	70004.05	2.85	***3.6***	117		0.425	1.41	9.24		7.67		
CW3A	MW03	MW03 Duplicate	1/5/2007	70004.02	3.67	***10.1***	162	0.145	3.04	2.12	9.5		3.21	7.81	
CW3A	MW02	CW3AMW02	1/5/2007	70004.04	3.58	***7.78***	158	0.116	2.21	1.53	3.18		2.84	9.1	
CW3A	MW04	CW3AMW04	1/5/2007	70004.06		***6.78***	132		***7.24***	1.32			1.84	8.46	
CW3A	MW04	CW3AMW04	4/20/2007	70144.06		***8.7***	188	0.296	***4.65***	1.13		4.02	6.41	9.34	
CW3A	MW01	CW3AMW01	4/20/2007	70144.03			8.41	0.233	0.5	9.64	0.953		5.83	7.59	***2.19***
CW3A	MW03	MW03 Duplicate	4/20/2007	70144.02	4.78	***6.99***	141	0.244	1.48	0.503		2.03	4.89	15.4	
CW3A	MW03	CW3AMW03	4/20/2007	70144.05	5.3	***5.54***	140	0.28	1.29	0.249		1.05	4.89	14.2	
CW3A	MW02	CW3AMW02	4/20/2007	70144.04		***5.33***	232	0.243	3.17	0.409		3.7	1.84	10.7	1.67
CW3A	MW03	CW3AMW03	7/19/2007	70271.05			96.2	0.138	1.77	0.918	3.17		7.81	12	
CW3A	MW04	CW3AMW04	7/19/2007	70271.06		***9.29***	146		***4.94***	0.749		2.26	1.7	15.6	
CW3A	MW02	CW3AMW02	7/19/2007	70271.04		***32.5***	512		***6.64***	0.662		***5.62***	1.58	19.3	
CW3A	MW02	MW02 Duplicate	7/19/2007	70271.02		***35.3***	513		***6.67***	0.698		***5.54***	1.41	19	
CW3A	MW01	CW3AMW01	7/19/2007	70271.03			11.8		1.01	0.256	0.508		1.34	14.4	
CW3A	MW02	CW3AMW02	10/4/2007	70371.04	1.68	***69.3***	583			1.6	0.909				
CW3A*	MW03	MW03 Duplicate	10/4/2007	70371.02	***10.2***		105	0.372		9.52	48.7	3.68	8.96		
CW3A	MW03	CW3AMW03	10/4/2007	70371.05	2.62		96.6	0.195		3.13	17.4		7.62		
CW3A	MW04	CW3AMW04	10/4/2007	70371.06	4.38		114			1.08			0.863		
CW3A	MW01	CW3AMW01	10/4/2007	70371.03	2.34		20	0.101	0.892	1.05		***16.7***	0.847		
CW3A	MW04	CW3AMW04	1/9/2008	80011.06			126	0.226	1.1	1.09			6.92		
CW3A	MW03	CW3AMW03	1/9/2008	80011.05		***3.9***	144	0.17	0.239	0.344	2.76		6.33		
CW3A	MW01	CW3AMW01	1/9/2008	80011.03			1.36	0.177	0.202	3.91			4.71		
CW3A*	MW01	MW01 Duplicate	1/9/2008	80011.02			1.24			69.7	12.4		33.4		
CW3A	MW02	CW3AMW02	1/9/2008	80011.04			760	0.152	0.99				2.8		
CW3A	MW01	CW3AMW01	4/8/2008	80116.03											
CW3A	MW01	MW01 Duplicate	4/8/2008	80116.02											
CW3A*	MW02	CW3AMW02	4/8/2008	80116.04		***9.13***	612		***6.29***	0.601		4.81			
CW3A	MW04	CW3AMW04	4/8/2008	80116.06		***3.74***	130		***4.26***	0.71		2.93	2.3		
CW3A	MW03	CW3AMW03	4/8/2008	80116.05			114		1.23	0.857		0.76	0.385		
CW3A	MW01	CW3AMW01	7/23/2008	80249.03			31.3	0.108	1.14	1.02				9.63	
CW3A	MW01	MW01 Duplicate	7/23/2008	80249.02			24.5		0.495	0.985				10.5	
CW3A	MW03	CW3AMW03	7/23/2008	80249.05			80.8	0.1	0.313	1.05			2.66	8.14	
CW3A	MW04	CW3AMW04	7/23/2008	80249.06			131	0.138	1.42	1.75			1.38	6.89	
CW3A*	MW02	CW3AMW02	7/23/2008	80249.04		***113***	664	0.135	***4.32***	0.852		4.99	1.18	3.2	
CW3A	MW02	CW3AMW02	10/15/2008	80366.04	3.83	***32.6***	861	0.129		0.531					
CW3A*	MW03	CW3AMW03	10/15/2008	80366.05	***18.7***		180	***2.04***	0.697	***92***	113	***11***	45.3		
CW3A	MW04	CW3AMW04	10/15/2008	80366.06			131	0.299	0.594	1.09			3.67		

Table 1. Summary of Select Metal Concentrations in Groundwater from January 2005 to July 2010 at Site CW-3A

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	40	2
CW3A	MW01	MW01 Duplicate	10/15/2008	80366.02		2.42	26.4	0.248	0.713	5.25		4.03	1.1		
CW3A	MW01	CW3AMW01	10/15/2008	80366.03			26.2	0.217	0.676	4.09		1.62	0.718		
CW3A*	MW03	CW3AMW03	2/17/2009	90055.05	***17.8***	***92.6***	88.4			3.91	10	***8.35***		***80.6***	
CW3A*	MW04	MW04 Duplicate	2/17/2009	90055.02	***19.2***	***75.4***	186			0.874		***9.82***		35.8	
CW3A*	MW04	CW3AMW04	2/17/2009	90055.06	***19.7***	***73.9***	136			0.825		***8.07***		***53***	
CW3A	MW01	CW3AMW01	2/17/2009	90055.03	***7.12***	***35.7***	2.61		0.221	0.814		***8.83***		***46.9***	
CW3A*	MW02	CW3AMW02	2/17/2009	90055.04	***18.7***	***121***	598			0.395		***11***		***44.6***	
CW3A*	MW02	CW3AMW02	4/22/2009	90164.04	1.22	***62.5***	630		***5.87***	1.71	4.14			***40.2***	
CW3A	MW01	MW01 Duplicate	4/22/2009	90164.02	***8.08***	***40.6***	14.4			0.479		2.13		***91.3***	
CW3A	MW04	CW3AMW04	4/22/2009	90164.06	***9.27***	***67.3***	124		2.51	1.7			3.22	***92.7***	
CW3A	MW03	CW3AMW03	4/22/2009	90164.05	***17.7***	***61.4***	127		0.243	1.37			2.59	***132***	
CW3A	MW01	CW3AMW01	4/22/2009	90164.03	***13.4***	***49.3***	13.6			1.29			0.676	***96.6***	
CW3A	MW03	CW3AMW03	7/22/2009	90306.05		***14.7***	87.7	0.087	0.574	3.09	6.55		7.48	19.8	
CW3A	MW01	CW3AMW01	7/22/2009	90306.03		***28.3***	83.5		0.955				6.82	***47.6***	
CW3A	MW04	CW3AMW04	7/22/2009	90306.06	***6.72***	***31***	146		2.07				3.99	6.72	
CW3A	MW02	CW3AMW02	7/22/2009	90306.04	***8.06***	***51.3***	489		2.04		1.35		2.22		
CW3A*	MW03	MW03 Duplicate	7/22/2009	90306.02	***15***	***21.3***	97.1	0.193	1.95	14.1	88.3	***9.51***	10.6		
CW3A	MW04	CW3AMW04	10/7/2009	90407.06	4.85	2.3	148		1.43				9.47		
CW3A	MW01	CW3AMW01	10/7/2009	90407.03			56				2.84		4.48	39.3	
CW3A*	MW03	CW3AMW03	10/7/2009	90407.05		***4.82***	97.3	0.182	2.04	13.7	21.9	***8.99***	12.8		
CW3A*	MW03	MW03 Duplicate	10/7/2009	90407.02	***6.79***	***5.1***	92.3	0.209	1.79	16.4	35.1	***8.57***	11.9		
CW3A	MW02	CW3AMW02	10/7/2009	90407.04		***66.3***	623		2.54			3.41	0.886		
CW3A	MW02	CW3AMW02	1/5/2010	10004.04		2.57	723								
CW3A	MW03	MW03 Duplicate	1/5/2010	10004.02	5.59	2.82	103			10.5	10.3	4.86	7.53		
CW3A	MW03	CW3AMW03	1/5/2010	10004.05	5.85	1.87	101			5.21	3.36		6		0.63
CW3A	MW01	CW3AMW01	1/5/2010	10004.03	4.94	2	3.42			1.38			1.93		
CW3A	MW04	CW3AMW04	1/5/2010	10004.06			126						1.82		
CW3A	MW01	LF3(1)	4/7/2010	10129.04		0.9	8.67								
CW3A	MW03	LF3(1)	4/7/2010	10129.05	***8.7***	1.78	82.1						6.6		
CW3A	MW04	LF3(1)	4/7/2010	10129.03		***3.9***	112		1.18			2.82	3.4		
CW3A	MW04	LF3(1) Duplicate	4/7/2010	10129.02	***7.25***	***4.01***	120		1.38			3.14	3.18		
CW3A	MW02	LF3(1)	4/7/2010	10129.06	5.38	***4.6***	324					3.41	0.887		
CW3A	MW02	LF4(1)	7/26/2010	10320.06	***12.6***	***3.02***	484		3.64			3.33			
CW3A	MW03	LF4(1)	7/26/2010	10320.05			109		0.924				9.03		
CW3A	MW01	LF4(1)	7/26/2010	10320.04	***9.51***	1.77	146		1.05	2.36		2.58	2.91		
CW3A	MW04	LF4(1)	7/26/2010	10320.03	***13.8***	***4.17***	152		3.9			***5.46***	0.606		
CW3A	MW04	LF4(1) Duplicate	7/26/2010	10320.02	***9.47***	***4.04***	135		3.24			2.53	0.539		

Table 1. Summary of Select Metal Concentrations in Groundwater from January 2005 to July 2010 at Site CW-3A

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	40	2
				Mean	7.67	27.33	200.80	0.25	2.21	5.28	15.58	5.45	5.61	29.01	2.20
				90th Percentile	17.75	71.14	557.20	0.30	5.52	10.24	36.15	9.57	9.70	84.88	3.68
				Adjusted Mean	6.31	16.69	146.51	0.18	1.69	1.91	8.56	4.68	3.90	20.02	1.50

Notes: Adjusted mean does not include metal concentrations that exceed the 90th Percentile

1) Concentrations bolded and italicized exceed applicable Ground Water Quality Standard (GWQS)
2) Concentrations bolded and italicized in red exceed applicable GWQS and the 90th Percentile
3) Concentrations highlighted in red cells exceed exceed the 90th Percentile and are deemed to be extreme outliers
4) Samples highlighted in yellow contain two or more metal concentrations that exceed the 90th Percentile
5) Blank cells indicate metals were not detected, not analyzed, or not reported due to instrument errors

M: Metal detected in method blank

* Sample contains two or more metals at concentrations exceeding the 90th Percentile

Table 2
Landfill CW-3A
Concentration Rankings and Recommended Monitoring Well Sampling
4th Quarter 2008 - 3rd Quarter 2010

Well ID	Antimony	Arsenic	Cadmium	Lead	Selenium	Thallium
	NJDEP GWQS	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*
	6	*3*	*4*	*5*	*40*	*2*
CW3AMW01						
CW3AMW02	18.7	121	5.87	11	*	*
CW3AMW03	18.7	92.6		11	*	*
CW3AMW04	19.7				*	*

Notes:

Results reported in µg/L.

Within the reporting period, the two highest concentrations are listed for each parameter.

Shaded rows indicate monitoring wells recommended for metals analysis.

Metals were analyzed during the entire reporting period, 4th Quarter 2008 through 3rd Quarter 2010.

*Based on results from the 4th Quarter 2010 and 1st Quarter 2011 sampling events, analysis of Selenium and Thallium may be required.

SITE SPECIFIC EVALUATION
Building CW-6

Site data and 90th Percentile calculations are provided on Table 1 (attached), and summarized as follows:

90th Percentile Analysis Summary
Building CW-6

CW-6	Sb	As	Ba	Be	Cd	Cr	Cu	Pb	Ni	Se*	Tl*
Jan 05 - July 10	n=25	n=58	n=103	n=56	n=59	n=83	n=57	n=38	n=79	n=41	n=2
90th Percentile	16.86	48.34	59.52	1.33	1.63	7.33	52.04	7.19	19.56	32.20	2.27
Mean	7.77	17.50	25.45	0.47	1.22	3.60	23.28	3.92	7.53	15.40	2.18
Adjusted Mean	4.96	11.17	20.88	0.34	0.74	2.88	15.69	3.42	5.60	8.61	2.07
NJDEP GWQS (ug/L)	**6**	**3**	**6000**	**1**	**4**	**70**	**1300**	**5**	**100**	**40**	**2**

Results reported in µg/L or parts per billion. Shaded cells indicate values that exceed the GWQS. "n" = population size in the statistical analysis. As a conservative measure, non-detectable results were not included in the statistical analysis, and thus the population size may be biased low when compared to the total number of data points. * Due to possible laboratory inaccuracies, the 90th Percentile Analysis was not used in developing sampling recommendations for these parameters.

90th Percentile Values Meet GWQS:

The 90th percentile values for barium, cadmium, chromium, copper, nickel, and selenium are below their respective GWQS.

Note that due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Mean Values, or Adjusted Mean Values, Meet GWQS:

The mean values for beryllium and lead are below their respective GWQS.

The adjusted mean value antimony is below its GWQS.

Recommendations:

In consideration of the above, the following sampling protocol is recommended for this site:

1. Selenium and Thallium - Due to possible laboratory inaccuracies affecting selenium and/or thallium results, the 90th Percentile Analysis was not used to determine compliance with the GWQS.

Evaluation of the 4th Quarter 2010 and 1st Quarter 2011 sampling should be performed to determine compliance with the GWQS. If exceedances of the GWQS are identified, the sampling protocol specified under item 3 below should be followed.

2. With the exception of selenium and thallium (addressed above), no further sampling/analysis is recommended for metals with 90th percentile values below their respective GWQS.

3. For remaining metals, the collection of ground water samples using the following sampling protocol is recommended.

Collection of samples on a semiannual basis, targeting the times of the year typically exhibiting elevated precipitation amounts (generally 2nd and 4th quarters).

For future sampling events, raw and filtered water sample pairs should be collected from select wells (identified below), to evaluate the input from sample turbidity. Samples should be analyzed by a NJ certified laboratory. Slow-purge methodology should be followed for all sampling events which include metals analyses. Refer to the Concentration Ranking and Monitoring Well Selection Protocol described below.

Concentration Ranking and Monitoring Well Selection Protocol

For the specified sampling events, the monitoring wells recommended for sampling were selected with a bias towards those wells demonstrating the highest concentrations as follows.

For the available data from 4th Quarter 2008 through 3rd Quarter 2010, the highest observed concentrations for the site monitoring wells were ranked for each metal of concern. For larger sites, such as landfills, the highest four concentrations were listed; for smaller sites, the highest two concentrations were deemed adequate. Concentration Rankings and Recommended Well Sampling are summarized in Table 2 (attached).

Based on the specified protocol, monitoring wells CW6MW01, CW6MW02, and CW6MW03 are recommended for sampling with laboratory analysis for antimony, arsenic, beryllium, and lead, along with selenium and thallium as required.

Table 1. Summary of Select Metal Concentrations in Groundwater from January 2005 to July 2010 at Site CW-6

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	40	2
CW6*	MW02	MW2 Duplicate	1/1/2005	50017.02	***32.9***	***47.2***			***12.1***		7.32				
CW6*	MW02	CW6MW2	1/1/2005	50017.04	***34.3***	***51***			***12.3***		8.5				
CW6	MW03	CW6MW03	1/1/2005	50017.05			10.5								
CW6	MW01	CW6MW01	1/1/2005	50017.03			17.3				7.2				
CW6	MW34	CW6MW34	1/11/2005	50017.06			35.2								
CW6	MW34	CW6MW34	4/13/2005	50199.06			32.7								
CW6	MW03	CW6MW03	4/13/2005	50199.05			8.46								
CW6	MW01	CW6MW01	4/13/2005	50199.03			12.9								
CW6	MW01	MW01 Duplicate	4/13/2005	50199.02			14.5								
CW6	MW34	CW6MW34	7/14/2005	50346.06			14.7								
CW6	MW03	CW6MW03	7/14/2005	50346.05			14.2								
CW6	MW01	CW6MW01	7/14/2005	50346.03			16.6				19.8				
CW6	MW01	MW01 Duplicate	7/14/2005	50346.02			17.1				24.7		5.98		
CW6	MW34	CW6MW34	10/28/2005	50561.06			47.2								
CW6	MW03	CW6MW03	10/28/2005	50561.05			11.4								
CW6	MW01	CW6MW01	10/28/2005	50561.03			11.6				22.8				
CW6	MW01	MW01 Duplicate	10/28/2005	50561.02			11.5				22.1				
CW6	MW34	CW6MW34	1/10/2006	60019.06			42.3								
CW6	MW03	CW6MW03	1/10/2006	60019.05			11.6								
CW6	MW01	CW6MW01	1/10/2006	60019.03			15.7				9.53		5.67		
CW6	MW01	MW01 Duplicate	1/10/2006	60019.02			16.9				6.29		5.59		
CW6	MW03	CW6MW03	4/6/2006	60141.05			11.3		0.531	1.71	1.57				
CW6	MW01	CW6MW01	4/6/2006	60141.03		***3.23***	18.5	0.145		5.6	36.1	1.53	8.2		
CW6	MW01	MW01 Duplicate	4/6/2006	60141.02			17.1	0.113		5.7	33.9		8.15		
CW6	MW34	CW6MW34	4/6/2006	60141.06			60.6	0.444	0.821	1.47			6.15		
CW6	MW03	CW6MW03	7/6/2006	60300.05	***6.13***	***3.83***	14.3			1.39	5.42				
CW6*	MW01	MW01 Duplicate	7/6/2006	60300.02	***9.79***	***9.43***	13.5	0.106		11.3	103	***8.12***	9.77		
CW6*	MW01	CW6MW01	7/6/2006	60300.03	***6.43***	***7.91***	13.6			11	105	***7.4***	9.34	3.1	
CW6	MW34	CW6MW34	7/6/2006	60300.06		2.47	40.1	0.155	0.559	2.18	1.41		2.49		
CW6	MW03	CW6MW03	10/24/2006	60464.05			11.4			1.44				7.95	
CW6	MW01	CW6MW01	10/24/2006	60464.03		2.27	10.2	0.144		7.34	43.1	3.25	4.91	6.45	
CW6	MW01	MW01 Duplicate	10/24/2006	60464.02		***3.44***	10.1	0.175		7.3	42.6	3.72	4.82	6.14	
CW6	MW34	CW6MW34	10/24/2006	6046405		2.21	59.6	0.438	1.22	2.92			4.52	6.59	
CW6	MW03	CW6MW03	1/9/2007	70012.05			9.47		1.04	2.19	3.53			5.14	
CW6	MW01	MW01 Duplicate	1/9/2007	70012.02		***3.57***	16.8	0.135		4.37	17		5.62	3.3	
CW6*	MW34	CW6MW34	1/9/2007	70012.06	2.5		60.3	0.462	1.78	2.12			5.54	7.64	
CW6	MW01	CW6MW01	1/9/2007	70012.03		2.37	16.4	0.144		5.03	18.5		5.44	4.71	
CW6	MW01	CW6MW01	4/26/2007	70151.03			22.6	0.33	0.684	6.52	9.25	1.34	9.17	7.6	
CW6	MW01	MW01 Duplicate	4/26/2007	70151.02			24.1	0.313	0.698	3.39	8.64	1.13	7.27	9.39	***2.07***
CW6	MW34	CW6MW34	4/26/2007	70151.06			23.2	0.438	0.9	2.44			3.61	8.11	***2.29***

Table 1. Summary of Select Metal Concentrations in Groundwater from January 2005 to July 2010 at Site CW-6

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	40	2
CW6	MW03	CW6MW03	4/26/2007	70151.05			16.8	0.296	1.19	0.678		0.768	1.98	7.99	
CW6*	MW01	CW6MW01	7/26/2007	70281.03	3.52	***5.45***	15	0.134	0.421	9.01	54.2	***6.58***	7.97		
CW6	MW01	MW01 Duplicate	7/26/2007	70281.02	2.44	***5.37***	15.9	0.125	0.348	6.49	50.6	***5.19***	7.72		
CW6	MW34	CW6MW34	7/26/2007	70281.06	0.719		15.5	0.2	0.684	3.11	0.92		2.35		
CW6	MW03	CW6MW03	7/26/2007	70281.05			13		1.14	1.56	3.84		0.671	5.25	
CW6	MW01	CW6MW01	11/23/2007	70484.03	1.61	***5.67***	15.8	0.128	0.369	2.72	22.8	***7.95***	3.98	4.35	
CW6	MW01	MW01 Duplicate	11/23/2007	70484.02	1.81	***4.21***	16.8	0.132	0.233	3.1	22.5	***7.07***	3.6	3.59	
CW6	MW02	CW6MW02	11/23/2007	70484.04		***5.95***	58.7	***1.26***		1.07		0.706	22.9		
CW6	MW34	CW6MW34	11/23/2007	70484.06			23	0.348	0.511	2.36		0.824	2.03	3.73	
CW6	MW03	CW6MW03	11/23/2007	70484.05	1.32		17.3	0.123	1.46	1.26	3.15	4.66	0.878	5.02	
CW6	MW34	CW6MW34	1/9/2008	80012.06			35.1	0.462	0.583	1.56			8.56		
CW6	MW01	CW6MW01	1/9/2008	80012.03		***3.75***	12.4	0.221	0.259	5.07	23.9		4.14	4.97	
CW6	MW03	CW6MW03	1/9/2008	80012.05			10.4	0.185	0.683	0.86	0.504		3.61		
CW6*	MW02	CW6MW02	1/9/2008	20012.03		***12.4***	59.2	***1.5***	0.72	1.26			25.5		
CW6*	MW02	MW02 Duplicate	1/9/2008	80012.02		***12.6***	58.9	***1.54***	0.716	1.29			24.8		
CW6	MW03	CW6MW03	4/8/2008	80119.05			9.51		0.785	1.4					
CW6	MW34	CW6MW34	4/8/2008	80119.06			52	0.257	0.78	1.27			4.87		
CW6	MW01	CW6MW01	4/8/2008	80119.03			11.9	0.134		6.6	23	2.19	4.71		
CW6	MW01	MW01 Duplicate	4/8/2008	80119.02		***3.67***	11.8	0.133		5.15	22.4	2.37	4.6		
CW6*	MW02	CW6MW02	4/8/2008	80119.04		***16.1***	58.3	***1.28***	1.65	1.96			21.1		
CW6	MW01	MW01 Duplicate	7/23/2008	80369.03		***10.2***	10.5	0.206	0.617	10.5	43.8	***7.1***	4.74	5.78	
CW6*	MW01	CW6MW01	7/23/2008	80254.03		***11***	10.4	0.234	0.699	9.17	42.1	***9.26***	4.48	7.02	
CW6*	MW02	CW6MW02	7/23/2008	80254.04		***16.4***	66.6	0.893	2.57	5.76		3.47	18.7	5.5	
CW6	MW34	CW6MW34	7/23/2008	8025405			22.6	0.354	0.73	3.87			1.82	4.84	
CW6	MW03	CW6MW03	7/23/2008	80254.05			23	0.228	0.924	5.21		4.51	1.7	9.99	
CW6	MW03	CW6MW03	10/15/2008	80369.05			14.7	0.248		2.15				4.41	
CW6*	MW01	CW6MW01	10/15/2008	80254.02	1.2	***10.2***	9.78	0.35	0.545	10.1	99.9	***6.68***	5.67	6.9	
CW6*	MW01	MW01 Duplicate	10/15/2008	80369.02			7.37	0.302	0.28	7.55	84.1	3.15	5.18	4.88	
CW6	MW34	CW6MW34	10/15/2008	80369.06			23.9	0.531	0.25	2.61			2.78	3.77	
CW6*	MW02	CW6MW02	10/15/2008	80369.04		***19.2***	63.9	***1.37***	0.243	2.46			17.5	3.18	
CW6*	MW03	CW6MW03	3/6/2009	90092.05	***9.93***	***64.4***	31.6		1.13	0.57	1.48	3.62		***95.9***	
CW6*	MW03	MW03 Duplicate	3/6/2009	90092.02	***17.9***	***63.8***	30.1		1.63	0.508	0.701			***79.3***	
CW6*	MW01	CW6MW01	3/6/2009	90092.03	***15.3***	***64.9***	25.3		0.38	3.42	10.4	1.85	5.38	***89.4***	
CW6*	MW34	CW6MW34	3/6/2009	90092.06	3.29	***37.7***	61	0.297		1.62			4.53	***48***	
CW6	MW02	CW6MW02	3/6/2009	90092.04		***40.3***	57.2	***1.45***		0.811		***5.21***	19.4	24.4	
CW6	MW03	MW03 Duplicate	5/20/2009	90206.02	2.72	***18.1***	14.9		0.499	4.67	47.5	3.62	7.39		
CW6	MW03	CW6MW03	5/20/2009	90206.05		***18.7***	13.8		0.297	4.6	46.6	2.82	7.12		
CW6	MW34	CW6MW34	5/20/2009	90206.06	4.71	***9.28***	31.1	0.151	0.285	3.62	1.42	1.86	4.09	5.15	
CW6*	MW02	CW6MW02	5/20/2009	90206.04		***25.3***	62.5	***1.85***	0.643	0.547		2.31	28.3		
CW6	MW01	CW6MW01	5/20/2009	90206.03		***15***	8.31		0.427	1.06			1.09		

Table 1. Summary of Select Metal Concentrations in Groundwater from January 2005 to July 2010 at Site CW-6

Site ID	Well ID	SiteWELL ID	Date Collected	Lab ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Copper	Lead	Nickel	Selenium	Thallium
NJDEP Ground Water Quality Standards (µg/L)					6	3	6000	1	4	70	1300	5	100	40	2
CW6*	MW01	CW6MW01	8/27/2009	90360.03		***20.3***	10.1			9.12	80.2	2.7	8.37	24.2	
CW6	MW34	CW6MW34	8/27/2009	90360.06		***7.56***	30.1	0.206	0.981	3.17			3.23	20.4	
CW6	MW02	CW6MW02	8/27/2009	90360.04		***26.1***	60.6	0.87	1.13	4.93			15.9	7.37	
CW6	MW03	CW6MW03	8/27/2009	90360.05		***17.3***	21.1		0.675	3.39	3.89	4.99	1.85	27.6	
CW6	MW03	MW03 Duplicate	8/27/2009	90360.02		***19.2***	20.9		0.652	1.45	1.76	3.43	1.6	32.2	
CW6	MW01	CW6MW01	10/28/2009	90431.03		***4.26***	17.4			4.34	22.1	3.29	6.9		
CW6	MW34	CW6MW34	10/28/2009	90431.06		***9.04***	27.5	0.198		1.91			3.95		
CW6	MW03	CW6MW03	10/28/2009	90431.05		1.39	5.88		0.938	2.64	3.42		3.2	10.1	
CW6*	MW02	CW6MW02	10/28/2009	90431.04		***120***	54.8	***1.28***	0.559	2.06			20.2		
CW6	MW03	MW03 Duplicate	10/28/2009	90431.02		***8.23***	6.5		0.899	3.09	3.82		1.89		
CW6	MW01	CW6MW01	1/19/2010	10021.03		***4.54***	12.7			6.54	11.1		7.3		
CW6	MW34	CW6MW34	1/19/2010	10021.06			25.8	0.128		1.47			4.67		
CW6*	MW02	CW6MW02	1/19/2010	10021.04	4.96	***70.07***	67.5	***1.52***		2.08			27.5		
CW6	MW03	CW6MW03	1/19/2010	10021.05	5.28		17.3			2.01			2.13		
CW6	MW03	MW03 Duplicate	1/19/2010	10021.02	***7.33***		18.4		0.915	2.5		3.2	2.06		
CW6	MW01	CW6MW01	4/9/2010	10134.03		***3.63***	16.4			1.96	12.8		6.99		
CW6	MW01	LF3(1) Duplicate	4/9/2010	10134.02	5.9	***4.08***	17.3			1.86	13.5		6.82		
CW6	MW03	LF3(1)	4/9/2010	10134.04		1.33	27.1	0.083		2.6			2.48		
CW6	MW02	LF3(1)	4/9/2010	10134.06	3.36	2.19	13.3		0.777			3.36	2.41		
CW6	MW34	LF3(1)	4/9/2010	10134.05		***20.72***	71.9	0.456		3.12		3.55	18.2		
CW6	MW01	CW6MW01	7/22/2010	10318.06	***8.88***	***12.1***	26.3		1.18	1.78	4.59		6.72		
CW6*	MW02	CW6MW02	7/22/2010	10318.05		***20.16***	66.6	0.846	2.46	5.05	2.17	4.09	26.5		
CW6	MW34	CW6MW34	7/22/2010	10318.07			31.1	0.171	1.13	2.82			2.91		
CW6	MW03	CW6MW03	7/22/2010	10318.04		1.86	11.4		1.25	2.38	1.62		1.35		
CW6	MW03	MW03 Duplicate	7/22/2010	10318.03		2.29	12.3		1.22	2.23	2.65		1.27		
				Mean	7.77	17.50	25.45	0.47	1.22	3.60	23.28	3.92	7.53	15.40	2.18
				90th Percentile	16.86	48.34	59.52	1.33	1.63	7.33	52.04	7.19	19.56	32.20	2.27
				Adjusted Mean	4.96	11.17	20.88	0.34	0.74	2.88	15.69	3.42	5.60	8.61	2.07

Notes: Adjusted mean does not include metal concentrations that exceed the 90th Percentile

1) Concentrations bolded and italicized exceed applicable Ground Water Quality Standard (GWQS)
2) Concentrations bolded and italicized in red exceed applicable GWQS and the 90th Percentile
3) Concentrations highlighted in red cells exceed exceed the 90th Percentile and are deemed to be extreme outliers
4) Samples highlighted in yellow contain two or more metal concentrations that exceed the 90th Percentile
5) Blank cells indicate metals were not detected, not analyzed, or not reported due to instrument errors

M: Metal detected in method blank

* Sample contains two or more metals at concentrations exceeding the 90th Percentile

Table 2
Building CW-6
Concentration Rankings and Recommended Monitoring Well Sampling
4th Quarter 2008 - 3rd Quarter 2010

Well ID	Antimony	Arsenic	Beryllium	Lead	Selenium	Thallium
	NJDEP GWQS	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*	*NJDEP GWQS*
	6	*3*	*1*	*5*	*40*	*2*
CW6MW01	15.3	64.9		7.1	*	*
CW6MW02		120	1.85	5.21	*	*
CW6MW03	17.9				*	*
CW6MW34						

Notes:

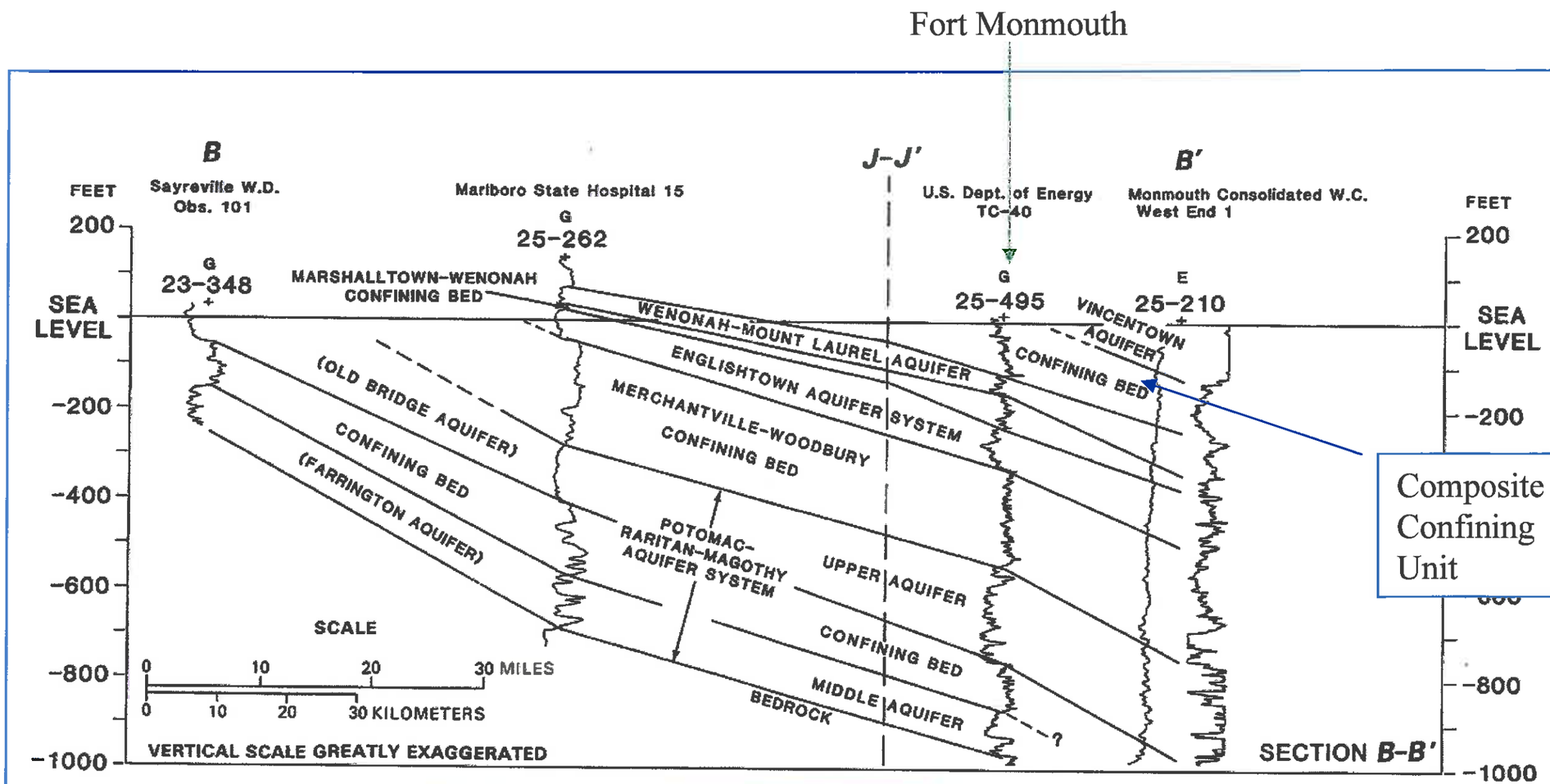
Results reported in µg/L.

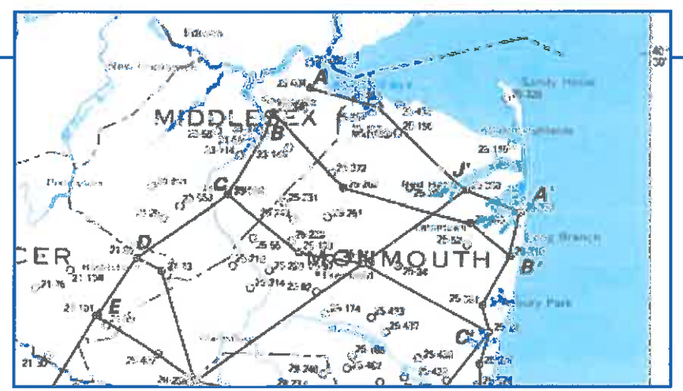
Within the reporting period, the two highest concentrations are listed for each parameter.

Shaded rows indicate monitoring wells recommended for metals analysis.

Metals were analyzed during the entire reporting period, 4th Quarter 2008 through 3rd Quarter 2010.

*Based on results from the 4th Quarter 2010 and 1st Quarter 2011 sampling events, analysis of Selenium and Thallium may be required.





Source: Zapecza, O. 1989. *Hydrogeologic Framework of the New Jersey Coastal Plain.* USGS Professional Paper 1404-B. U.S. Government Printing Office, Washington, DC.

FIGURE 6-1

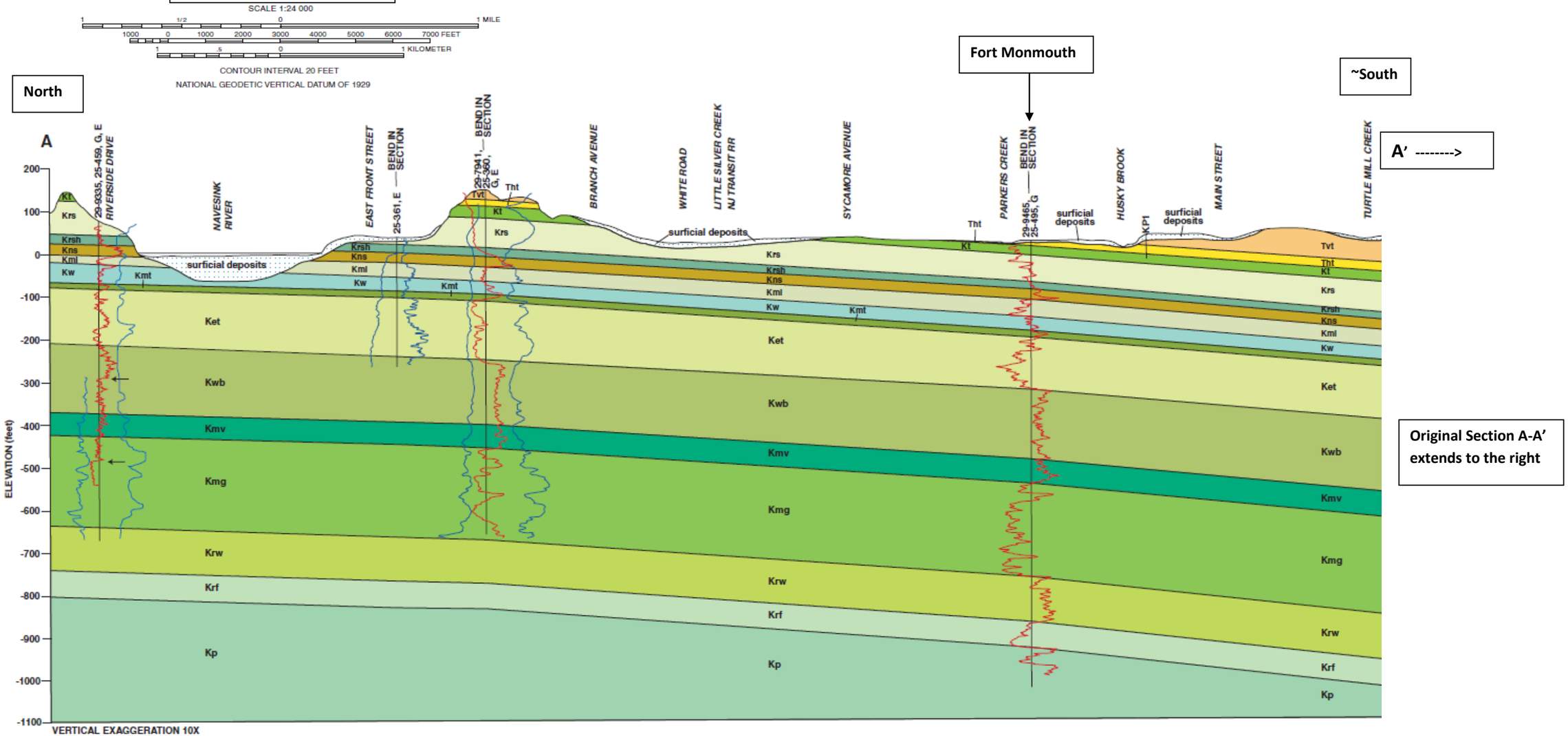
Regional Geologic Cross-Section
Site 1122 – Main Post
Fort Monmouth, New Jersey

Versar INC.
2558 Pearl Buck Road, Suite 1
Bristol, PA 19007
(215) 788-7844

BEDROCK GEOLOGY OF THE LONG BRANCH QUADRANGLE MONMOUTH COUNTY, NEW JERSEY

by
Scott D. Stanford and Peter J. Sugarman
2010

Excerpt of Cross-Section A-A'



Original Section A-A' extends to the right

Description of Geologic Units Shown on Cross-Section A-A'

Tvt VINCENTOWN FORMATION—Glauconitic (5-20%) silty medium-to-coarse quartz sand, some fine-to-medium sand, some very coarse sand to very fine pebbles; yellow, reddish-yellow, olive-yellow, olive-brown; unstratified to weakly horizontally stratified. Coarse sands are locally iron-cemented into beds and masses as much as 10 feet thick. Lowermost 10-20 feet of the formation is silty fine-to-medium sand, with more glauconite than upsection. Total thickness of formation is 180 feet. Late Paleocene in age, based on foraminifera (Olsson and Wise, 1987; Miller and others, 2006) and calcareous nannofossils (Sugarman and others, 1991). Unconformably overlies the Hornerstown Formation.

Tht HORNERSTOWN FORMATION—Glauconite (>50%) clay and silty clay; olive, dark green, black where unweathered, olive-brown with brown to reddish-brown mottles where weathered; unstratified. Glauconite occurs primarily in soft grains of fine-to-medium sand size. Thickness is 25 to 30 feet. Early Paleocene in age, based on foraminifera (Olsson and others, 1997; Landman and others, 2004; Miller and others, 2006) and calcareous nannofossils (Sugarman and others, 1991; Miller and others, 2006). Unconformably overlies the Tinton Formation.

Kt TINTON FORMATION—Glauconitic (5-30%) silty medium-to-coarse and fine-to-medium quartz sand; reddish-brown, reddish-yellow, yellowish-brown where weathered, grayish-brown, brown, olive-brown where unweathered; unstratified to weakly horizontally stratified. Commonly iron-cemented into beds and masses as much as 15 feet thick. Uppermost 4-6 feet, just below contact with Hornerstown Formation, is a brown to olive-gray glauconitic clayey-silty fine sand to fine-sandy silt-clay ("New Egypt Formation" of Landman and others, 2004). Total thickness of Tinton is 30 to 40 feet. Late Cretaceous (late Maestrichtian) in age based on foraminifera, nannofossils, and ammonites (Landman and others, 2004) and strontium-isotope ratios (Sugarman and others, 1995). Overlies the Shrewsbury Member of the Red Bank Formation. Contact with Shrewsbury is not exposed in the Long Branch quadrangle. It is gradational over several feet in the Sandy Hook quadrangle, north of the Long Branch quadrangle (Minard, 1969), but may be unconformable in the Marlboro quadrangle, west of the Long Branch quadrangle (Sugarman and Owens, 1996).

Krs RED BANK FORMATION, SHREWSBURY MEMBER—Fine-to-medium quartz sand, minor medium-to-coarse sand, slightly silty, glauconitic (<5%), and micaceous; reddish-yellow, yellow where weathered, light gray and gray where unweathered; unstratified to weakly horizontally bedded; locally iron-cemented. As much as 100 feet thick. Late Cretaceous (late Maestrichtian) in age based on fossils in the underlying Sandy Hook Member; the Shrewsbury Member is unfossiliferous. Grades downward within 2-3 feet to the Red Bank Formation, Sandy Hook Member. On geophysical well logs, transition to Sandy Hook Member is marked by increased gamma-ray intensity and decreased resistance.

Krsh RED BANK FORMATION, SANDY HOOK MEMBER—Fine-sandy clayey silt, micaceous, slightly glauconitic (<5%); brown to yellowish-brown where weathered, dark gray, olive-gray where unweathered; unstratified. Calcareous brachiopod, pelecypod, and gastropod fossils are common. As much as 20 feet thick. Late Cretaceous (late Maestrichtian) in age based on calcareous nannofossils (Sugarman and Owens, 1996), foraminifera (Olsson, 1964; Olsson and Wise, 1987; Owens and others, 1977), and strontium-isotope ratios (Sugarman and others, 1995). Grades downward within 2-3 feet into the Navesink Formation. On geophysical well logs, transition to Navesink is marked by increased gamma-ray intensity and slightly decreased resistance.

Kns NAVESINK FORMATION—Glauconitic (20-50%) clayey-silty fine-to-medium quartz sand to fine-sandy clayey silt; dark gray, gray, grayish-brown, olive-gray where unweathered, brown to yellowish-brown where weathered; unstratified. Glauconite occurs chiefly in soft grains of fine-to-medium sand size. Calcareous brachiopod, pelecypod, and gastropod fossils are common. Late Cretaceous (late Maestrichtian) in age based on calcareous nannofossils and foraminifera (Olsson, 1964; Miller and others, 2006), macrofossils (Sohl, 1977), and strontium-isotope ratios (Sugarman and others, 1995). Unconformably overlies the Mount Laurel Formation. Contact with Mount Laurel is commonly marked by a sharp peak in gamma-ray intensity on geophysical well logs, with reduced intensity in the Mount Laurel.

Description of Geologic Units Shown on Cross-Section A-A' (cont.)

Kml MOUNT LAUREL FORMATION—Glauconitic (3-15%) fine-to-medium quartz sand, minor medium-to-coarse sand, with thin interbeds of clay and silt; yellowish-brown where weathered, olive-gray to olive-brown where unweathered. Sand is unstratified to horizontally bedded to cross-bedded. As much as 50 feet thick in the southern part of the quadrangle; thins to 20 feet to the north. In subsurface only, covered by surficial deposits in the Navesink River estuary and by overlying Coastal Plain formations elsewhere. Late Cretaceous (late Campanian) in age, based on calcareous nannofossils and strontium-isotope ratios (Sugarman and others, 1991; Miller and others, 2006). Grades downward into the Wenonah Formation. On geophysical well logs, transition to Wenonah is generally marked by slightly decreased resistance and increased gamma-ray intensity.

Kw WENONAH FORMATION—Silty fine-to-very-fine quartz sand to fine-sandy clayey silt, micaceous, slightly glauconitic (<5%); yellow, very pale brown where weathered, gray to pale-olive where unweathered; unstratified. As much as 40 feet thick. In subsurface only, covered by surficial deposits in the Navesink River estuary and by overlying Coastal Plain formations elsewhere. Late Cretaceous (late Campanian) in age based on pollen (Wolfe, 1976) and ammonites (Kennedy and Cobban, 1994). Grades downward into the Marshalltown Formation. On geophysical well logs, transition to Marshalltown is marked by increased gamma-ray intensity.

Kmt MARSHALLTOWN FORMATION—Glauconitic (20-50%), slightly micaceous, silty-clayey fine-to-medium quartz sand, to fine-sandy clayey silt; olive-gray to olive-brown; unstratified. Thickness is 15 to 20 feet. In subsurface only. Late Cretaceous (middle Campanian) in age based on calcareous nannofossils, foraminifera, mollusks, and strontium-isotope ratios (Sugarman and others, 1995). Unconformably overlies the Englishtown Formation. On geophysical well logs, contact with Englishtown is marked by decreased gamma-ray intensity and slightly increased resistance.

Ket ENGLISHTOWN FORMATION—Fine-to-medium quartz sand, minor medium-to-coarse sand, with thin interbeds of clay and silt; micaceous and lignitic, with a trace (<1%) of glauconite; white and light gray where weathered, dark gray where unweathered. Sand is unstratified to horizontally bedded to cross-bedded. In subsurface only. As much as 140 feet thick in the eastern part of the quadrangle, thins to 110 feet thick in the west. In the Asbury Park quadrangle to the south of the Long Branch quadrangle, and farther southwest in northern Ocean County, the Englishtown is divided into an upper and lower member based on the presence of a clay-silt facies in the middle of the formation that is distinctive on gamma-ray logs (Nichols, 1977; Sugarman and Owens, 1994; Miller and others, 2006). This facies is not well marked on gamma-ray logs in the Long Branch quadrangle (wells 29-9335, 29-7941, 29-9465, 29-6173, 29-23948, and 29-48307) and so the members are not mapped here. Late Cretaceous (middle to late Campanian) in age, based on pollen (Wolfe, 1976), ostracodes (Gohn, 1992), calcareous nannofossils, and strontium-isotope ratios (Miller and others, 2006). Grades downward into the Woodbury Formation. On geophysical well logs, transition to Woodbury is marked by increased gamma-ray intensity and decreased resistance.

Kwb WOODBURY FORMATION—Clay, silty clay, with minor thin beds of very fine quartz sand, slightly micaceous and lignitic; dark gray and black where unweathered, yellowish-brown to brown where weathered; unstratified. In subsurface only. As much as 240 feet thick in the eastern part of the quadrangle, thins to 160 feet thick in the central and western parts of the quadrangle. Late Cretaceous (early to middle Campanian) based on pollen (Wolfe, 1976), ostracodes (Gohn, 1992), and calcareous nannofossils (Miller and others, 2006). Grades downward into the Merchantville Formation. On geophysical well logs, transition to the Merchantville is marked by slightly increased gamma-ray intensity.

Description of Geologic Units Shown on Cross-Section A-A' (cont.)

Kmv MERCHANTVILLE FORMATION—Glauconitic (20-50%) clayey silt to sandy clayey silt, slightly micaceous; olive, dark gray, black where unweathered, olive-brown to yellowish-brown where weathered; unstratified. Thickness is 40 to 60 feet. In subsurface only. Late Cretaceous (early Campanian to Santonian) in age based on ammonites (Owens and others, 1977) and calcareous nannofossils (Miller and others, 2006). The Cheesequake Formation, a glauconitic clayey silt underlying the Merchantville, is mapped in outcrop in northern Monmouth and eastern Middlesex counties (Sugarman and Owens, 1996; Sugarman and others, 2005; Stanford and Sugarman, 2008) and in the subsurface both west and south of the Long Branch quadrangle (Sugarman and Owens, 1994, 1996). Because it is lithically similar to the Merchantville and cannot be easily distinguished from it on geophysical logs, it is not mapped separately here. If present, it is included here within the Merchantville, or uppermost Magothy Formation.

Kmg MAGOTHY FORMATION—Fine-to-medium quartz sand, some very-fine-to-fine sand and minor medium-to-coarse sand, micaceous, lignitic, and pyrite-bearing in places, with thin interbeds of silt and clay; white to yellow where weathered, light gray to gray where unweathered. Sand is cross-bedded to laminated. As much as 220 feet thick. In subsurface only. Late Cretaceous (Turonian-Santonian) in age, based on pollen (Christopher, 1979, 1982; Miller and others, 2006). Unconformably overlies the Raritan Formation, Woodbridge Clay member. On geophysical well logs, contact with the Woodbridge is marked by increased gamma-ray intensity.

In its outcrop area in eastern Middlesex County the Magothy is divided into 5 members. From bottom to top they include: South Amboy Fire Clay, Old Bridge Sand, Amboy Stoneware Clay, Morgan beds, and Cliffwood beds (Sugarman and others, 2005). The Old Bridge is a thick sand, the other members are interbedded clay-silt and fine sand. These members may extend downdip in the subsurface (Miller and others, 2006). Geophysical well logs in the Long Branch quadrangle (wells 29-21612, 29-23948, 29-21510, 29-9335, 29-7941, 29-9465, and 29-6173) show generally higher gamma-ray intensity and lower resistivity in the uppermost 50 feet of the formation, and again in the lowermost 30-40 feet, than in the middle 100-120 feet. The upper fine-grained beds may correspond to the Amboy Stoneware Clay and Morgan and Cliffwood beds, and the lower fine-grained beds may correspond to the South Amboy Fire Clay. The middle sand may correspond to the Old Bridge Sand.

Krw RARITAN FORMATION, WOODBRIDGE CLAY MEMBER—Clay and silt, micaceous, lignitic, and pyrite-bearing; gray and black where unweathered, white to brown where weathered; with minor thin interbeds and laminas of white, yellow, and light gray very-fine-to-fine quartz sand. As much as 110 feet thick. In subsurface only, penetrated by wells 29-9465 and 29-1921. The driller's log for well 29-2366 in Eatontown reports "weathered bedrock", with no further information, beneath the Magothy Formation, at a depth of 875-891 feet. This depth is anomalously shallow for the basement surface, suggesting that the material may be weathered clay of either the Woodbridge or South Amboy Fire Clay member of the Magothy. The Woodbridge is Late Cretaceous (late Cenomanian) in age based on pollen (Christopher, 1979) and ammonites (Cobban and Kennedy, 1990). Grades downward into the Raritan Formation, Farrington Sand member. Transition to the Farrington is marked by decreased gamma-ray intensity on geophysical well logs.

Krf RARITAN FORMATION, FARRINGTON SAND MEMBER—Fine-to-coarse quartz sand, some coarse-to-very-coarse sand, minor beds of clay and silt; white and yellow where weathered, gray where unweathered. Sands are horizontally bedded to cross-bedded. As much as 60 feet thick. In subsurface only, penetrated in well 29-9465. Late Cretaceous (Cenomanian) in age based on pollen (Christopher, 1979). Unconformably overlies the Potomac Formation. Contact with Potomac is marked by increased gamma-ray intensity on geophysical well logs.

Description of Geologic Units Shown on Cross-Section A-A' (cont.)

Kp POTOMAC FORMATION—Fine-to-medium quartz sand, some coarse-to-very-coarse sand, with beds of clay and silt; white, red, yellow where weathered, gray where unweathered. Sands are horizontally bedded to cross-bedded, clays are in beds as much as 8 feet thick. More than 90 feet thick, full thickness not penetrated in the Long Branch quadrangle. In subsurface only, partially penetrated in well 29-9465. Late Cretaceous (Albian-Cenomanian) based on pollen (Sugarman and Owens, 1996; Miller and others, 2006), which indicates that the Potomac in this area corresponds to the Potomac Formation, unit 3, of Doyle and Robbins (1977).

United States Army
Fort Monmouth, New Jersey

M-5 Landfill (FTMM-05)
Remedial Action Progress Report
(1st Quarter 2009 through 3rd Quarter 2010)

(ABRIDGED)

Main Post
Fort Monmouth, New Jersey

Prepared by

U.S. Army, Office of the Assistant Chief of Staff for Installation Management

Fort Monmouth, New Jersey

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TABLE OF CONTENTS

EXECUTIVE SUMMARY i

1.0 INTRODUCTION 1

1.1 Objectives 1

1.2 Report Organization 1

2.0 SITE BACKGROUND 2

2.1 Site Location and Description 2

2.2 Site History and Background Investigations 2

2.2.1 SI Report, 1995 – Roy F. Weston, Inc. 3
2.2.2 Remedial Action Work Plan (RAWP), 2000 – ATC Associates Inc. 3
2.2.3 Remedial Action Progress Report (RAPR), 1999-2002 – Versar, Inc. 5
2.2.4 Remedial Action Progress Report (RAPR), 2002-2003 – Versar, Inc. 5
2.2.5 Remedial Investigation Report (RIR) and Sediment Quality Evaluation (SQE), 2004 – Versar, Inc. 6
2.2.6 Remedial Investigation Report (RIR) for Near Surface Soils, 2004 – Versar, Inc. 6
2.2.7 Remedial Action Progress Report (RAPR), 2003-2005 – VEETech P.C. 6
2.2.8 Remedial Action Progress Report (RAPR), 2005-2006 – VEETech P.C. 7
2.2.9 Remedial Action Progress Report (RAPR), 2006-2008 – VEETech P.C. 7

3.0 REMEDIAL ACTIVITIES 9

3.1 Landfill Cover Investigation 9

3.2 Proposed Future Remedial Activities 10

4.0 MONITORING AND SAMPLING ACTIVITIES 12

4.1 Ground Water Monitoring 12

4.2 Ground Water Sampling 13

4.3 Surface Water Sampling 13

4.4 Types of Waste Generated and Disposal Methods 14

5.0 SAMPLING ANALYTICAL RESULTS 15

5.1 Ground Water Sampling Results 15

5.1.1 Volatile Organic Compounds (VOCs) and Semivolatile Organic Compounds (SVOCs) 16
5.1.2 Tentatively Identified Compounds (TICs) 16
5.1.3 Metals 16
5.1.4 Pesticides/Polychlorinated Biphenyls (PCBs) 17
5.1.5 Ground Water Contaminants of Concern (COCs) 17
5.1.6 Ground Water - Quality Assurance/Quality Control (QA/QC) 19

5.2 Surface Water Sampling Results 21

5.2.1 Volatile Organic Compounds (VOCs) 22
5.2.2 Tentatively Identified Compounds (TICs) 22

5.2.3 Metals 22
5.2.4 Pesticides 22
5.2.5 Surface Water Contaminants of Concern (COCs) 22
5.2.6 Surface Water – Quality Assurance/Quality Control (QA/QC) 23

6.0 BACKGROUND METALS EVALUATION 25

6.1 Evaluation Approach 25
6.1.1 Nature of Apparent Sources 26
6.1.2 Relationship of Metal Levels to Turbidity 27
6.1.3 Extreme Variability in Metal Content of Field Duplicate Samples 30
6.1.4 Occurrence of Atypical Spikes 32
6.2 Conclusion of Base-Wide Evaluation of Metals As Contaminants of Concern 35

7.0 RECEPTOR EVALUATION 38

7.1 Sensitive Receptor and Well Search 38
7.2 Vapor Intrusion (VI) Investigation 38
7.3 Baseline Ecological Evaluation (BEE) 39
7.4 Public Notification 39

8.0 REMEDIAL ACTION PROGRESS 41

8.1 Costs of Remediation Incurred to Date 41
8.2 Ground Water Conclusions 41
8.3 Surface Water Conclusions 43
8.4 Future Plans 43
8.5 Remedial Action (RA) Schedule 44

9.0 CLASSIFICATION EXCEPTION AREA (CEA) 45

10.0 REFERENCES 46

FIGURES	
Figure 2-1	Site Location Map
Figure 2-2	Site Layout Map
Figure 3-1	Bioremediation Area Map
Figure 5-1	Ground Water Contaminant Distribution Map
Figure 5-2	Tetrachloroethene Concentrations vs Time at M-5MW11
Figure 5-3A	Tetrachloroethene Concentrations vs Time at M-5MW16
Figure 5-3B	Trichloroethene Concentrations vs Time at M-5MW16
Figure 5-3C	Vinyl Chloride Concentrations vs Time at M-5MW16
Figure 5-4A	Tetrachloroethene Concentrations vs Time at M-5MW19
Figure 5-4B	Trichloroethene Concentrations vs Time at M-5MW19
Figure 5-5A	Tetrachloroethene Concentrations vs Time at M-5MW20
Figure 5-5B	Trichloroethene Concentrations vs Time at M-5MW20
Figure 5-5C	cis-1,2 DCE Concentrations vs Time at M-5MW20
Figure 5-6A	Tetrachloroethene Concentrations vs Time at M-5MW23
Figure 5-6B	Tetrachloroethene Concentrations vs Time at M-5MW23

TABLES	
Table 4-1	Ground Water Sampling Summary
Table 5-1	Ground Water Sampling Results Site M-5MW10
Table 5-2	Ground Water Sampling Results Site M-5MW11
Table 5-3	Ground Water Sampling Results Site M-5MW12
Table 5-4	Ground Water Sampling Results Site M-5MW13
Table 5-5	Ground Water Sampling Results Site M-5MW14
Table 5-6	Ground Water Sampling Results Site M-5MW15
Table 5-7	Ground Water Sampling Results Site M-5MW16
Table 5-8	Ground Water Sampling Results Site M-5MW18
Table 5-9	Ground Water Sampling Results Site M-5MW19
Table 5-10	Ground Water Sampling Results Site M-5MW20
Table 5-11	Ground Water Sampling Results Site M-5MW23
Table 5-12	Ground Water Sampling Results Site M-5MW25
Table 5-13	Ground Water Exceedance Summary
Table 5-14	Ground Water Tentatively Identified Compounds (TICs)
Table 5-15	Ground Water Relative Percent Difference Calculations

APPENDICES	
Appendix A	Electronic Documents Library
Appendix B	Remedial Action Documents
Appendix C	Fort Monmouth Directorate of Public Works Standard Operating Procedure
Appendix D	1st Quarter 2009 Ground Water Sampling
Appendix E	2nd Quarter 2009 Ground Water Sampling
Appendix F	3rd Quarter 2009 Ground Water Sampling
Appendix G	4th Quarter 2009 Ground Water Sampling
Appendix H	1st Quarter 2010 Ground Water Sampling
Appendix I	2nd Quarter 2010 Ground Water Sampling
Appendix J	3rd Quarter 2010 Ground Water Sampling
Appendix K	1st Quarter 2009 through 3rd Quarter 2010 Surface Water Sampling
Appendix L	Background Metals Evaluation
Appendix M	Receptor Evaluation
Appendix N	Landfill Costs and Schedule for the M-5 Landfill
Appendix O	Classification Exception Area (CEA) Documents

EXECUTIVE SUMMARY

This *Remedial Action Progress Report* (RAPR) documents the quarterly ground water sampling of 10 monitoring wells at the M-5 Landfill (FTMM-05) from the 1st Quarter 2009 through the 3rd Quarter 2010 to monitor the progress of the enhanced natural attenuation program [Hydrogen Release Compound® (HRC®)] in reducing contaminant of concern (COC) concentrations in ground water. A proposed Ground Water Classification Exception Area (CEA) is also provided herein.

The M-5 Landfill consists of approximately 3.2 acres located on the western portion of the Main Post on the Eatontown/Oceanport Borough line. The site is bordered by Mill Creek and Parkers Creek to the west and is adjacent to the southern boundary of the M-8 Landfill.

A *Remedial Action Work Plan* (RAWP) was submitted by ATC Associates, Inc. (ATC) in February of 2000 and approved by the New Jersey Department of Environmental Protection (NJDEP) in March of 2001. The RAWP proposed enhanced natural attenuation with ground water monitoring as the site remedy for tetrachloroethene (PCE). PCE, trichloroethene (TCE), *cis*-1,2-dichloroethene (*cis*-1,2-DCE), and vinyl chloride have been identified as COCs in subsequent RAPRs submitted to the NJDEP.

Ground water monitoring conducted during the current reporting period identified PCE, TCE, and vinyl chloride at concentrations that exceeded the NJDEP's Ground Water Quality Standards (GWQS) for Class II-A aquifers. PCE was detected at concentrations greater than the NJDEP GWQS of 1 microgram per liter (µg/L) in five monitoring wells (M-5MW11, M-5MW16, M-5MW19, M-5MW20, and M-5MW23). TCE was detected at concentrations greater than the NJDEP GWQS of 1 µg/L in four monitoring wells (M-5MW16, M-5MW19, M-5MW20, and M-5MW23). *cis*-1,2-DCE was detected at concentrations exceeding the NJDEP GWQS of 70 µg/L in monitoring wells M5-MW16 and M5-MW20. Vinyl chloride was detected at concentrations greater than the NJDEP GWQS of 1 µg/L in monitoring well M-5MW16 only. In addition, two metals (arsenic and antimony) were detected at concentrations exceeding NJDEP GWQS. These metal detections are the direct result of acid leaching of suspended solids in ground water samples. Therefore, metals are not considered COCs at the M-5 Landfill. In addition, due to the extremely slow migration rates of metals in ground water, they pose little potential for migration.

During the current reporting period, surface water samples were collected from three locations along Mill Creek and Laferta Creek: SS-24 (upstream of M-5 Landfill), SS-5 (along the western boundary of M-5 Landfill), and SS-28 (downstream of M-5 Landfill). PCE concentrations exceeded NJDEP Surface Water Quality Standards (SWQS) in SS-5, SS-24, and SS-28. TCE concentrations exceeded NJDEP SWQS in SS-24. Although PCE and TCE were detected at concentrations exceeding NJDEP SWQS, the location and distribution of COCs suggests that the M-5 Landfill is not the probable source for these VOCs.

Future plans include collection of quarterly ground water and surface water samples until closure

of Fort Monmouth in September 2011. At that time, future sampling will be evaluated and discussed with NJDEP. The Army plans to prepare a Remedial Action Selection Report (RASR)/Feasibility Study (FS) as the next report submittal, which will include a final closure plan for the M-5 Landfill.

1.0 INTRODUCTION

An enhanced natural attenuation program to remediate VOC concentrations at the M-5 Landfill (FTMM-05) located at the Main Post Area of Fort Monmouth, New Jersey is being conducted in accordance with the RAWP prepared by ATC Associates, Inc. (ATC) in February of 2000 and approved by the NJDEP in March of 2001. This RAPR documents ground water and surface water monitoring conducted during the current reporting period of the 1st Quarter 2009 through the 3rd Quarter 2010.

1.1 Objectives

The objective of this RAPR is to document the implementation of the remedial action (RA) program performed at the M-5 Landfill during the current reporting period (1st Quarter 2009 through the 3rd Quarter 2010). HRC® injections were implemented by the Army from October of 2000 to December of 2005 as an RA based upon the recommendations in the RAWP prepared by ATC dated February 2000 and approved by the NJDEP in March of 2001. The purpose of the RA was to treat the COC-affected areas at the site using HRC® to reduce COC concentrations to comply with the NJDEP GWQS. The remedial activities were conducted in accordance with the NJDEP's *Technical Requirements for Site Remediation* (*Technical Requirements*), N.J.A.C. (New Jersey Administrative Code) 7:26E *et seq*. and the M-5 Landfill RAWP.

The RA and subsequent preparation of this RAPR encompassed the following:

- Conducting quarterly rounds of ground water and surface water sampling and documenting the results to evaluate the effectiveness of the RA;
- Comparing the results of ground water and surface water sampling with NJDEP GWQS and NJDEP SWQS;
- Identifying and discussing recommendations with the Army for the continuation of this RA; and
- Documenting remedial activities as required by the *Technical Requirements*.

1.2 Report Organization

Section 2.0 discusses site history and background information for the M-5 Landfill. Section 3.0 describes and summarizes the remedial activities conducted at the site. Section 4.0 discusses ground water and surface water monitoring and sampling activities at the site. Section 5.0 presents the laboratory analytical results of the ground water and surface water sampling. Sections 6.0 and 7.0 discuss the Background Metals Evaluation and Receptor Evaluation respectively. Section 8.0 discusses the effectiveness of the RA and provides recommendations to the Army for the M-5 Landfill. Section 9.0 is the Classification Exception Area (CEA) section and Section 10.0 provides a list of references used during generation of this report.

2.0 SITE BACKGROUND

The following sections describe the site background of the M-5 Landfill. Provided is a description of the site location, site history, background investigations, and previous technical reports.

2.1 Site Location and Description

Fort Monmouth is located in the central-eastern portion of New Jersey in Monmouth County, approximately 45 miles south of New York City and 70 miles northeast of Philadelphia. The M-5 Landfill is located on the western portion of the Main Post on the Eatontown/Oceanport Borough line and east of Mill Creek and Parkers Creek and consists of approximately 3.2 acres (Figure 2-1 – Site Location Map). The M-5 Landfill is adjacent to the southern boundary of the M-8 Landfill. According to a report prepared by the US Army Toxic and Hazardous Materials Agency (USATHAMA) entitled *Installation Assessment of Fort Monmouth, Report 171* dated May 1980, the M-5 Landfill was in use from 1952 to 1959 for the general disposal of domestic and industrial wastes in addition to automobiles. This site has reportedly been inactive since 1959. Since then there has been a steady growth and stabilization of vegetation (grass, trees, and bushes) on site. The environmental setting (regional/local geology and hydrogeology) of the M-5 Landfill is described in ATC's RAWP.

2.2 Site History and Background Investigations

The US Army Corps of Engineers (USACE), Baltimore District initially contracted Roy F. Weston, Inc. (Weston) to perform a site investigation (SI) at Fort Monmouth, New Jersey. Suspected hazardous waste sites were identified at Fort Monmouth in a report prepared by USATHAMA (1980). The USATHAMA report identified 37 sites with known or suspected waste materials on the Main Post and Charles Wood Area. Weston conducted a background investigation of the 37 sites plus eight additional sites that were identified by Fort Monmouth and the NJDEP. Weston's findings were described in a report entitled *Investigation of Suspected Hazardous Waste Sites at Fort Monmouth, New Jersey* (1993). The M-5 Landfill was one of the 37 sites identified.

In 1995, Weston conducted an SI of the M-5 Landfill and prepared an SI Report (December 1995). The Weston SI Report entitled *Final Site Investigation, Fort Monmouth, New Jersey, Main Post and Charles Wood Areas* (Appendix A) was used as the basis for subsequent remedial investigations (RIs), which progressed to the development of RAs, including the remediation program at the M-5 Landfill. The Army conducted an RI of the site from May of 1997 through September of 1999. ATC was contracted by the Army to evaluate the data collected during the RI and to prepare the RAWP.

2.2.1 SI Report, 1995 – Roy F. Weston, Inc.

The SI performed by Weston in 1995 (Appendix A) at the M-5 Landfill included installation and sampling of two ground water monitoring wells (M-5MW10 [downgradient] and M-5MW11). Surface water sampling was not performed for the M-5 Landfill although surface water had previously been sampled in conjunction with the M-2 Landfill, which is upgradient. Two rounds of ground water sampling were performed and samples were analyzed for Target Compound List (TCL) plus 30 parameters (TCL+30), TAL metals, sulfate, and cyanide.

A background study of the Main Post Area was conducted as part of the SI. Five soil borings on the Main Post were completed in areas believed to be unaffected by base activities, as specified by the 1993 Weston SI Report. Two soil samples were collected from each of the five soil borings. The soil borings were converted to monitoring wells and two ground water samples were collected from each well. Two sediment and surface water samples were also collected as part of the background study. Maximum background concentrations were then established and reported in the SI Report for soil, ground water, surface water and sediment for the Main Post Area of Fort Monmouth so they could be compared to any future laboratory analytical results.

Ground water analytical data for one ground water monitoring well indicated that PCE concentrations exceeding the NJDEP GWQS of 1 µg/L were identified at the M-5 Landfill in monitoring well M-5MW11. Concentrations of sulfate or cyanide did not exceed the NJDEP GWQS. Fourteen metals were detected in site ground water; however, only four (aluminum, iron, manganese, and sodium) were identified at concentrations exceeding the NJDEP GWQS, but were detected at concentrations less than the maximum background concentrations established in the 1995 Weston SI Report and were, therefore, not identified as COCs.

The Weston SI Report (1995) presented a proposal to the Army for the M-5 Landfill that was subsequently implemented. A long-term ground water and surface water monitoring program was proposed utilizing the existing ground water monitoring wells and surface water sampling locations to monitor and document downgradient surface water and ground water quality conditions with time.

As requested by the NJDEP, an expanded SI identified PCE as the only COC in ground water at the M-5 Landfill. In 1998, the Army installed three additional ground water monitoring wells (M-5MW12, M-5MW13, and M-5MW14) as part of the expanded SI. This resulted in the performance of an RI encompassing soil and ground water characterization to determine the extent of the impact of PCE at the site.

2.2.2 Remedial Action Work Plan (RAWP), 2000 – ATC Associates Inc.

ATC submitted an RAWP to Fort Monmouth in February of 2000 (Appendix A). The Army performed an RI of the M-5 Landfill from April 1995 through September 1999. ATC was contracted by the Army to install additional ground water monitoring wells, evaluate data

collected during the RI, and prepare an RAWP.

The following RI approach was established:

- Performance of a Geoprobe® investigation of the soils and ground water within the landfill and surrounding areas to characterize near surface and subsurface soils and shallow ground water and determine whether a source area existed for the PCE observed in ground water.
- Installation of additional ground water monitoring wells within the landfill and surrounding areas and performance of constant discharge pump tests to determine the aquifer characteristics of the shallow saturated zone at the M-5 Landfill.
- Incorporation of new wells into the quarterly ground water monitoring and sampling program.
- Continuation of quarterly surface water sampling to evaluate potential impact to the stream from the PCE detected in the soils and shallow ground water.

Geoprobe® Investigation

The RI involved the drilling of 261 Geoprobe® locations for the collection of soil and ground water samples. The results of the RI indicated that PCE was detected at concentrations greater than the method detection limit (MDL) in seven of the soil borings and at concentrations exceeding the NJDEP Impact to Ground Water Soil Cleanup Criteria (IGWSCC) of 1 milligram per kilogram (mg/kg) in five samples. PCE was detected in ground water samples collected from 105 boring locations at concentrations exceeding the NJDEP GWQS for PCE of 1 µg/L.

Eight VOCs (PCE, TCE, *cis*-1,2-DCE, chlorobenzene, benzene, toluene, ethylbenzene, and total xylenes) were detected in ground water samples; five of which (PCE, TCE, *cis*-1,2-DCE, chlorobenzene, and benzene) were identified in ground water at concentrations exceeding their respective NJDEP GWQS. PCE concentrations greater than the NJDEP GWQS were detected in 105 samples. TCE (six samples), *cis*-1,2-DCE (10 samples), chlorobenzene (five samples), and benzene (nine samples) were detected at concentrations greater than their respective NJDEP GWQS.

Monitoring Wells

A total of 15 ground water monitoring wells, consisting of three (M-5MW10, M-5MW11, and M-8MW12) installed by Weston (1995), three (M-5MW12, M-5MW13, and M-5MW14) installed by the Army (1998), and nine (M-5MW15, M-5MW16, M-5MW18, M-5MW19, M-5MW20, M-5MW23, M-5MW25, M-8MW23, and M-8MW24) installed by ATC (1999) have been incorporated into the ground water monitoring program at the M-5 Landfill. Monitoring well depths range from 14 to 20 feet below ground surface (bgs). Ground water analytical results from the permanent monitoring wells identified PCE as the only COC at the M-5 Landfill. Although PCE concentrations were expected to naturally attenuate and decrease to NJDEP

GWQS with time, the Army proposed to actively remediate the affected areas at the M-5 Landfill by targeting seven specific locations and applying HRC®.

2.2.3 Remedial Action Progress Report (RAPR), 1999-2002 – Versar, Inc.

After the first and second HRC® injections and 12 rounds of ground water monitoring well sampling (4th Quarter of 1999 through the 3rd Quarter of 2002), Versar prepared an RAPR dated April 2003 (Appendix A). The RAPR documented ground water quality conditions with time and evaluated the impact of the HRC® injection program.

The initial injection of HRC® was performed between October and December of 2000 and the second was performed between February and May of 2002. These injection events were completed with the prior approval of the NJDEP under the provisions of a Permit-by-Rule.

A decreasing trend in PCE concentrations and an increase in degradation byproduct concentrations in ground water were observed during the reporting period (4th Quarter of 1999 through the 3rd Quarter of 2002). Ground water analytical results supported the contention that COC degradation was occurring at the M-5 Landfill, presumably due to the effectiveness of the HRC® injection program which supported biodegradation processes.

Based upon the COC concentration in ground water following the HRC® injections, the HRC® subsurface injection program was continued by the Army.

2.2.4 Remedial Action Progress Report (RAPR), 2002-2003 – Versar, Inc.

The third HRC® injection round was performed by the Army between June and August of 2003. This injection event was completed with the prior approval of the NJDEP under the provisions of a Permit-by-Rule. Versar prepared a second RAPR dated September 2005 (Appendix A) following the third injection event for the reporting period (4th Quarter of 2002 through the 3rd Quarter of 2003) which documented ground water quality conditions with time and evaluated the effectiveness of the HRC® injection program.

A decreasing trend in PCE concentrations was observed in ground water at the site throughout the four quarters of ground water sampling. Ground water analytical results supported the contention that PCE degradation was occurring at the M-5 Landfill, presumably due to the effectiveness of the HRC® injection program at supporting biodegradation processes.

Based upon the decreasing concentrations of the COC and increased presence of degradation products in ground water during the reporting period, the HRC® subsurface injection program was continued.

2.2.5 Remedial Investigation Report (RIR) and Sediment Quality Evaluation (SQE), 2004 – Versar, Inc.

To determine potential polychlorinated biphenyl (PCB)-related impacts to sediments in Mill Creek from the adjacent M-5 Landfill, the Army collected 16 sediment samples, including three duplicate samples for quality assurance/quality Control (QA/QC) purposes, on April 13, 2000 from the surface and near surface of Mill Creek. The sediment samples were collected along the 570-foot section of the creek that borders the M-5 Landfill. All 16 sediment samples were analyzed for PCBs and compared to sediment sampling guidance concentrations defined in the NJDEP's November 1998 *Guidance for Sediment Quality Evaluations*.

Only one of the 16 sediment samples (0.054 mg/kg, B-2, zero to six inches bgs) had total PCBs detected greater than the laboratory MDL. This sampling result also exceeded the NJDEP's Effect Range-Low (ER-L) guidance concentration for total PCBs, which represents the concentration at which adverse benthic effects are found in approximately 10% of studies. Other guidance criteria were not exceeded. Analysis of the remaining 15 samples, including upgradient samples, did not indicate PCBs at concentrations exceeding the laboratory MDLs. Given that the result at boring B-2 exceeded only the ER-L guidance concentration and the proximal upgradient samples were ND for total PCBs, no long-term adverse benthic effects were expected in Mill Creek. The RIR and SQE dated January 26, 2004 are provided in Appendix A.

2.2.6 Remedial Investigation Report (RIR) for Near Surface Soils, 2004 – Versar, Inc.

The Army characterized the near surface soils using 254 borings installed at strategic locations throughout the site. The *RIR for Near-Surface Soils* dated March 16, 2004 is provided in Appendix A. The Army advanced soil borings and collected soil samples between September of 1998 and November of 1998. Soil samples were analyzed for TCL+30 parameters and TAL metals.

VOCs, semivolatile organic compounds (SVOCs), pesticides, PCBs, and metals were detected at concentrations exceeding the NJDEP's Residential Direct Contact Soil Cleanup Criteria (RDCSCC). An evaluation of the analytical results did not define a "source area" or level of contamination that necessitated the identification and evaluation of additional RAs. In most cases, either the calculated compliance average was less than the respective NJDEP RDCSCC or the exceedance was considered marginal. Due to the adoption of the Soil Remediation Standards in 2008, this item is further discussed in Section 3.1 of this report.

2.2.7 Remedial Action Progress Report (RAPR), 2003-2005 – VEETech P.C.

The fourth HRC® injection round was performed by the Army from June to August of 2004. This injection event was completed with the prior approval of the NJDEP under the provisions of a Permit-by-Rule. VEETech prepared another RAPR dated February 2009 for the reporting

period of the 4th Quarter of 2003 through the 3rd Quarter of 2005 which documented ground water quality conditions with time and evaluated the effectiveness of the HRC® injection program.

A decreasing trend in PCE concentrations was observed in ground water at the site throughout the eight quarters of ground water sampling. Ground water analytical results supported the contention that PCE degradation was occurring at the M-5 Landfill, presumably due to the effectiveness of the HRC® at supporting biodegradation processes.

Based upon the decreasing concentrations of the COC and increased presence of degradation products in ground water during the reporting period, the HRC® subsurface injection program was continued.

2.2.8 Remedial Action Progress Report (RAPR), 2005-2006 – VEETech P.C.

The fifth HRC® injection event was performed by the Army from September to December of 2005. This injection event was completed with the prior approval of the NJDEP under the provisions of a Permit-by-Rule. VEETech prepared another RAPR dated April 2009 (Appendix A) for the reporting period of the 4th Quarter of 2005 through the 3rd Quarter of 2006 which documented ground water quality conditions with time and evaluated the effectiveness of the HRC® injection program.

Overall, a decreasing trend of PCE concentrations was observed in ground water at the site throughout the four quarters of ground water sampling. The results supported the contention that PCE degradation was occurring at the M-5 Landfill, presumably due to the effectiveness of the HRC® at supporting biodegradation processes.

2.2.9 Remedial Action Progress Report (RAPR), 2006-2008 – VEETech P.C.

During the reporting period of the 1st Quarter of 2006 through the 4th Quarter of 2008, ground water monitoring identified concentrations of PCE, TCE, and vinyl chloride greater than NJDEP GWQS. PCE was detected greater than the NJDEP GWQS of 1 µg/L in five monitoring wells (M-5MW11, M-5MW16, M-5MW19, M-5MW20, and M-5MW23). TCE was detected greater than the NJDEP GWQS of 1 µg/L in four monitoring wells (M-5MW16, M-5MW19, M-5MW20, and M-5MW23); *cis*-1,2-DCE exceeded NJDEP GWQS in monitoring well M-5MW16 on September 13, 2006. Vinyl chloride was detected greater than the NJDEP GWQS of 1 µg/L in one monitoring well (M-5MW16).

During this reporting period, surface water samples were collected from three surface water locations used to monitor the M-5 Landfill and analyzed for VOCs. PCE and TCE were detected at one location, SS-15, exceeding NJDEP freshwater SWQS.

PCE concentrations have decreased in monitoring wells where concentrations were greater than

NJDEP GWQS prior to the first HRC® injection. VEETech recommended that the Army continue quarterly ground water and surface water monitoring and consider additional biological or chemical oxidation treatment events.

3.0 REMEDIAL ACTIVITIES

Sampling results documented in ATC's RAWP (February 2000) for the M-5 Landfill indicated shallow ground water concentrations of PCE exceeding NJDEP GWQS. Although the PCE concentrations in ground water were expected to decrease through natural degradation and attenuation, the Army implemented a HRC® injection program from October 2000 to December 2005 to actively remediate ground water contamination at the site. This bioremediation program involved treating seven areas identified in the RAWP where elevated concentrations of PCE were detected (Figure 3-1 – Bioremediation Area Map). HRC® injection was not conducted during the current reporting period of the 1st Quarter of 2009 through the 3rd Quarter of 2010.

No RAs were completed during this reporting period. In 2009, temporary monitoring point investigations were conducted on July 29, August 7 and 25, and September 8 and 9, when 12 ground water samples were collected from 11 locations. These locations were selected to determine the horizontal and vertical extent of dissolved COC concentrations exceeding NJDEP GWQS at monitoring wells M-5MW11 and M-5MW23.

Laboratory analyses indicated that three VOCs were identified as COCs: *cis*-1,2-DCE, PCE, and TCE. VOC concentrations exceeding NJDEP GWQS were detected in ground water samples collected from temporary monitoring points M-5TMP-6 and M-5TMP-7. These results indicate that the greatest concentrations of COCs are located near monitoring wells M-5MW05 and M-5MW11.

3.1 Landfill Cover Investigation

A landfill cover investigation was conducted to determine the dimensions of the M-5 Landfill. The study incorporated data concerning the redefined landfill area, depth of landfill cover, and the type and concentrations of COCs present as it relates to current applicable NJDEP Soil Remediation Standards (SRS). The complete M-5 *Landfill Cover Investigation Report* is included in Appendix B.

The majority of information summarized in the report was obtained from the *Remedial Investigation Report (RIR) for Near Surface Soils – M-5 Landfill*, Fort Monmouth, New Jersey, prepared by Versar, Inc. (Versar) dated March 15, 2004. The RIR summarizes a Remedial Investigation (RI) performed from April through August 1998 at the M-5 Landfill. Data presented in the Versar RIR were compared to the NJDEP's Residential Direct Contact Soil Cleanup Criteria (RDCSCC), in effect at that time. The same data were compared to the Nonresidential Direct Contact Soil Remediation Standards (NRDCSRS) due to the 2008 adoption of the SRS and the acknowledgement of the Fort that the landfill will be deed restricted for nonresidential uses.

The study was conducted in accordance with the NJDEP'S *Technical Requirements* to characterize near-surface soil and assess potential risks to human health and the environment.

The RI activities included the collection of 508 near-surface soil samples at 254 borings at the M-5 Landfill.

The majority of the M-5 Landfill boundaries were determined through the 1998 RI, a prior review of aerial photographs of the Post from 1940 to 1974, and a study conducted in 2009 that consisted of trenching. The 2009 investigation was undertaken in order to precisely delineate the perimeter of the M-5 Landfill. That effort involved trenching along the northern, eastern, and southern boundaries of the known landfill. The western boundary of the M-5 is Mill Creek; therefore, trenches were not performed along this boundary.

DEPTH OF COVER MATERIAL
Depth of cover material was derived from the logs for all 254 borings in 1998 and 11 trenches and one (1) boring excavated/performed between January and February 2009 for the primary purpose of delineating the boundaries of the M-5 Landfill. Soil boring logs and detailed trench logs show the depth of cover found at each boring and trench location.

Summary of Findings

a. The average depth of cover at the M-5 Landfill is 24.1 inches.
b. Depth of cover throughout the M-5 Landfill varies from a maximum of 72 inches (Trenches T-5, T-10 and T-11) to a minimum of zero cover (Borings 8, 9, 53, 66, 67, 75, 76, 162 and163).
c. 30.88% (80 out of 259) of boring/trench logs show depth of cover greater than 24 inches.
d. Approximately 34.36% of boring/trench locations (89 of 259) show cover greater than 20 inches.

Concentrations of SVOCs and metals exceeded the NJDEP NRDCSRS. A review of the analytical results did not define a “source area” or level of contamination that necessitated the identification and evaluation of potential remedial actions other than the permanent closure of the landfill.

3.2 Proposed Future Remedial Activities

In correspondence dated September 2, 2010 (provided in Appendix B), the Army requested authorization via Permit-by-Rule pursuant to the New Jersey Pollutant Discharge Elimination System, N.J.A.C. 7:14A-1 *et seq*., to permit the injection of RegenOx™ and HRC Advanced® into the subsurface in an effort to remediate COCs detected in ground water at the M-5 Landfill.

In an effort to reduce chlorinated hydrocarbon concentrations in ground water in the areas surrounding monitoring wells M-5MW11, M-5MW16, and M-5MW23, the Army proposes to conduct additional injections using RegenOx™. RegenOx™, a product manufactured by Regenesis, is an advanced chemical oxidation technology that directly oxidizes compounds while

its catalytic component generates a range of highly-oxidizing free radicals that destroy a range of target compounds including total petroleum hydrocarbons (TPHCs), chlorinated compounds, and oxygenates. RegenOx™ injections will generally follow the HRC® injection procedure described in the RIR/RAWP prepared by ATC Associates, and will be limited to areas encompassing only the three aforementioned ground water monitoring wells. The Army proposed the injection of RegenOx™ beginning at a depth of 15 feet bgs; injection rates will be greater than the rate of previous HRC® injections as previously approved by NJDEP. According to Regenesis, the rate of injection should be approximately 20-22 gallons/vertical foot.

The Army proposes to utilize RegenOx™ to treat the COCs in ground water. After treatment with RegenOx™, if COC concentrations exceed applicable NJDEP GWQS, the Army may opt to continue injections using RegenOx™ followed by low-cost accelerated bioremediation using Regenesis' controlled release compound product, namely HRC Advanced®.

HRC Advanced® contains a nontoxic food-grade polyactate ester which quickly undergoes a fermentation that produces hydrogen upon introduction into an aquifer. Hydrogen serves as an electron donor in a reductive dechlorination process. HRC Advanced® also contains fatty acids which ferment more slowly than the polyactate ester, thereby providing a controlled release supply of hydrogen over a longer period of time. The Permit-by-Rule for the RegenOx™/HRC Advanced® request is provided in Appendix B.

4.0 MONITORING AND SAMPLING ACTIVITIES

Quarterly ground water monitoring and surface water sampling continued from the 1st Quarter 2009 through the 3rd Quarter 2010 as part of the long-term monitoring (LTM) at the M-5 Landfill. Ground water samples were collected from 10 monitoring wells (M-5MW10 through M-5MW14, M-5MW16, M-5MW18, M-5MW19, M-5MW20, and M-5MW23) at the M-5 Landfill during seven quarterly sampling events. Two monitoring wells, M-5MW15 and M-5MW25, were last sampled on July 30, 2003.

Surface water samples were collected over seven rounds of sampling from 15 locations (SS-03, SS-05, SS-09, SS-11 through SS-15, SS-19, SS-21, SS-22, SS-24, SS-26, SS-27 and SS-28). During the current reporting period, surface water samples were collected from three locations along Mill Creek and Laferta Creek: SS-24 (upstream of M-5 Landfill), SS-5 (along the western boundary of M-5 Landfill), and SS-28 (downstream of M-5 Landfill).

Sampling was conducted by the Army in accordance with the established protocols as described in the Fort Monmouth Standard Sampling Operating Procedure (SOP No. SAM-0205, August 1999, Revision #1 January 2003, Revision #2 September 2004, Revision #3 January 2006, and Revision #4 April 2008), (Appendix C), and the NJDEP's August 2005 *Field Sampling Procedures Manual*. Ground water samples were analyzed for VO+15 (VOCs with a 15-peak library search) and TAL metals. Laboratory analyses of the samples were conducted at Fort Monmouth's Environmental Testing Laboratory (FMETL), an NJDEP-certified laboratory (Certification No. 13461).

4.1 Ground Water Monitoring

During this reporting period at the M-5 Landfill (1st Quarter 2009 through 3rd Quarter 2010), ground water was encountered at elevations ranging from 1.29 to 11.36 feet above mean sea level (msl). Static depth to water from the top of the monitoring well casings was measured on February 26, 2009, June 12, 2009, September 19, 2009, December 28, 2009, March 29 and 30, 2010, June 29 and 30, 2010, and September 29, 2010. Separate phase product was not observed in the 10 monitoring wells during this reporting period. Figure 2-2 – Site Layout Map illustrates the locations of the monitoring wells. Ground water elevation contour maps have been generated from the 1st Quarter 2010 through the 3rd Quarter 2010. Post-wide depth-to-water measurements were taken in lieu of site-specific measurements beginning in 2010 in order to produce better representations of ground water conditions. The Army proposal and NJDEP response to the Post-wide depth to water collection is provided in Appendix H. Ground water contour maps can be found in Appendices H through J. Please note that ground water contour maps were not generated for the four quarters of 2009. These data indicate that ground water flows in a general west to northwest direction. Depth-to-water measurements are summarized quarterly in Appendices H through J. NJDEP Contour Map Reporting Forms are presented in Appendices H through J, for each quarterly sampling event.

The contour maps indicate that shallow ground water underlying the M-5 Landfill generally flows to the west - northwest toward Mill Creek and Parkers Creek. Variations in ground water flow conditions were not observed during the current monitoring period.

4.2 Ground Water Sampling

Quarterly ground water sampling was conducted by the Army. Quality control samples for the monitoring period provided 10 method blanks, 10 trip blanks, 10 field blanks, and 7 duplicate samples.

Sampling equipment was decontaminated before and after each use. Following collection, the ground water samples were immediately placed in laboratory-supplied bottleware. Sample containers were labeled, sealed, packed in ice, and transported to FMETL under proper chain-of-custody procedures.

Appendices D through J include all associated ground water data, tables and figures specific to each sampling event (i.e., Appendix D is dedicated to all 1st Quarter 2009 sampling data). Each appendix includes Ground Water Elevation Summaries, Ground Water Contour Maps, Contour Map Reporting Forms, Ground Water Contour Reporting Summaries, Isoconcentration Maps, Isoconcentration Summaries, and full laboratory analytical data. (No Ground Water Contour Maps were produced for the 2009 events as the depth-to-water sampling was not conducted on concurrent days. Depth-to-water measurements were collected on a Post-wide basis starting in the 1st Quarter 2010. Considering the much larger number of data points, the Post-wide data are considered to be a better representation of ground water conditions.) For ease of navigation, an item list is provided within each Appendix.

Table 4-1 (Ground Water Sampling Summary) provides a summary of the ground water sampling activities at the M-5 Landfill.

4.3 Surface Water Sampling

Surface water sampling was conducted by the Army for the current reporting period as part of a base-wide surface water sampling program. A total of 105 surface water samples were collected over seven rounds of sampling from 15 locations (SS-03, SS-05, SS-09, SS-11, SS-12, SS-13, SS-14, SS-15, SS-19, SS-21, SS-22, SS-24, SS-26, SS-27 and SS-28). A Surface Water Sampling Location Map is provided in Appendix K. The samples were analyzed by FMETL. The results of these analyses are discussed below in Section 5.2.

Sampling equipment was decontaminated before and after each use. Surface water samples were collected and immediately placed in laboratory-supplied bottleware. Sample containers were labeled, sealed, packed in ice, and transported to the FMETL under proper chain-of-custody procedures.

All surface water sampling data along with supporting data are presented in Appendix K, including copies of the chain-of-custody forms, laboratory analytical data, a summary of surface water sampling activities for Surface Water Rounds 1 through 56 for all sampling points, sampling rounds, sampling identification numbers, stream sampling locations, collection/analysis dates, analytical parameters, and analysis method.

4.4 Types of Waste Generated and Disposal Methods

Waste types generated by the remedial activities included three-gallon polyethylene pails, polyethylene tubing, Teflon® bailers, mason string, and personal protective equipment. The pails were recycled and the other materials were disposed of in accordance with the Fort Monmouth Solid Waste Management Plan.

5.0 SAMPLING ANALYTICAL RESULTS

This section includes a summary discussion of the chemical characterization of the M-5 Landfill based upon the samples collected and analyzed for the current reporting period, including seven quarterly rounds of ground water monitoring well samples and seven rounds of surface water samples. Analytes detected in ground water or surface water samples at concentrations greater than their respective NJDEP GWQS are bolded and highlighted in the tables.

5.1 Ground Water Sampling Results

Summaries of the analytical results from the monitoring wells at the M-5 Landfill from the inception of LTM are summarized in Tables 5-1 through 5-12. Monitoring wells M-5MW15 and M-5MW25 were last sampled in July of 2003. Ground water summary tables include detected analytical results for the M-5 Landfill and are divided by monitoring well numbers and sampling dates. The characterization of ground water quality at the M-5 Landfill contains 56 quarterly ground water sampling events conducted from May of 1997 through September of 2010. Ground water results are compared to NJDEP GWQS and are presented in three different tabs (electronically) reflecting changes to NJDEP criteria. The first set of data is compared against the January 7, 1993 criteria; the next is when criteria changes occurred on November 7, 2005, followed by further criteria changes on July 27, 2007.

The results in the ground water summary tables include analyte detections as well as exceedances of NJDEP GWQS, which are bolded and shaded. VOCs, SVOCs, pesticides/PCBs, and metals are presented as required to summarize results for detected parameters. Detections are presented in the ground water sampling result summary tables as follows:

- Xylenes are reported as total xylenes (the sum of *o*-xylene and *m*,*p*-xylenes).
- Tentatively Identified Compounds (TICs) are added and reported as total concentrations for the sum of TICs detected for VOCs and SVOCs.
- Duplicate samples are provided after the respective primary sample.
- Low Flow sampling method results are identified as “LF”.
- A “J” value is a concentration exceeding the MDL but less than the reporting limit (RL) for VOCs, SVOCs, and pesticides/PCBs.
- Estimated Results (“ER”) are concentrations exceeding the MDL and less than the RL for metals.
- A “B” value is a compound detected in the sample and the associated blank sample.
- Sample suites that were discontinued are recorded in the footnotes along with a date of NJDEP Case Manager approval.
- If a particular sample suite or analyte was not detected in a monitoring well, the suite/analyte is not presented in the monitoring well summary table.

Ten monitoring wells (M-5MW10 through M-5MW14, M-5MW16, M-5MW18 through M-5MW20, and M-5MW23) at the M-5 Landfill were sampled during the current reporting period

(1st Quarter 2009 through the 3rd Quarter 2010) and analyzed for VOCs and TAL metals. Analyses for SVOCs, pesticides and PCBs were discontinued for monitoring wells at the M-5 Landfill starting with Round 26.

5.1.1 Volatile Organic Compounds (VOCs) and Semivolatile Organic Compounds (SVOCs)

During seven quarterly sampling events for the current reporting period from February 2009 through September 2010, four VOCs (*cis*-1,2-DCE, PCE, TCE, and vinyl chloride) were detected at concentrations exceeding their respective NJDEP GWQS.

Analytical results for five monitoring wells (M-5MW11, M-5MW16, M-5MW19, M-5MW20 and M-5MW23) sampled during the current reporting period exceeded NJDEP GWQS for PCE. Analytical results for four monitoring wells (M-5MW16, M-5MW19, M-5MW20, and M-5MW23) sampled during the current reporting period exceeded NJDEP GWQS for TCE. The concentration of vinyl chloride exceeded NJDEP GWQS in one monitoring well (M-5MW16), as did *cis*-1,2-DCE in M-5MW20. PCE was initially identified as the COC in the RAWP. PCE degradation byproducts, TCE, *cis*-1,2 DCE, and vinyl chloride have been identified as COCs in subsequent RAPRs submitted to the NJDEP.

A summary of results exceeding NJDEP GWQS in the current reporting period is presented on Table 5-13. Figure 5-1 – Ground Water Contaminant Distribution Map summarizes the analytical results for COCs on a site map.

SVOCs were not analyzed during the current reporting period.

5.1.2 Tentatively Identified Compounds (TICs)

During this reporting period, VO TIC concentrations in ground water did not exceed the NJDEP GWQS of 100 µg/L for individual compounds or 500 µg/L for total TIC concentrations. Table 5-14 summarizes the analytical results for the ground water VO TICs during this reporting period.

The only TIC detection during this reporting period was in the 3rd Quarter 2010 in M-5MW20 (7 µg /L). No other TICs were detected during this reporting period.

5.1.3 Metals

During the current reporting period, ground water was sampled and analyzed for metals in the 1st, 2nd and 3rd Quarters of 2010. Eleven metals were detected in the M-5 Landfill ground water samples. Two metals (antimony and arsenic) were detected at concentrations greater than their respective NJDEP GWQS. Nine metals (barium, beryllium, cadmium, chromium, copper, lead, nickel, mercury and thallium) were detected at concentrations in compliance with the

NJDEP GWQS.

Arsenic concentrations were detected greater than the NJDEP GWQS in monitoring wells M-5MW12, M-5MW13, M-5MW16, M-5MW18 and M-5MW19. The greatest arsenic exceedance was 6.40 µg/L, which is less than the maximum background concentration (89.3µg/L) for ground water established in the Weston (1995) Report.

Antimony concentrations were detected greater than NJDEP GWQS in all monitoring wells during the current reporting period. Antimony concentrations were below the maximum background concentration (20.7 µg/L) for ground water established in the Weston (1995) Report with the exception of M-5MW12 and M-5MW13 in the 3rd Quarter 2010 which had exceedances of 27.5 and 30.1 µg/L, respectively.

In the 1st Quarter 2010, the Army began sampling for metals utilizing low flow sampling methods. Low flow sampling is the preferred method of sampling for metals by the NJDEP as it causes minimal disturbance to water and sediments in the well and generally produces samples with lower turbidity compared to standard purge methods.

Due to quality control issues in the FMETL during the analysis of selenium throughout this reporting period, no results have been reported for this metal. Please note that metals were not analyzed for in 2009.

5.1.4 Pesticides/Polychlorinated Biphenyls (PCBs)

Pesticides/PCBs were not analyzed for during the current reporting period.

5.1.5 Ground Water Contaminants of Concern (COCs)

Volatile Organic Compounds (VOCs) - The following summarizes VOC concentrations detected greater than NJDEP GWQS during the current reporting period:

- PCE concentrations in M-5MW11 ranged from 0.69 (1st Quarter 2010) to 2.74 µg/L (2nd Quarter 2009). PCE concentrations exceeded the NJDEP GWQS of 1 µg/L in five of seven sampling rounds for the current reporting period. Figure 5-2 illustrates the PCE concentrations with time in monitoring well M-5MW11, including all quarters of LTM since May of 1997.
- PCE concentrations in M-5MW16 ranged from 1.36 (1st Quarter 2010) to 4.9 µg/L (4th Quarter 2009). PCE concentrations exceeded the NJDEP GWQS of 1 µg/L in all seven sampling rounds for the current reporting period. Figure 5-3A illustrates the PCE concentrations with time throughout the LTM in monitoring well M-5MW16.
- PCE concentrations in M-5MW19 ranged from ND (3rd Quarter 2009 and 2nd and 3rd Quarters 2010) to 3.17 µg/L (2nd Quarter 2009). PCE concentrations exceeded the NJDEP GWQS of 1 µg/L in two of seven sampling rounds for the current reporting

period. Figure 5-4A illustrates the PCE concentrations with time throughout the LTM in monitoring well M-5MW19.

- PCE concentrations in M-5MW20 ranged from 0.96 (4th Quarter 2009) to 11.13 µg/L (2nd Quarter 2010). PCE concentrations exceeded the NJDEP GWQS of 1 µg/L in six of seven sampling rounds for the current reporting period. Figure 5-5A illustrates the PCE concentrations with time throughout the LTM in monitoring well M-5MW20.
- PCE concentrations in M-5MW23 ranged from 1.76 (4th Quarter 2009) to 46.64 µg/L (3rd Quarter 2010). PCE concentrations exceeded the NJDEP GWQS of 1 µg/L in all seven sampling rounds for the current reporting period. Figure 5-6A illustrates the PCE concentration with time throughout the LTM in monitoring well M-5MW23.
- TCE concentrations in M-5MW16 ranged from ND (3rd and 4th Quarters 2009) to 1.84 µg/L (1st Quarter 2010). TCE concentrations exceeded the NJDEP GWQS of 1 µg/L in three of seven sampling rounds for the current reporting period. Figure 5-3B illustrates the TCE concentrations with time throughout the LTM in monitoring well M-5MW16.
- TCE concentrations in M-5MW19 ranged from ND (3rd Quarter 2009 and 3rd Quarter 2010) to 2.9 µg/L (1st Quarter 2009). TCE concentrations exceeded the NJDEP GWQS of 1 µg/L in one of seven sampling rounds for the current reporting period. Figure 5-4B illustrates the TCE concentrations with time throughout the LTM in monitoring well M-5MW19.
- TCE concentrations in M-5MW20 ranged from 0.30J (4th Quarter 2009) to 51.25 µg/L (2nd Quarter 2010). TCE concentrations exceeded the NJDEP GWQS of 1 µg/L in five of seven sampling rounds for the current reporting period. Figure 5-5B illustrates the TCE concentrations with time throughout the LTM in monitoring well M-5MW20.
- TCE concentrations in M-5MW23 ranged from ND (1st, 2nd, 3rd and 4th Quarters of 2009) to 2.62 µg/L (3rd Quarter 2010). TCE concentrations exceeded the NJDEP GWQS of 1 µg/L in three of seven sampling rounds for the current reporting period. Figure 5-6B illustrates the TCE concentrations with time throughout the LTM in monitoring well M-5MW23.
- *cis*-1,2-DCE concentrations in M-5MW20 ranged from 1.44 µg/L (4th Quarter 2009) to 111.95 µg/L (2nd Quarter 2010); cis-1,2-DCE concentrations exceeded the NJDEP GWQS of 70 µg/L in one of seven sampling rounds for the current reporting period. Figure 5-5C illustrates the *cis*-1,2-DCE concentrations with time throughout the LTM in monitoring well M-5MW20.
- Vinyl chloride concentrations in M-5MW16 ranged from ND (2nd, 3rd and 4th Quarters of 2009 and 1st and 3rd Quarters of 2010) to 1.28J µg/L (1st Quarter 2009). Vinyl chloride concentrations exceeded the NJDEP GWQS of 1 µg/L in two of seven sampling rounds for the current reporting period. Figure 5-3C illustrates the vinyl chloride concentrations with time throughout the LTM in monitoring well M-5MW16.

All other monitoring wells had *cis*-1,2-DCE, PCE, TCE, and vinyl chloride concentrations that were ND or less than their respective NJDEP GWQS.

Metals - The metals identified as exceedances of NJDEP GWQS are not considered to be COCs

as they are naturally occurring metals within the soils on the Fort and no source areas are apparent. A discussion of background metals concentrations is provided in Section 6.0 of this RAPR.

5.1.6 Ground Water - Quality Assurance/Quality Control (QA/QC)

To verify the reliability of ground water analytical results, a review of the holding times for each sample and the results of the analyses for 10 method blanks, 10 trip blanks, 10 field blanks, and seven field duplicate samples was conducted. The discussion below is based upon QA/QC for the ground water samples. Samples were analyzed by the FMETL within the prescribed holding time requirements for the analytical method.

Method Blanks

Laboratory method blanks accompanied each batch of samples for the M-5 Landfill. These method blanks consisted of laboratory-grade water that was processed identically to the samples and analyzed with the sample batch. A total of 10 method blanks were analyzed with the M-5 Landfill samples.

No VOCs were detected in the method blanks.

Trip Blanks

A total of 10 trip blanks were provided as part of the M-5 Landfill sampling program to document that VOCs were not introduced into the samples during the handling process. The trip blanks were prepared by the FMETL and consisted of sample bottles filled with laboratory-deionized water. The trip blanks remained with the sample bottles in coolers and were returned to the laboratory for analyses along with the ground water samples.

Chloroform was detected in one of the 10 trip blanks at a concentration of 5.12 µg/L during the 3rd Quarter 2009. This detection did not exceed the NJDEP GWQS of 70 µg/L. Chloroform is a common laboratory contaminant and this single detection is not indicative of a widespread laboratory contamination problem. The detection of chloroform indicates that sample handling procedures, including sample containers, may have introduced contamination into the sampling and analysis processes.

No other VOCs or COCs were detected in the trip blank samples.

Field Blanks

One field blank sample was collected during each day's sampling activities to check for potential introduction of contaminants from the field sampling and equipment decontamination procedures. A total of 10 field blanks were collected during this reporting period of the M-5 Landfill sampling program. The field blanks were collected by pouring laboratory-deionized

water over the sampling equipment used for daily activities. The water was collected in clean laboratory-supplied containers and submitted for analysis along with the M-5 Landfill ground water samples.

Chloroform was detected in one of the 10 trip blanks at a concentration of 2.46 µg/L during the 3rd Quarter 2009. This detection did not exceed the NJDEP GWQS of 70 µg/L. Chloroform is a common laboratory contaminant and this single detection is not indicative of a widespread laboratory contamination problem. The detection of chloroform indicates that sample handling procedures, including sample containers, may have introduced contamination into the sampling and analysis processes.

No other VOCs or COCs were detected in the field blank samples.

Duplicate Samples

Ten field duplicate samples were also collected during the current reporting period for the M-5 Landfill sampling events to verify the consistency of the entire sampling and analytical procedure. The Relative Percent Differences (RPDs) for the duplicate sample analyses for VOCs ranged from zero (0) percent to 31.37 percent; and for metals, zero (0) percent to 13.70 percent (Table 5-15). The average RPDs for duplicate analyses for VOCs were 8.80 percent; and for metals, 8.68 percent. The RPDs for all sampling categories ranged from zero (0) percent to 31.37 percent with an average of 9.74 percent.

M-5 Ground Water Data Validation

Tetra Tech EM Inc. (Tetra Tech) conducted data validation for the M-5 Landfill. Data were evaluated for the following criteria: data completeness, sample preservation, receipt and holding times, gas chromatography and mass spectrometry (GC/MS) instrument performance checks, initial and continuing calibration, calibration verification, field, trip, and laboratory blanks, inductively coupled plasma–interference check sample (ICP-ICS), system monitoring compounds (surrogates), matrix spike/matrix spike duplicates (MS/MSDs), laboratory duplicate sample analysis, ICP serial dilution, field duplicates, laboratory control samples (LCSs), dilution, re-extraction and reanalysis, internal standards, target analyte identification, analyte quantitation, and reported detection limits. Data validation packages are provided in their respective appendices.

- Tetra Tech conducted data validation of the analytical results for 10 ground water samples, one field duplicate, one field blank, and one trip blank that were collected at the M-5 Landfill on December 28, 2009. The overall quality of this data package was acceptable. Rejection of data was not required for this data package. The VOC data were qualified because of minor calibration irregularities and results less than the laboratory RLs but greater than the MDLs. All data can be used as qualified.

- Tetra Tech conducted data validation of the analytical results for 10 ground water samples, one field duplicate, two trip blanks, and two field blanks, which were collected at the M-5 Landfill on June 29 and 30, 2010 as part of the 2nd Quarter 2010 LTM project. The overall quality of the data was acceptable. For sample M-5MW20, the undiluted result for *cis*-1,2-DCE and the diluted results for the remaining VOCs were rejected as unusable for the reason that in the initial VOC analysis of Sample M-5MW20 the concentration of *cis*-1,2-DCE exceeded the calibration range. The sample was reanalyzed at a five-fold dilution, which brought the concentration of that compound within the calibration range. Both sets of results are given in the written report (Appendix I), but the original (undiluted) result for *cis*-1,2-DCE is rejected (flagged "R") and the diluted results for all other analytes are rejected. This leaves one reported result for each VOC analyte in that sample. All data, except for the rejected VOC results, may be used as qualified.

5.2 Surface Water Sampling Results

Quarterly surface water samples were collected at 15 locations during the current sampling period (Surface Water Sampling Rounds 50 through 56). Results for surface water samples from the inception of the LTM are summarized in Appendix K. Surface water summary tables include detected analytical results for the surface water sample locations and are divided by surface water sample numbers and sampling dates.

A total of seven quarterly surface water sampling events were conducted from March of 2009 through September of 2010. The surface water sampling results from the base-wide sampling program were compared to NJDEP freshwater SWQS. Concentrations of VOCs, metals, and wet chemistry exceeding their respective NJDEP freshwater SWQS are summarized in Appendix K. Surface water COC distributions with time are presented in Appendix K. The results of the current surface water sampling events are discussed below.

The results in the surface water summary tables include analyte detections as well as exceedances of NJDEP freshwater SWQS, which are bolded and shaded. VOCs, metals, and wet chemistry parameters are presented as required to summarize results for detected parameters. Detections are presented in the surface water sampling result summary tables as follows:

- Xylenes are reported as total xylenes (the sum of *o*-xylene and *m*,*p*-xylenes).
- TICs are added and reported as a total concentration for the sum of TICs detected for VOCs.
- Duplicate samples are provided after the respective primary sample.
- A "J" value is a concentration exceeding the MDL but less than the RL for VOCs.
- Estimated Results ("ER") are concentrations exceeding the MDL and less than the RL for metals.
- A "B" value is a compound detected in the sample and its associated field blank sample.
- If a particular sample suite or analyte was not detected in a surface water sample location,

the suite/analyte is not presented in the summary table.

5.2.1 Volatile Organic Compounds (VOCs)

During seven quarterly sampling events for the current reporting period, four VOCs (bromodichloromethane, PCE, TCE, and vinyl chloride) were detected at concentrations exceeding their respective NJDEP SWQS.

Appendix K includes a summary of the analytical results which exceeded NJDEP SWQS during the current reporting period.

5.2.2 Tentatively Identified Compounds (TICs)

During this reporting period, VO TICs were periodically detected at low level concentrations at seven of the 15 total locations. For purposes of comparison, concentrations were compared to NJDEP GWQS as there are no NJDEP SWQS for VO TICs.

Surface water TICs did not exceed either the NJDEP GWQS of 100 µg/L for an individual compound or 500 µg/L for total TIC concentrations during the current reporting period (Appendix K).

5.2.3 Metals

Four metals (antimony, arsenic, lead, and mercury) were detected at concentrations exceeding their respective NJDEP SWQS.

Appendix K includes a summary of the analytical results which exceeded NJDEP SWQS during the current reporting period.

5.2.4 Pesticides

Pesticides were not analyzed for during the current reporting period.

5.2.5 Surface Water Contaminants of Concern (COCs)

During the current reporting period, surface water samples were collected from three locations along Mill Creek and Laferta Creek: SS-24 (upstream of M-5 Landfill), SS-5 (along the western boundary of M-5 Landfill), and SS-28 (downstream of M-5 Landfill). PCE concentrations exceeded NJDEP SWQS in SS-5, SS-24, and SS-28. TCE concentrations exceeded NJDEP SWQS in SS-24. Although PCE and TCE were detected at concentrations exceeding NJDEP SWQS, the location and distribution of COCs suggests that the M-5 Landfill is not the probable source for these VOCs.

5.2.6 Surface Water – Quality Assurance/Quality Control (QA/QC)

To verify the reliability of surface water analytical results, a review of the holding times for each sample and the results of the analyses of nine method blanks, seven trip blanks, seven field blanks, and seven field duplicate samples was conducted. The discussion below is based upon QA/QC for the VOC surface water samples. Samples were analyzed by the FMETL within the prescribed holding time requirements for the analytical method.

Method Blanks

Laboratory method blanks accompanied each batch of surface water samples for each Main Post surface water sampling event. These method blanks consisted of laboratory-deionized water that is processed identically to the samples and analyzed with the sample batch. A total of nine VOC method blanks were analyzed with the base-wide surface water samples.

No VOCs were detected in the method blank samples.

Trip Blanks

A total of seven trip blanks were provided as part of the base-wide surface water sampling program to document that VOCs were not introduced into the samples during the handling process. The trip blanks were prepared by the FMETL and consisted of sample bottles filled with laboratory-deionized water. The trip blanks remained with the sample bottles in coolers and were returned to the laboratory for analyses along with the surface water samples.

Methylene chloride was detected in one of the seven trip blanks at a concentration of 15.28 µg/L, which is greater than the NJDEP Freshwater SWQS of 2.5 µg/L and less than the NJDEP saline SWQS of 310 µg/L. Methylene chloride is a common laboratory contaminant and its detection is not indicative of a widespread laboratory contamination problem. The detection of methylene chloride indicates that sample handling procedures, including sample containers, may have introduced contamination into the sampling and analysis processes.

No COCs were detected in the trip blank samples.

Field Blanks

One field blank sample was obtained during each day's sampling activities to document equipment decontamination procedures. A total of seven field samples (e.g., field blanks) were collected during the base-wide surface water sampling program. The field blanks were collected by pouring laboratory-deionized water over the sampling equipment used for daily activities. The water was collected in clean laboratory-supplied containers and submitted for analysis along with the surface water samples.

Methylene chloride was detected in one of seven trip blanks at a concentration of 2.18 µg/L, which is less than the NJDEP Freshwater SWQS of 2.5 µg/L and NJDEP saline SWQS of 310 µg/L. As noted for the trip blanks, the detection of methylene chloride may indicate that sample handling procedures, including sample containers, may have introduced contamination into the sampling and analysis processes.

No COCs were detected in the field blank samples.

Duplicate Samples

A total of seven field duplicate samples were also collected during the base-wide surface water sampling events to verify the consistency of the entire sampling and analytical procedures.

The results for the duplicate samples were similar to those obtained for the original samples. The RPDs for the duplicate sample analyses ranged from 0 to 21.51%; however, the average RPD for the seven duplicates was 13.65%. Based upon average RPDs, the QA/QC sampling results indicate a high level of precision.

Surface Water Data Validation

Tetra Tech conducted data validation for the Main Post surface water sampling results. Data was evaluated for the following criteria: data completeness, sample preservation, receipt and holding times, GC/MS instrument performance checks, initial and continuing calibration, calibration verification, field, trip, and laboratory blanks, ICP-ICS, system monitoring compounds (surrogates), MS/MSDs, laboratory duplicate sample analysis, ICP serial dilution, field duplicates, LCSs, dilution, reextraction and reanalysis, internal standards, target analyte identification, analyte quantitation, and reported detection limits.

- Tetra Tech conducted data validation of the analytical results for 15 surface water samples, one field duplicate, one field blank, and one trip blank that were collected at various Stream Sites (abbreviated to "SS" in the sample designations) on December 7, 2009. The overall quality of this data package was acceptable. Rejection of data was not required for this data package. The VOC data were qualified because of minor calibration irregularities and results less than the laboratory RLs but greater than the MDLs. Metals results were qualified for calibration verification irregularities, blank contamination, a result greater than the linear range of the instrument, and results less than the laboratory RLs but greater than the MDLs. All data can be used as qualified.

- Tetra Tech conducted data validation of the analytical results for 15 surface water samples, one field duplicate, one trip blank, and one field blank, that were collected on June 22, 2010 as part of the 2nd Quarter 2010 LTM project. Tetra Tech concluded that the overall quality of the data was acceptable. No results were rejected. All data can be used as qualified.

6.0 BACKGROUND METALS EVALUATION

Historically, ground water samples from monitoring wells throughout Fort Monmouth's Main Post and the Charles Wood Area have periodically displayed concentrations of metals that exceed NJDEP GWQS. Some of the metals have been retained as COCs while characterization has continued. However, it has long been believed that the metal detections represent materials derived from the native soil as a background condition in the local region.

Brinkerhoff Environmental Services (2011) noted the likelihood that metal results reflected the presence of high turbidity in samples (see Appendix L). In addition, the analysis of glauconitic clay (see Appendix L) indicates that the clay contains a metal fingerprint that mirrors that found in turbid ground water samples, suggesting the fines from the native clays are the source of the turbidity and that the metals are derived from acid extraction of the metals on those fines when subjected to the preservatives added to the sample vials.

The Army has conducted additional analysis of available data and concludes that the metals heretofore designated as COCs in ground water are, in fact, native materials associated with clay fines in the samples. The following describes the approach taken and the conclusions drawn from the results of the analyses.

6.1 Evaluation Approach

In the past, each site at Fort Monmouth has been evaluated on its own merits with respect to COCs and risk. However, it has become very clear that the apparent metals issue is ubiquitous and would benefit from a base-wide analysis. Pursuant to that, a review was made of all historical groundwater sampling data to help put metal results in perspective. In the Brinkerhoff background analysis (2011), it was concluded that there were no sources for any of the metals observed in ground water, with the possible exception of lead. Because there were potential sources of lead present at Fort Monmouth (but not specifically associated with any individual site), Brinkerhoff chose not to rule out the possibility that some of the metals found in ground water could be the direct result of a release. At the same time, Brinkerhoff found a direct correlation between arsenic concentrations and lead concentrations, despite there being no potential source of arsenic releases. The obvious implication of that finding is that lead, as well as arsenic, arises from its presence in native soil. As a consequence, the Army has focused its analysis primarily on lead.

The review focused on the following areas:

- Nature of apparent sources
- Relationship of metals levels to turbidity
- Extreme variability in field duplicate results
- History of atypical spikes

6.1.1 Nature of Apparent Sources

A review of monitoring data over the life of the environmental restoration program at Fort Monmouth reveals that virtually every monitoring well at one time or another has had a metal concentration that has exceeded NJDEP GWQS. Given the diverse nature of activities and the location of the monitoring wells, this suggests a common factor across sites other than the activities that might have resulted in releases. Specific to lead contamination, sites with heating oil tanks and lime pits are unlikely sources of a release. Not only is lead not present as an additive in heating oil, but the characteristics of the lime pit should reduce the solubility of lead, not increase it. Lead is mobilized by acidity, not by basic conditions.

When the review is expanded to all metals, there is a consistent pattern of observations despite the nature of the Army's activities as seen in Table 6-1. Moreover, the metals observed (antimony – Sb; arsenic – As; beryllium – Be, cadmium – Cd, chromium – Cr; lead – Pb; and nickel – Ni) are all present in glauconitic clay. Metal observations in ground water are consistent, despite the disparate nature of the Army's activities at the sites being monitored.

Table 6-1
Metal Observations in Ground Water Are Consistent, Despite the Disparate Nature of the Army's Activities At the Sites Being Monitored

Site	Release Type	Location	Other COCs	Metals > NJGWQS (Bkgd)
FTMM-14, M-14 Landfill	Landfill	Main Base, Central		Sb, As, Be, Cd, Pb, Th
FTMM-03, Landfill M-3	Landfill	Main Base, North Central	VOC	Sb, As, Cd, Pb
Building 750	Heating Oil USTs	Main Base. South Central		Sb, As, Be, Cd, Cr, Pb, Ni
FTMM-18, 54, 55, 62	Landfill, USTs, Fuel area	Main Base, North Central	Benzene	Sb, As, Be, Cd, Pb
FTMM-25, Landfill CW-3A	Landfill	Charles Wood, South		Sb, As, Be, Cd, Cr, Pb
FTMM-28, Pesticide Spill Location	Pesticide Spill, USTs Fuel Area	Charles Wood, Central		As, Pb, Cd, Sb, Sl, Th
FTMM-04, Landfill M-4	Landfill	Main Base, West Central		Sb, As, Be, Cd, Pb, Th
FTMM-12, M-12 Landfill	Landfill	Main Base, Central		Sb, As, Be, Cd, Pb, Th
FTMM-66, Building 866	Heating Oil AST	Main Base, South Central	Methyl Napthalene,	Sb, As, Cd, Pb

			Benzene, BEHP	
FTMM-58, Building 2567	Active Gas Station	Charles Wood, East Central	Tert Butyl Alcohol	Sb, As, Pb
FTMM-56, Buildings 80-166	Heating Oil UST	Main Base, East	Chlordane, DDD, DDE	Sb, As, Be, Cd, Pb, Th
FTMM-22, Building CW-1	Lime Pit	Charles Wood, West	TCE	Sb, As, Pb
FTMM-57, Building 108	Heating Oil UST	Main Base, East		Sb, AS, Pb

6.1.2 Relationship of Metal Levels to Turbidity

Brinkerhoff Environmental Services' *Report on Background Metals* (2011) notes in Section 4.2 that there has been a historic problem with turbid samples and the subsequent dissolution of metals from native soil by the nitric acid preservative used on samples intended for metals analysis. In a background study of the glauconite-rich soil at Fort Monmouth, researchers noted concentrations of 16 mg/kg lead (March 9, 2011 letter from U.S. Army to Larry Quinn). Turbidity is exacerbated by purge techniques in formations with fine soil particles, but can also be a problem with low-flow sampling as noted in Tetra Tech's January 2010 Data Validation Report in which some field duplicates had RPDs for metals that exceeded QC criteria (e.g., 80MW03 on 2/24/2010).

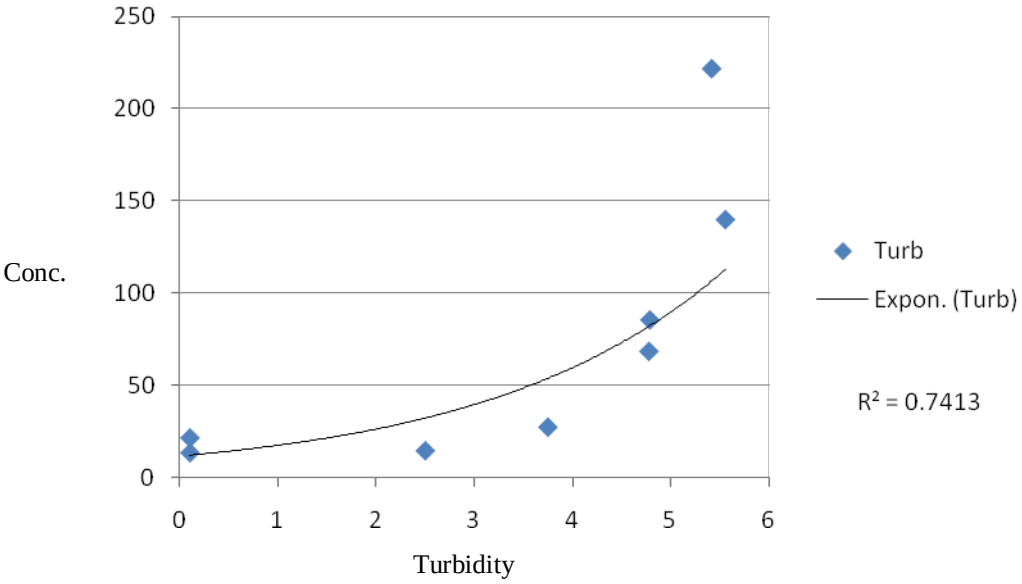
Turbidity data have not been reported for most historic samples. However, turbidity has been measured since implementation of low-flow sampling techniques in 2010. In general, samples should have turbidity < 5 units for a sample to yield results representative of dissolved metals. The data presented in Table 6-2 summarize turbidity levels for samples taken from various sites at Fort Monmouth in 2010. Clearly, turbidity remains a problem, despite the use of low-flow sampling. Occurrence of turbidity in excess of 5 NTU in 2010 samples have continued despite the use of low-flow sampling techniques.

Table 6-2
Occurrence of Turbidity In Excess of 5 JTU in 2010 Samples Have Continued, Despite Use of Low Flow Sampling Techniques

Site	Turbidity (NTU) **Bold XX** – Value is in excess of 5 NTU										
	MW01	MW02	MW03	MW04	MW05	MW06	MW07	MW08	MW09	MW10	MW11
FTMM-57 (Q2)	**9.16**	**10.3**	4.16	**37.4**							
FTMM-03 (Q1)				0.28	**15.6**	4.64	**7.63**	4.83	**12.4**	**10.8**	2.28
FTMM-03 (Q2)				3.61	**11.7**	**10.3**	**6.02**	**11.5**	**7.54**	2.13	1.82
FTMM-18/54/55/62 (Q2)	2.14	**16.8**	1.67	**11.3**		**6.17**	**34.5**	**13.3**			
FTMM-04 (Q1)							3.65	**36.6**	**7.68**	1.43	
FTMM-04 (Q2)							2.81	**24.3**	**6.17**	2.7	
FTMM-66 (Q2, RW wells)	**14.4**	**222**	13.3	**140**	**85.5**	**68.4**	**21.4**	**27.2**			
FTMM-58 (Q1)	**38.1**	**11.5**	**8.67**	**22**	**9.4**	**21.6**	**6.88**				
FTMM-58 (Q2)	0.58	**6.17**	**10.2**	**5.54**	**35.7**	**16.8**	**8.17**				
Well	MW16	MW17	MW18	MW19	MW20	MW21	MW22	MW23	MW24	MW25	MW26
FTMM-12	3.06	**5.65**	1.2	0.75	0.33	4.34	2.05	**5.61**	3.36	**5.22**	**9.72**

When the turbidity is high, there is a direct correlation between turbidity and lead concentrations as is evident from the data from Site FTMM-66 samples collected in May 2010 (Figure 6-1).

Figure 6-1
There is a Direct Correlation Between Turbidity and Lead Concentrations at FTMM-66 Using Low Flow Sampling Techniques



As one would expect, the introduction of low-flow sampling techniques has reduced metal concentrations reported in ground water samples at Fort Monmouth. A comparison of lead concentrations prior to and after implementation of the low-flow techniques is provided in Table 6-3. As is evident, lead concentrations decreased when low flow sampling was implemented. However, as presented in Table 6-2, turbidity issues are still present with low flow sampling and can still cause an apparent elevation in lead levels.

Table 6-3
There Has Been a Clear Reduction in Lead with Use of Low Flow Sampling Techniques, Despite Continued Presence of High Turbidity

Site	Lead Concentration (ug/L) Pre-Low Ave/Low Flow Ave										
	MW 01	MW 02	MW 03	MW 04	MW 05	MW 06	MW 07	MW 08	MW 09	MW 10	MW 11
FTMM-57 (10/08 to 8/10)	16./6.9	9/4.2	5.4/3.7	8.6/4.7		7.6/6.0					
FTMM-03 (12/08 to 9/10)				ND/1.9	ND/ 4.4	ND/3.7	48/3.3	ND/6.4	ND/3.3	ND/6.2	ND/3.3
Bldg 750 (10/08 to 8/10)	0.9/ND	61/6.5	6.7/ND	1.9/ND							

FTMM-18/54/55/62 283 wells (10/08 to 9/10)					8.1/ND	3.9/ND					
FTMM-18/54/55/62 290 and 296 wells (10/08 to 9/10)	10.7/ND	5.6/1.2	15/3.8*	4.5/4.5	5.7/7.2	5.2/4.5	5/ND	9.2/6			
FTMM-25 (10/08 to 7/10)	5.9/ND	7.2/3.4	8.2/2.4	9/3.5							
FTMM-04 (10/8 to 7/10)							3.5/ND	12/ND	4/ND	6.7/ND	
FTMM-66 (12/8 to 8/10)	5.1/3.7	2.9/1.5	5.2/6.1	ND/ND	28/2.8						
FTMM-58 (11/08 to 9/10)	ND/ND	3.4/ND	1.5/ND	2.2/5.5	30/9.2	1.9/ND					
FTMM-56 (2/09 to 8/10)	3.8/4.7	2.9/ND	5.2/ND	ND/2.8	19/3.6						
FTMM-56 Well 166 (2/09 to 8/10)	7.3/3.4										
Well	MW 16	MW 17	MW 18	MW 19	MW 20	MW 21	MW 22	MW 23	MW 24	MW 25	MW 26
FTMM-12 (10/8 to 9/10)	10/2.6	4.4/3.2	5.7/5.3	9.8/ND	4.1/4.9	2.9/ND	7.7/6.6	2.9/4.1	4.7/ND	2.1/ND	5.6/2.8
FTMM-12 14MW wells (10/8 to 9/10)				3.7/3.7	1.9/ND	ND/ND	6.2/9.2	1.3/3.6	5.4/ND		

*Average does not include the 1060 value reported in 1/2010 that was an outlier

6.1.3 Extreme Variability in Metal Content of Field Duplicate Samples

In accordance with standard quality control/quality assurance protocol, field duplicate samples were collected throughout the performance of monitoring work at Fort Monmouth. Pursuant to the Quality Assurance Project Plan for Fort Monmouth, whenever samples are found to have a

relative percent difference (RPD) of greater than 25% for metals, the data quality is suspect. An examination of the RPD values for ground water samples at Fort Monmouth reveals that a significant number of the duplicates collected from wells across the installation have RPD values well in excess of 25%.

Table 6-4
A Significant Percentage of the Field Duplicates Collected at Fort Monmouth Yielded RPD for Lead in Excess of the Quality Control/Quality Assurance Threshold Value of 25%

Site	Well	Date	Lead Concentration (ug/L)		RPD (%)
			Sample #1	Sample #2	
FTMM-57	MW01	11/2000	8.14	15.6	63
		5/2001	4.2	5.33	24
		10/2008	30.8	20.9	38
	MW04	5/2000	ND	67.2	194
		9/2001	2.45	3.65	39
		12/2001	5.03	5.18	2.9
		2/2009	1.71	9.74	140
		6/2009	25.1	22.7	10
		8/2009	5.26	4.04	26
		11/2009	2.98	3.55	17
FTMM-22	MW26	8/1998	ND	149	197
		8/1999	ND	2.89	97
		2/2001	1.47	2.06	33
	MW31	5/2001	10.7	2.65	52
		11/2001	18.3	1.91	32
	MW38	11/2002	6.11	ND	144
	MW281	3/1999	6.22	4.98	22
		5/2000	33.1	ND	188
		11/2001	ND	2.05	69
	MW282	6/1998	5.5	3.9	169
		8/2000	66.6	ND	118
FTMM-03	MW04	6/2010	ND	3.68	85
FTMM-18/54/55/62	290MW01	9/2010	2.48	ND	85
	296MW01	8/2000	3.69	4.43	18
		11/2000	ND	63.3	194
		5/2001	4.07	6.89	51
		3/2009	7.06	5.9	18
		5/2009	ND	9.32	161
	296MW06	8/2001	17	1.34	171
	296MW07	2/2001	3.15	2.76	13
FTMM-25	MW01	8/1999	ND	4.16	122

		11/1999	3.82	3.55	7
		10/4/2000	ND	2.12	72
		10/16/2000	ND	231	198
		5/2002	6.54	1.93	109
		8/2003	3.82	ND	117
	MW02	4/2001	1.89	1.6	17
	MW03	1/1998	16	ND	176
		4/2003	2.65	2.18	19
		10/2005	ND	5.56	139
		7/2009	9.51	ND	162
		1/2010	ND	4.86	132
	MW04	4/2010	3.14	2.82	11
		7/2010	2.53	5.46	73
FTMM-12	14MW19	6/2009	6.79	3.97	52
		9/2009	4.72	ND	130
		11/2009	3.11	ND	103
FTMM-66	80MW01	11/2001	19.7	3.08	146
	166MW01	3/2000	4.21	2.93	36
		10/2000	16.4	36.5	76
		4/2001	31	6.44	131
		8/2001	15.9	15.2	5

The presence of turbidity is the most common cause of poor RPD performance when metals are the analyte. Simply put, suspended solids that cause turbidity in water samples are heterogeneous by nature and when the sample is split, there is no way to divide them evenly so that both samples obtain the same amount of solids, let alone an evenly divided sampling of the different solid particle types that may be present. A single particle of mineral origin can have sufficient metal content to dramatically affect the RPD.

6.1.4 Occurrence of Atypical Spikes

Metals generally move slowly in ground water, both because of the slow velocity of the water itself and because of interactions with the soil that retard their movement. As such, time frames are sufficient for dispersion and diffusion to give rise to classic Gaussian plumes that display first order concentration gradients. When samples collected in sequential quarters differ in concentration by more than an order of magnitude, it suggests that at least one of the two values does not represent dissolved metal content and is more likely to be the result of acid extraction from suspended solids in the sample. Atypical spikes noted in historic monitoring results are presented in Table 6-5.

Table 6-5
Historical Data from Fort Monmouth Show Rapid Increases and Decreases in Lead Concentrations That Cannot Be Attributed to Dissolved Metals

Site	Well	Date	Lead Concentration (ug/L)		
			Preceding	Spike	Succeeding
FTMM-57	MW01	3-9/1999	90	125	11.2
		5-10/2002	6.91	28.3	4.88
		8/2008 – 6/2009	2.45	30.6 and 16.1	2.9
	MW02	7-8/1993		137	ND
		6/1997-3/1998	4.2	17	ND
		2-9/2003	ND	15.4	2.87
	MW03	6/1997-3/1998	4.2	17	ND
		2-9/2003	ND	15.4	2.87
	MW04	4-11/1997	24	122	35
		5-11/1998	34.4	99 and 163	7.18
		8-11/2000	13.2	143	1.26
FTMM-22	MW38	11/2000-2/2001		90.8	ND
	MW40	9/2002-2/2003	ND	13.2	ND
Bldg 750	MW01	4/1993-11/1994	ND	23	3.2
		9/1997-3/1998	3.3	12	5
		5-12/1998	ND	14	5.2
		5-11/2000	ND	31.2	ND
		2-8/2004	ND	20.5	ND
	MW02	11/1996-2/1997		23.8	ND
		5-12/1998	ND	69	ND
		12/1998-7/1999	ND	111 and 612	7.84
		5/2000-2/2001	15.7	114 and 68.4	ND
		5-11/2002	5.41	44.8	9.25
		11/2004-4/2005	7	59.2	ND
		8/2008-	ND	232	2.03

		3/2009			
	MW03	12/1998-6/1999	ND	17.3	ND
		10/1999-5/2000	ND	19.4	ND
		1-7/2005	ND	22.7	ND
	MW04	11/8-30/1994		201	4.7
		2-8/2001	ND	66.7	2.92
		1-7/2005	ND	33.4	ND
FTMM-18/54/55/62	296MW01	3-8/2000	ND	20.5	4.06
	296MW02	11/1997-5/1998	30	836	16.5
		3-8/2000	6.3	28.3	7.74
		5-12/2002	1.5	177	ND
		2-8/2005	17.3	52	ND
		5-11/2009	ND	36.1	2.73
		11/2009-5/2010	2.73	1060	ND
	296MW04	12/2001-5/2002	5.54	31.4	9.93
	296MW06	5-8/2001	2.18	17	1.34
		11/2003-5/2004	ND	31.8	ND
	296MW07	8/2001-3/2002	5.69	18.2	3.36
		11/2003-5/2004	ND	17.9	ND
		7/2004-2/2005	ND	14.5	ND
	296MW08	5-12/2001	13.1	80.6	16
FTMM-25	MW01	1-3/1998	ND	16	ND
	MW02	10/2001-5/2002	2.37	34.1	1.29
	MW03	8/1999-2/2000	ND	1010	ND
		5-8/2000	2.35	26.5	1.7
	MW04	5-8/2000	ND	104	ND
		10/2000-4/2001	ND	32.4	ND
		1-7/2002	1.73	23	7.4
		10/2003-5/2004	6.06	86.6	ND

FTMM-04	MW08	7/2009-1/2010	ND	31.1	ND
FTMM-12	14MW22	10/2008-6/2009	ND	9.96	ND
		6-9/2010	ND	9.23	
FTMM-66	80MW01	6-11/1998	3.3	10.4	2.86
		3-8/2000	3.67	10.4	2.86
		2-8/2005	ND	18.3	6.5
	80MW04	2-8/2005	ND	19.4	ND
	80MW05	1-12/2002	13.4	47.2 and 70.1	4.31
		2-8/2009	ND	28.4	ND
	166MW01	8/1997-2/1998	1.6	15	ND
		6-11/1998	2.3	12.4	4.23
		3-8/2000	2.93	17.3	5.12
		3-9/2003	1.62	10.2	3.43
FTMM-58	MW02	4-1993-3/1994	ND	260	ND
		8/1997-3/1998	ND	20	8
FTMM-56	80MW05	2-8/2009	ND	28.4	ND
	166MW01	6-11/2009	ND	7.25	ND

6.2 Conclusion of Base-Wide Evaluation of Metals As Contaminants of Concern

The only consistent explanation for lead findings to date (and other metals as well) is that fine particles of glauconitic clay are suspended in many of the samples and yield metals when contacted with the acid preservative used for ground water samples. The applicability of each of these factors to individual sites at Fort Monmouth is summarized in Table 6-6.

Table 6-6
All Sites with Historic Lead Occurrences Have One or More Clear Markers Suggesting Turbidity is the Source of the Lead

Site and Use	Most Recent Lead Con Range in ug/L (date)	Percent of Low Flow Samples with Turbidity > 5 NTU	Affect of Low Flow (Ave Post/Pre)*	% of RPD** > 25 (Maximum RPD)*	# Atypical Spikes (Max Value in ug/L)
FTMM-12, M-14 Landfill	ND-9.23 (9/9/2010)			60% (194)	2 (9.96)
FTMM-03, Landfill M-3	ND-8.37 (9/7/2010)	50% (Q1) 62.5% (Q2)	0.59	100% (85)	
Building 750 – Heating Oil UST	ND (8/18/2010)		0.13		18 (612)
FTMM-18, 54, 55, 62 Landfill, USTs, and Fuel Area	ND-8.89 (9/29/2010)	71.4%	0.17 (#283) 0.48 (#290/6)	62.5% (194)	14 (1060)
FTMM-25, Landfill CW-3A	ND-4 (7/26/2010)		0.34	71.4% (198)	7 (110)
FTMM-04, Landfill M-4	ND (7/21/2010)	50% (Q1) 50% (Q2)	0.15	50% (73)	1 (31.1)
FTMM-12, M-12 Landfill	ND-9.23 (9/9/2010)	36.3%	0.56 1 (#14MW)	100% (130)	
FTMM-66, Building 866, Heating Oil AST	ND-7.09 (8/5/2010)	100%	0.36	80% (146)	10 (70.1)
FTMM-58, Building 2567, Gas Station	ND (1/16/2004)	100% (Q1) 87.4% (Q2)	0.47		2 (260)
FTMM-56, Buildings 80-166, Heating	ND-6.43 (8/31/2010)		0.41		2 (28.4)

Oil UST					
FTMM-22, Building CW-1, Lime Pit	ND-2.45 (8/24/2010)			91% (197)	2 (90.8)
FTMM-57, Building 108, Heating Oil UST	ND-6.91 (8/19/2010)	75%	0.55	70% (197)	11 (163)

*Based on setting ND samples at 1 ug/kg
**If both duplicates were ND or if one was ND and the other <2 ug/L, the duplicate was not evaluated

Given the weight of evidence, the Army has concluded that metal detections in general, and lead specifically, are the direct result of acid leaching of suspended solids in ground water samples. Therefore, metals are not considered COCs. This is further supported by the location of the Wenonah Mount Laurel aquifer, which is approximately 125 feet bgs - too deep to be affected by the presence of these metals near ground surface. In addition, the sensitive receptor survey (Appendix M) indicated no domestic or irrigation wells are close enough to be adversely impacted by COC migration.

7.0 RECEPTOR EVALUATION

7.1 Sensitive Receptor and Well Search

A visual and documentary search of sensitive populations was performed the Army and their subcontractor to identify potentially sensitive populations within 200 feet of the FTMM boundary. The identification of said populations is in accordance with NJDEP statutory requirements. The Receptor Evaluation Report, NJDEP Sensitive Receptor Survey Form, and Sensitive Receptor Survey figure are provided in Appendix M.

Although the identified populations are within 200 feet of the FTMM boundary, all of the environmentally-impacted locations are an appreciable distance from the fence line and in all cases exceed the 200-foot buffer established by NJDEP. In addition, site-specific utility maps were reviewed to identify any preferential pathways which could affect site contamination plumes. These maps are provided in Appendix M.

In addition to the sensitive receptors, the Army has included all identified off-site wells within 2,000 feet of the FTMM perimeter. No production wells were identified within 2,000 feet of the FTMM boundary. The majority of off-site wells are monitoring wells associated with various remedial activities. A ground water model has been developed for FTMM, with the overall ground water flow pattern for the Main Post being easterly with a localized northeasterly component. FTMM is bounded by surface water bodies to the east and northeast. Domestic and/or irrigation wells to the east or northeast of the Main Post would not be impacted by activities on FTMM property.

Surface water bodies interact with ground water at FTMM. The interaction takes place in three basic ways: streams gain water from inflow of ground water through the streambed, streams lose water to ground water by outflow through the streambed, or both, gaining in some reaches and losing in other reaches. When ground water discharges into a surface water body, the elevation of the ground water table in the vicinity of the surface water body must be higher than the elevation of the stream water surface. Conversely, for surface water to seep to ground water, the elevation of the water table in the vicinity of the stream must be lower than the elevation of the stream water surface. The surface water bodies at FTMM (Oceanport and Parkers Creeks) may be gaining or losing depending upon the tidal cycle. Throughout the entire tidal cycle however, net results are that ground water inflows into the creeks, albeit at low flow rates. Figures depicting the surface water features, wetland areas, and stream bank stabilization areas in the vicinity of the Site are included in Appendix M.

7.2 Vapor Intrusion (VI) Investigation

FTMM evaluated the requirements for a VI assessment in accordance with the NJDEP's October 2005 Vapor Intrusion Guidance (VIG) and *Technical Requirements.* FTMM utilized the three-stage assessment criteria as detailed in the VIG decision framework to determine the

applicability of VI regulations. Site-specific ground water data from the seven most recent quarterly ground water sampling events were compared to the NJDEP Ground Water Screening Levels (GWSLs). Given that PCE, TCE, and vinyl chloride concentrations exceeded applicable NJDEP GWSLs and were identified within 100 feet of surrounding building(s), a vapor intrusion evaluation is warranted. All supporting documentation regarding the VI evaluation, including a figure depicting groundwater concentrations and distances are included in Appendix M.

7.3 Baseline Ecological Evaluation (BEE)

Shaw Environmental, Inc. was contracted by the Army to conduct a Baseline Ecological Evaluation (BEE) for Fort Monmouth's Main Post and Charles Wood Areas. Sampling of multiple media was conducted in 2010. The draft BEE was submitted in May 2011 and will be updated once comments are resolved with NJDEP.

7.4 Public Notification

In accordance with Public Notification requirements in the *Technical Requirements* (N.J.A.C. 7:26E-1.4), the Army submitted a request to the NJDEP Site Remediation Program dated June 17, 2010 to conduct an alternative Public Notification Plan. This request was approved by the NJDEP in correspondence dated June 24, 2010, a copy of which is provided in Appendix M.

The alternative Public Notification Plan includes newspaper advertisements being placed in local and county newspapers through the Asbury Park Press and Link, all public notification documents being sent to the Municipal Clerk for each municipality in which the contaminated site is located, and to the local designated health officials. FTMM has also established a local document repository for all reports produced regarding the site remediation areas of concern (AOCs) at Fort Monmouth. The repository is located at the Monmouth County Library in Shrewsbury, New Jersey, where all reports are available for public review. Said reports are also available online at https:/cecom100.monmouth.army.mil/usagfmima/sites/local/brac.asp.

The Fort conducted two Open Houses in January of 2008 and January of 2009, during which time figures and data regarding all of the Fort's site remediation AOCs were on display; environmental personnel from the Fort were available to answer questions from the public. The Fort will conduct a third Open House should the need arise.

The Fort also operates a Fort Restoration Advisory Board (RAB) which holds quarterly public meetings held by RAB members who are public citizens, not elected officials, selected from all of the surrounding towns. They review and comment on technical documents and plans relative to ongoing environmental investigations and restoration activities at the Fort. Members serve as liaisons with the community and are available to meet with community members and groups. The meetings are open to the public and notification of all meetings is provided in local newspapers as well as by mail to all interested parties. All environmental projects subject to the *Technical Requirements* are presented to the RAB via this public forum. Examples of the

newspaper advertisement and Affidavit of Publication placed in the Asbury Park Press are provided in Appendix M.

8.0 REMEDIAL ACTION PROGRESS

Long-term ground water monitoring results indicate that PCE concentrations have decreased in monitoring wells where concentrations were greater than NJDEP GWQS at the onset of the first HRC® injection. Concentrations of PCE have continued to decrease in certain monitoring wells, notably M-5MW11 and M-5MW16, through the current reporting period (1st Quarter 2009 through the 3rd Quarter 2010). Concentrations of PCE in other monitoring wells, notably M-5MW19 and M-5MW20, appeared to stabilize. Concentrations of PCE degradation byproducts appear to have stabilized, but continue to increase in some wells.

Concentrations of PCE and breakdown byproducts (TCE and vinyl chloride) continued to exceed NJDEP GWQS in monitoring wells M-8MW23, M-8MW12, M-5MW11, M-5MW16, M-5MW20, M-5MW19 and M-5MW23. The greatest concentrations of PCE remain in hydraulically upgradient monitoring well M-5MW16. At the time of report preparation, additional rounds of chemical injections have been planned. The effectiveness of these injections will be covered in subsequent RAPRs.

8.1 Costs of Remediation Incurred to Date

Total costs to date for the annual implementation of the RAs performed at the M-5 Landfill are approximately $1,961K (Appendix N). This includes the Preliminary Assessment (PA) Phase, SI, RI, Remedial Design, RA, LTM, and reporting.

8.2 Ground Water Conclusions

Figures 5-2 through Figure 5-6 illustrate the trends in concentrations of PCE and degradation byproducts with time for monitoring wells M-5MW11, M-5MW16, M-5MW19, M-5MW20 and M-5MW23 where these chlorinated VOCs were detected greater than their respective NJDEP GWQS. During this reporting period, PCE and/or degradation byproducts were not detected in four of the 13 monitoring wells (M-5MW10, M-5MW12, M-5MW13 and M-5MW14).

PCE was detected at concentrations greater than NJDEP GWQS in M-5MW11. PCE concentrations in M-5MW11 ranged from 0.69 (1st Quarter 2010) to 2.74 µg/L (2nd Quarter 2009). PCE concentrations exceeded NJDEP GWQS in five of seven sampling rounds during the current reporting period.

PCE was detected at concentrations greater than NJDEP GWQS in M-5MW16. PCE concentrations in M-5MW16 ranged from 1.36 µg/L (1st Quarter 2010) to 4.9 µg/L (4th Quarter 2009). PCE concentrations exceeded the NJDEP GWQS in all seven sampling rounds during the current reporting period.

PCE was detected at concentrations greater than NJDEP GWQS in M-5MW19 [3.17 µg/L (2nd Quarter 2009) and 3.03 µg/L (1st Quarter 2009)]. PCE concentrations were either ND or

detected at less than NJDEP GWQS for the remaining five rounds of the current reporting period.

PCE was detected at concentrations greater than NJDEP GWQS in M-5MW20, ranging from 0.96 (4th Quarter 2009) to 11.13 µg/L (2nd Quarter 2010). PCE was detected at concentrations less than NJDEP GWQS in M-5MW20 in the 4th Quarter 2009 and greater than NJDEP GWQS in all other sampling events during this reporting period.

PCE was detected at concentrations greater than NJDEP GWQS in M-5MW23, ranging from 1.76 µg/L (4th Quarter 2009) to 46.64 µg/L (3rd Quarter 2010). PCE concentrations exceeded NJDEP GWQS for all seven sampling rounds during the current reporting period.

TCE was detected at concentrations greater than NJDEP GWQS in M-5MW16, ranging from ND (3rd and 4th Quarters of 2009) to 1.84 µg/L (1st Quarter 2010). The NJDEP GWQS for TCE is 1 µg/L. TCE was detected at concentrations less than NJDEP GWQS in M-5MW16 in four of the sampling events conducted during this reporting period (2nd, 3rd, and 4th Quarters of 2009 and 3rd Quarter 2010).

TCE was detected at concentrations greater than NJDEP GWQS in M-5MW19, ranging from ND (3rd Quarter 2009 and 3rd Quarter 2010) to 2.9 µg/L (1st Quarter 2009). TCE was detected at concentrations in compliance with the NJDEP GWQS in M-5MW19 in the 2nd and 4th Quarters of 2009 and 1st and 2nd Quarters of 2010, and was ND in the 3rd Quarters of 2009 and 2010.

TCE was detected at concentrations greater than NJDEP GWQS in M-5MW20, ranging from 0.30J (4th Quarter 2009) to 51.25 µg/L (2nd Quarter 2010). TCE was detected at concentrations less than NJDEP GWQS for the 2nd and 4th Quarters of 2009, but detected at concentrations greater than NJDEP GWQS for the remaining five rounds of sampling in the current reporting period.

TCE was detected at concentrations greater than NJDEP GWQS in M-5MW23 at 1.77 µg/L, 2.15 µg/L, and 2.62 µg/L during the 1st, 2nd and 3rd Quarters of 2010, respectively. TCE was not detected throughout the remaining sampling events during the current reporting period (1st, 2nd, 3rd and 4th Quarters of 2009).

cis-1,2-DCE concentrations in M-5MW20 ranged from 1.44 (4th Quarter 2009) to 111.95 µg/L (2nd Quarter 2010); *cis*-1,2-DCE concentrations exceeded the NJDEP GWQS of 70 µg/L in one of seven sampling rounds for the current reporting period and were either ND or detected below NJDEP GWQS in the remaining nine monitoring wells associated with the M-5 Landfill.

Vinyl chloride was detected at concentrations greater than NJDEP GWQS in M-5MW16, ranging from 1.15 (2nd Quarter 2010) to 1.28J µg/L (1st Quarter 2009). Vinyl chloride was ND in M-5MW16 in the remaining rounds of sampling for the current reporting period. Vinyl

chloride was not detected in the other nine monitoring wells associated with the M-5 Landfill throughout the current reporting period.

Ground Water Discussion

Ground water monitoring conducted during the current reporting period identified PCE, TCE, and vinyl chloride at concentrations that exceeded the NJDEP's GWQS for Class II-A aquifers. PCE was detected at concentrations greater than the NJDEP GWQS of 1 µg/L in five monitoring wells (M-5MW11, M-5MW16, M-5MW19, M-5MW20, and M-5MW23). TCE was detected at concentrations greater than the NJDEP GWQS of 1 µg/L in four monitoring wells (M-5MW16, M-5MW19, M-5MW20, and M-5MW23). *cis*-1,2-DCE was detected at concentrations exceeding the NJDEP GWQS of 70 µg/L in monitoring wells M-5MW16 and M-5MW20. Vinyl chloride was detected at concentrations greater than the NJDEP GWQS of 1 µg/L in monitoring well M-5MW16 only.

In addition, two metals (arsenic and antimony) were detected at concentrations exceeding NJDEP GWQS. As detailed in Section 6.0 of this RAPR, these metal detections are the direct result of acid leaching of suspended solids in ground water samples. Therefore, metals are not considered COCs at the M-5 Landfill. In addition, due to the extremely slow migration rates of metals in ground water, they pose little potential for migration.

8.3 Surface Water Conclusions

During this reporting period, surface water samples were collected from a total of 15 locations used to monitor the Main Post Area. All locations were monitored for VOCs, with select locations monitored for arsenic and lead or the full suite of TAL metals.

During the current reporting period, surface water samples were collected from three locations along Mill Creek and Laferta Creek: SS-24 (upstream of M-5 Landfill), SS-5 (along the western boundary of M-5 Landfill), and SS-28 (downstream of M-5 Landfill). PCE concentrations exceeded NJDEP Surface Water Quality Standards (SWQS) in SS-5, SS-24, and SS-28. TCE concentrations exceeded NJDEP SWQS in SS-24. Although PCE and TCE were detected at concentrations exceeding NJDEP SWQS, the location and distribution of COCs suggests that the M-5 Landfill is not the probable source for these VOCs.

8.4 Future Plans

The following actions are planned:

- Prepare a Remedial Action Selection Report (RASR)/Feasibility Study (FS) that will include a final closure plan for the M-5 Landfill.

- Continue quarterly ground water and surface water sampling until closure of Fort Monmouth in September 2011. At that time, future sampling will be evaluated and discussed with NJDEP.

- Discontinue analysis of ground water samples for metals.

8.5 Remedial Action (RA) Schedule

The table and Gantt chart provided in Appendix N represent a scheduled summary for remedial activities at the M-5 Landfill from the PA phase through the end of this reporting period and estimated into the future. Said table and chart include actual costs and schedule to date and estimated/anticipated costs and projected schedule for future activities.

9.0 CLASSIFICATION EXCEPTION AREA (CEA)

Brinkerhoff Environmental Services, Inc. (Brinkerhoff) completed a proposed CEA in accordance with current NJDEP guidelines, specifically the procedures described in the *Final Guidance on Designation of CEAs* and the *Technical Requirements for Site Remediation* (*Technical Requirements*), New Jersey Administrative Code (N.J.A.C.) 7:26E-8.4, last amended on November 4, 2009.

A combined M5/M8 CEA was generated based on the COCs present at both landfills. The CEA is based upon current ground water conditions and the prediction of future ground water conditions. Therefore, only the most recent analytical data set from the September 2010 sampling event was used to estimate the extent of the CEA. Data from the most recent sampling rounds (2009 and 2010) indicate that eleven constituents: three volatile organic compounds (VOCs), six pesticides, and two metals, exceeded NJDEP GWQS.

Arsenic and antimony were detected in ground water samples collected during the September 2010 sampling event at concentrations exceeding NJDEP GWQS. Metals are known to migrate slowly and to not degrade. Metals in ground water throughout Fort Monmouth were evaluated using statistical analyses and published literature information (Brinkerhoff, 2011 *Background Metals Evaluation*). It was concluded that the metals detections in ground water are likely a combination of a natural dissolved component along with input from sample turbidity and thus are not included in the CEA.

Pesticides are also not included in the CEA as pesticide concentrations detected in shallow groundwater are indicative of proper pesticide application in a residential setting and do not represent a release/spill of pesticides. Input from sample turbidity, as seen base-wide with metals concentrations in ground water, is seen as a contributing factor to the pesticide detections historically observed in M-5/M-8 Landfill ground water. Therefore, VOCs (PCE, TCE, and VC) are the only compounds on which the fate and transport modeling included in this report are based. Fate and transport modeling results for PCE are presented for the well with the highest detected concentrations, along with historical measured data. The decreasing 2000 to 2010 modeled results show the fate and transport model calibration, and from 2010 to the year when the concentration in the “hot spot” decreases to comply with NJDEP GWQS.

The CEA duration for PCE is 20 years (September 2010 to September 2030). The CEA duration for pesticides is indeterminate. The September 2010 CEA extent is approximately three acres.

The vertical extent of the Site CEA includes the shallow part of the aquifer beneath the Site and it extends from the water table, five feet below ground surface (bgs) to approximately 20 feet bgs, which represents the total depth of the wells at both landfills.

10.0 REFERENCES

USATHAMA (US Army Toxic and Hazardous Materials Agency), May 1980, *Installation Assessment of Fort Monmouth. Report 171*

US Geological Survey, Photorevised 1989, *Long Branch Quadrangle Map*

Roy F. Weston, Inc., December 1993, *Investigation of Suspected Hazardous Waste Sites at Fort Monmouth, New Jersey*

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ATC Associates, Inc., February 2000, *Remedial Action Work Plan – Landfill M-5, Main Post, Fort Monmouth, New Jersey*

New Jersey Department of Environmental Protection, 2005, *Technical Requirements for Site Remediation*, NJAC 7:26E

New Jersey Department of Environmental Protection, *Field Sampling Procedures Manual*, 1992 and 2005

US Army Garrison, Fort Monmouth, New Jersey, Directorate of Public Works (DPW), August 1999, Revised January 2003, September 2004, January 2006, and April 2008, *Fort Monmouth Standard Sampling Operating Procedure (SOP No. SAM-0205)*.

Versar, Inc., August 2003, U.S. Army Garrison, Fort Monmouth, New Jersey, *M-5 Landfill - Final Remedial Action Progress Report (4th Quarter 1999 through 3rd Quarter 2002)*

Versar, Inc., January 26, 2004, *Remedial Investigation Report and Sediment Quality Evaluation, M-5 Landfill, U.S. Army Installation Fort Monmouth, Fort Monmouth, New Jersey*

Versar, Inc., March 15, 2004, *Remedial Investigation Report for Near Surface Soils, M-5 Landfill, U.S. Army Installation Fort Monmouth, Fort Monmouth, New Jersey*

Versar, Inc., September 2005, U.S. Army Garrison, Fort Monmouth, New Jersey, *M-5 Landfill - Final Remedial Action Progress Report (4th Quarter 2002 through 3rd Quarter 2003)*

VEETech, P.C., March 2009, U.S. Army Garrison, Fort Monmouth, New Jersey, *M-5 Landfill (FTMM-05) - Remedial Action Progress Report (4th Quarter 2003 through 3rd Quarter 2005)*

VEETech, P.C., April 2009, U.S. Army Garrison, Fort Monmouth, New Jersey, *M-5 Landfill (FTMM-05) - Remedial Action Progress Report (4th Quarter 2005 through 3rd Quarter 2006)*

FIGURES

TABLES

APPENDIX A

Electronic Documents Library

Item 1: **Roy F. Weston, Inc., December 1995, Final Site Investigation, Fort Monmouth, New Jersey, Main Post and Charles Wood Areas**

Item 2: **ATC Associates, Inc., February 2000, Remedial Action Work Plan – M-5 Landfill, Main Post, Fort Monmouth, New Jersey**

Item 3: **Versar, Inc, April 2003, Remedial Action Progress Report for 1999-2002 – M-5 Landfill, Fort Monmouth, New Jersey**

Item 4: **Versar, Inc, September 2005, Remedial Action Progress Report for 2002-2003 – M-5 Landfill, Fort Monmouth, New Jersey**

Item 5: **Versar, Inc., January 26, 2004, Remedial Investigation Report and Sediment Quality Evaluation, M-5 Landfill, Fort Monmouth, New Jersey**

Item 6 **Versar, Inc., March 15, 2004, Remedial Investigation Report for Near Surface Soils, M-5 Landfill, Fort Monmouth, New Jersey**

Item 7: **VEETech, Inc, February 2009, Remedial Action Progress Report for 2003-2005 – M-5 Landfill, Fort Monmouth, New Jersey**

Item 8: **VEETech, Inc, April 2009, Remedial Action Progress Report for 2005-2006 – M-5 Landfill, Fort Monmouth, New Jersey**

Item 9: **VEETech, Inc, September 2010, Remedial Action Progress Report for 2006-2008 – M-5 Landfill, Fort Monmouth, New Jersey**

APPENDIX B

Remedial Action Documents

Item 1: **M-5 Landfill – Remedial Investigation Of Landfill Cover Requirements**

Item 2: **Request for Permit-by-Rule for RegenOx™ and HRC Advanced® Advanced Injections. M-5 Landfill, Fort Monmouth, New Jersey. September 2, 2010**

Item 3: **Approval of Discharge to Ground Water Permit-By-Rule, M-5 Landfill – Injection of RegenOx™ and HRC Advanced®, Fort Monmouth, New Jersey, November 10, 2010**

APPENDIX C

Fort Monmouth Directorate of Public Works Standard Operating Procedure

Item 1:	**Decontamination Procedures for Field Equipment, Revised April 14, 2008**
Item 2:	**Field Sampling, Revised March 29, 2010**
Item 3:	**Geoprobe® Sampling Methods, Revised, March 29, 2010**
Item 4:	**Oxygen Release Compound (ORC®)/ Hydrogen Release Compound (HRC®) Injections, Revised March 29, 2010**
Item 5:	**Monitoring Well Sampling for IRP Sites at Fort Monmouth, Revised April 17, 2008**
Item 6:	**Low Flow Monitor Well Sampling, Revised October 13, 2010**

APPENDIX D

1st Quarter 2009 Ground Water Sampling

Item 1: **Contaminant Isoconcentration Maps**

Item 2: **Contaminant Isoconcentration Summary Table**

Item 3: **Laboratory Analytical Data**

Note: Contaminant Isoconcentration Maps have been generated for the combined M-5 and M-8 Landfills. Contaminant Isoconcentration Summary Tables are provided herein for both landfill sites. Laboratory analytical data are provided only in each Landfill's respective RAPR.

APPENDIX E

2nd Quarter 2009 Ground Water Sampling

Item 1: **Contaminant Isoconcentration Maps**

Item 2: **Contaminant Isoconcentration Summary Table**

Item 3: **Laboratory Analytical Data**

Note: Contaminant Isoconcentration Maps have been generated for the combined M-5 and M-8 Landfills. Contaminant Isoconcentration Summary Tables are provided herein for both Landfill sites. Laboratory analytical data are provided only in each Landfill's respective RAPR.

APPENDIX F

3rd Quarter 2009 Ground Water Sampling

Item 1: **Contaminant Isoconcentration Map**

Item 2: **Contaminant Isoconcentration Summary Table**

Item 3: **Laboratory Analytical Data**

Note: Contaminant Isoconcentration Maps have been generated for the combined M-5 and M-8 Landfills. Contaminant Isoconcentration Summary Tables are provided herein for both Landfill sites. Laboratory analytical data are provided only in each Landfill's respective RAPR.

APPENDIX G

4th Quarter 2009 Ground Water Sampling

Item 1: **Contaminant Isoconcentration Map**

Item 2: **Contaminant Isoconcentration Summary Table**

Item 3: **Laboratory Analytical Data**

Item 4: **Tetra Tech EM, Inc. *Laboratory Data Validation Report for the M-5 Landfill 4th Quarter 2009*, January 27, 2010**

Note: Contaminant Isoconcentration Maps have been generated for the combined M-5 and M-8 Landfills. Contaminant Isoconcentration Summary Tables are provided herein for both Landfill sites. Laboratory analytical data are provided only in each Landfill's respective RAPR.

APPENDIX H

1st Quarter 2010 Ground Water Sampling

Item 1:	**Ground Water Contour Map**
Item 2:	**MODFLOW Ground Water Contour Map**
Item 3:	**Ground Water Contour Summary Table**
Item 4:	**Contour Map Reporting Form**
Item 5:	**Army Proposal and NJDEP Response for Postwide Depth to Water Collection**
Item 6:	**Contaminant Isoconcentration Maps**
Item 7:	**Contaminant Isoconcentration Summary Table**
Item 8:	**Laboratory Analytical Data**

Note: Contaminant Isoconcentration Maps have been generated for the combined M-5 and M-8 Landfills. Contaminant Isoconcentration Summary Tables are provided herein for both Landfill sites. Laboratory analytical data are provided only in each Landfill's respective RAPR.

APPENDIX I

2nd Quarter 2010 Ground Water Sampling

Item 1:	**Ground Water Contour Map**
Item 2:	**MODFLOW Ground Water Contour Map**
Item 3:	**Ground Water Contour Summary Table**
Item 4:	**Contour Map Reporting Form**
Item 5:	**Contaminant Isoconcentration Maps**
Item 6:	**Contaminant Isoconcentration Summary Table**
Item 7:	**Laboratory Analytical Data**
Item 8:	**Tetra Tech EM, Inc. *Laboratory Data Validation Report for the M-5 Landfill 2nd Quarter 2010,* January 17, 2011**

Note: Contaminant Isoconcentration Maps have been generated for the combined M-5 and M-8 Landfills. Contaminant Isoconcentration Summary Tables are provided herein for both Landfill sites. Laboratory analytical data are provided only in each Landfill's respective RAPR.

APPENDIX J

3rd Quarter 2010 Ground Water Sampling

Item 1: **Ground Water Contour Map**

Item 2: **MODFLOW Ground Water Contour Map**

Item 3: **Ground Water Contour Summary Table**

Item 4: **Contour Map Reporting Form**

Item 5: **Contaminant Isoconcentration Maps**

Item 6: **Contaminant Isoconcentration Summary Table**

Item 7: **Laboratory Analytical Data**

Note: Contaminant Isoconcentration Maps have been generated for the combined M-5 and M-8 Landfills. Contaminant Isoconcentration Summary Tables are provided herein for both Landfill sites. Laboratory analytical data are provided only in each Landfill's respective RAPR.

APPENDIX K

1st Quarter 2009 through 3rd Quarter 2010 Surface Water Sampling

Item 1: **Surface Water Sampling Location Map**

Item 2: **Surface Water Contaminant Distribution Map**

Item 3: **Surface Water Sampling Summary**

Item 4: **Surface Water Long Term Monitoring Tables (Tables 5-1 through 5-28)**

Item 5: **Surface Water Exceedance Summary**

Item 6: **Surface Water Tentatively Identified Compounds (TICs) Summary**

Item 7: **Laboratory Analytical Data**

Item 8: **Tetra Tech EM, Inc. *Laboratory Data Validation Report for the Fort Monmouth Surface Water Sampling, 2nd Quarter 2010,* January 19, 2011**

Item 9: **Tetra Tech EM, Inc. *Laboratory Data Validation Report for the Fort Monmouth Surface Water Sampling, 4th Quarter 2009,* February 1, 2010**

APPENDIX L

Background Metals Evaluation

APPENDIX M

Receptor Evaluation

Item 1: ***Offsite Receptor Evaluation Report for Fort Monmouth, Main Post and Charles Wood Area,*** **Tetra Tech, Inc., November 2, 2010**

Item 2: **Sensitive Receptor Survey Figure**

Item 3: **Utility Map**

Item 4: **Well Search**

Item 5: **Vapor Intrusion Investigation**

Item 6: **Public Notification Documents**

APPENDIX N

Costs and Schedule for the M-5 Landfill

APPENDIX O

Classification Exception Area (CEA) Documents

Table 4.2-13
Fort Monmouth - Main Post
Summary of Detected Compounds
In Soils at Site M-15

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	MAXIMUM BACKGROUND CONCENTRATION (mg/kg)	ANALYTICAL RESULTS SAMPLE DATE	
				SS01-A01 11/29/94	SS02-A01 11/29/94
SVOCs (mg/kg) - Sample Interval (6"to 12" bgs)					
Anthracene	0.152	10,000	0.1 J	0.041 J	ND
Phenathrene	0.165	NLE	0.39	0.37 J	0.17 J
Fluoranthene	0.198	2300	0.46	0.53	0.36 J
Pyrene	0.178	1700	1.5	0.72	0.43
Benzo(a)anthracene	0.162	0.9	0.65	0.31 J	0.18 J
Chrysene	0.145	0.9	0.65	0.33 J	0.23 J
bis(2-Ethylhexyl)phthalate	0.32	49	0.19 J	.069 J	.077 J
Benzo(b)fluoranthene	0.188	0.9	0.9	0.45	0.35 J
Benzo(k)fluoranthene	0.205	0.9	0.43	0.13 J	0.110 J
Benzo(a)pyrene	0.162	0.66	0.6	0.27 J	0.200 J
Indeno(1,2,3-cd)pyrene	0.234	0.9	0.46	0.16 J	0.120 J
Dibenzo(a,h)anthracene	0.198	0.66	0.079 J B	.041 J	ND
Benzo(g,h,i)perylene	0.224	NLE	0.64 B	0.16 J	0.11 J
PESTICIDES AND PCBs (mg/kg) Sample Interval (0" to 6" bgs)					
4,4'-DDE	0.0038	2	0.096 P	**6.6 CD**	1.0 CD
4,4'-DDT	0.0037	2	.110 D	**7.9 CD**	1.0 CD
METALS TOTAL (mg/kg) Sample Interval (0" to 6"bgs)					
Aluminum	3.9	NLE	15200	5300	5030
Arsenic	0.35	20	22.9	8.3	8.9
Barium	0.17	700	32.3	68.4	101
Beryllium	0.1	1	2	0.6	0.69
Calcium	2.2	NLE	921	815	1860
Cadmium	0.86	1	0.116[1]	**2.9**	**4.5**
Cobalt	0.71	NLE	2.5	6.1	7.8
Chromium	1.6	500	269	109	95.5
Copper	2.2	600	8	34	66.5
Iron	0.58	NLE	55800	33400	37700
Lead	0.49	400[2]	25.9[1]	**5340**	**6130**
Magnesium	9.6	NLE	7230	1560	1600
Manganese	0.18	NLE	90.7	159	187
Nickel	1.4	250	8.4	8.3	6.9
Potassium	(12.3-25.8)	NLE	15400	2990	2770
Sodium	3.8	NLE	51.6	23.4	33.1
Silver	0.54	110	1.1	1.4	1.5
Selenium	0.36	63	1.9	0.45	2.1
Vanadium	0.53	370	94.1	27.5	25.9
Zinc	0.41	1500	81.4	**7750**	**12800**

Compounds exceeding NJDEP soil cleanup criteria are noted by bold numbers.
bgs - Below Ground Surface
J - Indicates that the concentration value was estimated due to detection at or near the detection limits
C- Pesticide identification was confirmed by GC/MS
P - The percent difference between the results from two GC columns is greater than 25%,the lower of the two values is reported
B - Compound was observed in the sample and associated laboratory blank.
D - surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis
ND - Indicates that the compound was not detected at or below the quantification limits
NLE - No Level Established
Note:MDL's for metal analysis is actually the highest detection limit with potassium given as a range due to high variability
[1] Monmouth County maximum background concentration.
[2] NJDEP criteria are referenced in the Site Remediation News, Winter 1995.

addition, compounds that exceed the SCC are subsequently compared to the impact to groundwater SCC because there were no monitor wells installed at the site.

SVOCs

Three SVOCs were detected above laboratory quantitation limits in site soils, but were well below NJDEP SCC. In addition, all other detected compounds with established SCC were found in concentrations below their respective criteria. The detected compounds did not exceed the impact to groundwater SCC.

Pesticides/PCBs

Two pesticides (4,4'-DDE and 4,4'-DDT) were detected in concentrations above NJDEP SCC and background in SS-01. The concentrations of 4,4'-DDE and 4,4'-DDT were well below the respective impact to groundwater criteria (Figure 4.2-24). Pesticides were not detected above criteria in SS-02. PCBs were not detected in site surface soil samples.

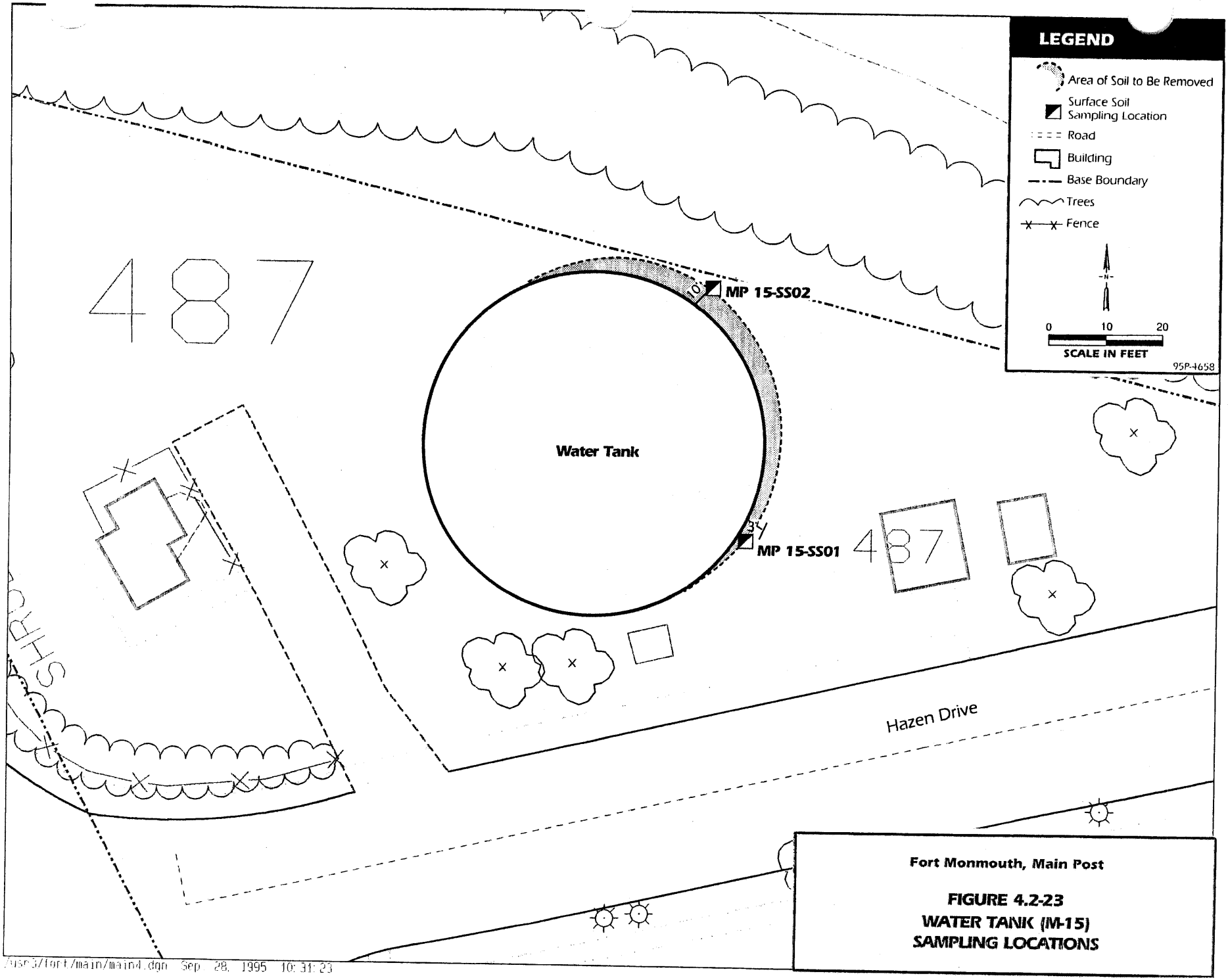
Metals

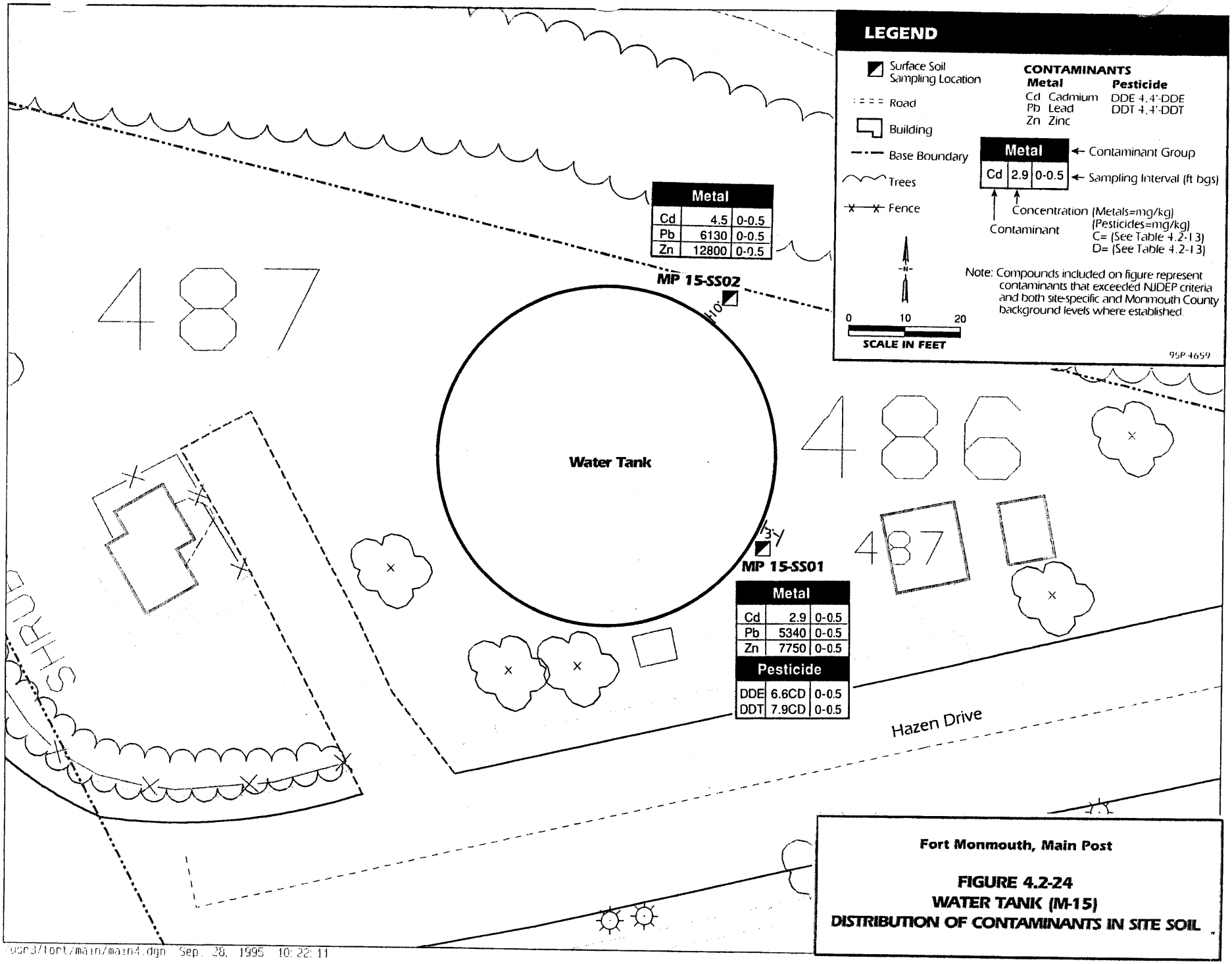
As indicated in Table 4.2-13, of the 20 metals detected in site soil, 3 (cadmium, lead, and zinc) were found in concentrations exceeding the NJDEP SCC. In addition, these metals were found in concentrations greater than those determined for site-specific and Monmouth County maximum background at the Main Post. Figure 4.2-24 presents the locations of compounds detected above the SCC and the established maximum background concentrations at the Main Post.

4.2.10.5 Recommendations

Two pesticide compounds and three metals, cadmium, zinc, and lead, were detected in surface soil at levels that exceeded NJDEP SCC and maximum background.

DPW has submitted the necessary documentation to Headquarters, Army Materiel Command/Army Environmental Center (HQAMC/AEC) to obtain the proper funding to remediate the site in FY 1996. Depending on funding availability, the affected soil will be excavated and disposed of in accordance with the applicable regulations. The area of contamination encompasses the perimeter of the tank, about 10 feet at the widest point. The depth of contamination is assumed to be 6 inches. Excavation will be performed in conjunction with confirmatory soil sampling to ensure that NJDEP SCC are achieved. It is estimated that 13 yd^3 of soil will be excavated, assuming that soil is excavated to a depth of 6 inches. NJDEP will be requested to send a representative to observe the excavation.


LEGEND
Area of Soil to Be Removed
Surface Soil Sampling Location
Road
Building
Base Boundary
Trees
Fence
N
0
10
20
SCALE IN FEET
95P-4658
487
MP 15-SS02
Water Tank
MP 15-SS01
487
Hazen Drive
SHAW
Fort Monmouth, Main Post
FIGURE 4.2-23
WATER TANK (M-15)
SAMPLING LOCATIONS
/usr3/fort/main/main4.dgn Sep 28, 1995 10:31:23


LEGEND
Surface Soil Sampling Location
Road
Building
Base Boundary
Trees
Fence
CONTAMINANTS
Metal
Cd Cadmium
Pb Lead
Zn Zinc
Pesticide
DDE 4,4'-DDE
DDT 4,4'-DDT
Metal
Cd 2.9 0-0.5
Contaminant Group
Sampling Interval (ft bgs)
Concentration (Metals=mg/kg) (Pesticides=mg/kg)
C= (See Table 4.2-13)
D= (See Table 4.2-13)
Contaminant
Note: Compounds included on figure represent contaminants that exceeded NJDEP criteria and both site-specific and Monmouth County background levels where established.
N
0 10 20
SCALE IN FEET
95P-4659
Metal
Cd 4.5 0-0.5
Pb 6130 0-0.5
Zn 12800 0-0.5
MP 15-SS02
Water Tank
MP 15-SS01
Metal
Cd 2.9 0-0.5
Pb 5340 0-0.5
Zn 7750 0-0.5
Pesticide
DDE 6.6CD 0-0.5
DDT 7.9CD 0-0.5
487
486
487
Hazen Drive
SHPDU
Fort Monmouth, Main Post
FIGURE 4.2-24
WATER TANK (M-15)
DISTRIBUTION OF CONTAMINANTS IN SITE SOIL
usgs3/fort/main/main4.dgn Sep. 28, 1995 10:22:11

Site M-16

4.2.11 Former Pesticide Storage Building (M-16)

4.2.11.1 Site Location

The former Pesticide Storage Building (M-16) was misidentified as Building 167 in the IA. The building actually used for pesticide storage was Building S-498, which is located on the south-side of Riverside Avenue, north of the marina (Figure 4.2-25). The approximate area of site M-16 is 1,400 ft^2 (0.03 acre).

4.2.11.2 Site History

Building S-498 was built in 1939. According to long-term Fort Monmouth employees, this building was used as a pesticide control shop in the 1940s and 1950s, before this function was moved to Building T-65. Building S-498 is currently used for miscellaneous storage. During the 1993 site visit, workers were bricking in the windows. The front of the building has a tile floor and was most likely used for office space. The back wing of the building has a cement floor with a centrally located floor drain. The southeast corner of the floor has sunk 2 to 3 inches, breaking away from the foundation and creating a crack in the area of the door. The cracks and floor drain could have allowed the release of spilled pesticides. Pesticide mixing reportedly took place inside the building with rinse water dumped in a sink that went to the sanitary sewer.

4.2.11.3 Sampling Effort

Four soil samples were collected from 6 to 12 inches bgs from areas that are not paved south of the building and analyzed for TCL +30 parameters (Figure 4.2-25). Soil samples were collected from two discrete intervals in the monitor well boring and analyzed for TCL +30 parameters and TAL metals. TAL metal analysis was not proposed in the CDAP but samples were collected at SB-01. One monitor well (MW-22) was south of Building S-498. Two rounds of groundwater samples from the monitor well were analyzed for TCL +30 parameters. In addition, an attempt was made to determine whether the floor drain discharges to the sanitary sewer at Building S-498. However, because the original floor in the building was reconstructed as a result of past

flooding problems, the original drainage line was no longer accessible and, consequently, could not be traced from Building S-498 to the sanitary sewer.

4.2.11.4 Hydrogeologic Interpretation

The lithologic log from MW-22 indicates that the lithology consists of a thin (0.4 ft) soil cover with crushed asphalt (to 2 ft bgs) underlain by interbedded green-brown fine-coarse sandy clay and fine-coarse sand with little clay.

Saturation was observed at 1 ft bgs. Monitor well MW-22 was screened in the saturated zone and was completed to a depth of 14.5 ft bgs. The site-specific groundwater flow direction is estimated to be south toward Oceanport Creek (Figure 4.2-26).

4.2.11.5 Soil Sampling Results

One shallow soil boring (SB-01) was installed in the MW-22 borehole to a depth of 6 ft bgs. Soil samples were collected in the borehole from two discrete intervals, i.e., 0 to 2 ft bgs and 2 to 4 ft bgs. In addition, four surface soil samples were collected from the 0 to 0.5 ft bgs interval. Soil samples were sampled for the analytical parameters listed in Table 3.6-1. The analytical results for site soils are listed in Appendix D. Table 4.2-14 compares detected compounds with the NJDEP SCC, and then compares the results to the subsequent site-specific and Monmouth County maximum background levels, where appropriate.

VOCs

VOCs were not detected in site soils.

SVOCs

Three SVOCs were detected slightly above laboratory quantitation limits in site soils. The compounds were detected well below their respective NJDEP SCC. In addition, SVOCs

Table 4.2-14 (1 of 2)
Fort Monmouth - Main Post
Summary of Detected Compounds
In Soil at Site M-16

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	MAXIMUM BACKGROUND CONCENTRATION (mg/kg)	ANALYTICAL RESULTS					
				SB01-A01 12/15/94 (0-2 ft bgs)	SB01-A02 12/15/94 (2-4 ft bgs)	SS01-A01 11/29/94 (1)	SS02-A01 11/29/94 (1)	SS03-A01 11/29/94 (1)	SS04-A01 11/29/94 (1)
SVOCs (mg/kg)									
bis(2-ethylhexyl)phthalate	0.32	49	0.19J	ND	0.23J	0.084 J	1.1 J	0.26 J	0.64
Phenathrene	0.165	NLE	0.39	0.140 J	ND	ND	ND	0.045 J	ND
Di-n-octylphthalate	0.185	1100	ND	ND	ND	0.845	1.1 J	0.26 J	0.64
Fluoranthene	0.198	2300	0.46	0.330 J	ND	0.046 J	ND	0.1 J	0.073 J
Pyrene	0.178	1700	1.5	0.220 J	ND	0.060 J	ND	0.14 J	0.096 J
Benzo(a)anthracene	0.162	0.9	0.65	0.092 J	ND	ND	ND	0.069 J	0.039 J
Chrysene	0.145	9	0.65	0.150 J	ND	ND	ND	0.063 J	0.043 J
Benzo(b)fluoranthene	0.188	0.9	0.9	0.150 J	ND	ND	ND	0.12 J	0.065 J
Benzo(k)fluoranthene	0.205	0.9	0.43	0.069 J	ND	ND	ND	ND	ND
Benzo(a)pyrene	0.162	0.66	0.6	0.084 J	0.43	ND	ND	0.575	0.046 J
Indeno(1,2,3-cd)pyrene	0.234	0.9	0.46	0.067 J	ND	ND	ND	0.049 J	0.04 J
Benzo(g,h,i)perylene	0.224	NLE	0.64 B	0.063 J	ND	ND	ND	ND	ND
PESTICIDES AND PCBs (mg/kg)									
Aldrin	0.0021	0.04	ND	ND	ND	ND	**0.17 C**	ND	ND
gamma-BHC (Lindane)	0.0021	0.52	ND	ND	ND	0.0034	0.17	0.0059	ND
Heptachlor	0.0021	0.15	ND	ND	ND	ND	**2.5 CD**	0.0099	ND
Dieldrin	0.0042	0.042	ND	**0.12**	ND	0.017	**2.0 CD**	**0.21 D**	**0.37 C**
4,4'-DDE	0.0037	2	0.091 D	1 C	0.1	0.35 CD	**3.5 CD**	0.48 CD	0.57 CD
4,4'-DDD	0.0037	3	0.0096 P	1.5 C	0.2	0.13 D	ND	0.22 D	1.7 CD
4,4'-DDT	0.00037	2	0.11 D	.71 C	0.072	1.1 CD	**23 CD**	**2.0 C D**	1.6 CD
Endrin Ketone	0.0037	NLE	ND	ND	ND	ND	0.092	ND	ND
alpha-Chlordane	0.0018	NLE	ND	0.042	0.0096	0.05	11 CD	0.2 D	0.86 CD
gamma-Chlordane	0.0018	NLE	ND	0.033 P	0.0088 P	0.05	13 CD	0.2 D	0.92 CD

Note: See page (2 of 2) for Table 4.2-14 Text, etc.

Table 4.2-14 (2 of 2)
Fort Monmouth - Main Post
Summary of Detected Compounds
In Soil at Site M-16

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	MAXIMUM BACKGROUND CONCENTRATION (mg/kg)	ANALYTICAL RESULTS					
				SB01-A01 12/15/94 (0-2 ft bgs)	SB01-A02 12/15/94 (2-4 ft bgs)	SS01-A01 11/29/94 (1)	SS02-A01 11/29/94 (1)	SS03-A01 11/29/94 (1)	SS04-A01 11/29/94 (1)
METALS TOTAL (mg/kg)									
Aluminum	3.9	NLE	15200	6840	11900	NA	NA	NA	NA
Arsenic	0.35	20	22.9	8.8	16	NA	NA	NA	NA
Barium	0.17	700	32.3	36.3	29.7	NA	NA	NA	NA
Beryllium	0.1	1	2	0.84	0.8	NA	NA	NA	NA
Calcium	2.2	NLE	921	1500	1200	NA	NA	NA	NA
Cobalt	0.7	NLE	2.5	5.0	2.8	NA	NA	NA	NA
Chromium	1.6	500	269	54.6	59.5	NA	NA	NA	NA
Copper	2.2	600	8	24.2	11.7	NA	NA	NA	NA
Iron	0.58	NLE	55800	21300	36200	NA	NA	NA	NA
Lead	0.4	400[3]	25.9[2]	35.3	16.3	NA	NA	NA	NA
Magnesium	9.6	NLE	7230	1670	2340	NA	NA	NA	NA
Manganese	0.18	NLE	90.7	74.5	37.7	NA	NA	NA	NA
Nickel	1.4	250	8.4	8.0	5.4	NA	NA	NA	NA
Potassium	(12.3-25.8)	NLE	15400	2990	3660	NA	NA	NA	NA
Sodium	3.8	NLE	51.6	283	232	NA	NA	NA	NA
Selenium	0.3	63	1.9	0.67	0.96	NA	NA	NA	NA
Vanadium	0.53	370	94.1	37.6	43.5	NA	NA	NA	NA
Zinc	0.41	1500	81.4	93	42.1	NA	NA	NA	NA

Compounds exceeding NJDEP cleanup criteria are noted by bold numbers.
J - Indicates that the concentration value was estimated due to detection at or near the detection limits
C- Pesticide identification was confirmed by GC/MS
D - Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis.
P - The percent difference between the results from two GC columns is greater than 25%,the lower of the two values is reported
B - Compound was observed in the sample and associated laboratory blank
NA- Not Analyzed - Not Proposed ; NLE - No Levels Established
ND - Indicates that the compound was not detected at or below the quantification limits
ft bgs. - feet below ground surface.
[1] - VOC's/SVOC's were collected from sample interval 6" to 12" bgs; Pesticide/PCB's were collected from sample interval 0.0" to 6" bgs.
Note: Metal analysis was not proposed or analyzed at surface soil locations. Metals analysis was not proposed at SB-01,but was analyzed.
Note: MDL's for metal analysis are actually the highest detection limit with potassium given as a range due to high variability.
[2] Monmouth County maximum background concentration.
[3] NJDEP criteria are referenced in the Site Remediation News, Winter 1995.

detected below laboratory quantitation limits were found in levels well below their respective criteria where established.

Pesticides/PCBs

A total of 10 pesticide compounds were detected above laboratory quantitation limits in site soil. Five pesticides (dieldrin, heptachlor, aldrin, 4,4'-DDE, and 4,4'-DDT) were found in concentrations exceeding the NJDEP SCC. Dieldrin was detected in soil boring SB-01 (0 to 2 ft bgs) and in surface soil samples SS-01 through SS-04. Heptachlor, aldrin, 4,4'-DDE, and 4,4'-DDT were detected at or above criteria in SS-01, SS-02, SS-03, and SS-04. None of the pesticides were detected above their respective impact to groundwater criteria. PCBs were not detected in site soil (Figure 4.2-27).

Metals

As indicated in Table 4.2-14, no metals were detected in concentrations above either the NJDEP SCC or established maximum background concentrations at the Main Post.

4.2.11.6 Groundwater Sampling Results

Monitor well MW-22 was sampled for the analytical parameters listed in Table 3.8-1. The compounds detected in groundwater samples from the individual sampling rounds, with the corresponding sample identifications, are listed in Appendix D. Table 4.2-15 compares the average concentrations of the detected compounds from the February and March sampling rounds with the NJDEP GWQC, and then compares the results to the subsequent site-specific and Monmouth County maximum background concentrations, where appropriate.

VOCs

VOCs were not detected in MW-22 from either sampling round.

Table 4.2-15
Fort Monmouth -Main Post
Summary of Average Concentrations of Detected Compounds in Groundwater
Site M-16

COMPOUND	METHOD DETECTION LIMIT	NJDEP GW QUALITY CRITERIA (µg/L)	MAXIMUM BACKGROUND CONCENTRATION (µg/L)	ANALYTICAL RESULTS (µg/L) SAMPLING DATE		
				MW22A01 2/17/95	MW22A02 3/9/95	MW22A02 (avg)
SVOCs (µg/L)						
bis-(2-Ethylhexyl)phthalate	9.7	30*	5 J	ND	1J	0.5 J

Compounds detected above NJDEP standards are noted by bold numbers.
GW - Ground water
NJDEP groundwater quality criteria consist of the higher number between the PQL or the STANDARD.
*PQL - Practical Quantitation Limit was used as the NJDEP groundwater quality criteria
J - Indicates that the concentration value was estimated due to detection at or near the quantification limits
ND - Indicates that the compound was not detected at or below the quantification limits

SVOCs

SVOCs were not detected above laboratory quantitation limits in MW-22 from either sampling round. The SVOC bis(2-ethylhexyl) phthalate was detected below the laboratory quantitation limit and well below the NJDEP GWQC.

Pesticides/PCBs

Pesticides/PCBs were not detected in MW-22 from either sampling round.

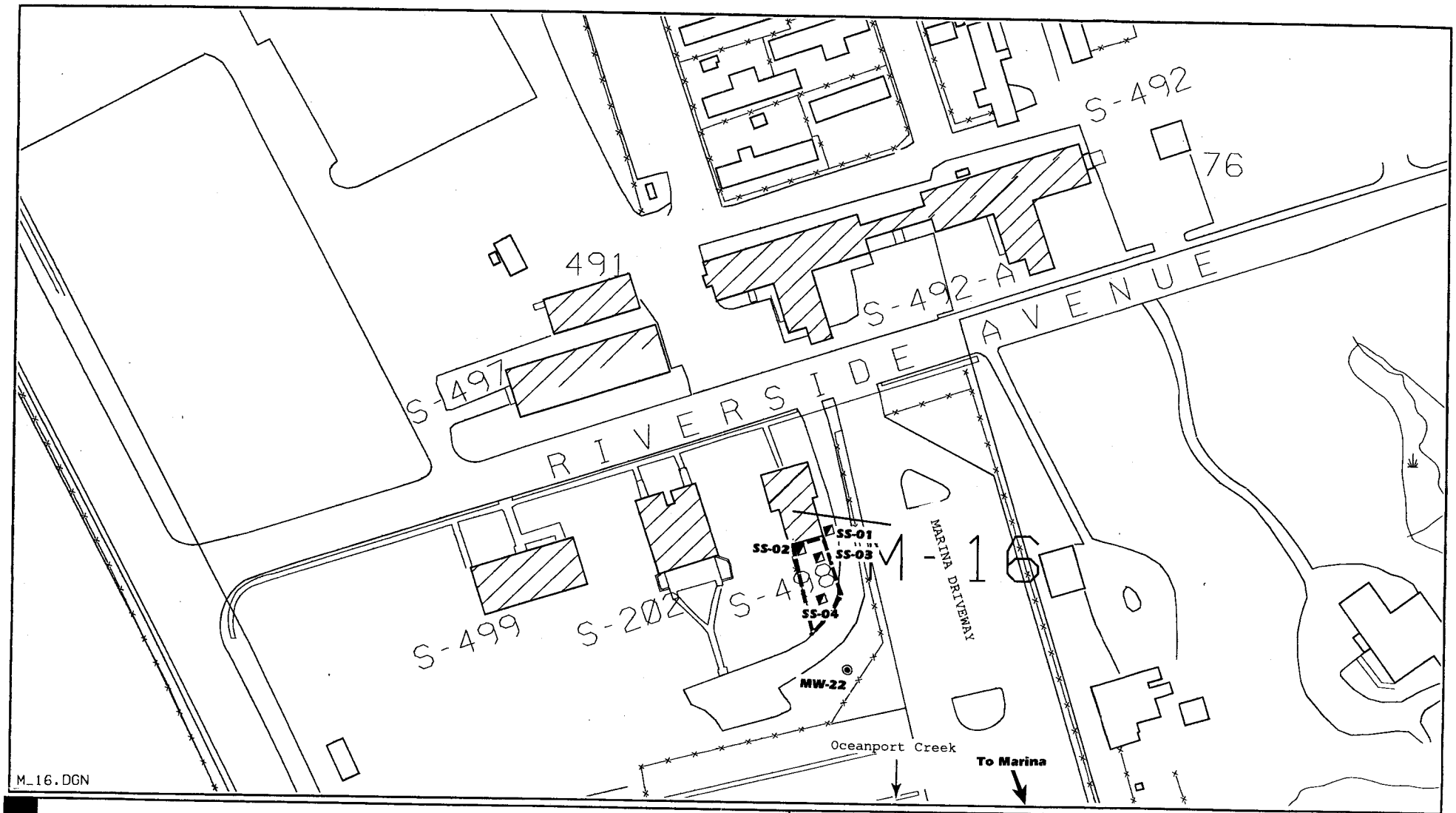
4.2.11.7 Recommendations

Pesticide compounds were detected at four surface soil sampling locations and in one soil boring sample (0 to 2-foot interval) in concentrations above NJDEP criteria and background.

No compounds of concern were detected in the groundwater above NJDEP criteria.

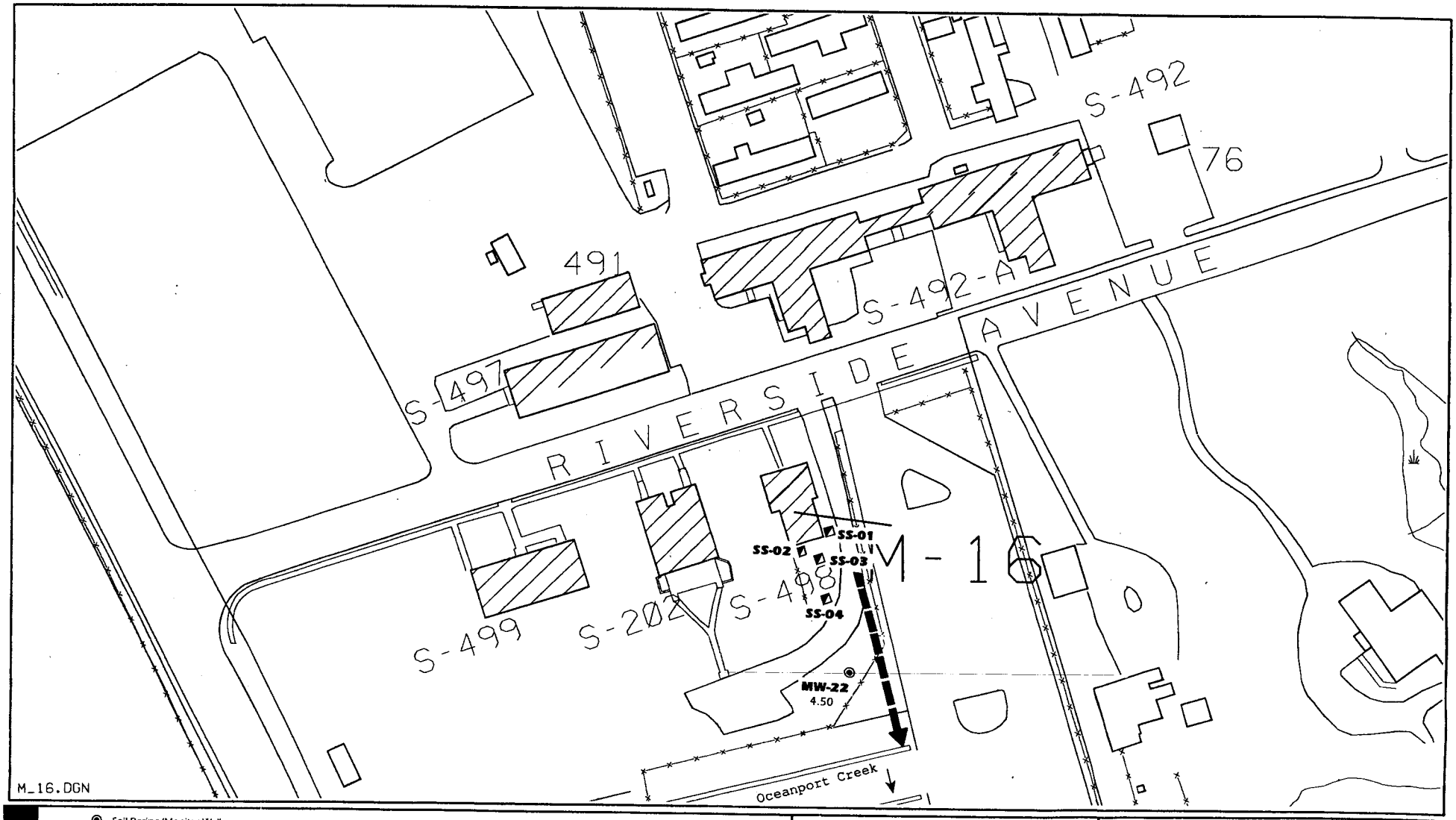
DPW has submitted the necessary documentation to HQAMC/AEC to obtain the proper funding to remediate the site in FY 1996. Depending on funding availability, the affected soil will be excavated and disposed of in accordance with the applicable regulations. The area of contamination is approximately 50 feet by 20 feet. The depth of contamination is assumed to be 12 inches. Excavation will be conducted in conjunction with confirmatory soil sampling to ensure that NJDEP SCC are achieved. It is estimated that 56 yd^3 of soil will be excavated, assuming that soil will be excavated to a depth of 12 inches. NJDEP will be requested to send a representative to observe the excavation.

The site monitor well will be properly abandoned due to the nondetection of compounds of concern in groundwater. The remedial activities proposed will remediate potential source areas of pesticides detected in soil.



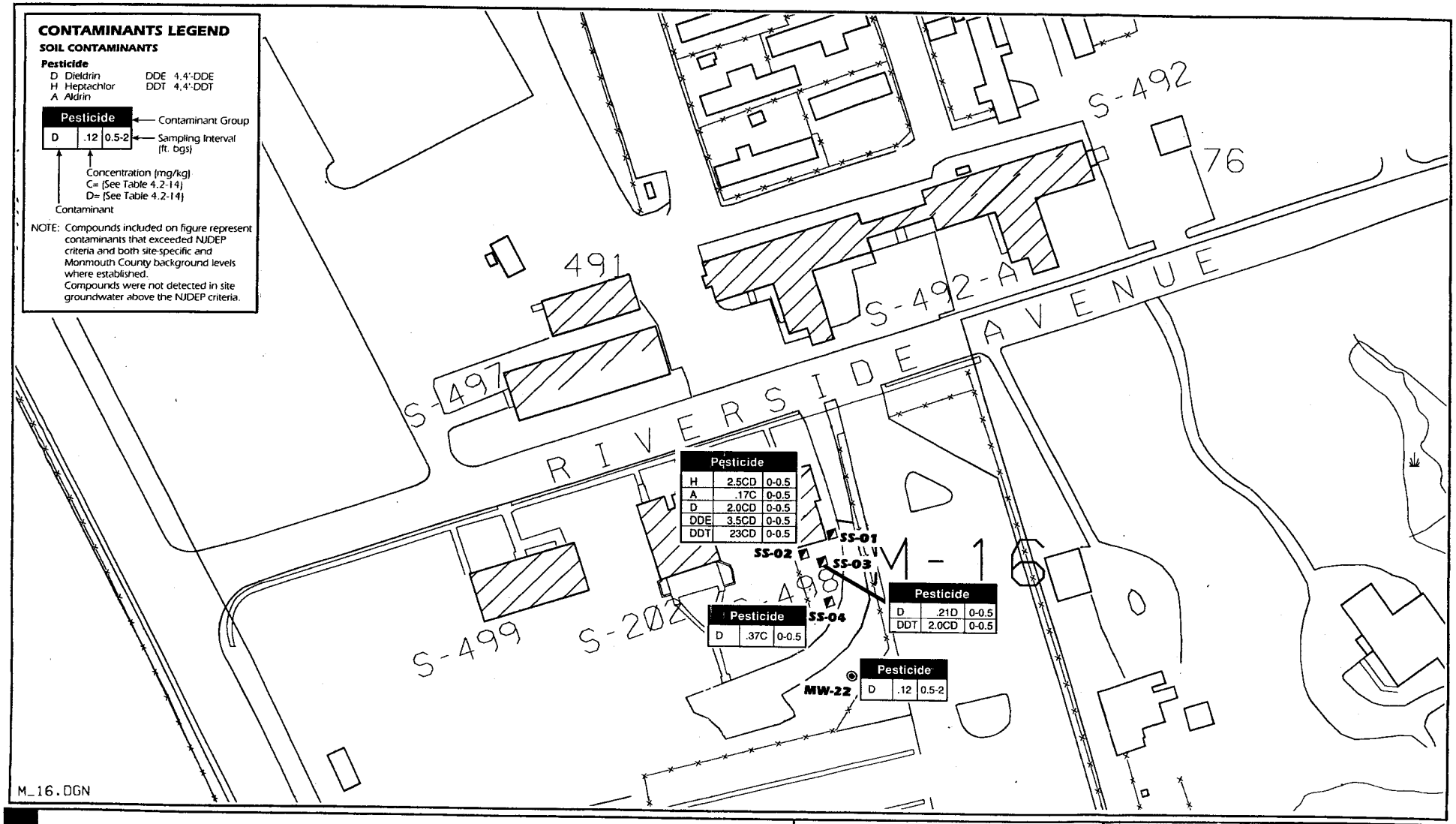
Fort Monmouth, Main Post

FIGURE 4.2-25
FORMER PESTICIDE STORAGE BUILDING (M-16)
SAMPLING LOCATIONS



Fort Monmouth, Main Post

FIGURE 4.2-26
FORMER PESTICIDE STORAGE BUILDING (M-16)
APPROXIMATE GROUNDWATER FLOW DIRECTIONS
(Groundwater Elevations Recorded from March 1995 Sampling Round)



Fort Monmouth, Main Post

FIGURE 4.2-27
FORMER PESTICIDE STORAGE BUILDING (M-16)
DISTRIBUTION OF CONTAMINANTS IN SITE SOIL

Site M-18

4.2.12 Former Training Area (M-18)

4.2.12.1 Site Location

The Army Signal School Training Area (M-18) is located in the northern part of the Main Post, between Parkers Creek to the north and Buildings 283, T-294, T-293, S-289, and S-145 to the south (Figure 4.2-28). The approximate area of site M-18 is 177,300 ft^2 (4.1 acres).

4.2.12.2 Site History

The Army Signal School Training Area has been used for military training exercises since 1919. Diesel and gasoline generators used to support these field exercises were reported in the IA to have been used 150 meters from Lafetra Creek, although the location shown in Figure 7 of the IA is closer to Parkers Creek. The IA reports that numerous fuel spills occurred in the generator area. A riot control agent was also used in this area for troop protective mask training for a limited period of time. During the 1993 site inspection, military training area exercises were being conducted in the M-18 area. Part of the area is paved. Based on the presence of concrete at the surface, there is a suspected debris disposal area used for the disposal of building rubble in the area north of Building 289.

4.2.12.3 Sampling Effort

GPR and electromagnetic (EM) surveys were conducted to investigate the extent of debris disposal north of Building 289. Nine soil borings in a grid pattern were drilled in this area (Figure 4.2-28). The original scope of work included the installation of 12 soil borings. However, because of difficult drilling locations in marshy areas, the borings were repositioned and fewer borings were installed. Soil samples were analyzed for VOCs and TPHs and were collected from either 6 to 12 inches or 12 to 18 inches below the bottom of the asphalt (to avoid bias from the asphalt that covers about half of this area) and either from intervals with visible staining or from just above the water table. If staining was observed, samples were collected for SVOC analysis. If staining or high HNu, organic vapor analyzer (OVA), or organic vapor monitor (OVM) readings were recorded, a sample was collected for TCL +30 parameters and

TAL metals. Due to soil staining and elevated PID readings at SB-06, TCL +30 parameters and TAL metals were sampled. No evidence of contamination was present at the other soil sampling locations. Monitor wells were installed in two of the borings (MW-24 and MW-25), and two rounds of groundwater samples were collected for TCL +30 parameters, TAL metals, and TPHs. In addition, two rounds of groundwater samples were collected from previously installed monitor well MW-3.

4.2.12.4 Geophysical Results

The EM survey conducted at site M-18 reveals apparent background conductivities in the range of 25 to 40 mS/m, which are represented by the green to yellow color contour intervals as shown in Figure 4.2-29. These conductivities are indicative of silty soils. High conductivity readings exist toward the north and perimeter of the site (70 + mS/m). This is probably due to marsh deposits and partially to cultural features such as the chainlink fence surrounding the site.

Anomalous conductivity signatures located at 0N to 60S/65E to 95E contain both high conductivity and low conductivity (positive and negative) readings. This may be indicative of buried metallic objects or abrupt changes in subsurface materials.

The in-phase component reveals a strong discrete anomaly located at approximately 0N to 10S/80E to 100E (represented by the blue color contours). This anomaly is adjacent to the quadrature anomalies. Also, discrete in-phase anomalies located within grid coordinates 0N to 60N/170E to 250E are indicative of buried metallic objects (Figure 4.2-30). The strongest of these point source anomalies is located at 15N to 25N/180E to 195E. Other discrete anomalies indicative of buried metallic objects are located at 50N/350E, 30N/360E, and on the east side of the fence at 60N/415E.

The GPR survey at site M-18 revealed anomalous radar signatures (including a hyperbolic diffraction pattern) located at 0N to 10S/100E. Figure 4.2-30A shows this anomaly, which coincides with the EM anomaly in Figure 4.2-30 and may be indicative of an underground storage tank (UST) or UST component (i.e., foundation) at a depth of approximately 5 or 6 ft

bgs. The 100E line traverse on Figure 4.2-30A indicates that the suspected UST is approximately 4 feet in length. Figure 4.2-30A reveals that the three areas contain chaotic reflectors, which are indicative of coarse-grained or disturbed subsoil. The areas, centrally located at grid coordinates 50N/250E, 10N/250E, and 50N/350E, coincide with EM anomalies and may contain buried metallic objects. The radar profiles also reveal low amplitude chaotic reflectors, indicative of coarse-grained soils in the area that encompasses low apparent conductivity at the western portion of the site (green contour interval), as shown in Figure 4.2-29.

Although the geophysical survey results indicated areas that may contain buried ferrous material and fill, these areas are within the suspected boundary of the landfill. Monitor wells and soil borings were appropriately located to evaluate subsurface conditions downgradient and within the landfill boundaries.

4.2.12.5 Hydrogeologic Interpretation

Lithologic logs from SB-01 through SB-07 and MW-24 and MW-25 indicate that the lithology consists of fill intermixed with a poorly sorted gray-olive-brown silty fine-coarse-grained sand with trace amounts of clay. The manmade components of the filled materials observed in the borings consisted of asphalt, wood fragments, and roof shingles.

Saturation was observed in monitor wells MW-24 and MW-25 at approximately 6 ft bgs. Both monitor wells were screened across the water table and were completed to 15 ft bgs. Local groundwater flows toward and discharges into Parkers Creek (Figure 4.2-31), as indicated by water-level measurements from site monitor wells and land surface topography. Monitor wells MW-24 and MW-25 are positioned downgradient of the M-18 area.

4.2.12.6 Soil Sampling Results

A total of nine shallow soil borings (Figure 4.2-32) were completed at selected locations at site M-18 to depths ranging from 2 to 10 ft bgs. Two soil borings (SB-24 and SB-25) were completed at the new monitor wells (MW-24 and MW-25) locations. Locations were selected

for seven of the borings based on the results of the geophysical surveys. Soil samples were collected from two discrete intervals (1 to 1.5 ft bgs and 2 to 10 ft bgs, depending on the depth to water), and based on field observations, were sampled for the analytical parameters listed in Table 3.6-1. The analytical results for soils at specific sampling intervals are listed in Appendix D. Tables 4.2-16 and 4.2-17 compare the detected compounds with the NJDEP SCC, and then compare the results with the subsequent site-specific and Monmouth County maximum background levels, where appropriate. Stained soil was observed below ground surface, but in the 0 to 2-ft bgs sampling interval at boring SB-06. In accordance with the work plan, samples were also taken for BNAs (SVOCs), pesticides/PCBs, and metals analysis at this location.

VOCs

VOCs were not detected above the laboratory quantitation limit in site soils. VOCs detected below quantitation limits were well below their respective criteria (Table 4.2-16).

SVOCs

A total of 13 SVOCs were detected above laboratory quantitation limits in SB-06. Four of the compounds [benzo(a)anthracene, chrysene, benzo(k)fluoranthene, and ideno(1,2,3-cd)pyrene] were detected in concentrations above laboratory quantitation limits and above the NJDEP SCC at SB-06 in the 2- to 5-ft bgs sampling interval. In addition, two compounds [benzo(b)fluoranthene and benzo(a)pyrene], detected below laboratory quantitation limits in SB-06, were also found in concentrations exceeding the NJDEP SCC from the 2- to 5-ft bgs sampling interval. All other detected SVOCs were found in concentrations below the established criteria. All six of the compounds that exceeded the NJDEP criteria also exceeded the site and Monmouth County background. Although the SVOCs were found in concentrations above NJDEP SCC and maximum background in SB-06, the concentrations were well below the impact to groundwater SCC. Monitor wells downgradient of this location did not detect these particular SVOCs. Figure 4.2-32 presents the locations of the compounds detected above the NJDEP SCC and the established maximum background levels at the Main Post.

Table 4.2-16
Fort Monmouth - Main Post
Summary of Detected Compounds
in Soils from Site M-18
(VOC's and TPH only)

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	RESIDENTAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	MAXIMUM BACKGROUND CONCENTRATION (mg/kg)	ANALYTICAL RESULTS							
				SB01-A01 1/12/95 1-1.5 ft bgs	SB01-A02 1/12/95 2 ft bgs	SB02-A01 1/12/95 1-1.5 ft bgs	SB02-A02 1/12/95 4-6 ft bgs	SB03-A01 1/12/95 1-1.5 ft bgs	SB03-A02 1/12/95 4-7.5 ft bgs	SB04-A01 1/11/95 1-1.5 ft bg	SB04-A02 1/11/95 4-6 ft bgs
VOC's (mg/kg)											
Ethylbenzene	0.0031	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	0.0027	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylene	0.0038	410	ND	ND	ND	ND	ND	ND	ND	ND	ND
TPH (mg/kg)	26.8	NLE	NA	367	84.9	188	612	6330*	1100*	ND	ND

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	MAXIMUM BACKGROUND CONCENTRATION (mg/kg)	ANALYTICAL RESULTS								
				SB05-A01 1/11/95 1-1.5 ft bgs	SB05-A02 1/11/95 2-5 ft bgs	SB06-A01 1/11/95 1-1.5 ft bgs	SB06-A02 1/11/95 2-5 ft bgs	SB07-A01 1/12/95 1-1.5 ft bgs	SB24-A01 1/12/95 1-1.5 ft bgs	SB24-A02 1/12/95 2-4 ft bgs	SB25-A01 1/13/95 1-1.5 ft bgs	SB25-A02 1/13/95 2-4 ft bgs
VOC's (mg/kg)												
Ethylbenzene	0.0031	1000	ND	ND	ND	ND	0.002 J	ND	ND	ND	ND	ND
Toluene	0.0027	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.002 J
Xylene	0.0038	410	ND	ND	ND	ND	0.013 J	ND	ND	ND	ND	0.006 J
TPH (mg/kg)	26.8	NLE	NA	117	ND	221	2300*	29.9	695	993	311	2500*

Compounds exceeding NJDEP soil cleanup criteria are noted by bold numbers.
ND - Indicates that the compound was not detected at or below the quantification limits
J - Indicates that the concentration value was estimated due to detection at or near the detection limits
NA- Not Analyzed
*Quantification limit was increased during analysis for the associated sample
ft bgs. - feet below ground surface.

Table 4.2-17
Fort Monmouth - Main Post
Summary of Detected Compounds in
Soils from Site M-18 Sample SB06-A02

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	MAXIMUM BACKGROUND CONCENTRATION (mg/kg)	ANALYTICAL RESULTS SB06-A02 1/11/95 2-5 ft bgs
SVOCs (mg/kg)				
Naphthalene	0.277	230	ND	1.2
2-Methylnaphthalene	0.287	NLE	ND	0.18 J
Acenaphthene	0.221	3400	0.1 J	52
Dibenzofuran	0.215	NLE	0.06 J	31
Fluorene	0.208	2300	0.074 J	40
Phenanthrene	0.165	NLE	0.39	140
Anthracene	0.152	10000	0.10 J	16
Carbazole	0.145	NLE	ND	4.8 J
Fluoranthene	0.198	2300	0.46	46
Pyrene	0.178	1700	1.5	48
Butylbenzylphthalate	0.175	1100	ND	0.45 J
Benzo(a)anthracene	0.162	0.9	0.65	**11**
Chrysene	0.145	9	0.65	**10**
bis(2-Ethylhexyl)phthalate	0.32	49	0.19 J	0.17 J
Benzo(b)fluoranthene	0.188	0.9	0.9	**7.6 J**
Benzo(k)fluoranthene	0.205	0.9	0.43	**2.3**
Benzo(a)pyrene	0.162	0.66	0.6	**3.8 J**
Indeno(1,2,3-cd)pyrene	0.234	0.9	0.46	**2.1**
Dibenzo(a,h)anthracene	0.198	0.66	0.079 J B	0.45 J
Benzo(g,h,i)perylene	0.224	NLE	0.079 J B	1.5
TPH (mg/kg)	26.8	NLE	NA	2300
PESTICIDES AND PCBs (mg/kg)				
Heptachlor epoxide	0.0021	NLE	ND	0.030 P
4,4'-DDE	0.0037	2	0.096 P	0.11
4,4'-DDD	0.0037	3	0.096 P	0.46 UX
4,4"-DDT	0.0037	2	0.11 D	0.032
alpha-Chlordane	0.0021	NLE	ND	0.0078
gamma-Chlordane	0.0021	NLE	ND	0.02 P
METALS TOTAL (mg/kg)				
Aluminum	3.9	NLE	15200	6130
Arsenic	0.35	20	22.9	5.8
Barium	0.17	700	32.3	31
Calcium	2.2	NLE	921	11100
Cobalt	0.71	NLE	2.5	6.3
Chromium	1.60	500	269	35.3
Copper	2.2	600	8	218
Iron	0.58	NLE	55800	17700
Lead	0.4	400[2]	25.9[1]	127
Magnesium	9.6	NLE	7230	3380
Manganese	0.18	NLE	90.7	168
Mercury	0.49	14	ND	0.61
Nickel	1.4	250	8.4	12.6
Potassium	(12.3-25.8)	NLE	15400	2190
Sodium	3.8	NLE	51.6	181
Selenium	0.3	63	1.9	0.78
Vanadium	0.53	370	94.1	27.3
Zinc	0.41	1500	81.4	72.6

Compounds exceeding NJDEP cleanup criteria are noted by bold numbers.
ft bgs - Feet below ground surface
NLE - No Level Established
ND - Indicates that the compound was not detected at or below the quantification limits
J - Indicates that the concentration value was estimated due to detection at or near the detection limits
B - Compound was observed in the samples and associated laboratory blank
NA- Not Analyzed
C- Pesticide identification was confirmed by GC/MS
P - The percent difference between the results from two GC columns is greater than 25%,the lower of the two values is reported
U - Compound was not detected at or above the reporting limit.
X - Other specific flags may be required to properly qualify the result.

[1] Monmouth County maximum background concentration.

[2] NJDEP criteria are referenced in the Site Remediation News, Winter 1995.

Pesticides/PCBs

Five pesticides were detected in concentrations above laboratory quantitation limits in SB-06 from the 2- to 5-ft bgs sampling interval. However, all pesticide compounds were detected below the NJDEP SCC. PCBs were analyzed for but were not detected in any of the boring locations.

Metals

As indicated in Table 4.2-17, metals detected in SB-06 were found in concentrations below the NJDEP SCC.

Total Petroleum Hydrocarbons (TPHs)

TPH concentrations were detected above laboratory quantitation limits in one or both sampling intervals in all but soil boring SB-04 in concentrations ranging from 29.9 milligrams per kilogram (mg/kg) to 6,330 mg/kg.

4.2.12.7 Groundwater Sampling Results

Monitor wells at site M-18 were sampled for the analytical parameters listed in Table 3.8-1. The compounds detected in groundwater samples from the individual sampling rounds, with the corresponding sample identifications, are listed in Appendix D. The existing monitor well, MW-3, was sampled in May 1995. Table 4.2-18 compares the average concentrations from the February and March sampling rounds with the NJDEP GWQC, and then compares the results to the subsequent site-specific and Monmouth County maximum background, where appropriate.

VOCs

Acetone was the only VOC detected in site groundwater samples. Acetone was detected in concentrations below the NJDEP GWQC in groundwater samples collected from MW-24 and

Table 4.2-18
Fort Monmouth - Main Post
Summary of Average Concentrations of Detected Compounds in Groundwater - Site M-18

COMPOUND	METHOD DETECTION LIMIT (µg/L)	NJDEP GROUNDWATER QUALITY CRITERIA (µg/L)	MAXIMUM BACKGROUND CONCENTRATION (µg/L)	ANALYTICAL RESULTS (µg/L) SAMPLING DATE		
				MW24 2/17/95, 3/10/95 (avg.)	MW25 2/17/95, 3/10/95 (avg.)	MW03 5/10/95, 5/27/95 (avg.)
VOC's (µg/L)						
Acetone	6.9	700	ND	10 J	12.5	ND
SVOCs (µg/L)						
4-Methylphenol	12.9	NLE	ND	3.5J	ND	ND
PETROLEUM HYDROCARBONS (µg/L)						
Petroleum Hydrocarbons	0.26	NLE	NA	1.12	0.43	ND
PESTICIDES/PCBs (µg/L)						
4,4'-DDD	0.97	0.1	0.050 JP	**0.145P**	ND	ND
METALS TOTAL (µg/L)						
Aluminum	24.0	200	121000	**5615**	**4103**	**8310**
Arsenic	1.9	8*	89.3	**16.8**	**11.4**	4.8
Barium	1.7	2000	699	267	92.9	13.7
Beryllium	0.9	20*	7[1]	1.65	0.53	0.6
Calcium	10.4	NLE	45400	747000	169000	5470
Cadmium	2.8	4	9.5	2.775	3.625	ND
Cobalt	2.3	NLE	18.3	1.975	1.825	4.1
Chromium	2.9	100	191	48.15	23.2	54.2
Copper	1.9	1000	730[1]	8.45	2.6	2.9
Iron	6.4	300	431000	**40000**	**28620**	**39950**
Potassium	685	NLE	137000	19200	29900	10735
Magnesium	18.3	NLE	62700	49750	69050	6145
Manganese	1.8	50	480[1]	**712**	**940**	38.3
Sodium	30.5	50000	197000[1]	42000	**363500**	**55950**
Nickel	10.8	100	187	6.75	8.35	7.3
Lead	1.1	10*	22.7	**34.7**	**11.2**	8.2
Selenium	1.5	50	29.6	1.575	ND	ND
Vanadium	2.3	NLE	108	29.15	24.85	44.8
Zinc	3.8	5000	233	90.75	33.55	88.9

Compounds exceding NJDEP groundwater quality criteria are noted by bold numbers.
NJDEP groundwater quality criteria consist of the higher number between the PQL or STANDARD
*PQL - Practical Quantitation Limit -was used as the NJDEP groundwater quality criteria
NLE - No Level Established
ND - Indicates that the compound was not detected at noted quantification limit
NA - Not analyzed
J - Indicates that the concentration value was estimated due to detection at or near the quantification limits
P - The percent difference between the results from two GC columns is greater than 25%, the lower of the two values is reported.
[1] - Monmouth County maximum background concentration.

MW-25. The source of the acetone is not known, however, acetone is a common laboratory contaminant.

SVOCs

One SVOC (4-methylphenol) was detected in MW-24 below the laboratory quantitation limit. SVOCs were not detected in MW-25 or MW-3.

Pesticides/PCBs

One pesticide (4,4'-DDD) was detected in a concentration that slightly exceeds the NJDEP GWQC in MW-24. 4,4'-DDD was detected in concentrations above the criteria in MW-24 from both sampling rounds. PCB compounds were not detected in site monitor wells from either sampling round (Figure 4.2-32).

Metals

As indicated in Table 4.2-18, of the 19 metals detected in site groundwater, only 6 (aluminum, arsenic, iron, manganese, sodium, and lead) were found in concentrations exceeding the NJDEP GWQC. In addition, manganese in MW-24 and MW-25, lead in MW-24, and sodium in MW-25 were found in concentrations greater than those determined for site-specific and Monmouth County maximum background at the Main Post. Lead was not detected in the filtered sample. However, aluminum and arsenic were found in concentrations below both maximum background levels where established. Although iron was detected in concentrations greater than the regional maximum background, iron was detected well below the site-specific background levels in the Main Post and is not a compound of concern. Sodium in MW-3 was found in a concentration greater than the site-specific background, but was well below the Monmouth County level. The elevated sodium levels in MW-25 may be caused by saline water intrusion from the Parkers Creek estuary. Sodium is not a compound of concern (Figure 4.2-32). As discussed in Subsection 4.1, groundwater flowing through glauconitic formations contains abundant

manganese. In addition, manganese is a common metal found in tidally influenced environments. Therefore, manganese is not identified as a compound of concern.

TPHs

TPH concentrations were detected just above the laboratory quantitation limit in MW-24 and MW-25 from both the February and March sampling rounds.

4.2.12.8 Recommendations

The geophysical surveys identified several anomalies indicative of buried waste and fill material within the suspected boundaries of the site M-18 area. One anomaly was indicative of a UST or storage tank component. The geophysical results indicate that soil borings and monitor wells were appropriately located to evaluate subsurface conditions downgradient and within landfill boundaries.

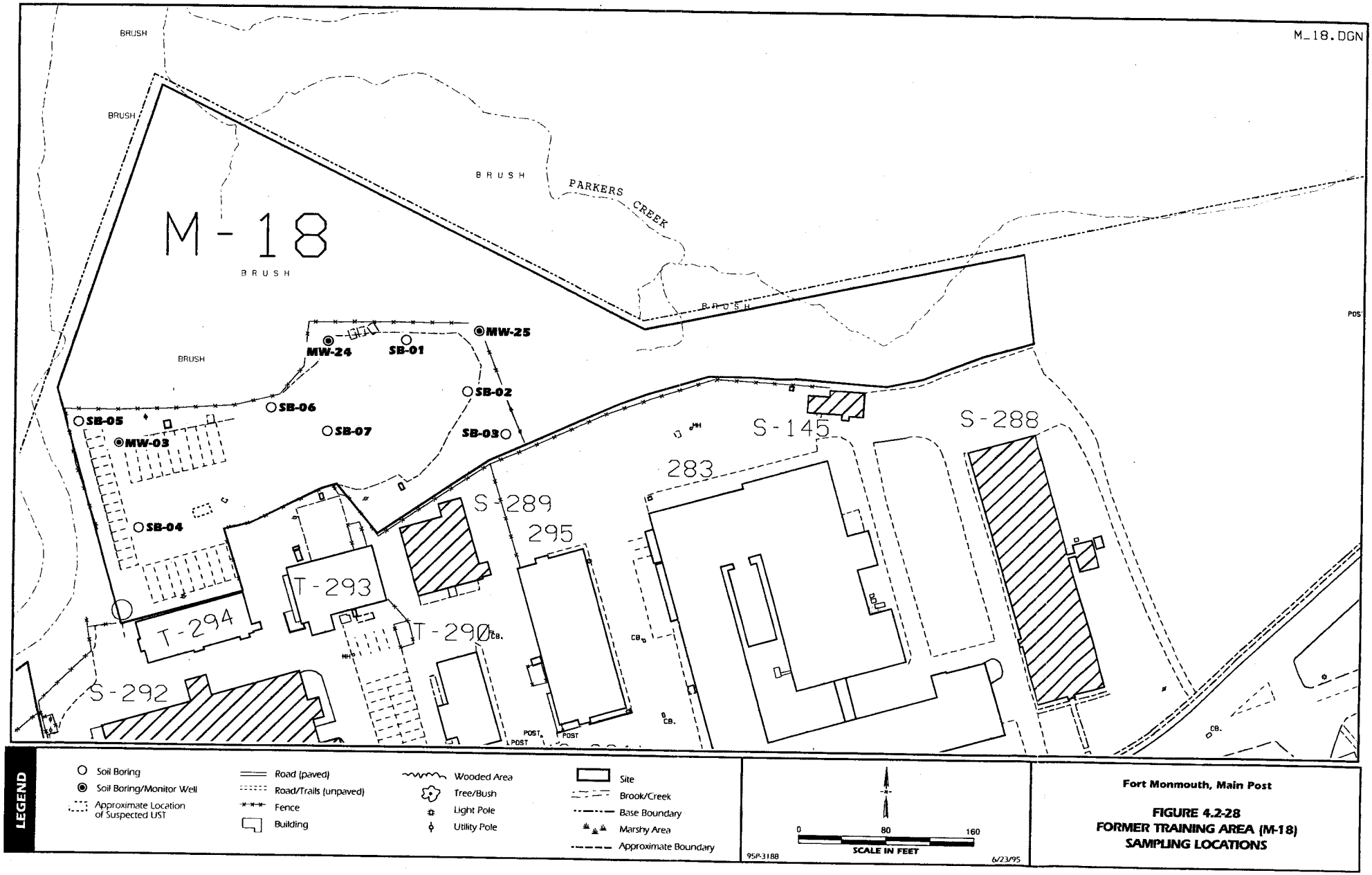
The soil sampling results indicated that six SVOCs were detected at SB-06 in concentrations that exceeded the NJDEP criteria and established background concentrations.

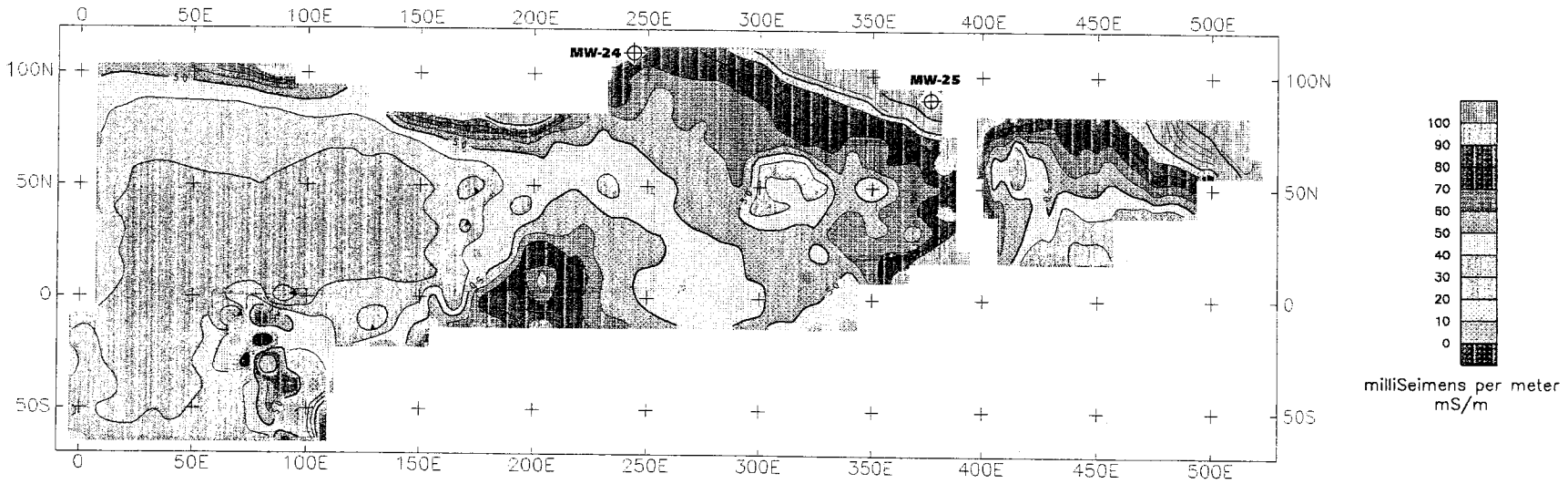
The groundwater sampling results indicate that 4,4-DDD was detected at a concentration just above the NJDEP GWQC in one well (MW-24) from both sampling rounds. Lead was detected in one location above NJDEP GWQC and background. TPH concentrations were also detected just above laboratory quantitation limits in MW-24 and MW-25 in both sampling rounds.

Trenching will be performed at the suspected UST or UST component location to confirm the geophysical results and to excavate if necessary. A PID will be used to conduct field screening during the excavation. The excavation will be performed in conjunction with confirmatory sampling, in accordance with the *Technical Requirements for Site Remediation* (NJDEP, 1993), if a UST is encountered to ensure that NJDEP SCC are achieved. NJDEP will be requested to send a representative to observe the excavation.

Additionally, soil at soil boring SB-06 will be excavated. If it is determined that the suspected UST is the source of contamination at SB-06, this location will be remediated in conjunction with the UST. Confirmatory sampling will also be conducted.

DPW proposes that a long-term groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells. Compounds of concern identified in the first two rounds of sampling would be targeted for the monitoring program.


M_18.DGN
BRUSH
BRUSH
BRUSH
PARKERS CREEK
M-18
BRUSH
BRUSH
MW-25
MW-24
SB-01
SB-02
SB-06
SB-05
SB-07
SB-03
MW-03
SB-04
S-145
S-288
283
S-289
295
T-293
T-294
T-290
S-292
CB.
POST
POST
POS
LEGEND
Soil Boring
Soil Boring/Monitor Well
Approximate Location of Suspected UST
Road (paved)
Road/Trails (unpaved)
Fence
Building
Wooded Area
Tree/Bush
Light Pole
Utility Pole
Site
Brook/Creek
Base Boundary
Marshy Area
Approximate Boundary
0
80
160
SCALE IN FEET
95P-3188
6/23/95
Fort Monmouth, Main Post
FIGURE 4.2-28
FORMER TRAINING AREA (M-18)
SAMPLING LOCATIONS



LEGEND

Monitor Well

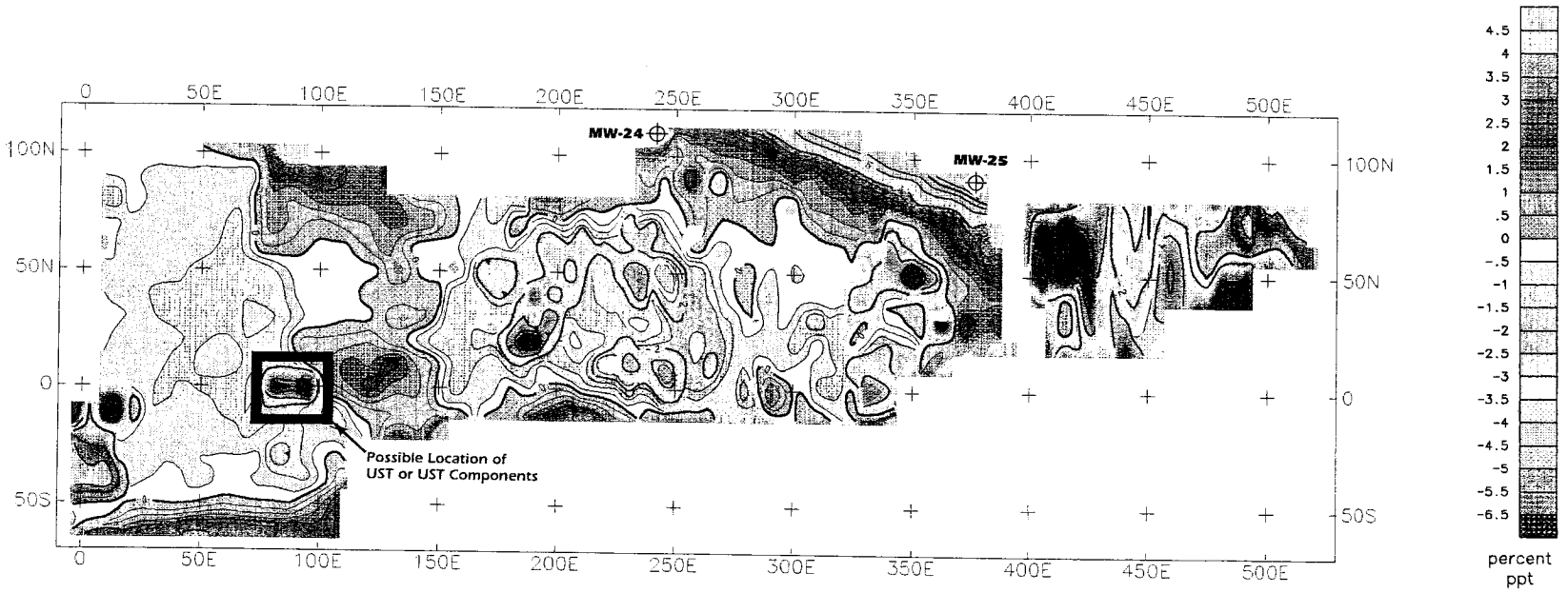
0 25 50 75 100

SCALE IN FEET

Fort Monmouth, Main Post Site M-18

FIGURE 4.2-29
ELECTROMAGNETIC SURVEY
QUADRATURE COMPONENT – SITE M-18

95P-3241 6/27/95



LEGEND

Monitor Well

0 25 50 75 100

SCALE IN FEET

Fort Monmouth, Main Post Site M-18

FIGURE 4.2-30
ELECTROMAGNETIC SURVEY
IN PHASE COMPONENT – SITE M-18

95P-3242 6/27/95

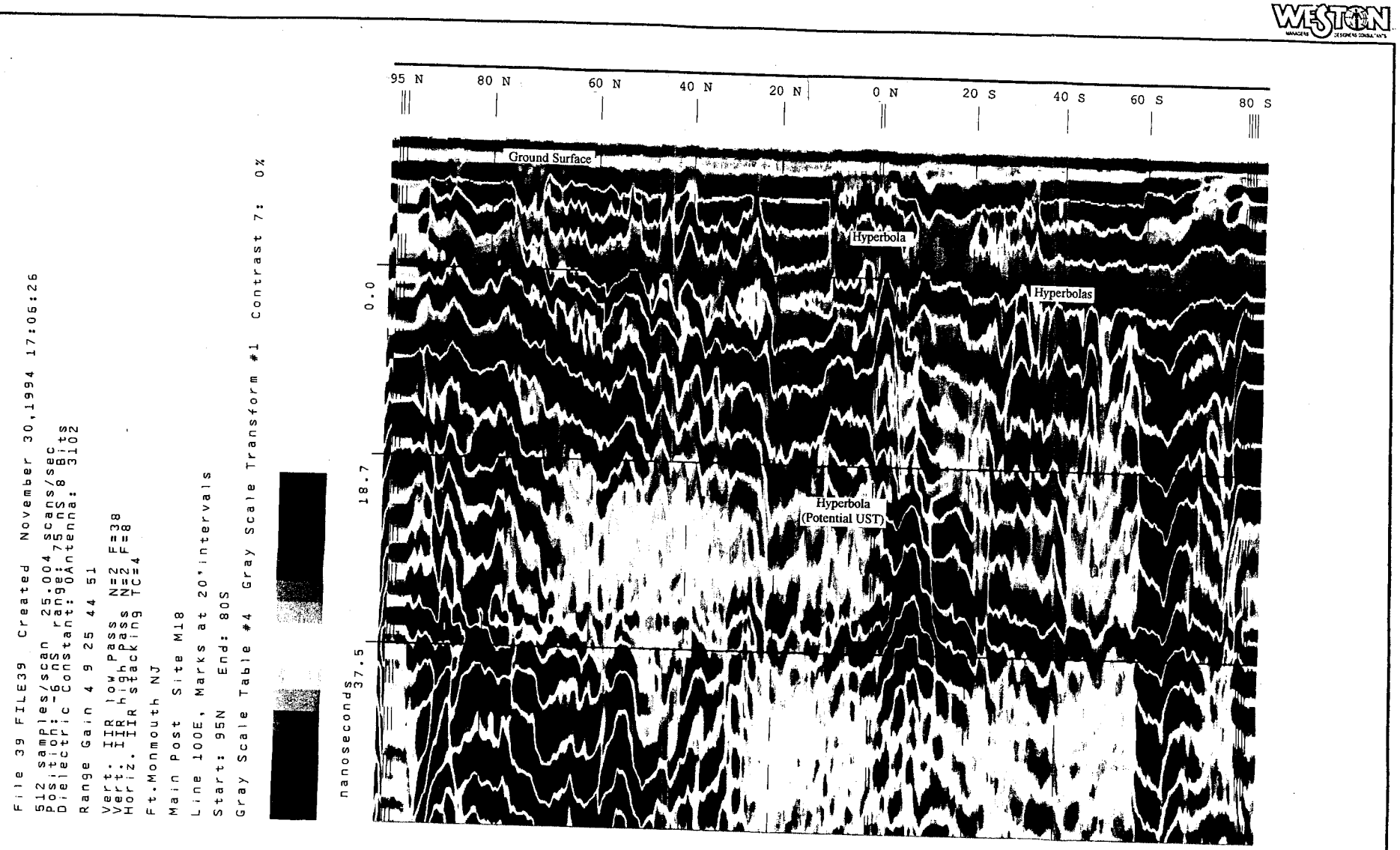
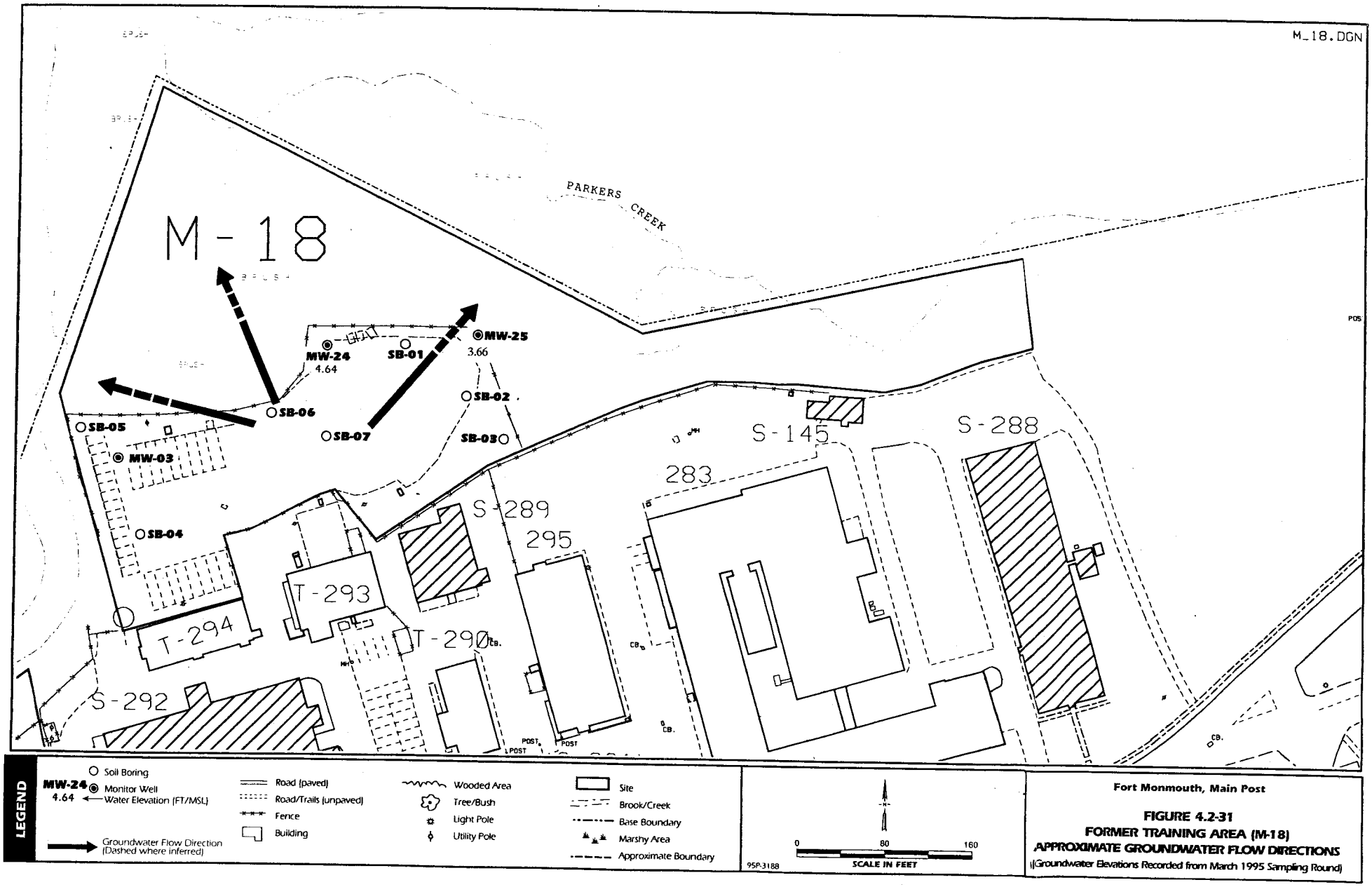
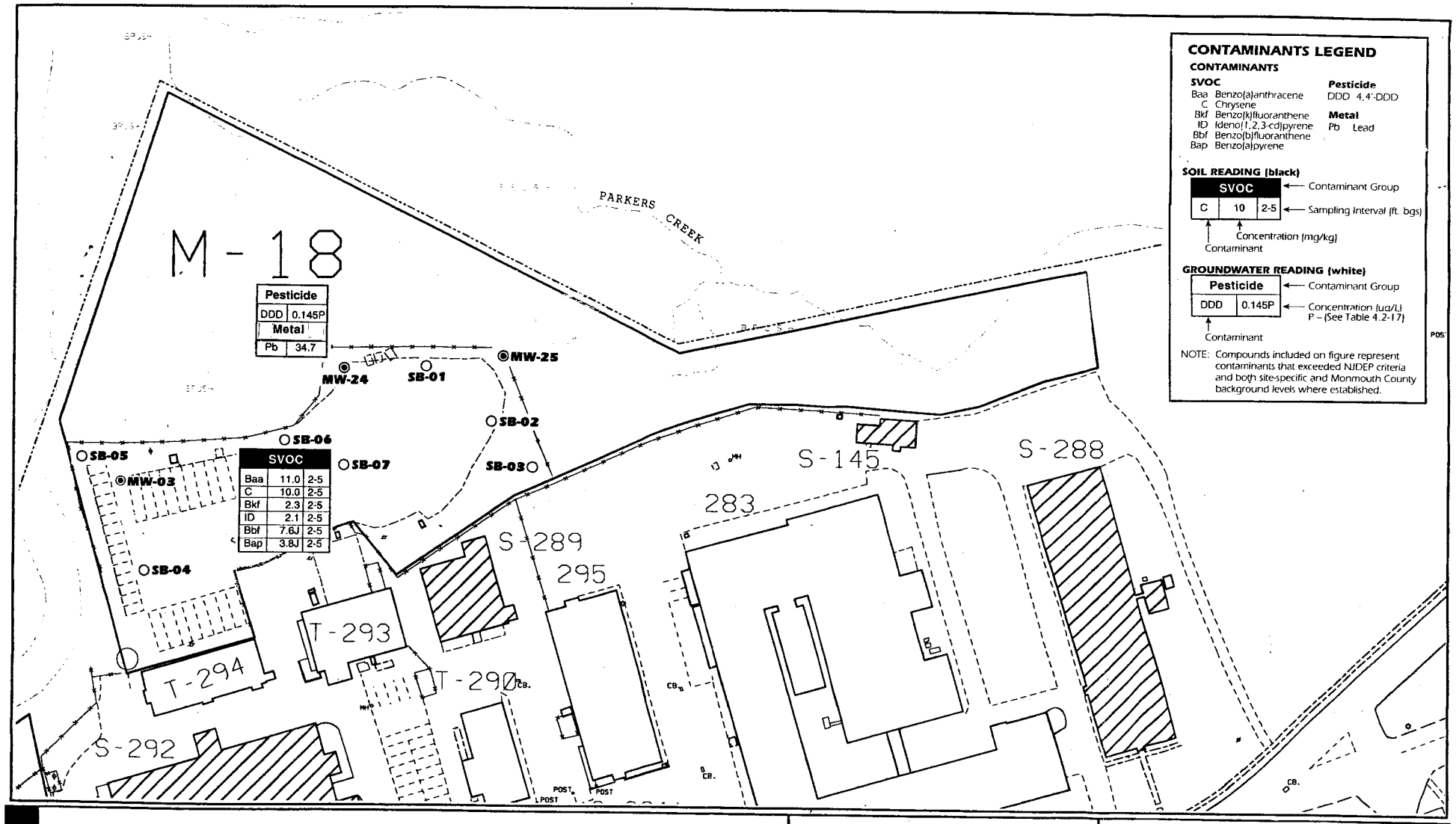


FIGURE 4.2-30A RADAR PROFILE DEPICTING POTENTIAL UST AT SITE M-18


M_18.DGN
M-18
PARKERS CREEK
MW-24
4.64
SB-01
MW-25
3.66
SB-02
SB-03
SB-05
SB-06
SB-07
MW-03
SB-04
S-145
S-288
283
S-289
295
T-293
T-294
T-290
S-292
POST
CB.
LEGEND
Soil Boring
MW-24 Monitor Well
4.64 Water Elevation (FT/MSL)
Groundwater Flow Direction (Dashed where inferred)
Road (paved)
Road/Trails (unpaved)
Fence
Building
Wooded Area
Tree/Bush
Light Pole
Utility Pole
Site
Brook/Creek
Base Boundary
Marshy Area
Approximate Boundary
95P-3188
0
80
160
SCALE IN FEET
Fort Monmouth, Main Post
FIGURE 4.2-31
FORMER TRAINING AREA (M-18)
APPROXIMATE GROUNDWATER FLOW DIRECTIONS
(Groundwater Elevations Recorded from March 1995 Sampling Round)


M-18
PARKERS CREEK
Pesticide
DDD 0.145P
Metal
Pb 34.7
MW-24
SB-01
MW-25
SB-02
SB-03
SB-04
SB-05
SB-06
SB-07
MW-03
SVOC
Baa 11.0 2-5
C 10.0 2-5
Bkf 2.3 2-5
ID 2.1 2-5
Bbf 7.6J 2-5
Bap 3.8J 2-5
S-145
S-288
283
S-289
295
T-293
T-294
T-290
S-292
CONTAMINANTS LEGEND
CONTAMINANTS
SVOC
Baa Benzo(a)anthracene
C Chrysene
Bkf Benzo(k)fluoranthene
ID Ideno(1,2,3-cd)pyrene
Bbf Benzo(b)fluoranthene
Bap Benzo(a)pyrene
Pesticide
DDD 4,4'-DDD
Metal
Pb Lead
SOIL READING (black)
SVOC
C 10 2-5
Contaminant Group
Sampling Interval (ft. bgs)
Concentration (mg/kg)
Contaminant
GROUNDWATER READING (white)
Pesticide
DDD 0.145P
Contaminant Group
Concentration (ug/L)
P – (See Table 4.2-17)
Contaminant
NOTE: Compounds included on figure represent contaminants that exceeded NJDEP criteria and both site-specific and Monmouth County background levels where established.
LEGEND
Soil Boring
Soil Boring/Monitor Well
Road (paved)
Road/Trails (unpaved)
Fence
Building
Wooded Area
Tree/Bush
Light Pole
Utility Pole
Site
Brook/Creek
Base Boundary
Marshy Area
Approximate Boundary
0 80 160
SCALE IN FEET
95P-3188
5/23/95
Fort Monmouth, Main Post
FIGURE 4.2-32
FORMER TRAINING AREA (M-18)
DISTRIBUTION OF CONTAMINANTS IN
SITE SOIL AND GROUNDWATER

Site AOC-3

4.2.13 Former Main Post Sanitary Treatment Plant (AOC-3)

4.2.13.1 Site Location

The former Sanitary Treatment Plant (STP, AOC-3) was located on Parkers Creek north of Sherrill Avenue, between Buildings S-292 to the east and S-697 to the west (Figure 4.2-33). The approximate area of site AOC-3 is 96,000 ft^2 (2.2 acres).

4.2.13.2 Site History

This site was identified by the NJDEP as an area of concern (AOC) in the 8 June 1990 letter. The Main Post STP was built in 1941 to handle 700,000 gallons of sewage per day. As described in the IA, this STP consisted of a bar screen and grit chamber, comminutor, primary and secondary settling tanks, a mixing and aeration tank, and a baffled contact chlorination tank. Effluent from the STP was discharged to Parkers Creek. Sludge was treated in a three-stage anaerobic digester and discharged to underdrained sandbeds for drying. According to the IA and DEH employees, sludge was transported to the Charles Wood golf course and to landfills. This STP was closed on 3 September 1975 when the Main Post sewer system was connected to the Northeast Monmouth County Regional Sewerage Authority (NMCRSA) system. In 1981, all sludges and supernatant liquids were removed from the STP and the facility was cleaned and disinfected. The removal contractor was Modern Transportation Co. of Kearny, New Jersey. The physical facility was demolished in 1983. At present, this area is flat and grass covered.

4.2.13.3 Sampling Effort

Sediments from one location in the Parkers Creek outfall area were analyzed for TCL +30 parameters, TAL metals, and cyanide. Two soil borings were completed in the area of the former sludge-drying beds to identify the original land surface and collect soil samples from an interval just below the original surface for TCL +30 parameters, TAL metals, and cyanide (Figure 4.2-33).

4.2.13.4 Soil Sampling Results

Borings were drilled to depths of 12 ft bgs (depth where saturation was encountered). Samples were collected from one sampling interval (6 to 9.5 ft bgs) and were analyzed for the parameters listed in Table 3.6-1. The analytical results for site soils at specific sampling intervals, with the corresponding sample identifications, are listed in Appendix D. Table 4.2-19 compares the compounds detected in site soils with the NJDEP Residential Direct Contact SCC, and then compares the results to the subsequent site-specific and Monmouth County maximum background concentrations, where appropriate. In addition, compounds were also compared to the impact to groundwater SCC because no monitor wells were installed at the site.

VOCs

VOCs were not detected in site soils from either boring location.

SVOCs

SVOCs were not detected above laboratory quantitation limits in site soils. SVOCs detected below laboratory quantitation limits were found in concentrations well below their respective criteria.

Pesticides/PCBs

Of the six pesticides detected in site soil, none were detected above the NJDEP SCC or the impact to groundwater SCC (Table 4.2-19).

One PCB (Aroclor-1248) was detected in SB-02 above the laboratory quantitation limit. However, Aroclor-1248 was found in a concentration below both the NJDEP residential direct contact and impact to groundwater SCC.

Table 4.2-19
Fort Monmouth - Main Post
Summary of Detected Compounds
In Soils at Site AOC - 3

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	MAXIMUM BACKGROUND CONCENTRATION (mg/kg)	ANALYTICAL RESULTS	
				SB01-A02 12/14/94 (6-9.5 ftbgs)	SB02-A02 12/14/94 (6-9.5 ft bgs)
SVOCs (mg/kg)					
Phenanthrene	0.165	NLE	0.39	0.09 J	ND
Fluoranthene	0.198	2300	0.46	0.11 J	ND
Pyrene	0.178	1700	1.5	0.15 J	ND
Benzo(a)anthracene	0.162	0.9	0.65	0.077 J	ND
Chrysene	0.145	9	0.65	0.099 J	ND
bis(2-Ethylhexyl)phthalate	0.32	49	0.19 J	0.057 J	0.053 J
Benzo(b)fluoranthene	0.188	0.9	0.9	0.077 J	ND
Benzo(a)pyrene	0.162	0.66	0.6	0.055 J	ND
Indeno(1,2,3-cd)pyrene	0.234	0.9	0.46	0.046 J	ND
Benzo(g,h,i)perylene	0.224	NLE	0.64 B	0.049 J	ND
PESTICIDES AND PCBs (mg/kg)					
4,4'-DDE	0.0037	2	0.096 P	0.044	0.022
4,4'-DDD	0.0037	3	0.096 P	0.024	0.016
4,4'-DDT	0.0037	2	0.11 D	0.035 P	0.085
alpha-Chlordane	0.0017	NLE	ND	ND	0.0052
gamma-Chlordane	0.0017	NLE	ND	ND	0.0035 P
Aroclor-1248	0.036	0.49	ND	ND	0.2 P
METALS TOTAL (mg/kg)					
Aluminum	3.9	NLE	15200	3000	4020
Arsenic	0.35	20	22.9	2.8	4.2
Barium	0.17	700	32.3	14.4	12.5
Beryllium	0.10	1	2	0.34	0.63
Calcium	2.2	NLE	921	310	226
Cobalt	0.86	NLE	2.5	0.72	1.5
Chromium	0.71	500	269	39.9	61
Copper	2.2	600	8	1.9	1.7
Iron	0.58	NLE	55800	15000	21700
Lead	0.40	**400**[2]	25.9[1]	8.3	11.5
Magnesium	9.6	NLE	7230	690	1490
Manganese	0.18	NLE	90.7	13.8	15.6
Nickel	1.4	250	8.4	1.9	3
Potassium	(12.3-25.8)	NLE	15400	1760	4240
Sodium	3.8	NLE	51.6	17.4	18.6
Selenium	0.3	63	1.9	ND	ND
Vanadium	0.53	370	94.1	28	32.9
Zinc	0.41	1500	81.4	19.1	30.8

Compounds exceeding NJDEP soil cleanup criteria are noted by bold numbers.
NLE - No Level Established
ND - Indicates that the compound was not detected at or below the quantification limits
J - Indicates that the concentration value was estimated due to detection at or near the detection limits
P - The percent difference between the results from two GC columns is greater than 25%,the lower of the two values is reported
D - Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis
ft bgs. - feet below ground surface.
Note: MDL's for metal analysis is actually the highest detection limit with potassium given as a range due to high variability.

[1] Monmouth County maximum background concentration.

[2] NJDEP criteria are referenced in the Site Remediation News, Winter 1995.

Metals

As indicated in Table 4.2-19 all of the metals detected in site soil were found in concentrations below the NJDEP SCC.

Cyanide

Cyanide was not detected in site soils from either soil boring.

4.2.13.5 Sediment Sampling Results

Sample location M8SD-1 appears to be tidally influenced, and based on conductivity results and field observations, was determined to be saltwater.

One sediment sample, M8SD-1, was collected at AOC-3 (Figure 4.2-33). Table 4.2-20 presents a comparison of detected sediment concentrations at sampling location M8SD-1 to marine/ estuarine sediment criteria (Long et al., 1995), and maximum detected background concentrations.

VOCs

2-Butanone was the only VOC detected above the laboratory quantitation limit in a site sediment sample. 2-Butanone is a common laboratory contaminant.

SVOCs

Two SVOCs were detected below the laboratory quantitation limit in site sediment from location M8SD1.

Pesticides/PCBs

Pesticides/PCBs were analyzed for but were not detected in the site sediment sample.

Table 4.2-20
Fort Monmouth - Main Post
Summary of Detected Compounds in Sediment
Site AOC-3

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	MARINE/ESTUARINE BIOLOGICAL EFFECTS LEVEL (ERL)[a] (mg/kg)	MAXIMUM DETECTED BACKGROUND CONCENTRATION	ANALYTICAL RESULTS M8SD-1 12/1/94
VOC's (mg/kg)				
2-Butanone	0.0041	NLE	0.1	0.02
SVOCs (mg/kg)				
Di-n-butylphthalate	0.215	NLE	0.26 JB	0.68 J
2,2'-oxybis(1-Chloropropane)	0.231	NLE	ND	0.061 J
PAHs (mg/kg)				
Benzo(a)pyrene	0.162	0.43	1.2	0.079 J
METALS TOTAL (mg/kg)				
Aluminum	18.1	NLE	9060	8830
Arsenic	2.5	8.2	14.5	**13.2**
Barium	1.4	NLE	87.6	13
Beryllium	1.0	NLE	3.2	1.4
Calcium	8.1	NLE	3180	1290
Chromium	4.3	81	88.1	74
Cobalt	1.9	NLE	119	5.5
Copper	1.6	34	48.4	3.1
Iron	3.2	NLE	61900	40300
Lead	9.9	46.7	64.1	6.5
Magnesium	25.8	NLE	3280	3670
Manganese	1.4	NLE	70.2	51.7
Nickel	8.7	20.9	131	14
Potassium	555	NLE	10200	6640
Selenium	0.56	NLE	1.7	0.42
Sodium	10.4	NLE	189	3090
Vanadium	2.0	NLE	49.1	39.3
Zinc	1.9	150	162	68.8

Compounds detected above NJDEP Sediment Guidance are noted by bold numbers.

[a] - Value from Long et al. (1995).

ND - Compound was not detected at or above the quantification limit.

NLE - No Level Established

B - Compound was found in the sample and associated laboratory blank

J - Concentration was estimated due to detection at or below the quantification limit

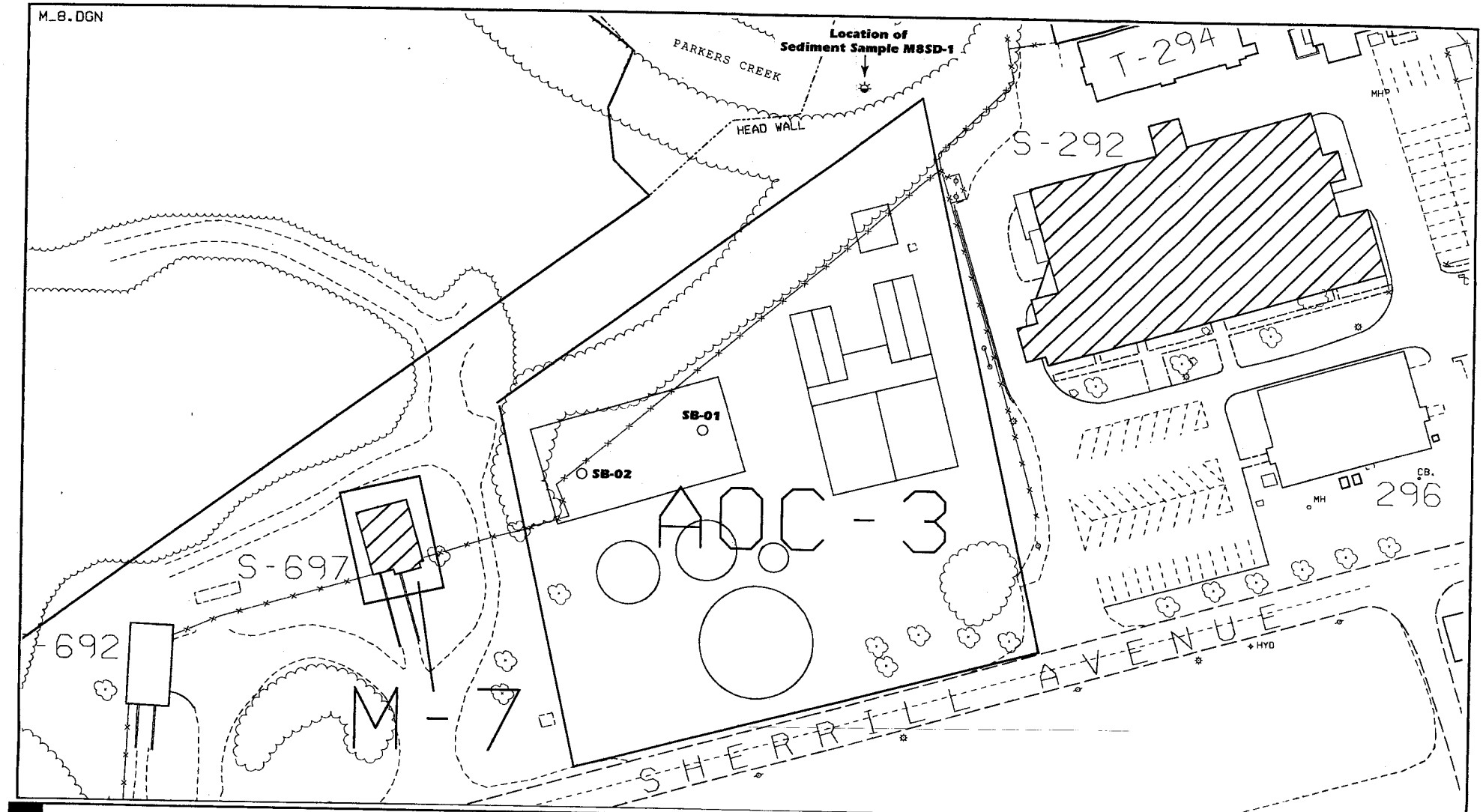
Metals

As indicated in Table 4.2-20, of the 18 metals detected above laboratory quantitation limits, only one (arsenic) was found in a concentration slightly exceeding the established criteria. However, the concentration of arsenic was found at a level below the maximum detected background concentration.

4.2.13.6 Recommendations

The results of the soil and sediment sampling indicated that compounds of concern were not detected above the NJDEP criteria and established background concentrations.

No further action will be taken.


M_8.DGN
Location of
Sediment Sample M8SD-1
PARKERS CREEK
HEAD WALL
T-294
S-292
MHP
SB-01
SB-02
AOC-3
S-697
692
M-7
CB.
MH
296
HYD
SHERRILL AVENUE
LEGEND
Soil Boring Location
Sediment Sampling Location
Road (paved)
Road/Trails (unpaved)
Fence
Building
Wooded Area
Tree/Bush
Light Pole
Utility Pole
Site
Brook/Creek
Base Boundary
Marshy Area
Approximate Boundary
0
100
200
SCALE IN FEET
95P-3189
6/23/95
Fort Monmouth, Main Post
FIGURE 4.2-33
FORMER SANITARY TREATMENT PLANT (AOC-3)
SOIL AND SEDIMENT SAMPLING LOCATIONS

Former Sanitary Treatment Plant (STP)

Former Sanitary Treatment Plant (STP)

4.2.14 Pre-1941 Sanitary Treatment Plant (STP)

4.2.14.1 Site Location

The pre-1941 STP for the Main Post was located on Parkers Creek in an area north of Allen Avenue in approximately the same location as current Building 259 (Figure 4.2-34). The approximate area of the STP is 130,000 ft^2 (2.9 acres).

4.2.14.2 Site History

This STP is shown on a 1935 Fort Monmouth map. The date of construction and period of operation are unknown, although the STP presumably operated until the Main Post STP (AOC-3) came on line in 1941.

4.2.14.3 Sampling Effort

The former STP is presented in Figure 4.2-34. Sediment coring was conducted at the former outfall and a sample was collected for TAL metals analysis.

4.2.14.4 Sediment Sample Results

Sediment at the STP was determined to be saltwater based on conductivity results and field observations. Therefore, detected concentrations of contaminants in the STP sediment were compared to marine/estuarine biological effects levels (Long et al., 1995) (Table 4.2-21).

One sediment sample, STPSD-1, was collected at the former STP (Figure 4.2-34).

Metals

As indicated in Table 4.2-21, of the 21 metals detected above laboratory quantitation limits, nine (arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc) were found in concentrations exceeding their respective established criteria. In addition, arsenic, cadmium,

Table 4.2-21
Fort Monmouth - Main Post
Summary of Detected Compounds in Sediments
Site - Pre-1941 Sanitary Treatment Plant

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	MARINE/ESTUARINE BIOLOGICAL EFFECTS LEVEL (ERL)[a] (mg/kg)	MAXIMUM DETECTED BACKGROUND CONCENTRATION	ANALYTICAL RESULTS STPSD-1 12/1/94
METALS TOTAL (mg/kg)				
Aluminum	18.1	NLE	9060	9240
Arsenic	2.5	8.2	14.5	**24.2**
Barium	1.4	NLE	87.6	27.6
Beryllium	1.0	NLE	3.2	1.3
Cadmium	2.3	1.2	ND	**4.2**
Calcium	8.1	NLE	3180	1010
Chromium	4.3	81	88.1	**93.5**
Cobalt	1.9	NLE	119	13.5
Copper	1.6	34	48.4	**35.2**
Iron	3.2	NLE	61900	49200
Lead	9.9	46.7	64.1	**59**
Magnesium	25.8	NLE	3280	3390
Manganese	1.4	NLE	70.2	39.5
Mercury	0.32	0.15	1.7	**0.57**
Nickel	8.7	20.9	131	**26.5**
Potassium	555	NLE	10200	6760
Selenium	0.56	NLE	1.7	0.88
Silver	2.1	1	ND	**5.2**
Sodium	10.4	NLE	189	2330
Vanadium	2.0	NLE	49.1	49.5
Zinc	1.9	150	162	**386**

Compounds detected above NJDEP Sediment Guidance are noted by bold numbers.

[a] - Value from Long et al. (1995).

ND - Compound was not detected at or above the quantification limit.

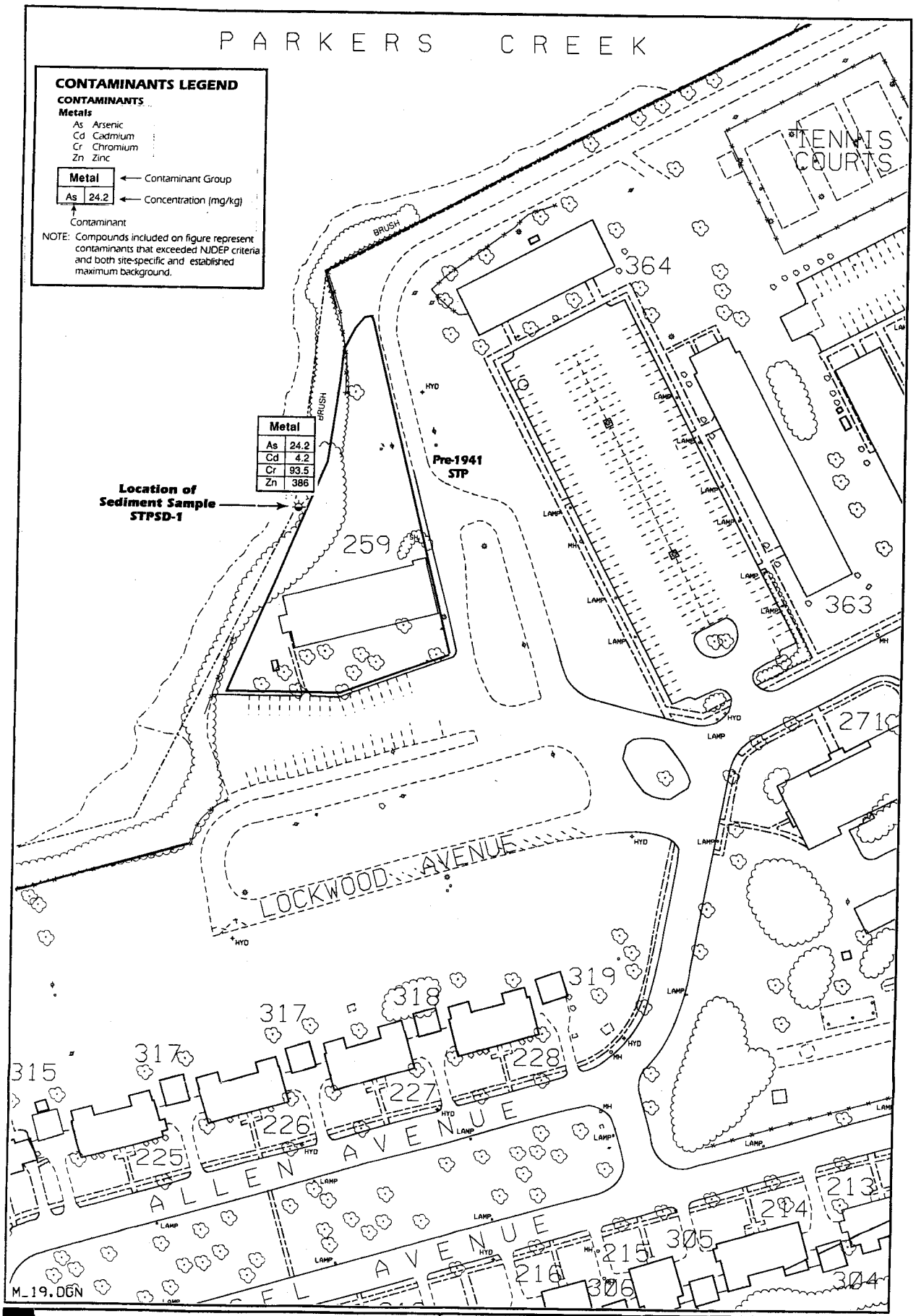
NLE - No Level Established

chromium, and zinc were found in concentrations slightly exceeding their respective background concentrations. However, copper, lead, mercury, and nickel were found in concentrations below their respective maximum background levels.

4.2.14.5 Recommendations

Nine metals were detected above NJDEP criteria in the sediment sample collected at the outfall area. In addition, four metals (arsenic, cadmium, chromium, and zinc) exceeded their respective maximum background concentrations. The other five metals were detected below established background concentrations.

Although four metals were detected in sediment at levels exceeding NJDEP criteria and background, in the worst case the criteria were exceeded by a factor of three. Since the samples was taken at the outfall of the STP, the results are believed to be the worst case and the area of contamination is probably small. Access to this portion of Lafetra Creek is restricted although the stream is on the property boundary. The STP has not been used since 1941, and, presumably, the local ecology has reached an equilibrium. Therefore, since remediation would disrupt the ecology of the site, no further action will be taken.



LEGEND

- Sediment Sampling Location
- Road (paved)
- Road/Trails (unpaved)
- Fence
- Building
- Wooded Area
- Tree/Bush
- Light Pole
- Utility Pole
- Site
- Brook/Creek
- Base Boundary
- Marshy Area

0 80 160
SCALE IN FEET

2017-0585

Fort Monmouth, Main Post

FIGURE 4.2-34
PRE-1941 SANITARY TREATMENT PLANT
(Distribution of Contaminants in Site Sediment)

Main Post
PCB Transformers

Main Post
PCB Transformers

4.2.15 PCB Transformers

4.2.15.1 Site Location

During the 1993 investigation (WESTON, 1993) all locations where PCB transformers had formerly been located were inspected for evidence of spills. Eight sites were identified where a PCB transformer was either formerly located over soil and thus evidence of a spill could not be determined visually, or was formerly located on concrete and there was discoloration in the concrete. These locations are listed in Table 3.5-1. Figure 4.2-35 presents the Main Post transformer site sample locations.

4.2.15.2 Site History

All PCB transformers (contain greater than 500 ppm PCBs) have been removed from Fort Monmouth. However, the former locations of these transformers were not previously investigated for spilled PCBs.

4.2.15.3 Sampling Effort

As discussed in Subsection 3.5, soil samples were taken below pole-mounted transformers and on four sides of an outdoor pad-mounted transformer. Concrete samples were taken from stained areas on outdoor concrete pads or in interior vaults with concrete floors. All samples were analyzed for PCBs.

4.2.15.4 PCB Sampling Results

The results of the PCB transformer sampling are presented in Table 4.2-22. Four of the eight transformers sampled at the Main Post area were found to have PCBs in soil or concrete above applicable cleanup criteria.

All other transformers sampled in the Main Post either had results below detection limits, or had detectable levels of PCBs below applicable cleanup criteria.

Table 4.2-22
Results of Transformer Site Sampling on Main Post

Location (Building No.)	Sample ID	Method Detection Limit (mg/kg)	Medium	NJDEP Cleanup Criteria (mg/kg)	Total PCBs (mg/kg)
292	MPT5-TR01	0.24	Soil	0.49	**0.68**
686	MPT6-TR01	0.045	Soil	0.49	0.18
718	MPT4-TR01	0.051	Soil	0.49	0.06
1002	MPT7-CC01	2000*	Concrete	0.055	**8400**
1004	MPT8-TR01	0.45	Soil	0.49	ND
1208	MPT2-CC01	2000*	Concrete	0.055	**19000**
1209	MPT1-CC01	400*	Concrete	0.055	**1500**
1220	MPT3-TR01	0.045	Soil	0.49	ND
1220	MPT3-TR02	0.041	Soil	0.49	ND
1220	MPT3-TR03	0.047	Soil	0.49	0.06
1220	MPT3-TR04	0.045	Soil	0.49	0.09
1220	MPT3-CC01	0.04	Concrete	0.055	ND

Compounds exceeding NJDEP cleanup criteria are noted by bold numbers
ND - Indicates that the compound was not detected at the quantification limit.
* = Method detection limit unit exceeded the NJDEP criteria.

The following transformer sites had PCBs in soil or concrete above applicable cleanup standards:

- MP-062 (Building 292).
- Indoor transformer vault in Building 1002.
- Indoor transformer vault in Building 1208.
- Indoor transformer vault in Building 1209.

PCBs were detected in soils above applicable soil standards in the soil beneath transformer MP-062, which was a pole-mounted transformer on the northwest side of Building 292. The sample beneath the transformer contained PCBs above the NJDEP SCC.

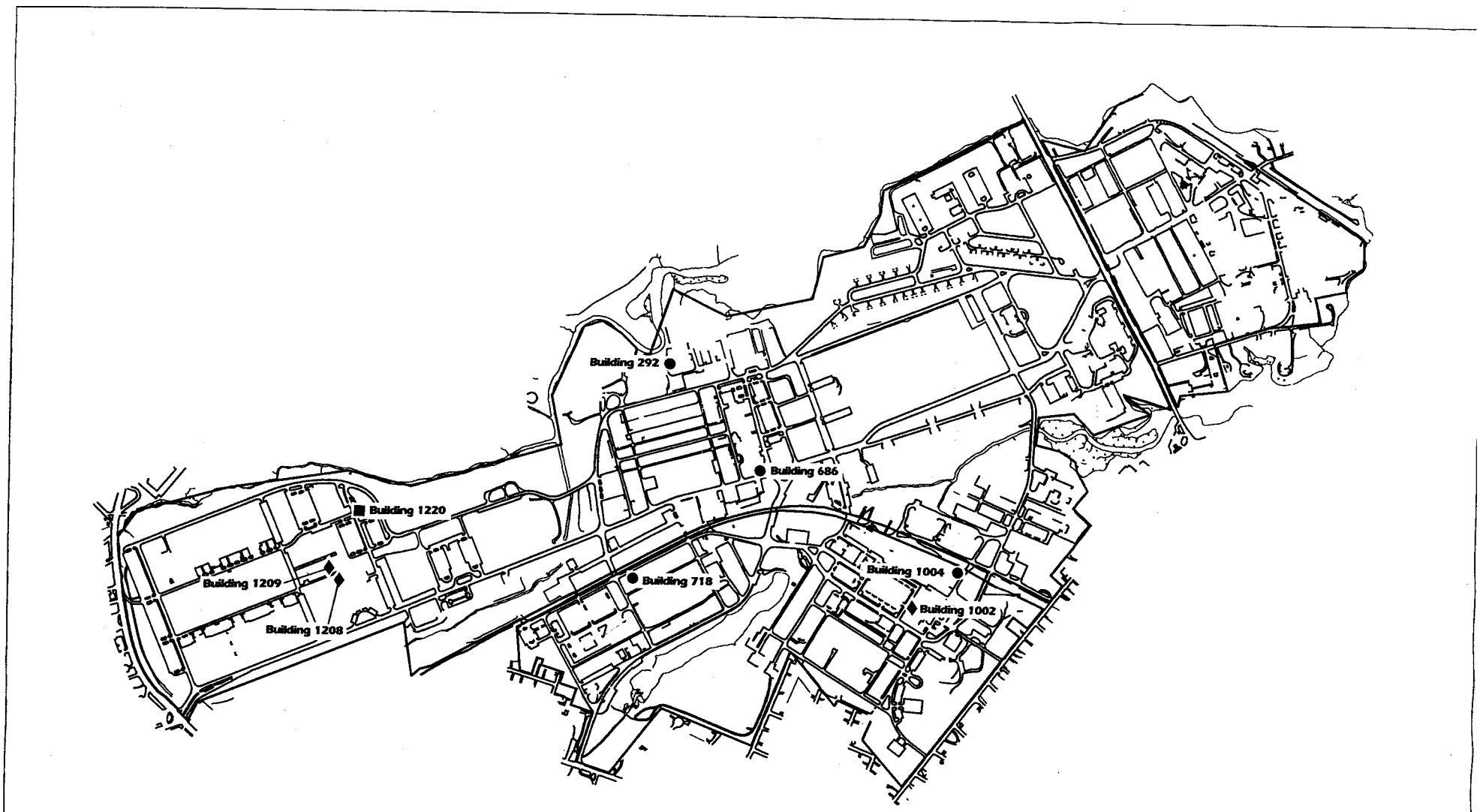
The concrete samples from visibly stained areas in the indoor transformer vaults in Buildings 1002, 1208, and 1209 each contained PCBs above the proposed indoor surface cleanup criteria of 0.055 mg/kg.

4.2.15.5 Recommendations

PCB levels in stained concrete were found to exceed NJDEP guidance levels in indoor vaults at Buildings 1002, 1208, and 1209. PCBs were also detected above applicable soil standards in the soil beneath transformer MP-062 on the northwest side of Building 292.

Since the indoor vaults are normally locked and are accessible by a very limited number of facility personnel, and the stained concrete cannot be removed without significantly disrupting electrical service, remedial work will be performed when the transformers are removed from service and the stained areas are made accessible. A warning sign will be posted, and workers entering the vaults will be trained to take precautions to prevent contamination.

Because the concentration of PCBs is only slightly above the SCC, additional sampling will be conducted beneath the former location of transformer MP-062 to determine the vertical and horizontal extent of PCBs in soil. The soil sampling will be performed in accordance with the NJDEP *Technical Requirements for Site Remediation* (NJDEP, 1993). Personal protective clothing will be worn accordingly.



Fort Monmouth, Main Post

FIGURE 4.2-35
MAIN POST TRANSFORMER SITE
SAMPLE LOCATIONS

Charles Wood
Background Samples

4.3 CHARLES WOOD

This subsection presents a description of each Charles Wood site and presents the rationale for the sampling activities. The sites and the sampling effort are summarized in Table 4.3-1. Additional historical information on each site may be obtained from the *Investigation of Suspected Waste Sites at Fort Monmouth, New Jersey*, 1993.

The following subsections summarize the results of the sampling program that was implemented to characterize site conditions as specified in the report titled, *Site Investigation, Chemical Data Acquisition Plan (CDAP).* Although the field investigation was generally conducted in accordance with the CDAP, minor changes were made. These changes are summarized in Table 4.3-2. A total of 19 soil borings and 16 monitor wells were installed and 3 sediment and 2 surface-water samples were collected in the Charles Wood area. Soil and groundwater samples were collected from the borings and monitor wells and were analyzed for compounds determined to be characteristic of the wastes associated with each area, i.e., TCL and TAL analytes (see Tables 3.6-1 and 3.8-1). Appendix D presents the results of the Charles Wood sampling activities. Detailed information regarding the specific sampling protocols for each site is provided in the following subsections. In addition to the results of groundwater and soil analyses, the lithologic descriptions and water-level information are used to provide a hydrogeologic interpretation of the site where appropriate.

Figure 4.3-1 shows the location of the nine Charles Wood sites discussed in this subsection.

4.3.1 Background Samples

The locations of background sampling locations were selected in areas believed to be unaffected by past base activities. They were identified in the report *The Investigation of Suspected Hazardous Waste Sites at Fort Monmouth, New Jersey* (WESTON, 1993), which was approved by NJDEP. The purpose of the collection of background characterization data was to identify levels of chemicals that are naturally occurring.

Table 4.3-1

Site Investigation Summary — Charles Wood

Site Number	Site	Description	Potential Waste/ Contaminants	Past Samples and Analyses	Investigation Activities
CHARLES WOOD AREA					
CW-1	Wastewater treatment (lime pit)	4-m^3 tank containing limestone for neutralizing liquid waste from Bldg. 2700. Sludge removal periodically. Acid/base drains not currently used. Pit discharge to sewage system. Limestone was replaced in 1992; contractor took limestone off-site. Built with bldg. around 1952.	Solvents and metals.	Analyzed old limestone. Sludge analyzed; found organics and metals.	Installed 4 soil boring/monitor wells, 1 on each side of pit. Collected soil samples (2 to 3 per boring) from 7 to 9 ft. Analyzed for TCL +30/TAL. Sampled groundwater for same parameters.
CW-2	Wastewater treatment (lime pit)	Same as CW-1.	Solvents and metals.	Analyzed old limestone.	Same as CW-1.
CW-3, AOC-4	Landfill	Operated during 1940s. Site identified in IA now used for storage of contractor equipment and debris. Site was cleared in mid-1995.	Administrative waste and wood.	None.	Work postponed. Trenching is planned to evaluate subsurface conditions.
CW-3A	Landfill	Site in west was used for leaves and small debris, and by off-site dumpers. 1969 aerial photo shows disturbed soil at west site. One partially buried drum found. May have been used for demolition debris.	Unknown.	None.	Used geophysics (magnetics, EM-31, and GPR) to evaluate possible subsurface disposal near Pulse Power Building.
CW-4	Range (small arms)	Bldg. 2537. Indoor range. Cleaned and repainted in 1989. Has metal and sand bullet trap and filtered ventilation system. 3-ft diameter bare area to north of building with spent shells and bullet debris. Appears to be clean sand in back of building.	Lead.	None.	Collected 2 soil samples: 1 soil boring and 1 surface soil. Analyzed for TCL +30/TAL/TPH.
CW-5, AOC-3	Heavy metals	Former treatment plant. Discharged to stream. Sludge removed from sludge drying bed and plant cleaned, disinfected, and dismantled.	Heavy metals and cyanide.	Sludge analyzed in 1981 — no heavy metals.	Sampled sludge (see CW-9) for metals. Installed 2 soil borings in area of sludge drying beds. Sampled sediment at outfall. Analyzed for TCL +30/TAL/CN.

Table 4.3-1

Site Investigation Summary — Charles Wood (Continued)

Site Number	Site	Description	Potential Waste/ Contaminants	Past Samples and Analyses	Investigation Activities
CW-6	Pesticide Storage Building T-2044	Pesticides no longer stored in CW area. Use pesticide contractor. Pesticides were stored in steel igloo on concrete base. Was mixed outside of igloo and Bldg. T-2044.	Pesticides and herbicides.	Soil sampled in 1989 for pesticides. High levels of chlordane (up to 595 mg/kg) and trace amounts of others detected.	2 soil borings and installation of MW by Bldg. T-2044. Sampled soil, new well, and existing well MW-1 for TCL +30. Surface soil sample by ditch (TCL +30/TAL).
CW-9, AOC-3	Sludge dump	Sludge was placed on golf course. Sludge temporarily stored south of Bldg. T-2044. Currently has dark gray soil that had been removed near Hole 1.	Heavy metals.	None.	Installed 2 MWs for TCL +30/TAL. 9 surface soil samples for TAL, 1 soil boring for TCL +30/TAL.
AOC-7	Former hazardous waste storage area	Bldg. 2500 area. Has been used as storage area since 1961. Used as temporary hazardous waste storage area in 1987. Security guard overcome by fumes in 1987. Currently open field, no evidence of contamination.	Solvents, oil, and metals.	None.	Installed 6 soil borings. Analyzed for TCL +30.
PCB Transformers	Buildings	Several transformers in this area. All transformers were tested in 1990 for PCBs. Those with PCBs > 500 ppm were removed or remediated.	PCBs.	Transformers sampled — several >500 ppm. See transformer list.	Sampled PCB transformer locations.

Table 4.3-2

Differences Between Proposed and Actual Work at Charles Wood

Site	Differences
CW-1, CW-2	In accordance with work plan, only one sample was taken per soil boring instead of three because no contamination was detected during field efforts.
CW-3	Site had not been cleared prior to field effort; therefore, no investigation was conducted.
CW-4	Because contaminated soil had not been excavated prior to the field effort, one soil boring was installed instead of three surface soil samples.
CW-6, CW-9	The location of the monitor well was moved from site CW-6 to CW-9 because there was an existing well near the proposed location at CW-6. The existing monitor well at CW-6 was sampled. Surface soil sample SS-01 was analyzed for TAL metals, which was not originally proposed in the CDAP.

A total of five background soil borings, which were converted into monitor wells, were installed and two separate soil intervals were sampled from each boring. Two rounds of groundwater samples were collected from each location. Soil and groundwater samples were analyzed for the parameters listed in Tables 3.6-1 and 3.8-1. Background monitor wells were labeled as "B" wells, i.e., MW-06B. Charles Wood background locations are shown in Figure 4.3-2 and are labeled B-6, B-7, etc. Monitor well MW-06B was installed at background location B-6 and a similar practice was followed at the other background locations. Two background surface-water and sediment samples were also collected (Figure 4.3-2).

4.3.1.1 Hydrogeologic Interpretation

The five background monitor wells installed at the Charles Wood area were installed to depths ranging from 14 ft bgs to 15 ft bgs. Total depths were determined during drilling activities and were based on the depth where groundwater was encountered. The lithology and depth to groundwater varied between background locations, and this information is presented on the lithologic logs in Appendix A.

4.3.1.2 Soil Sampling Results

Soil samples were collected from two discrete intervals: 0 to 2 ft bgs and 2 ft bgs to depth to groundwater. Soil boring depths varied between the background locations, depending on the depth where water was encountered. The analytical results for background soil at specific sampling intervals are presented in Appendix D. Table 4.1-7 summarizes the maximum concentrations detected in background soil at Charles Wood.

VOCs

VOCs were not detected in Charles Wood background soil.

SVOCs

A total 10 SVOCs were detected below laboratory quantitation limits in background soil at the Charles Wood area (Table 4.1-7).

Pesticides/PCBs

Two pesticides (4,4'-DDE and 4,4'-DDT) were detected above the laboratory quantitation limit in background soil at the Charles Wood area.

Metals

As indicated in Table 4.1-7, 19 metals were detected in background soil at the Charles Wood area.

Cyanide

Cyanide was not detected in background soil at the Charles Wood area.

4.3.1.3 Groundwater Sampling Results

Two rounds of groundwater sampling were conducted at Charles Wood. The analytical results for groundwater samples from the individual sampling rounds are listed in Appendix D. Table 4.1-7 summarizes the maximum background concentrations detected in background water at Charles Wood.

VOCs

VOCs were not detected in Charles Wood background groundwater.

SVOCs

Two SVOCs were detected in background groundwater at Charles Wood (Table 4.1-7).

Pesticides/PCBs

Pesticides/PCBs were not detected in background groundwater at Charles Wood.

Metals

As indicated in Table 4.1-7, 19 total metals were detected in background groundwater at Charles Wood.

4.3.1.4 Surface-Water Sampling Results

Two upgradient surface-water samples, SS-B3 and SS-B4, were selected as background at Charles Wood (Figure 4.3-2). Contaminants detected in background surface water and corresponding sample identifications are presented in Appendix D. Table 4.1-9 summarizes the maximum detected concentrations in total and soluble background surface water at Charles Wood.

VOCs

VOCs were not detected in total background surface water. Soluble background surface-water samples at Charles Wood were analyzed for VOCs.

SVOCs

One SVOC, bis(2-ethylhexyl) phthalate, was detected below laboratory quantitation limits in background surface water (total) at Charles Wood. SVOCs were not analyzed for in soluble background surface-water samples at Charles Wood.

Metals

In total background surface water, 13 metals were detected above laboratory quantitation limits at Charles Wood. Similarly, 11 metals in soluble background surface water were detected above laboratory quantitation limits.

4.3.1.5 Sediment Sampling Results

Two upgradient sediment samples, SS-B3 and SS-B4, were selected as background at Charles Wood (Figure 4.3-2). Contaminants detected in background sediment and corresponding sample identifications are presented in Appendix D. Table 4.1-9 summarizes the maximum detected concentrations in background sediment at Charles Wood.

VOCs

VOCs were not detected in background sediment at Charles Wood.

SVOCs

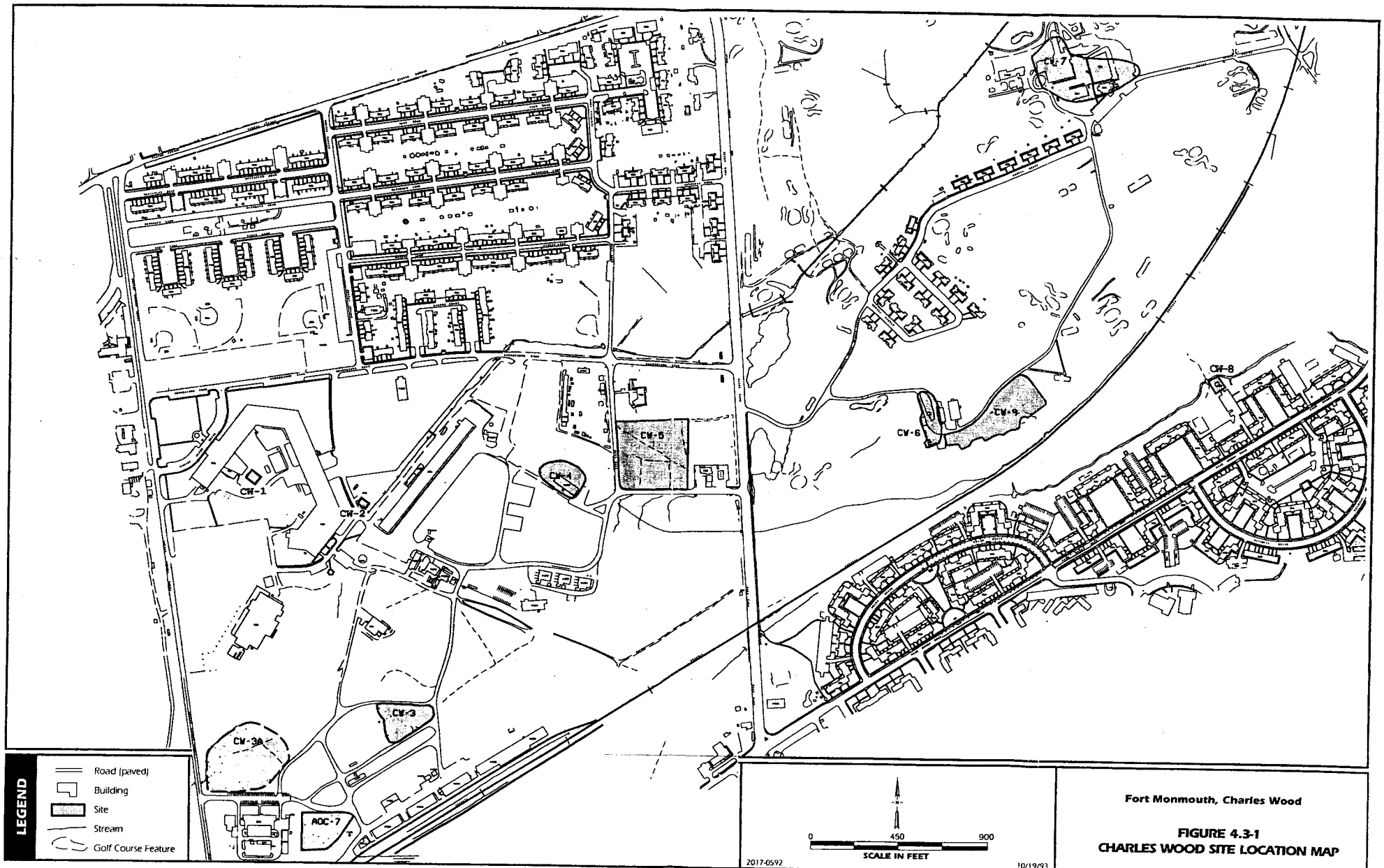
Bis(2-ethylhexyl) phthalate and di-n-butyl phthalate were detected below the laboratory quantitation limits in Charles Wood sediment. Six PAHs were detected below laboratory quantitation limits in Charles Wood sediment.

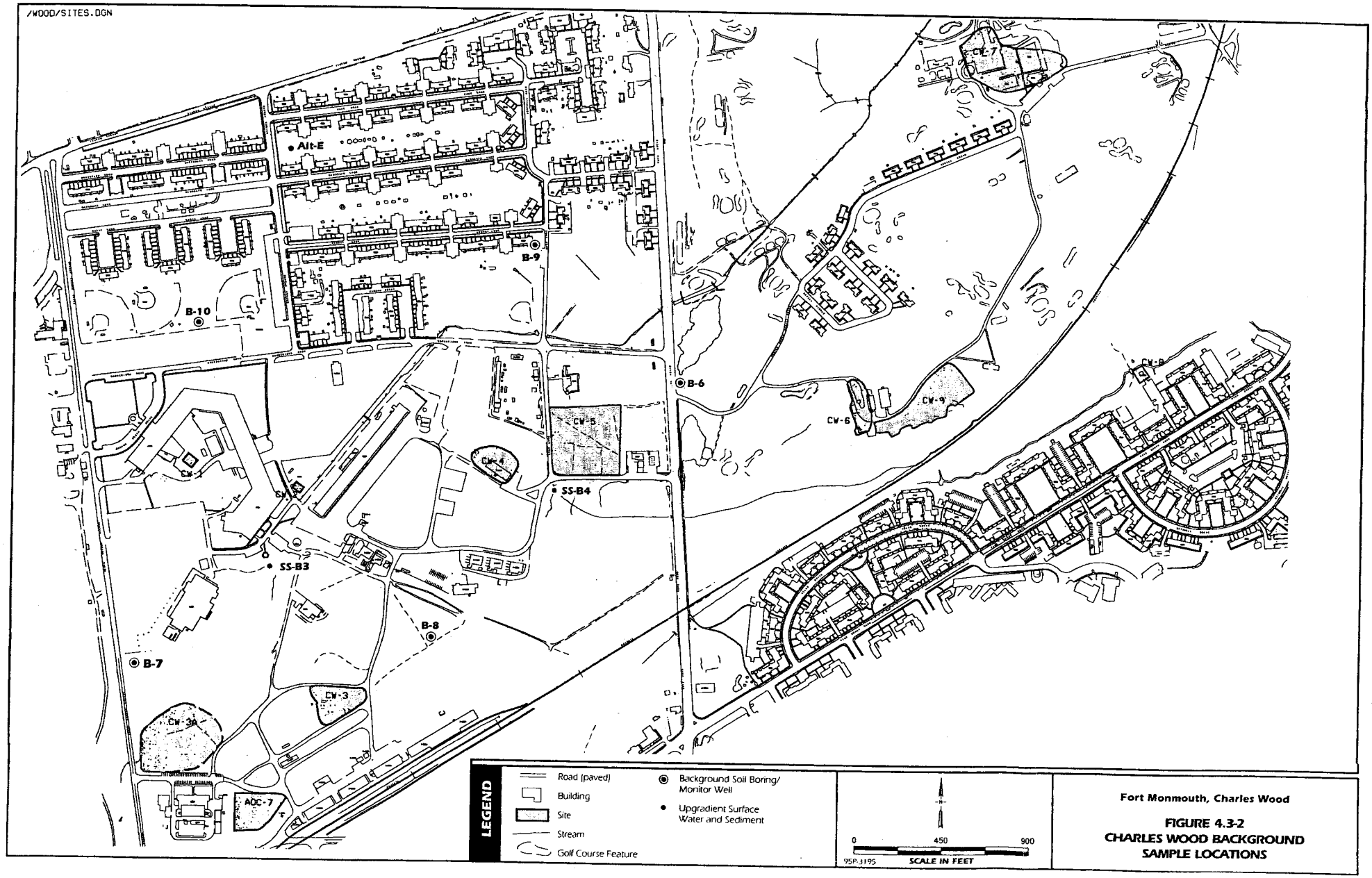
Pesticides

Three pesticides (4,4′-DDD, 4,4′-DDE, and 4,4′-DDT) were detected in Charles Wood background sediment.

Metals

A total of 17 metals were detected in background sediment at Charles Wood above laboratory quantitation limits.


CW-1
CW-2
CW-3
CW-3A
CW-4
CW-5
CW-6
CW-7
CW-8
CW-9
AOC-7
LEGEND
Road (paved)
Building
Site
Stream
Golf Course Feature
0
450
900
SCALE IN FEET
2017-0592
10/19/93
Fort Monmouth, Charles Wood
FIGURE 4.3-1
CHARLES WOOD SITE LOCATION MAP



Fort Monmouth, Charles Wood

FIGURE 4.3-2
CHARLES WOOD BACKGROUND SAMPLE LOCATIONS

Site CW-1

4.3.2 Wastewater Treatment Lime Pit 1 (CW-1)

4.3.2.1 Site Location

Wastewater Treatment Lime Pit 1 (CW-1) is located in the central area of the Hexagon Building (Building 2,700) at Charles Wood just east of the west wing of the building (Figure 4.3-3). The approximate area of CW-1 is 2,960 ft^2 (0.07 acre).

4.3.2.2 Site History

This lime pit (CW-1) was built concurrently with the Hexagon Building; construction was completed in 1952. This is one of two 4-cubic-meter (m^3) acid neutralization pits that contain limestone chips; the other pit (CW-2) is discussed in Subsection 4.3.3. Liquid wastes from the north and west wings of the Hexagon Building passed through this pit before being discharged to the sanitary sewer. Chemical wastes of up to 150 m^3 per day were generated from the shops and laboratories of the Hexagon Building; this waste output was reduced to 115 m^3 per day in June 1978 (USATHAMA, 1980). According to the IA, a licensed waste hauler was hired to dispose of concentrated wastes, such as etching solutions and organic solvents.

Each neutralization pit has a concrete floor and concrete block and mortar walls, and measures 7 ft by 13 ft wide by 8 ft high. The cover is constructed of concrete with a steel access panel. Several wooden baffles divide the pit into sections.

In October 1992, the pit was cleaned out, inspected, and the limestone chips replaced. A vacuum truck was used to remove the sludge and stones from the pit, after which the pit was rinsed with water. All sludge, stones, and rinse water were placed in drums and disposed of as a hazardous waste. At present, laboratory wastes are managed under the installation hazardous waste program, which forbids the discharge of these wastes to the sewer.

4.3.2.3 Sampling Effort

The elevated concentrations of halogenated hydrocarbons (HHCs) found in samples collected during the 1992 cleanout indicates the possibility that solvents were discharged into the lime pits. Neither concrete nor concrete block is an effective barrier to the migration of halogenated solvents. Halogenated solvents may have migrated from the lime pit into surrounding soils and possibly into groundwater. To investigate this potential, a monitor well was proposed for construction on each side of the lime pit (MW-26 through MW-29, shown in Figure 4.3-3); however, the proposed monitor well locations were slightly adjusted to avoid the buried conduit and underground water and acid lines. The wells were positioned accordingly to investigate the potential of halogenated solvent migration from the lime pit into the surrounding soil and groundwater. Continuous split-spoon samples were screened with an HNu or OVM. According to the CDAP, if any VOCs were detected, soil samples were to be collected from 7 to 9 ft bgs, from the interval with the highest instrument readings, and from just above the water table; otherwise, one sample was to be collected from 7 to 9 ft bgs from each boring. Because no elevated OVM readings were recorded, soil samples were collected from the 7 to 9 ft bgs interval only. Soil samples were analyzed for TCL +30 parameters and TAL metals. Two rounds of groundwater sampling were conducted from each well and analyzed for TCL +30 parameters and TAL metals.

4.3.2.4 Hydrogeologic Interpretation

Lithologic logs from monitor well locations MW-26 through MW-29 indicate that the lithology consists of a thin soil cover (0.3 ft) underlain by a well sorted olive-orange-brown medium-coarse-grained quartz sand.

Groundwater saturation was observed at approximately 7.5 ft bgs at all well locations. The four monitor wells were screened across the water table and were completed to 15 ft bgs at each location. Water-level elevation data, measured on 6 March 1995, prior to the March 1995 sampling round, indicate that the local groundwater flow direction is northeast, toward the Hexagon Research and Development Building. Based on groundwater elevation measurements,

monitor wells MW-28 and MW-29 are downgradient of the area under investigation (Figure 4.3-4).

4.3.2.5 Soil Sampling Results

Four soil samples, one in each monitor well borehole, were collected between 7 and 9 ft bgs and were analyzed for the parameters listed in Table 3.6-1. The analytical results for site soils, with the corresponding sample identifications, are listed in Appendix D. Table 4.3-3 compares the detected compounds with the NJDEP SCC, and then compares the results with the subsequent site-specific and Monmouth County maximum background limits.

VOCs

VOCs were not detected in site soil.

SVOCs

One SVOC (di-n-butyl phthalate) was detected above laboratory quantitation limits in site soil. However, the concentration of this compound was less than the NJDEP SCC and the maximum site-specific background.

Pesticides/PCBs

Pesticides were not detected above laboratory quantitation limits in site soil. PCBs were not detected in site soil.

Metals

As indicated in Table 4.3-4, all of the metals detected in site soil were found in concentrations below the NJDEP SCC, where established.

Table 4.3-3
Fort Monmouth - Charles Wood
Summary of Detected Compounds
In Soils at Site CW-1

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	MAXIMUM BACKGROUND CONCENTRATION (mg/kg)	ANALYTICAL RESULTS			
				SB26-A02 12/19/94 (7-9 ft bgs)	SB27-A02 12/19/94 (7-9 ft bgs)	SB28-A02 12/19/94 (7-9 ft bgs)	SB29-A02 12/19/94 (7-9 ft bgs)
SVOC's (mg/kg)							
Benzo(b)fluoranthene	0.188	0.9	0.078 J	ND	ND	ND	0.070 J
Benzo(a)pyrene	0.162	0.66	ND	ND	ND	ND	0.073 J
bis(2-Ethylhexyl)phthalate	0.32	49	0.17 J	0.075 J	0.090 J	ND	ND
Di-n-butylphthalate	0.215	5700	2.0 B	0.081	0.086	0.077	0.130
PESTICIDES/PCBs (mg/kg)							
4,4'-DDE	0.0037	2	0.071	0.0038 J	ND	ND	ND
METALS TOTAL (mg/kg)							
Aluminum	3.9	NLE	15700	4070	5120	4850	4010
Arsenic	0.35	20	31.6	4.1	4.5	5.6	2.2
Barium	0.17	700	26	3.4	4.4	4.2	2.7
Beryllium	0.10	1	1.7	0.41	0.45	0.84	0.33
Calcium	2.2	NLE	653	236	283	229	669
Cobalt	0.71	NLE	4.5	ND	0.73	0.86	ND
Chromium	1.6	500	128	52.2	71.7	59.7	46.4
Copper	2.2	600	7.27[1]	1.8	2	1.1	1.2
Iron	0.58	NLE	45500	10800	14500	12900	9440
Lead	0.40	400[2]	15.1[1]	3.9	5.9	2	3.3
Potassium	(12.3-25.8)	NLE	10600	2700	3540	3660	2700
Magnesium	9.6	NLE	3960	960	1310	1310	943
Manganese	0.18	NLE	120[1]	7.2	10.6	8	5.4
Mercury	0.49	14	ND	ND	ND	0.21	ND
Sodium	3.8	NLE	56.8	33.4	29.7	20.4	15.5
Nickel	1.4	250	8.3	1.5	3.1	2.7	1.4
Vanadium	0.53	370	59.6	28.8	42.4	31.8	26.7
Zinc	0.41	1500	55.6	12.8	16.2	15.2	11.7

Compounds detected above NJDEP standards are noted by bold numbers
NLE - No Level Estabished
ND - Indicates that the compound was not detected at or below the quantification limits
ft bgs - Feet below ground surface
J - Indicates that the concentration value was estimated due to detection at or near the quatification limits
B- Compound was observed in the sample and associated laboratory blank.
Note: MDL's for metal analysis is actually the highest detection limit with potassium given as a range due to high variability.

[1] Monmouth County maximum background concentration.

[2] NJDEP criteria are referenced in the Site Remediation News, Winter 1995.

Table 4.3-4
Fort Monmouth - Charles Wood
Summary of Average Concentrations of Detected Compounds in Groundwater - Site CW-1

COMPOUND	METHOD DETECTION LIMIT (µg/L)	NJDEP GROUNDWATER QUALITY CRITERIA (µg/L)	MAXIMUM BACKGROUND CONCENTRATION (µg/L)	ANALYTICAL RESULTS (µg/L) SAMPLING DATE			
				MW-26 2/21/95, 3/14/95 (avg.)	MW-27 2/21/95, 3/14/95 (avg.)	MW-28 2/21/95, 3/14/95 (avg.)	MW-29 2/21/95, 3/14/95 (avg.)
VOC's (µg/L)							
1,2-Dichloroethene (total)	4.4	10	ND	ND	ND	ND	**235**
Trichloroethene (TCE)	2.0**	1	ND	ND	ND	**35.5**	**885**
Tetrachloroethene (PCE)[1]	4.0**	1*	ND	**4.5J**	ND	ND	ND
SVOCs (µg/L)							
1,2,4 Trichlorobenzene	9.6**	9	ND	ND	ND	ND	4J
bis-(2Ethylhexyl)phthalate	9.7	30*	600	3.75J	2J	1.5J	3J
Di-n-butyl phthalate	6.5	900	ND	ND	5.25J	ND	ND
METALS TOTAL (µg/L)							
Aluminum	24	200	8210	**3857.5**	**5695**	**3815**	**2370**
Arsenic	1.9	8*	25.1	4.375	4.7	4	1.625
Barium	1.7	2000	400[2]	98.7	127	53.05	50.8
Beryllium	0.9	20*	7[2]	ND	0.72	ND	ND
Calcium	10.4	NLE	8700	25350	24100	15050	28350
Cadmium	2.8	4	6[2]	ND	2.1	ND	ND
Cobalt	2.3	NLE	30.6	9.6	14.5	6.95	4.8
Chromium	2.9	100	49.6	40.575	55.55	28.15	19.7
Copper	1.9	1000	730[2]	4.525	5.675	2.675	ND
Iron	6.4	300	27000[2]	**7796.65**	**11295**	**6185**	**4555**
Potassium	685	NLE	10000[2]	12450	12950	12900	11000
Magnesium	18.3	NLE	25000[2]	9155	13650	4080	5520
Manganese	1.8	50	480[2]	**91.15**	**125**	46.35	**70.55**
Sodium	30.5	50000	197000[2]	**64550**	**71700**	18100	29400
Nickel	10.8	100	48.3	19.8	20.95	8.75	10.1
Lead	1.1	10*	<100[2]	3.9	8.3	3.15	1.425
Vanadium	2.3	NLE	28.9	29.175	36.075	23.9	15.6
Zinc	3.8	5000	133	35.75	29.25	24.85	22.6

[1] - Same compound as listed by NJDEP Tetrachloroethylene

Compounds exceding NJDEP groundwater quality criteria are noted by bold numbers.

NJDEP groundwater quality criteria consist of the higher number between the PQL or STANDARD

*PQL - Practical Quantitation Limit -was used as the NJDEP groundwater quality criteria

ND - Indicates that the compound was not detected at the quantification limit

J - Indicates that the concentration value was estimated due to detection at or near the quantification limits

NLE - No Level Established

** - Method detection limit exceeds the NJDEP groundwater quality criteria

[2] - Monmouth County maximum background concentration

4.3.2.6 Groundwater Sampling Results

Monitor wells at site CW-1 were sampled for the analytical parameters listed in Table 3.8-1. The analytical results for the individual sampling rounds are listed in Appendix D. Table 4.3-4 compares the average concentrations of the detected compounds from the February and March sampling rounds with the NJDEP GWQC, and then compares the results with the subsequent site-specific and Monmouth County maximum background concentrations, where appropriate. Figure 4.3-5 presents the locations of the compounds detected above both NJDEP criteria and maximum background.

VOCs

Three VOCs (tetrachloroethene, trichloroethene, and 1,2-dichloroethene) were detected in site groundwater in concentrations exceeding the NJDEP GWQC. Tetrachloroethene was detected below the laboratory quantitation limit in MW-26 in the March sampling round only; however, the concentration exceeded the NJDEP GWQC. Trichloroethene was detected in MW-28 and MW-29 in both sampling rounds. 1,2-Dichloroethene (total) was detected in MW-29 only in both sampling rounds. VOCs were not detected in MW-27. Figure 4.3-5 presents the locations of the averaged concentration of compounds detected above the NJDEP GWQC and the maximum background levels established at Charles Wood.

SVOCs

SVOCs were not detected in the site monitor wells above laboratory quantitation limits and the NJDEP GWQC from either sampling round.

Pesticides/PCBs

Pesticides/PCBs were not detected in the site monitor wells from either sampling round.

Metals

As indicated in Table 4.3-4, of the 18 metals detected in site groundwater, 4 metals (aluminum, iron, manganese, and sodium) were found in concentrations exceeding the NJDEP GWQC; however, aluminum, iron, and manganese were detected in concentrations below the site-specific and Monmouth County maximum background levels. Although sodium was detected in concentrations greater than the site-specific background level, sodium was found in concentrations well below the Monmouth County maximum background level.

4.3.2.7 Recommendations

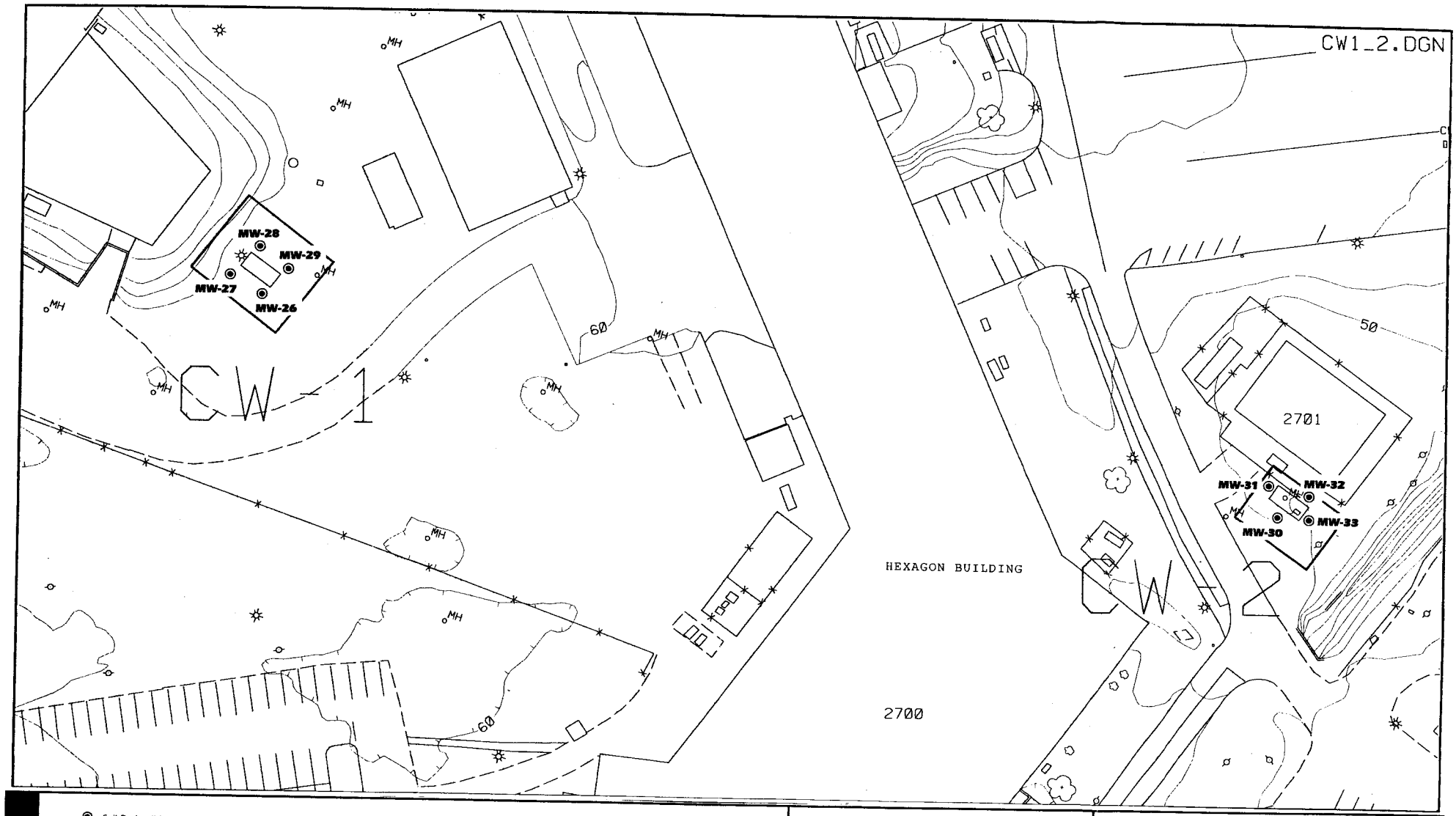
The soil sample results indicate that compounds of concern were either not detected or were below laboratory quantitation limits and NJDEP criteria.

The groundwater sampling results indicate that TCE, PCE, and 1,2-dichlorobenzene were detected in the groundwater downgradient of the site at levels that exceeded the NJDEP criteria.

Although NJDEP groundwater criteria were exceeded by three VOCs at this site, immediate remedial action is not required. The probable source of contamination has been eliminated since chemicals are not being disposed of in the pit. The pit was cleaned in October 1992 and the limestone sludge was removed and disposed of as a hazardous waste. Hazardous waste is currently collected for proper disposal off-site and waste is no longer disposed of in the pit. The groundwater is believed to flow toward the headwaters of Wampum Brook, and the shallow groundwater probably flows into Wampum Brook. There is no use of groundwater between the source and Wampum Brook. Surface-water samples were taken in Wampum Brook in the Charles Wood area and Mill Creek (as Wampum Brook is called further to the east) for use as background samples. No VOCs were detected in these samples, therefore, there is no immediate threat to human health.

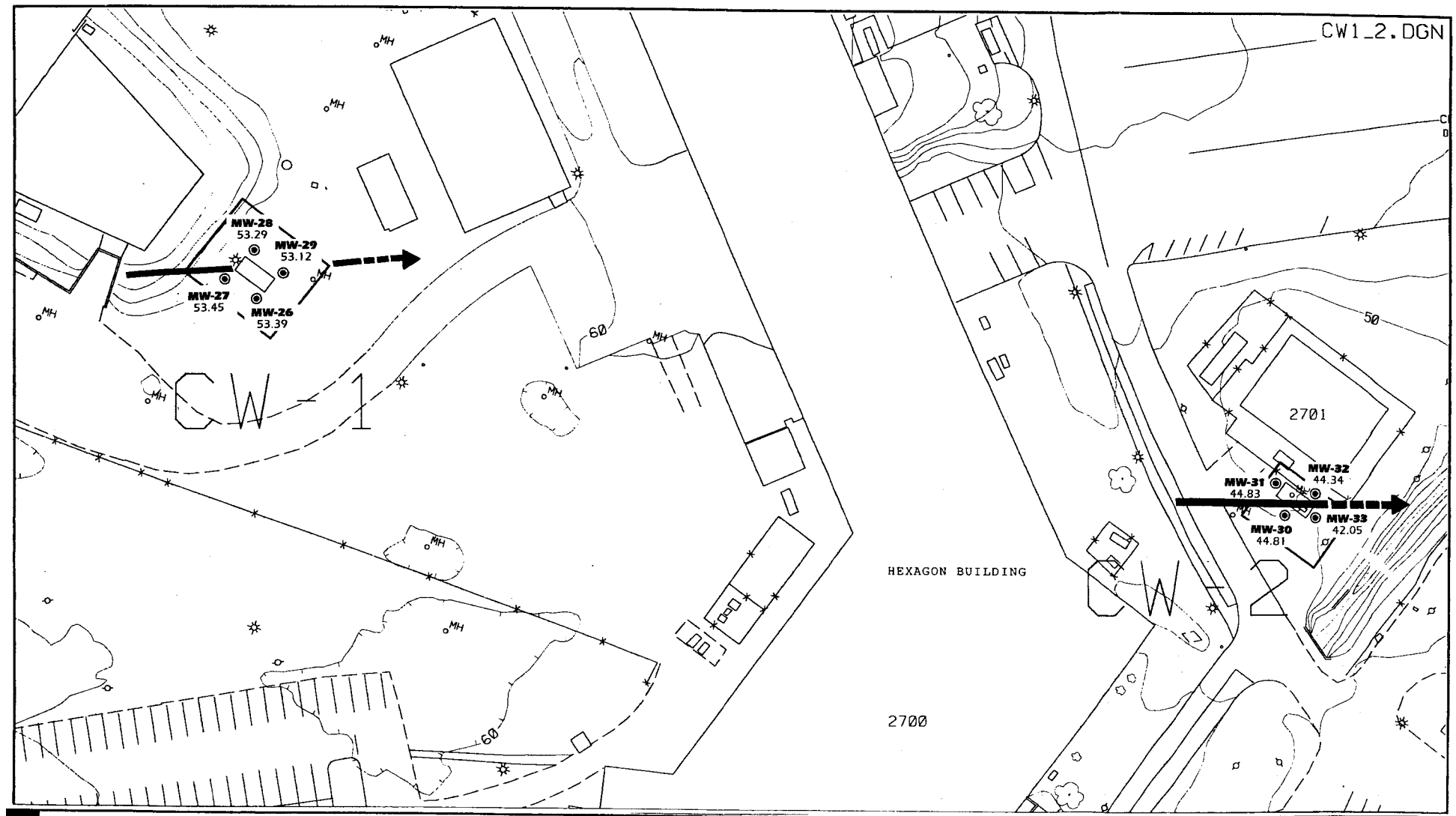
The extent of VOC concentrations in groundwater will be investigated by soil-gas survey techniques. The soil-gas survey will be performed on an established grid pattern to estimate the

lateral extent of VOCs in the vicinity of the neutralization pit. The results of the soil-gas survey will be used to locate two additional monitor wells at the downgradient edge of the plume. DPW proposes that a long-term groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells and the two newly installed monitor wells. Compounds of concern identified in the first two rounds of sampling would be targeted for the monitoring program.



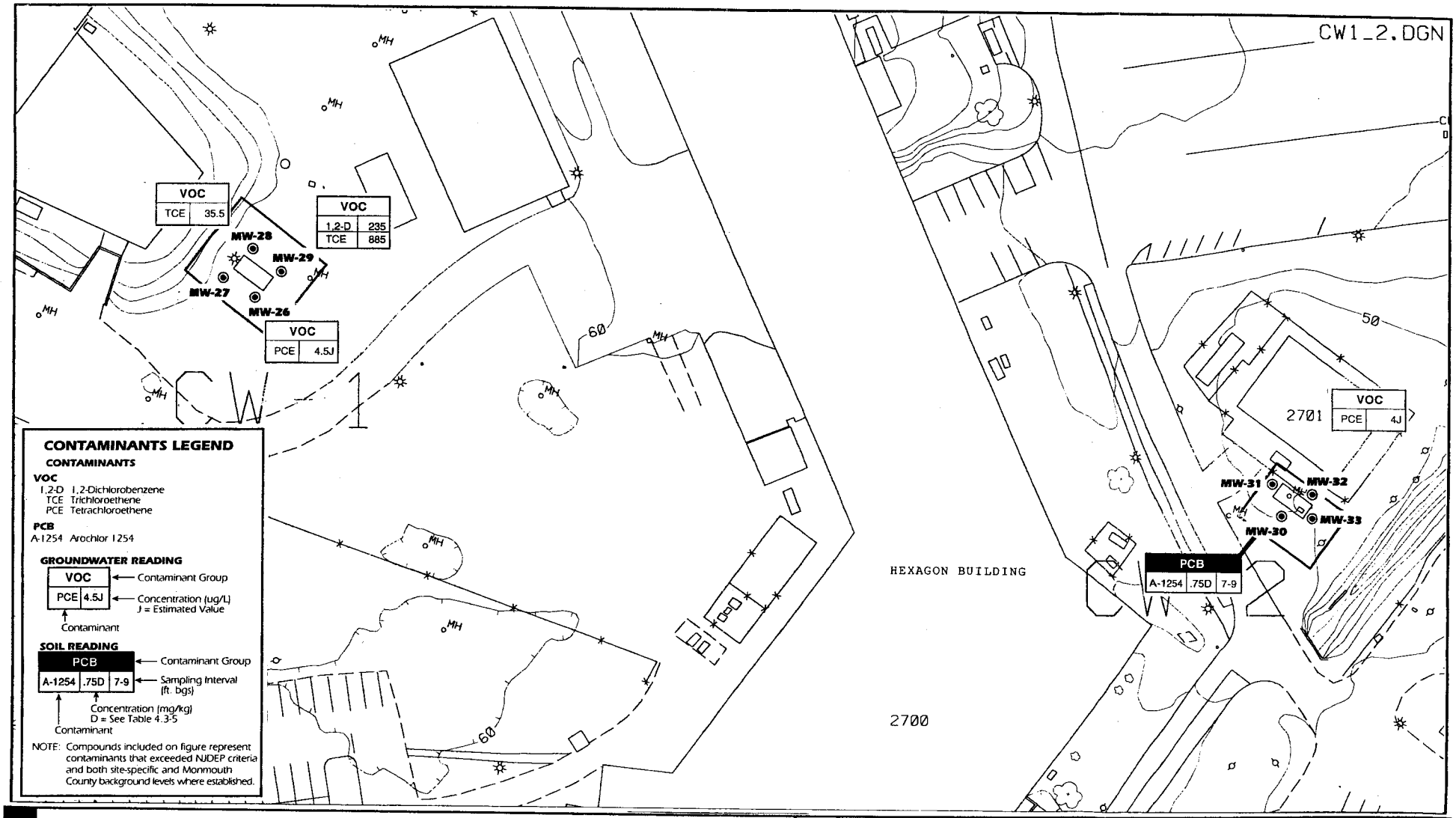
Fort Monmouth, Main Post

FIGURE 4.3-3
ACID NEUTRALIZATION LIME PITS (CW-1 AND CW-2) SAMPLING LOCATIONS



Fort Monmouth, Charles Wood

FIGURE 4.3-4
ACID NEUTRALIZATION LIME PITS (CW-1 AND CW-2)
APPROXIMATE GROUNDWATER FLOW DIRECTIONS
(Groundwater Elevations Recorded from March 1995 Sampling Round)



Fort Monmouth, Charles Wood

FIGURE 4.3-5
ACID NEUTRALIZATION LIME PITS (CW-1 AND CW-2)
DISTRIBUTION OF CONTAMINANTS IN SITE SOIL AND GROUNDWATER

Site CW-2

FTMM-23

4.3.3 Wastewater Treatment Lime Pit 2 (CW-2)

4.3.3.1 Site Location

Wastewater Treatment Lime Pit 2 (CW-2) is located southeast of the Hexagon Building (Building 2700) at Charles Wood near an electrical substation (Figure 4.3-3). The approximate area of site CW-2 is 1,751 ft^2 (0.04 acre).

4.3.3.2 Site History

Like Lime Pit 1, Lime Pit 2 (CW-2) was built concurrently with the Hexagon Building; construction was completed in 1952. Liquid wastes from the east and south wings of the Hexagon Building passed through this pit before being discharged to the sanitary sewer. Additional details, including the estimated quantities of wastes discharged through the lime pits, pit construction, and cleanout and replacement of the limestone, were discussed in Subsection 4.3.2.2.

Unlike Lime Pit 1, during cleanout this pit was found to have received sewage. A dye test was conducted and revealed that toilets from the guard shack and a bathroom for the handicapped near the east entrance were mistakenly connected to this pit. The plumbing has been rerouted to discharge the wastewater from the toilets directly to the sanitary sewer.

In October 1992, the pit was cleaned out, inspected, and the limestone chips replaced. A vacuum truck was used to remove the sludge and stones from the pit, after which the pit was rinsed with water. All sludge, stones, and rinse water were placed in drums and disposed of as a hazardous waste. At present, laboratory wastes are managed under the installation hazardous waste program, which forbids the discharge of these wastes to the sewer.

4.3.3.3 Sampling Effort

As in the case of Lime Pit 1, the elevated concentrations of HHCs in sludge, rinse, and grab samples suggest the possibility that solvents were discharged into the lime pits and that they may

have migrated from the lime pits into surrounding soils and possibly into groundwater. To investigate this potential, a monitor well was constructed on each side of the lime pit (MW-30 through MW-33, shown in Figure 4.3-3). Continuous split-spoon samples were screened with an HNu or OVM. According to the CDAP, if any VOCs were detected, soil samples were to be collected from 7- to 9-ft bgs (near the base of the neutralization pit), from the interval with the highest instrument readings, and from just above the water table; otherwise, one sample was to be collected from the 7- to 9-ft interval of each boring. Because no elevated OVM readings were recorded during borehole activities, one sample from the 7- to 9-ft bgs interval was collected for the required parameters. Soil samples were analyzed for TCL +30 parameters and TAL metals. Two rounds of groundwater samples were collected from each well and analyzed for TCL +30 parameters and TAL metals.

4.3.3.4 Hydrogeologic Interpretation

Lithologic logs from site monitor wells MW-30 and MW-31 indicate that the lithology consists of a thin soil cover (0.3 ft) underlain by fill material and reworked natural sediments. The components of the manmade materials consisted of quartz gravel and concrete, wood fragments, and pieces of old electrical conduit. The reworked natural sediments consisted of an interbedded green-gray silty fine-grained sand and green-gray fine-grained sandy silt. Lithologic logs from MW-32 and MW-33 indicate that the lithology consists of a thin soil cover (0.3 ft) underlain by shallow fill material and probable natural sediments. The filled material consisted of concrete fragments (to 2 ft bgs). The probable natural sediments consisted of an interbedded olive-gray moderately sorted silty fine-grained sand and a green moderately sorted very micaceous fine-grained sandy silt.

Groundwater saturation was observed between 1 and 8 ft bgs. The four monitor wells were screened across the water table and total depths ranged from 15 to 16 ft bgs. Water-level elevation data, measured on 6 March 1995, prior to the March 1995 sampling round, indicate that local groundwater flow is eastward (Figure 4.3-4). Based on groundwater elevation measurements, monitor wells MW-32 and MW-33 are downgradient of the former lime pit.

4.3.3.5 Soil Sampling Results

Four soil samples, one in each monitor well borehole, were collected and analyzed for the parameters listed in Table 3.6-1. Samples were collected between 7 and 9 ft bgs. The compounds detected in site soils, with the corresponding sample identifications, are listed in Appendix D. Table 4.3-5 compares site soil quality with the NJDEP SCC, and then compares the results with the subsequent site-specific and Monmouth County maximum background levels, where appropriate.

VOCs

Two VOCs (methylene chloride and 2-butanone) were detected in concentrations above laboratory quantitation limits. Methylene chloride and 2-butanone are common laboratory contaminants. Both compounds were detected in concentrations well below the NJDEP SCC.

SVOCs

Eight SVOCs were detected above laboratory quantitation limits in soil borings, but in concentrations below the NJDEP SCC. All SVOCs detected below quantitation limits were found in concentrations below the NJDEP SCC where established.

Pesticides/PCBs

Three pesticides (4,4'-DDE, 4,4'-DDD, and 4,4'-DDT) were detected in concentrations above laboratory quantitation limits, but were well below the NJDEP SCC.

One PCB (Aroclor-1254) in SB-30 was detected slightly above the laboratory quantitation limit as well as the NJDEP SCC (Figure 4.3-5). However, the PCB compound was not detected in groundwater samples from the corresponding well location, MW-30. PCBs were not detected in SB-31, SB-32, and SB-33.

Table 4.3-5
Fort Monmouth - Charles Wood
Summary of Detected Compounds
in Soils from Site CW-2

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	MAXIMUM BACKGROUND CONCENTRATION (mg/kg)	ANALYTICAL RESULTS			
				SB30-A02 12/16/94 (7-9 ft bgs)	SB31-A02 12/16/94 (7-9 ft bgs)	SB32-A02 12/16/94 (7-9 ft bgs)	SB33-A02 12/16/94 (7-9 ft bgs)
VOC's (mg/kg)							
Methylene Chloride	0.0027	49	ND	0.088	0.086	0.017	ND
2-Butanone	0.0041	1000	ND	ND	0.012 J	0.008 J	ND
SVOCs (mg/kg)							
Napthalene	0.277	230	ND	0.15 J	ND	ND	ND
2-Methylnaphthalene	0.287	NLE	ND	0.1 J	ND	ND	ND
Acenaphthene	0.221	3400	ND	0.17 J	ND	ND	ND
Dibenzofuran	0.215	NLE	ND	0.093 J	ND	ND	ND
Fluorene	0.208	2300	ND	0.21 J	ND	ND	ND
Phenanthrene	0.165	NLE	ND	1.3	ND	ND	0.075 J
Anthracene	0.152	10000	ND	0.33 J	ND	ND	ND
Carbazole	0.145	NLE	ND	0.18 J	ND	ND	ND
Fluoranthene	0.198	2300	0.042 J	1.5	ND	ND	0.073 J
Pyrene	0.178	1700	0.048 J	1.1	ND	ND	0.067 J
Benzo(a)anthracene	0.162	0.9	0.046 J	0.69	ND	ND	ND
Chrysene	0.145	9	0.083 J	0.71	ND	ND	0.043 J
bis(2-Ethylhexyl)phthalate	0.32	49	0.170 J	0.16 J	0.1 J	0.059 J	ND
Benzo(b)fluoranthene	0.188	0.9	0.078 J	0.79	ND	ND	ND
Benzo(k)fluoranthene	0.205	0.9	0.041 J	0.28 J	ND	ND	ND
Benzo(a)pyrene	0.162	0.66	0.047 J	0.62	0.13 J	0.053 J	0.094 J
Indeno(1,2,3-cd)pyrene	0.234	0.9	ND	0.37 J	ND	ND	ND
Benzo(g,h,i)perylene	0.224	NLE	0.042 J	0.35 J	ND	ND	ND
Dibenzo(a,h)anthracene	0.198	0.66	ND	.089 J	ND	ND	ND
PESTICIDES (mg/kg)							
Aroclor-1254	0.039	0.49	ND	**0.75 D**	ND	ND	ND
4,4'-DDE	0.0037	2	0.071	0.0035 JP	0.0035 J	ND	0.0083 P
4,4'-DDD	0.0037	3	ND	0.012 P	0.0098	0.0073	0.26
4,4'-DDT	0.0037	2	0.053	0.062 P	0.0058	ND	0.046
METALS TOTAL (mg/kg)							
Aluminum	3.9	NLE	15700	6450	5430	2920	7310
Arsenic	0.35	20	31.6	5.7	8.5	2.6	15.7
Barium	0.17	700	26	36.2	58.6	23.6	326
Beryllium	0.1	1	1.7	0.58	0.51	0.28	**1.5**
Calcium	2.2	NLE	653	655	976	502	1270
Cadmium	0.86	1	ND	ND	ND	ND	0.9
Cobalt	0.71	NLE	4.5	0.95	4.2	0.91	5.9
Chromium	1.6	500	128	69.9	48.6	32.2	56.5
Copper	2.2	600	7.27[1]	2.7	2.9	2.7	5.5
Iron	0.58	NLE	45500	20400	19200	11100	17600
Lead	0.4	400[2]	15.1[1]	8.1	7.5	3.1	5.6
Magnesium	9.6	NLE	3960	1720	1270	776	1880
Manganese	0.18	NLE	120[1]	25.1	24.8	12.5	35.1
Nickel	1.4	250	8.3	4.9	11.2	2.6	23.2
Potassium	(12.3-25.8)	NLE	10600	4210	2610	1980	3350
Selenium	0.3	63	0.85	0.29	0.7	0.2	4.2
Vanadium	0.53	370	59.6	36.6	29.1	19.4	23.6
Zinc	0.41	1500	55.6	27.8	44.2	19.3	63.9

Compounds exceeding NJDEP soil cleanup criteria are noted by bold numbers.
J- Indicates that the concentration value was estimated due to detection at or near the quantification limit
P- The percent difference between the results from two GC cloumns is greater than 25% the lower of the two values is reported
ND - Indicates that the compound was not detected at or below the quantification limits
NLE- No Level Established
ft bgs. - feet below ground surface.
Note: MDL's for metal analysis is actually the highest detection limit with potassium given as a range due to high variability.
[1] Monmouth County maximum background concentrations.
[2] NJDEP criteria are referenced in Site Remediation News, Winter 1995.
D - Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis.

Metals

As indicated in Table 4.3-5, of the 18 metals detected in site soil, only beryllium in SB-33 was found at a concentration slightly exceeding the NJDEP SCC. Although beryllium was detected in a concentration greater than the established Monmouth County background level, the metal was detected below the site-specific background level.

4.3.3.6 Groundwater Sampling Results

Monitor wells at site CW-2 were sampled for the analytical parameters listed in Table 3.8-1. The analytical results for groundwater samples from the individual sampling rounds are listed in Appendix D. Table 4.3-6 compares the average concentrations of the detected compounds from the February and March sampling rounds with the NJDEP GWQC, and then compares the results with the site-specific and Monmouth County maximum background levels, where appropriate.

VOCs

Tetrachloroethene was the only VOC detected in site groundwater. The compound was detected in a concentration that was below the quantitation limit but slightly exceeding the NJDEP GWQC from the March sampling round only in MW-32 (Figure 4.3-5). Tetrachloroethene was not detected in MW-32 in the February sampling round.

SVOCs

One SVOC (di-n-butyl phthalate) was detected above the laboratory quantitation limit in MW-31 from the March sampling round. Di-n-butyl phthalate was detected well below the NJDEP GWQC. SVOCs detected below the laboratory quantitation limit were also detected below the NJDEP GWQC.

Table 4.3-6
Fort Monmouth - Charles Wood
Summary of Average Concentrations of Detected Compounds in Groundwater - Site CW-2

COMPOUND	METHOD DETECTION LIMIT (µg/L)	NJDEP GROUNDWATER QUALITY CRITERIA (µg/L)	MAXIMUM BACKGROUND CONCENTRATION (µg/L)	ANALYTICAL RESULTS (µg/L) SAMPLING DATE			
				MW30 2/21/95, 3/14/9 (avg.)	MW31 2/21/95, 3/14/9 (avg.)	MW32 2/21/95, 3/14/95 (avg.)	MW33 2/21/95, 3/14/95 (avg.)
VOC's (µg/L)							
Tetrachloroethene (PCE)[1]	2.7**	1*	ND	ND	ND	**4J**	ND
SVOCs (µg/L)							
1,2,4 Trichlorobenzene	9.6**	9	ND	ND	5J	ND	ND
bis-(2ethylhexyl)phthalate	9.7	30*	600	2J	ND	1.5 J	1.5 J
Di-n-butylphthalate	6.5	900	ND	4J	5.5	4J	4J
METALS TOTAL (µg/L)							
Aluminum	24	200	8210	129	17.65	**447.5**	**676**
Arsenic	1.9	8*	25.1	ND	ND	ND	1.5
Barium	1.7	2000	400[1]	233.5	180.5	211	234
Calcium	10.4	NLE	8700	63600	36050	46250	51250
Cobalt	2.3	NLE	30.6	ND	ND	ND	2.9
Chromium	2.9	100	49.6	ND	ND	ND	2.15
Copper	1.9	1000	730[1]	3.8	2.15	2	11.9
Iron	6.4	300	27000[1]	**45750**	**36350**	**48950**	**54450**
Potassium	685	NLE	4630	9980	8710	9580	8455
Magnesium	18.3	NLE	25000[1]	7045	4775	5595	6100
Manganese	1.8	50	480[1]	**365**	**222.5**	**268.5**	**273**
Sodium	30.5	50000	36400	17100	10325	11800	14350
Nickel	10.8	100	48.3	10.65	ND	11.75	2.7
Lead	1.1	10*	<100[1]	ND	ND	0.7	3.3
Vanadium	2.3	NLE	28.9	ND	ND	3.05	5.15
Zinc	3.8	5000	133	5.7	3.9	13.85	25.6

[1] Same compound as listed by NJDEP Tetrachloroethylene

Compounds exceeding NJDEP groundwater quality criteria are noted by bold numbers.

*PQL - Practical Quantitation Limit -was used as the NJDEP groundwater quality criteria

NLE - No Level Established

J - Indicates that the concentration value was estimated due to detection at or near the quantitation limits

ND - Indicates that the compound was not detected at or below the quantitation limit

** Method detection limit exceeded NJDEP groundwater quality criteria

[1] - Monmouth County maximum background concentrations.

Pesticides/PCBs

Pesticides/PCBs were not detected in the site monitor wells from either sampling round.

Metals

As indicated in Table 4.3-6, of the 16 metals detected in site groundwater, 3 metals (aluminum, iron, and manganese) were found in concentrations exceeding the NJDEP GWQC. In addition, iron was detected in concentrations greater than those determined for site-specific and Monmouth County maximum background at Charles Wood. The presence of iron in exceedence of the NJDEP GWQC may be attributable to the high concentrations of iron present in natural soil found in Monmouth County. Therefore, iron is not identified as a compounds of concern. Although manganese was detected in concentrations above the site-specific background level in MW-30, MW-32, and MW-33, manganese was found in concentrations below the Monmouth County background level. Aluminum was found in concentrations below both the site-specific and Monmouth County maximum background levels.

4.3.3.7 Recommendations

The results of the soil sampling indicate that one PCB compound (Aroclor-1254) was detected in SB-30 at a concentration slightly above the NJDEP SCC. PCB compounds were not detected in the other three soil borings. In addition, PCBs were not detected in groundwater samples in the corresponding well location, MW-30.

Groundwater sampling results indicate that PCE was detected in the groundwater in one of the four wells (MW-32) in one of the two sampling rounds at levels slightly exceeding the NJDEP GWQC.

Although NJDEP groundwater criteria were exceeded by one VOC at this site, immediate remedial action is not required. The source of contamination has been eliminated since chemicals are not being disposed of in the pit. The pit was cleaned in October 1992 and the limestone

sludge was removed and disposed of as a hazardous waste. Hazardous waste is currently collected for proper disposal off-site and waste is no longer disposed of in the pit. Shallow groundwater flows toward and discharges to the headwaters of Wampum Brook, as indicated by water-level measurements from site monitor wells. There are no known uses of groundwater at or downgradient of the site. Surface-water samples were taken in Wampum Brook in the Charles Wood area and Mill Creek (as Wampum Brook is called further to the east) for use as background samples. No VOCs were detected in these samples, therefore, there is no immediate threat to human health.

The extent of PCE concentrations in groundwater will be investigated by soil-gas survey techniques. The soil-gas survey will be performed on an established grid pattern to estimate the lateral extent of VOCs in the vicinity of the neutralization pit. The results of the soil-gas survey will be used to locate two additional monitor wells if necessary. DPW proposes that a long-term groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells and from the two newly installed monitor wells. Compounds of concern identified in the first two rounds of sampling would be targeted for the monitoring program. When the additional monitor wells are installed, soil samples will be collected for PCB analysis because of the detection of PCBs in a soil sample collected from SB-30.

Site CW-3

4.3.4 Landfill 3 (CW-3)

4.3.4.1 Site Location

Landfill 3 is located in the southeastern part of Charles Wood (Figure 4.3-6) and has been designated a construction area. The approximate area of Landfill 3 is 39,758 ft^2 (0.91 acre).

4.3.4.2 Site History

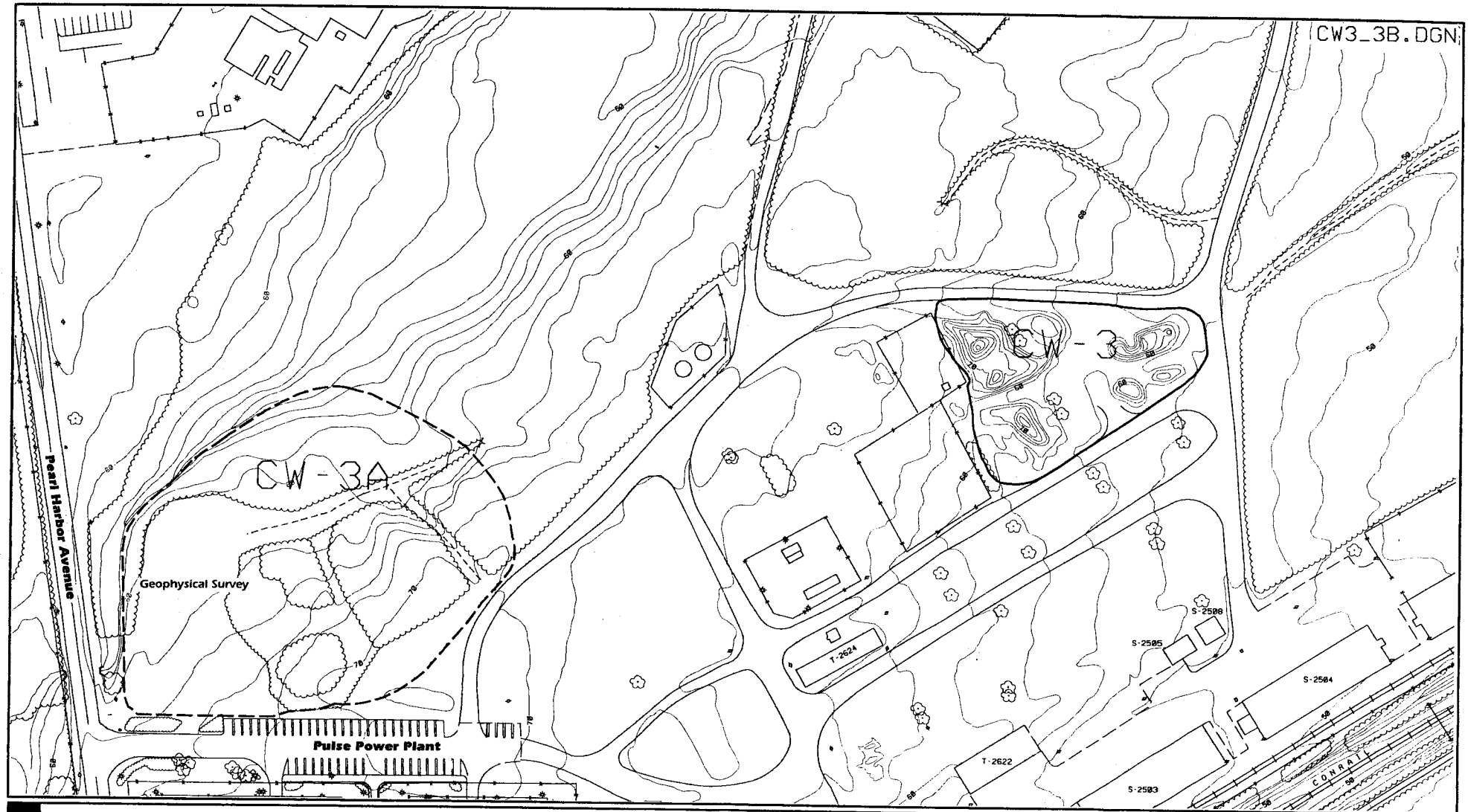
According to the IA, the Army Air Force used this area to dispose of administrative-type wastes and wood in the 1940s. Beginning in 1951, the aerial photographs show a cleared area used for storage. In 1981 and 1986, this area was relatively clear. During the 1993 site visit, the CW-3 area was being used as a construction rubble dump. Material observed included soil piles, brush, concrete, wood demolition debris, wood pallets, metal, and PVC pipe. There is no evidence of a subsurface landfill, and long-term Fort Monmouth employees said that this area was not used as a landfill.

4.3.4.3 Sampling Effort

Landfill 3 is shown in Figure 4.3-6. During the field investigation activities conducted between November 1994 and January 1995 at Fort Monmouth, construction rubble was present at site CW-3. The proposed sampling activities included collecting surface soil samples for TCL +30 parameters and TAL metal analysis if any evidence of soil staining was observed following the removal of the rubble. In addition, if high levels of chemical constituents were found in soils, monitor wells would be installed and sampled twice for TCL +30 parameters and TAL metals. Field sampling activities were postponed until the rubble could be removed. In June 1995, the construction rubble was removed. Exploratory trenches are planned to determine if any subsurface debris or soil staining is evident. However, because the area is believed to not have been used as a landfill, it is not anticipated that subsurface debris and soil staining will be found.

4.3.4.4 Recommendations

Investigation activities were not conducted as part of this investigation because of construction rubble that was present at the site during the field effort, which prohibited sample collection as planned. The rubble was removed and properly disposed of in June 1995 and exploratory trenches are planned to determine if any subsurface debris or soil staining is present. Field screening will be performed during excavation using a PID. NJDEP will be requested to send a representative to observe the investigation. In the absence of any elevated PID readings or evidence of subsurface debris, the excavation will be backfilled and no further action will be taken. If contamination is identified, then sampling will be conducted in accordance with the *Technical Requirements for Site Remediation* (NJDEP, 1993). Soil sample analytes will be collected and analyzed for the full range of contaminants.



Fort Monmouth, Charles Wood

FIGURE 4.3-6
LANDFILLS 3 (CW-3) AND 3A (CW-3A)

Site CW-3A

4.3.5 Debris Site (CW-3A)

4.3.5.1 Site Location

Debris Site CW-3A is located west of the CW-3 area, north of Pulse Power, Building 2707 (Figure 4.3-6). The approximate area of site CW-3A is 116,000 ft^2 (2.6 acres).

4.3.5.2 Site History

According to long-term Fort Monmouth employees, the area north of Pulse Power was used as a disposal area. The 1957 aerial photograph shows the CW-3A area with bare ground. According to *Fort Monmouth History and Place Names, 1917-1959*, 90 buildings at Charles Wood were razed in late 1955 and during 1956. It is possible that the demolition debris from these buildings was placed in this area. In the 1974 aerial photo, a steel igloo is visible on this area. By 1986, the western part of this area had not revegetated. During the 1993 site visit, some small debris was observed in the woods.

4.3.5.3 Sampling Effort

Site CW-3A is also presented in Figure 4.3-6. Surface geophysics were conducted in this area because it was not known if subsurface disposal had occurred in this area and in accessible cleared areas to the southeast in the construction areas. Magnetic and electromagnetic (EM-31) measurements were collected on 10-ft centers. GPR was also used to assess the degree of subsurface soil disturbance.

4.3.5.4 Geophysical Results

The geophysical investigation at Charles Wood site CW-3A utilized EM, MAG, and GPR methods to characterize the site. Prior to the investigation, a site walk revealed numerous metallic objects on the surface in the form of pipes, sheet metal, metal cans, and concrete, as well as nonmetallic objects such as asphalt and construction debris. The debris was noted and considered during data interpretation.

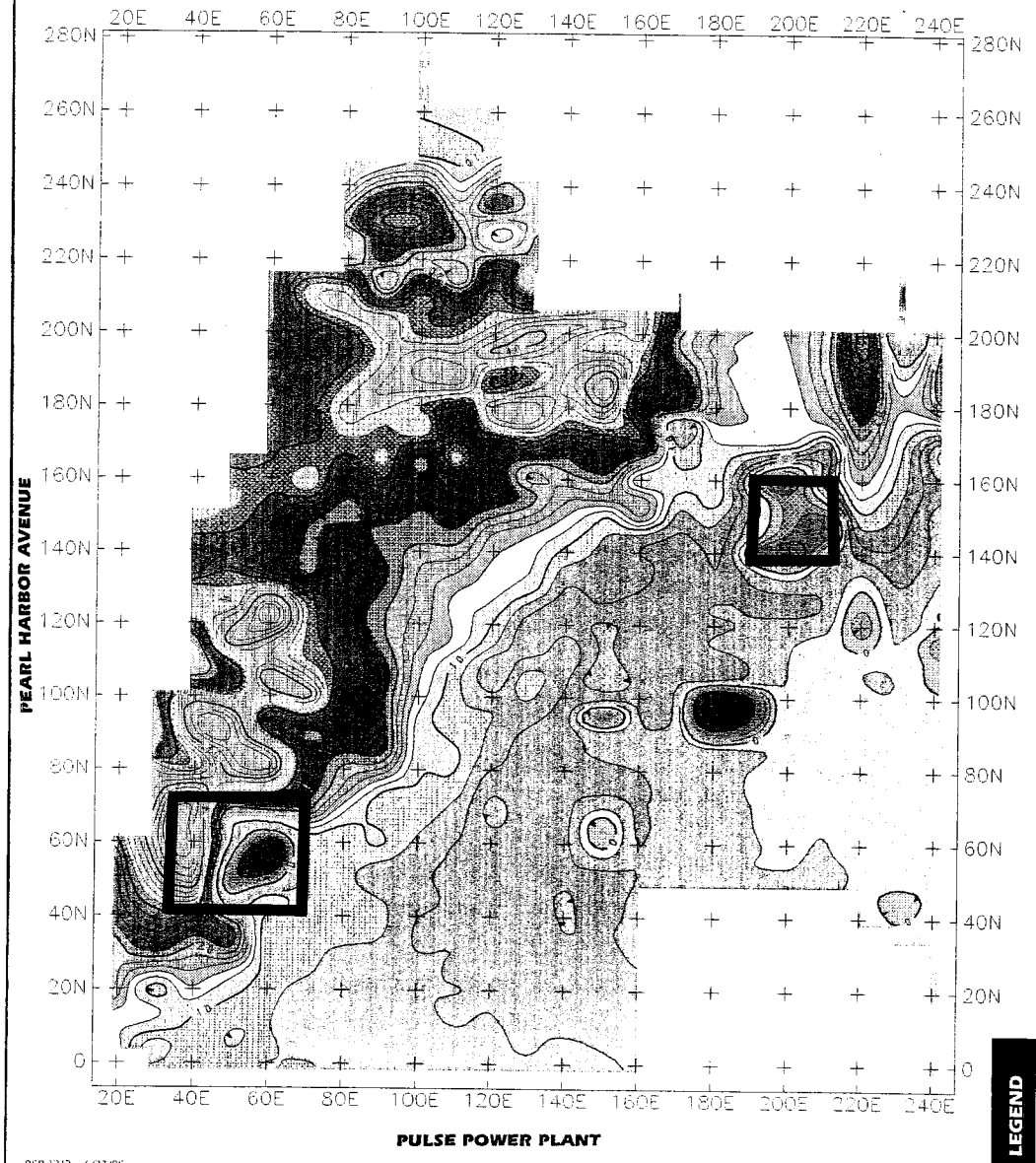
The EM survey revealed prominent anomalous signatures not attributed to surface debris at grid coordinates 40N to 70N/40E to 70E and 140N to 160N/190E to 210E. These anomalies are shown on the EM quadrature and in-phase contour plots, Figures 4.3-7 and 4.3-8, respectively, as either violet or blue contour intervals (high and low conductivity, respectively). These two EM anomalies are confirmed by the magnetometer survey as being ferrous material. As shown on the total magnetic field and magnetic gradient contour plots, Figures 4.3-9 and 4.3-10, respectively, these anomalies are represented as a high and low pair or magnetic dipole with violet and blue contour intervals. Other subtle anomalies exist throughout the area, as depicted on the EM in-phase plot in Figure 4.3-8, which may indicate metallic debris. However, the size and magnitude of these EM signals are negligible. Also, the EM quadrature plot (Figure 4.3-7) shows high apparent conductivity, represented by the violet contour interval, along the north and western borders of the site. This higher conductivity may be due to a subsurface change in lithology.

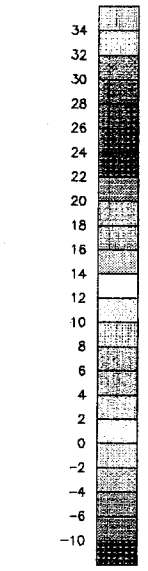
The GPR survey at CW-3A revealed chaotic reflectors within grid coordinates 40N to 70N/40E to 70E, confirming the EM and MAG anomalies at a depth of approximately 2 to 3 ft bgs. These chaotic reflectors are indicative of buried metallic debris and are shown on the GPR profile along 60N in Figure 4.3-10A.

4.3.5.5 Recommendations

Geophysical surveys indicated two areas where subsurface metallic debris may be present.

Exploratory trenching will be performed to investigate areas where subsurface metallic debris may be present. Field screening will be conducted with a PID during the excavation. NJDEP will be requested to send a representative to observe the excavation. In the absence of elevated PID readings or evidence of subsurface debris, the excavation will be backfilled and no further action will be taken. If contamination is identified, then sampling will be conducted in accordance with the *Technical Requirements for Site Remediation* (NJDEP, 1993). Soil sample analytes will be collected and analyzed for the full range of contaminants.





millimhos per meter
(mmhos/m)

LEGEND

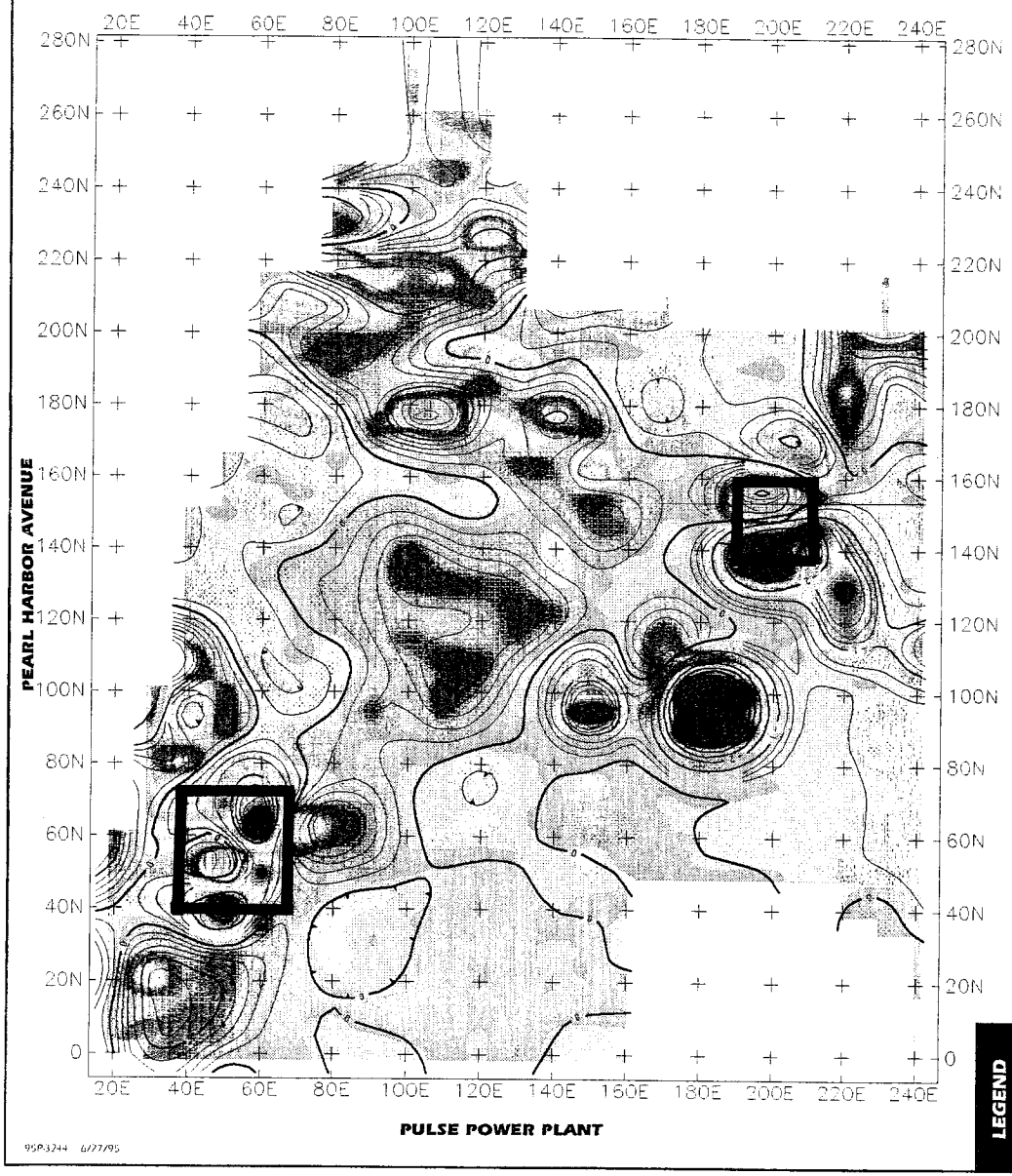
Subsurface Metallic Debris

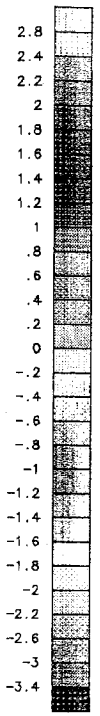
0 25 50 75
SCALE IN FEET

95P-3243 6/27/95

Fort Monmouth, Charles Wood Site CW-3A

FIGURE 4.3-7
ELECTROMAGNETIC SURVEY
QUADRATURE COMPONENT – SITE CW-3A





LEGEND

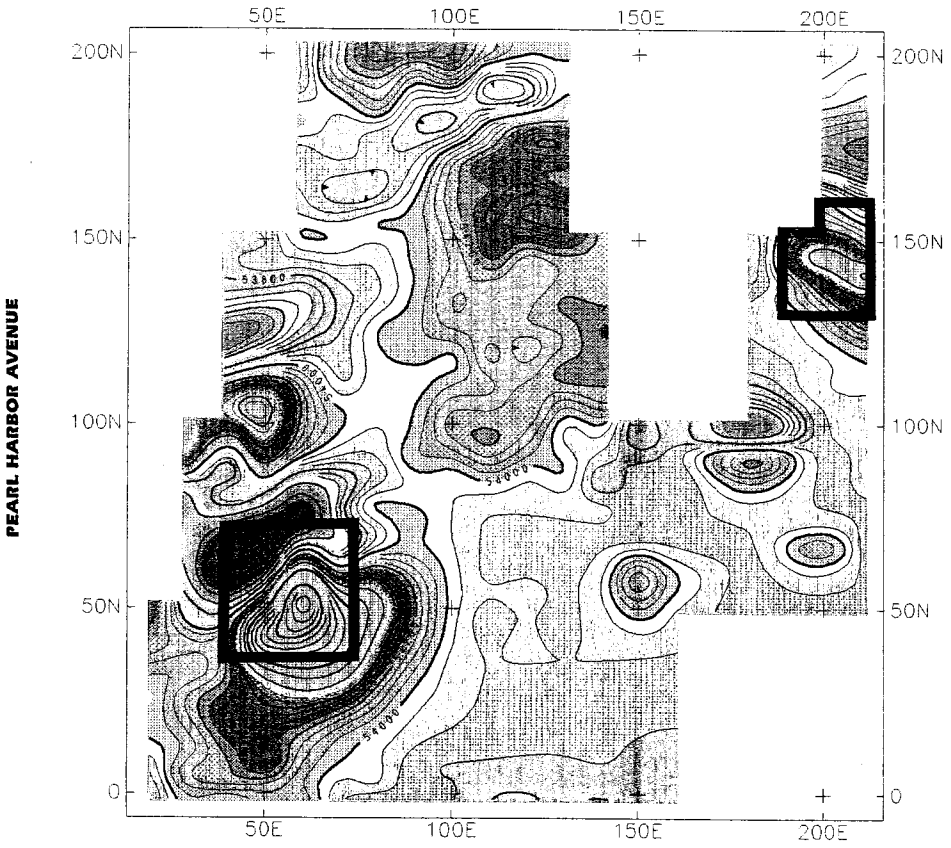
Subsurface Metallic Debris

0 25 50 75

SCALE IN FEET

Fort Monmouth, Charles Wood Site CW-3A

FIGURE 4.3-8
ELECTROMAGNETIC SURVEY
IN PHASE COMPONENT – SITE CW-3A



LEGEND

Subsurface Metallic Debris

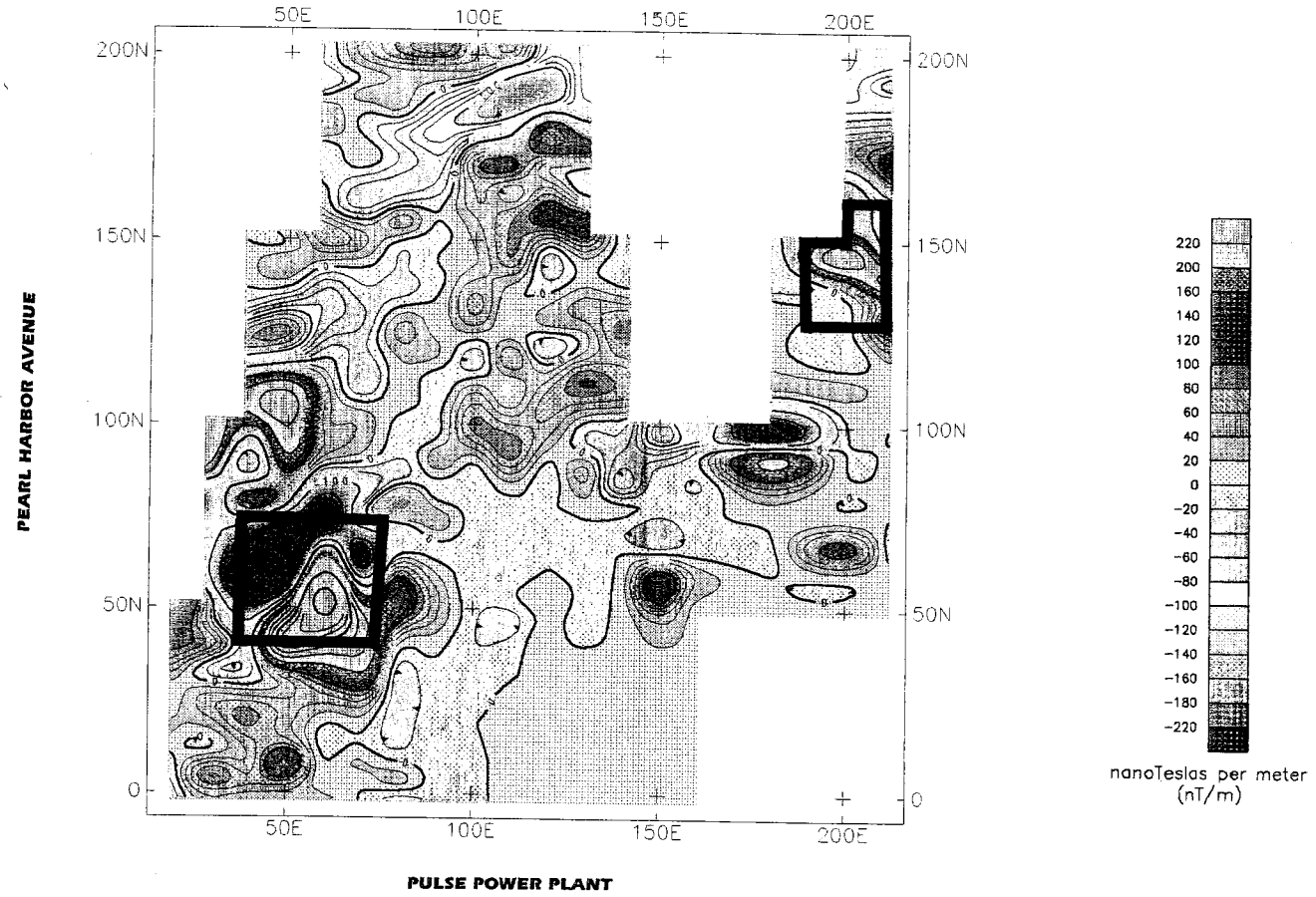
0 25 50 75

SCALE IN FEET

Fort Monmouth, Charles Wood Site CW-3A

FIGURE 4.3-9
MAGNETOMETER SURVEY
TOTAL MAGNETIC FIELD – SITE CW-3A

95P-3245 6/27/95



Fort Monmouth, Charles Wood Site CW-3A

FIGURE 4.3-10
MAGNETOMETER SURVEY
MAGNETIC GRADIENT – SITE CW-3A

95P-3246 6/27/95

FIGURE 4.3-10A RADAR PROFILES SHOWING SUBSURFACE ANOMALY AT SITE CW-3A

Site CW-4

4.3.6 Range (Small Arms) (CW-4)

4.3.6.1 Site Location

The small arms firing range is a one-story building (Building T-2537) located in the central portion of the Charles Wood area (Figure 4.3-11). The approximate area of site CW-4 is 32,000 ft^2 (0.7 acre). The range is used for indoor firing of small arms. The small arms are fired into a metal baffle that deflects the rounds down into a sand pit. Currently, the sand is sifted and spent rounds and shell-casings are disposed of off-site. The firing range area is ventilated by a blower through a filter. The filter currently used is a Flanders Filters Model No. 0-00J-C-11-00-CL-12-00-GGF. It has an efficiency of 95%, based on a di-octyl-phthalate (DOP) test. A manufacturer's representative stated that he believes this filter would be close to 100% efficient in removing the likely particulates generated in a firing range.

Spend rounds are visible at the surface of a bare patch of soil about 3 ft in diameter northeast of the building. A pile of sand is on the northwest side of the building.

4.3.6.2 Site History

Interviews with facility personnel indicate that the interior of the building is cleaned periodically. The building is currently in use.

4.3.6.3 Sampling Effort

The CW-4 site is presented in Figure 4.3-11. The facility personnel intend to excavate the soil at the bare patch until spent rounds and shell casings are no longer visible. Because contaminated soil had not been excavated prior to the field effort, one soil boring was installed in place of two of the three surface soil samples proposed in the CDAP. The soil boring was drilled near the debris pile to a depth of 8 ft bgs, where saturation was noted at approximately 6.1 ft bgs. The lithology consisted of an orange-brown sand with trace silt. The soil sample from soil boring SB-01 was collected at a depth of 4 to 6 ft bgs and analyzed for TCL +30 parameters, TAL metals, and TPHs. One surface soil sample was collected from the bottom of

the sand pile (sample SS-01) using a scoop to dig 6 inches below the bottom of the pile in one location. No firing debris was observed. Surface soil boring SS-01 was analyzed for TAL metals only.

4.3.6.4 Soil Sampling Results

Two soil samples were collected, one sample (SB-01) from the 2- to 6-ft bgs sampling interval in the soil boring at the debris pile, and one sample (SS-01) from the 0 to 0.5-ft bgs interval from the sand pile in the rear of the building. The samples were analyzed for the parameters listed in Table 3.6-1. The analytical results for site soils are listed in Appendix D. Table 4.3-7 compares the detected compound concentrations with the NJDEP SCC, and then compares the results with the subsequent site-specific and Monmouth County maximum background concentrations. In addition, the results were also compared with the impact to groundwater SCC because no monitor wells were installed at this site.

VOCs

VOCs were not detected in site soil.

SVOCs

SVOCs were not detected in site soil.

TPHs

Petroleum hydrocarbons were not detected in site soil.

Pesticides/PCBs

Pesticides/PCBs were not detected in site soil.

Table 4.3-7
Fort Monmouth - Charles Wood
Summary of Detected Compounds
In Soils from Site CW-4

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	MAXIMUM BACKGROUND CONCENTRATION (mg/kg)	ANALYTICAL RESULTS	
				SB01-A02 12/21/94 (4-6 ft bgs)	SS01-A01 11/30/95 (0-0.5 ft bgs)
METALS (mg/kg)					
Aluminum	3.9	NLE	15700	5030	687
Arsenic	0.35	20	31.6	1.5	7.8
Antimony	0.3	14	ND	ND	2.5
Barium	0.17	700	26	2.7	17.7
Beryllium	0.1	1	1.7	0.47	0.76
Calcium	2.2	NLE	653	302	699
Chromium	1.6	500	128	63.5	58.3
Cobalt	0.71	NLE	4.5	ND	0.62
Copper	2.2	600	7.27[1]	379	3.2
Iron	0.58	NLE	45500	11500	19700
Lead	0.4	400[2]	15.1[1]	**1440**	8.9
Magnesium	9.6	NLE	3960	1320	1450
Manganese	0.18	NLE	120[1]	8.8	26.2
Nickel	1.4	250	8.3	1.5	2.3
Potassium	(12.3-25.8)	NLE	10600	3490	2720
Silver	0.54	110	0.26[1]	ND	0.76
Selenium	0.3	63	0.85	ND	0.33
Sodium	3.8	NLE	50000	ND	16
Vanadium	0.53	370	59.6	20.6	37.3
Zinc	0.41	1500	55.6	42.6	24.6

Compound exceeding NJDEP soil cleanup criteria are noted by bold numbers.

ND - Indicates that the compound was not detected at or below the quantification limits

NLE - No Level Established

Note: MDL's for metal anaysis is actually the highest detection limit with potassium given as a range due to high variability.

[1] Monmouth County maximum background concentrations.

[2] NJDEP criteria are referenced in Site Remediation News, Winter 1995.

Metals

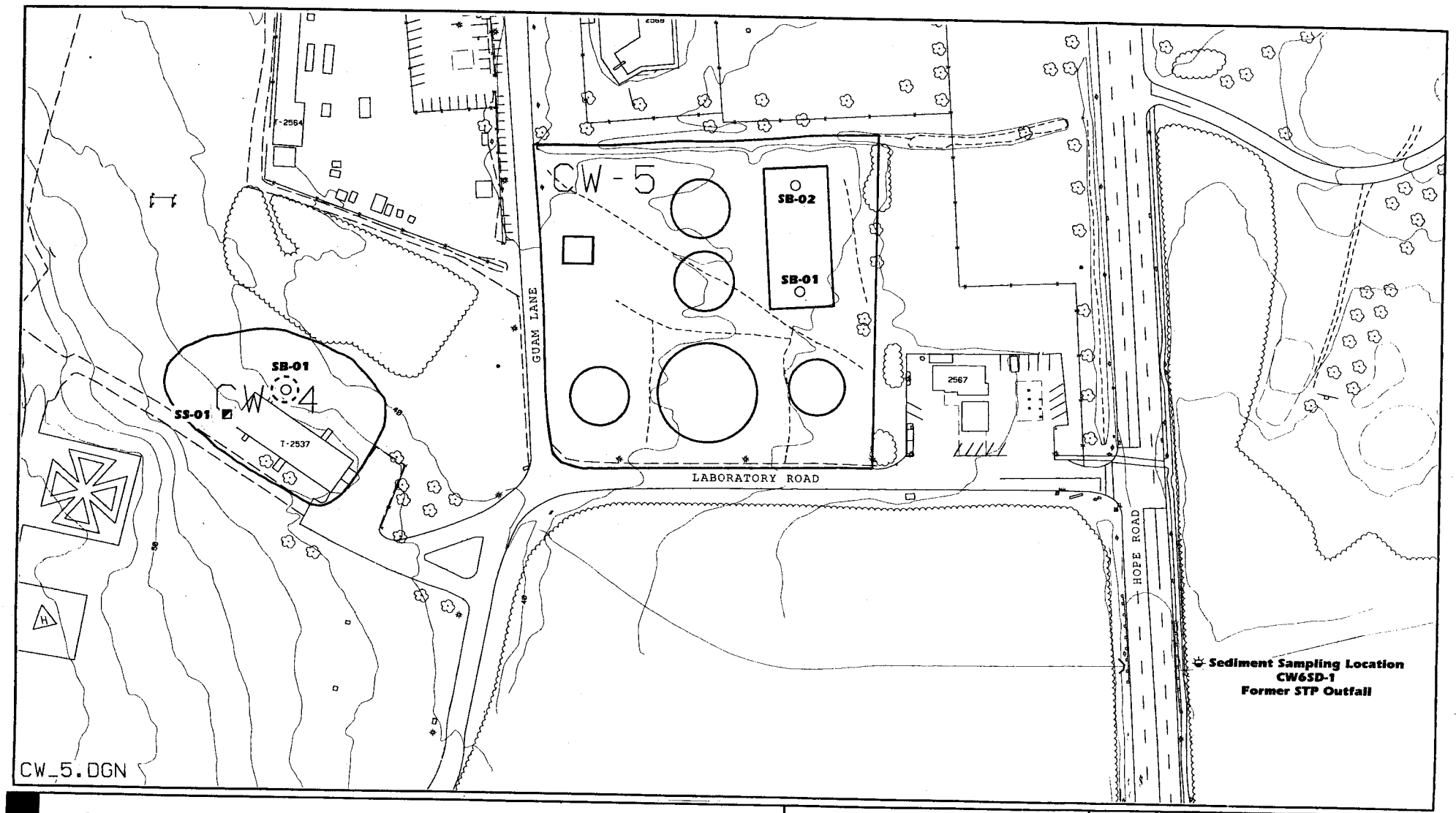
As indicated in Table 4.3-7, of the 20 metals detected in site soil, only lead was found in a concentration exceeding the NJDEP SCC. In addition, lead was detected in a concentration in SB-01 greater than the site-specific and Monmouth County maximum background levels for Charles Wood. The presence of lead in exceedance of criteria in the soil is reflective of the site's use for disposal of spent rounds. Figure 4.3-12 shows the locations of the compounds detected above the NJDEP SCC and above the established background levels for Charles Wood.

4.3.6.5 Recommendations

Soil sampling results indicate that only lead was detected at a concentration exceeding the NJDEP SCC at the spent round disposal area.

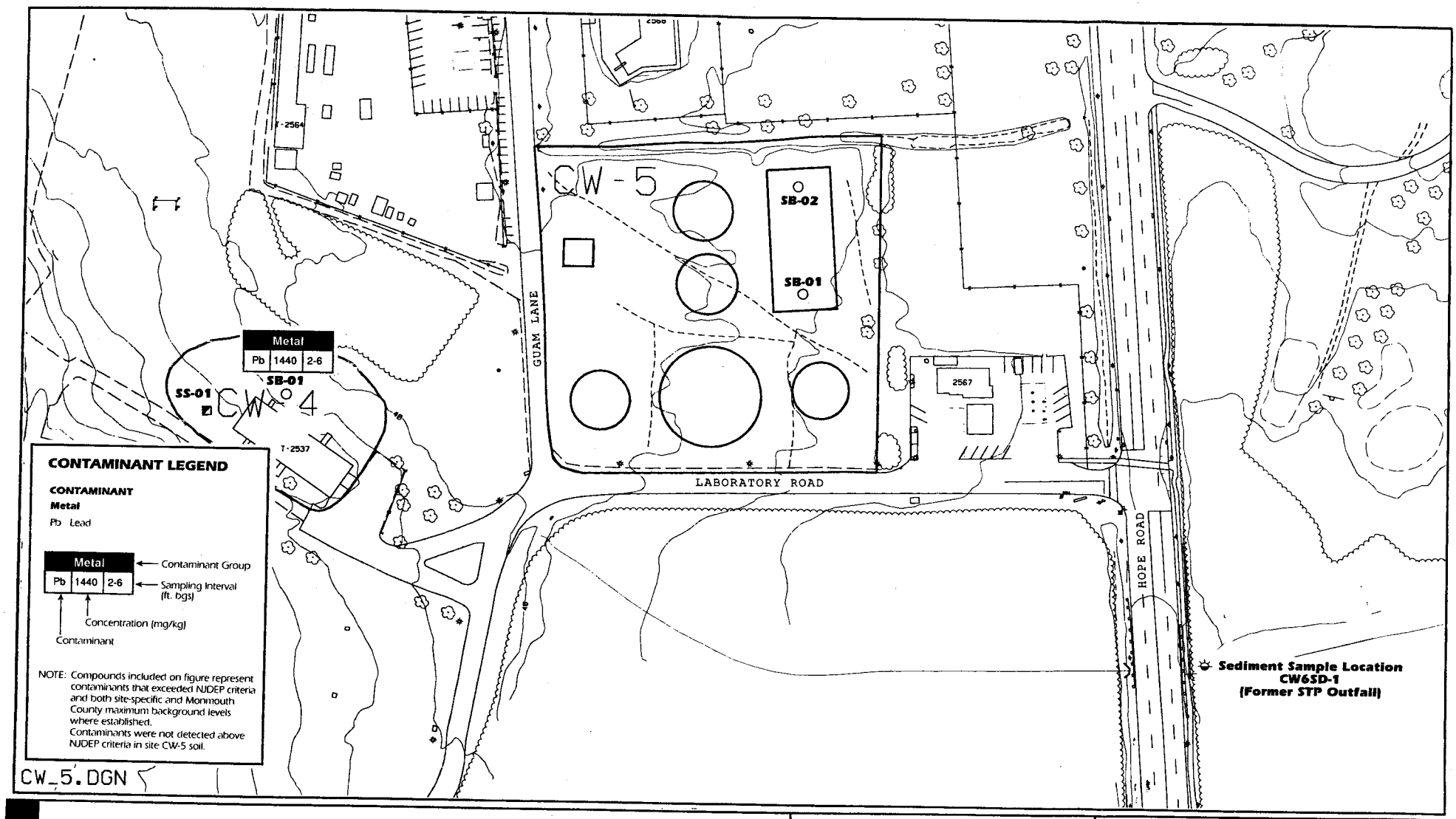
DPW has submitted the necessary documentation to HQAMC/AEC to obtain the proper funding to remediate the site in FY 1996. Depending on funding availability, the affected soil will be removed and confirmation samples will be collected at the base of the excavation.

The contaminated soil will be removed and disposed of in accordance with applicable regulations. The area of contamination is approximately 8 feet in diameter. The estimated depth of excavation is assumed to be 7 feet. Excavation will be performed in conjunction with confirmatory sampling to ensure that NJDEP SCC are achieved. It is estimated that 17 yd^3 of soil will be excavated, assuming that soil is excavated to a depth of 7 feet. NJDEP will be requested to send a representative to observe the excavation.



Fort Monmouth, Main Post

FIGURE 4.3-11
SMALL ARMS RANGE (CW-4) AND FORMER SANITARY TREATMENT PLANT (CW-5) SAMPLING LOCATIONS



Fort Monmouth, Charles Wood

FIGURE 4.3-12
SMALL ARMS RANGE (CW-4) AND FORMER SANITARY TREATMENT PLANT (CW-5) DISTRIBUTION OF CONTAMINANTS IN SITE SOILS

Site CW-5

4.3.7 Former Sanitary Treatment Plant (CW-5)

4.3.7.1 Site Location

The former STP at Charles Wood was located in the southwest corner of the area bounded by Hope Road to the east, Corregidor Road to the north, Guam Lane to the west, and Laboratory Road to the south (Figure 4.3-11). The approximate area of the STP was 134,080 ft^2 (3.1 acres).

4.3.7.2 Site History

The Charles Wood STP was built in 1942 to handle 800,000 gallons of sewage per day. As described in the IA, this STP consisted of a grit chamber screen, comminutor, primary and secondary settling tanks, biofilters, and a baffled contact chlorination tank. Sludge was treated in two anaerobic digesters and discharged to underdrained sand beds for final drying. Supernatant liquid from digester sludge and drainage from the sand beds were recycled through the STP for additional treatment. The chlorinated effluent was discharged to a tributary of Wampum Brook on the east side of Hope Road. Sludge went to the golf course and to landfills. This STP was closed on 29 October 1975 when the Charles Wood sewer system was connected to the NMCRSA system. In 1981, all sludges and supernatant liquids were removed from the STP, and the facility was cleaned and disinfected. The removal contractor was Modern Transportation Co. of Kearny, New Jersey. Mercury used in the distributor seal on the biofilter was removed and disposed of by the Directorate of Logistics. The physical facility was demolished in 1983. In 1993, a youth center was constructed on this site.

4.3.7.3 Sampling Effort

The CW-5 site is presented in Figure 4.3-11. One sediment sample from the outfall area east of Hope Road was collected and analyzed for TCL +30 parameters, TAL metals, and cyanide. Two soil borings were completed and soil samples collected in an effort to evaluate the impact of the former sludge-drying beds on soil quality in the original land surface. Soil borings SB-01 and SB-02 were completed to 8- and 6-ft bgs, respectively. Saturation was observed between 5.5- and 7-ft bgs. The lithology consisted of a yellow-brown gravelly sand fill underdrain by a

greenish-gray silty sand. Soil boring samples were analyzed for TCL +30 parameters, TAL metals, and cyanides.

4.3.7.4 Soil Sampling Results

Two soil samples, one in each borehole, were collected from the 6- to 8-ft bgs sampling interval and were analyzed for the parameters listed in Table 3.6-1. The analytical results for site soils are listed in Appendix D. Table 4.3-8 compares the detected compounds with the NJDEP SCC, and then compares the results with the site-specific and Monmouth County maximum background levels. In addition, the detected compounds were also compared with the impact to groundwater SCC because no monitor wells were installed at this site.

VOCs

One VOC (2-butanone) was detected in SB-01. The concentration was detected well below both applicable SCC (residential and impact to groundwater) and background. 2-Butanone is a common laboratory contaminant.

SVOCs

One SVOC was detected above the laboratory quantitation limit in site soil in SB-01, but below the NJDEP SCC and background. In addition, all compounds detected below quantitation limits were also detected well below both SCCs.

Pesticides/PCBs

Five pesticides and two PCBs were detected in concentrations above laboratory quantitation limits in SB-01 and SB-02, but were detected well below both of their respective SCCs and background.

Table 4.3-8
Fort Monmouth - Charles Wood
Summary of Detected Compounds in
Soil from Site CW-5

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	MAXIMUM BACKGROUND CONCENTRATION (mg/kg)	ANALYTICAL RESULTS	
				SB01-A02 12/20/94 6-8 ft bgs	SB02-A02 12/20/94 6-8 ft bgs
VOC's (mg/kg)					
2-Butanone	0.0041	1000	ND	0.013	0.01 J
SVOC's (mg/kg)					
Indeno(1,2,3-cd)pyrene	0.234	0.9	ND	0.066 J	ND
Benzo(a)anthracene	0.162	0.9	0.046 J	0.14 J	ND
bis(2-Ethylhexyl)phthalate	0.32	49	0.17 J	0.21	ND
Benzo(b)fluoranthene	0.188	0.9	0.078 J	0.22 J	ND
Benzo(k)fluoranthene	0.205	0.9	0.041 J	0.084 J	ND
Benzo(a)pyrene	0.162	0.66	0.047 J	0.110 J	ND
Chrysene	0.145	9	0.083 J	0.15 J	ND
Fluoranthene	0.198	2300	0.042 J	0.21 J	ND
Phenanthrene	0.165	NLE	ND	0.085 J	ND
Pyrene	0.178	1700	0.048 J	0.25 J	ND
PESTICIDES (mg/kg)					
Aroclor-1254	0.042	0.49	ND	0.17	ND
Aroclor-1260	0.042	0.49	ND	0.15	ND
alpha-Chlordane	0.002	NLE	ND	0.0084 P	ND
gamma-Chlordane	0.002	NLE	ND	0.0092	ND
4,4'-DDE	0.0037	2	0.071	0.21 P	0.0058
4,4'-DDD	0.0037	3	ND	0.087	0.0035 J
4,4'-DDT	0.0037	2	0.053	0.087	ND
METAL TOTAL (mg/kg)					
Aluminum	3.9	NLE	15700	3920	3400
Arsenic	0.35	20	31.6	3.8	1.5
Barium	0.17	700	26	36.2	21
Beryllium	0.1	1	1.7	0.14	0.32
Calcium	2.2	NLE	653	1000	851
Chromium	1.6	500	128	42.2	38.3
Colbalt	0.71	NLE	4.5	1	ND
Copper	2.2	600	7.27[1]	21.5	2
Iron	0.58	NLE	45500	8950	5930
Lead	0.4	400[2]	15.1[1]	20.7	3.3
Magnesium	9.6	NLE	3960	527	717
Manganese	0.18	NLE	120[1]	19.7	7.2
Mercury	0.49	14	ND	0.63	ND
Nickel	1.4	250	8.3	2.7	1.6
Potassium	(12.3-25.8)	NLE	10600	944	1880
Silver	0.54	110	.26[1]	7.4	ND
Sodium	3.8	NLE	56.8	28.9	13.5
Selenium	0.3	63	0.85	0.4	0.35
Thallium	0.36	2	ND	ND	0.33
Vanadium	0.53	370	59.6	20.7	21.4
Zinc	0.41	1500	55.6	40.4	11.4

Compounds exceeding NJDEP soil cleanup criteria are noted by bold numbers.
J - Indicates that the concentration value was estimated due to detection at or near the quantification limits
ND - Indicates that the compound was not detected at or below the quantification limits
NLE - No level established
Note: MDL's for metal analysis is actually the highest detection limit with potassium given as a range due to high variability.
P- The percent difference between the results from two GC columns is greater than 25%, the lower of the two values is reported

[1] Monmouth County maximum background concentrations.

[2] NJDEP criteria are referenced in Site Remediation News, Winter 1995.

Metals

As indicated in Table 4.3-8, all metals detected in site soils were found in concentrations below the NJDEP SCC, where established.

4.3.7.5 Sediment Sampling Results

The STP sediment sampling location was determined to be freshwater because the area is not tidally influenced. One sediment sample, CW6SD-1, was collected at the former outfall of the STP (Figure 4.3-11).

VOCs

VOCs were analyzed for but were not detected in site sediment samples.

SVOCs

One SVOC [bis(2-ethylhexyl) phthalate] was detected above the laboratory quantitation limit from location C6SD1. NJDEP sediment guidance values are not established for this compound. This compound is a common laboratory contaminant.

Pesticides/PCBs

Three pesticide compounds (4,4'-DDD, 4,4'-DDT, and 4,4'-DDE) were detected in concentrations exceeding the NJDEP sediment guidance criteria. However, the concentrations were found in levels below their respective background concentrations. PCBs were not detected in site sediment samples.

Metals

As indicated in Table 4.3-9, no metals were detected in concentrations greater than the NJDEP sediment guidance criteria.

4.3.7.6 Recommendations

Three compounds (4,4′-DDT, 4,4′-DDD, and 4,4′-DDE) were detected in the sediment at levels that were above the NJDEP sediment guidance criteria but below background. Soil results were below the NJDEP SCC and established maximum background.

No further action will be taken.

Table 4.3-9
Fort Monmouth - Charles Wood
Summary of Detected Compounds in Sediment
Site CW-5

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	NJDEP SEDIMENT GUIDANCE * (mg/kg)	MAXIMUM DETECTED BACKGROUND CONCENTRATION (mg/kg)	ANALYTICAL RESULTS GIVEN BY WESTON SAMPLE LOCATION C6SD-1 12/1/94
SVOCs (mg/kg)				
bis-(2-Ethylhexy)phthalate	0.32	NLE	0.23	0.45
Dimethylphthalate	0.145	NLE	ND	0.40 J
Di-n-butylphthalate	0.215	NLE	0.12	0.081 J
Di-n-octyl phthalate	0.185	NLE	ND	0.11 J
PAHs (mg/kg)				
Benzo (a)anthracene	0.162	0.23	0.09	0.079 J
Benzo (b)fluoranthene	0.188	NLE	0.16	0.1 J
Chrysene	0.145	0.4	0.14	0.087
Fluoranthene	0.198	0.6	0.12	0.16 J
Phenanthrene **	0.165	0.225, 0.326	0.079	0.098 J
Pyrene	0.178	0.35	0.41	0.19 J
PESTICIDES/PCBs (mg/kg)				
4,4'-DDD	0.0042	0.002	0.015	**0.005 P**
4,4'-DDE	0.0042	0.002	0.096	**0.0067**
4,4'-DDT **	0.0042	0.003, 0.00183	0.11	**0.0029 JP**
Heptachlor epoxide	0.0021	NLE	ND	0.0042 P
METALS TOTAL (mg/kg)				
Aluminum	6.1	NLE	6660	866
Arsenic	0.35	33	5.8	0.74
Barium	0.48	NLE	45.7	9.6
Calcium	2.7	NLE	2960	509
Chromium	1.5	80	36.9	7.8
Cobalt	0.64	NLE	4.2	1.3
Copper	0.55	70	24.5	7.4
Iron	1.1	NLE	19600	6910
Lead	1.8	35	142	9.3
Magnesium	8.7	NLE	2560	320
Manganese	0.45	NLE	65.1	25.8
Potassium	186	NLE	1700	256
Sodium	3.5	NLE	271	54
Vanadium	0.66	NLE	39.5	5.4
Zinc	0.64	120	126	22.5

Compounds detected above NJDEP Sediment Guidance are bolded.

*- NOAA (1990) ER-L guidance. Values for DDE and DDD are not presented in NJDEP Sediment Quality Evaluations (1991).

** - Standards developed using equilibrium partioning approach in accordance with NJDEP Guidance for Sediment Quality Evaluation (1991). Total organic carbon concentrations of 1% assumed based on organic carbon content detected in adjacent sample.

ND - Compound was not detected at or above the quantification limit.

NLE - No Level Established

J - Concentration was estimated due to detection at or below the quantification limit

P - The percent difference between the results from the two GC columns is greater than 25%, the lower of the two values is reported

Site CW-6

4.3.8 Pesticide Storage Building T-2044 (CW-6)

4.3.8.1 Site Location

Building T-2044 is part of a small complex of buildings in the south-central portion of the Charles Wood area. The complex consists of Building T-2044, Building T-2070, and two metal igloos. The buildings are currently used to store golf course maintenance and landscaping equipment, such as mowers and tractors. The approximate area of site CW-6 is 25,000 ft^2 (0.6 acre).

4.3.8.2 Site History

The golf course maintenance complex may predate the purchase of the golf course by the Army. Pesticides and herbicides were formerly stored and mixed in this area. The IA contains a 1979 inventory of pesticides and herbicides that were used on the golf course and stored in Building T-2044. Some of the pesticides that were present in significant quantities are malathion, floriable sevin, resmithrin, Borocel IV, chlordane, and Dibrom. The IA also discusses a pest control program that was in effect in 1979. The compounds that were used in large quantities include carbaryl (sevin), malathion, chlordane, and diazinon. Some of the herbicides mentioned in the IA include 2,4-D, Dacthal, 2,4,5-T, and sodium arsenite.

The course groundskeeper, who has been part of the grounds crew for 33 years (1960 to 1993), said pesticides and herbicides were kept in a metal igloo and were mixed in two areas marked A and B in Figure 4.3-13. Area A is on a currently grass-covered area south of the igloo. At area A two USTs were excavated and the chlordane-contaminated soil was disposed of in spring 1995. Area B is on pavement near the office door in T-2044. This paved area has a drain that empties into a ditch in the woods immediately behind T-2044. The supervisor said that pesticide containers were not rinsed, but were disposed of to the landfill as is. Prior to 1980, the containers would have been disposed of at a landfill on the Main Post, such as site M-8.

Pesticides and herbicides are not currently stored or mixed on-site. The facility has hired an outside contractor to come in and apply pesticides and herbicides.

4.3.8.3 Sampling Effort

Limited sampling in 1989 determined that NJDEP SCC were exceeded in one soil sample. The sampling report did not clearly identify the location of the sample.

To confirm the existence of contamination and evaluate the effect on groundwater, two soil borings were completed at locations where pesticides mixing was believed to have occurred. These locations are just north of Building T-2044 (SB-02) and just south of the pavement that extends in front of Building T-2044 (SB-34). The borings were advanced to the water table and soil samples were taken at 6 to 12 inches and at 2 feet and analyzed for TCL +30 parameters. One surface soil sample was taken in the runoff ditch that runs into the woods southwest of Building T-2044 (Figure 4.3-13).

One monitor well was installed in these borings (MW-34), shown in Figure 4.3-13, and groundwater samples were collected in two sampling rounds and analyzed for TCL +30 parameters. Furthermore, a pre-existing monitor well (MW-01) was sampled twice for TCL +30 parameters in an effort to further evaluate the nature and extent of contamination on site groundwater quality.

The location of the monitor well proposed in the CDAP (MW-35) at site CW-6 was moved to site CW-9 because an existing monitor well was located near the proposed well location.

4.3.8.4 Hydrogeologic Interpretation

The lithologic logs from MW-34 indicate that the lithology consists of a thin soil cover (0.3 ft) underlain by a brown fine-medium-grained sand with olive-brown sand laminae. Saturation was observed at approximately 4 ft bgs. Monitor well MW-34 was screened across the water table and was drilled to 14.5 ft bgs. Water-level elevation data, measured on 6 March 1995, prior to the March sampling round, indicate that local groundwater flow is east toward site CW-9 (Figure 4.3-14).

The following subsections summarize the soil and groundwater analytical results for site CW-6.

4.3.8.5 Soil Sampling Results

A total of four soil samples were collected: two in the MW-34 borehole, one in SB-02, and one in SS-01. The soil samples were analyzed for the parameters listed in Table 3.6-1. Sample depths of soil borings were 0 to 2 and 2 to 4 ft bgs in SB-34 and 0.5 to 1 ft bgs in SB-02. The surface soil sample was collected from 0 to 0.5 ft bgs. The analytical results for site soils at specific sampling intervals are listed in Appendix D. Table 4.3-10 compares the detected compounds with the NJDEP SCC, and then compares the results with the site-specific and Monmouth County maximum background concentrations, where appropriate.

VOCs

VOCs were not detected in site soil.

SVOCs

SVOCs were not detected above laboratory quantitation limits in site soil.

Pesticides/PCBs

Seven pesticides were detected above laboratory quantitation limits in either SB-34, SB-02, and SS-01 from predominantly the 0- to 2-ft bgs sampling interval. In addition, one compound (dieldrin) was detected in a concentration exceeding the NJDEP SCC and background in SB-34 (0 to 2 ft bgs). Subsequently, dieldrin was not detected in groundwater samples from MW-34. Three of the compounds detected were below the NJDEP SCC and three do not have established criteria. PCBs were not detected in site soil. Figure 4.3-15 presents the locations of compounds detected above maximum background and the NJDEP criteria.

Table 4.3-10
Fort Monmouth - Charles Wood
Summary of Detected Compounds
In Soil at Site CW-6

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	MAXIMUM BACKGROUND CONCENTRATION (mg/kg)	ANALYTICAL RESULTS			
				SB34-A01 1/3/95 (0-2 ft bgs)	SB34-A02 1/3/95 (2-4 ft bgs)	SB02-A01 5/10/95 (0.5-1 ft bgs)	SS01-A01 11/30/94 (1)
SVOC's (mg/kg)							
Phenanthrene	0.165	NLE	ND	ND	0.24 J	ND	ND
Fluoranthene	0.198	2300	0.042 J	0.049 J	0.18 J	ND	ND
Pyrene	0.178	1700	0.048 J	0.056 J	0.270 J	ND	ND
Benzo(a)anthracene	0.162	0.9	0.046 J	ND	0.160 J	ND	ND
Chrysene	0.145	9	0.083 J	ND	0.15 J	ND	ND
Benzo(b)fluoranthene	0.188	0.9	0.078 J	ND	0.11 J	ND	ND
Benzo(a)pyrene	0.162	0.66	0.047 J	ND	0.087 J	ND	ND
Indeno(1,2,3-cd)pyrene	0.234	0.9	ND	ND	0.054 J	ND	ND
Benzo(g,h,i)perylene	0.224	NLE	0.042 J	0.057	0.066	ND	ND
PESTICIDES (mg/kg)							
Heptachlor epoxide	0.002	NLE	ND	0.018 P	ND	0.0078 P	0.032 R
Dieldrin	0.0039	0.042	ND	**0.061 DP**	ND	ND	ND
alpha-Chlordane	0.002	NLE	ND	0.14 P	0.0034 P	.07 JD	0.870 CD
gamma-Chlordane	0.002	NLE	ND	0.11 P	0.0027 P	.068 JD	0.800 CD
4,4'-DDE	0.0037	2	0.071	0.074 P	ND	0.34 JCD	0.13
4,4'-DDD	0.0037	3	0.053	0.0095 P	ND	2.9 CD	0.86 C
4,4'-DDT	0.0037	2	ND	0.180 P	.011 P	ND	0.81 C
METALS TOTAL (mg/kg)							
Aluminum	3.9	NLE	15700	NS	NS	NS	5130
Arsenic	0.35	20	31.6	NS	NS	NS	11.6
Barium	0.17	700	26	NS	NS	NS	72.2
Calcium	2.2	NLE	653	NS	NS	NS	4430
Cadmium	0.86	1	0.135[2]	NS	NS	NS	**4.4**
Chromium	1.6	500	128	NS	NS	NS	65.8
Copper	2.2	600	7.27[2]	NS	NS	NS	69.8
Iron	0.58	NLE	45500	NS	NS	NS	10900
Lead	0.4	400[3]	15.1[2]	NS	NS	NS	203
Magnesium	9.6	NLE	3960	NS	NS	NS	1260
Manganese	0.18	NLE	120[2]	NS	NS	NS	78.8
Mercury	0.49	14	ND	NS	NS	NS	6
Potassium	(12.3-25.8)	NLE	10600	NS	NS	NS	1420
Silver	0.54	110	0.26[2]	NS	NS	NS	1.5
Sodium	3.8	NLE	56.8	NS	NS	NS	103
Selenium	0.3	63	0.85	NS	NS	NS	0.7
Vanadium	0.53	370	59.6	NS	NS	NS	21.8
Zinc	0.41	1500	55.6	NS	NS	NS	463

Compounds exceeding NJDEP soil cleanup criteria are bolded
NA - Not Analyzed; NS - Not Sampled
ND - Compound was not detected at or below the quantification limits
J - Indicates that the concentration value was estimated due to detection at or near the quantification limits
NLE - No Level Established
C - Pesticide identification was confirmed by GC/MS
D - Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis
P - The percent difference between the results from two GC columns is greater than 25%, the lower of the two values is reported
R - Data rejected, URS The Data Validator

Note: MDL's for metal anaysis is actually the highest detection limit with potassium given as a range due to high variability.

Note: Metals were analyzed (SS-01), but were not proposed in the scope of work.

(1) - VOC/SVOC's were collected from 6" to 12" bgs, pesticides and metals were collected from 0"-6" bgs.

[2] Monmouth County maximum background concentrations.

[3] NJDEP criteria are referenced in Site Remediation News, Winter 1995.

Metals

As indicated in Table 4.3-10, of the 18 metals detected in site soils, only cadmium was found in a concentration exceeding the NJDEP SCC in SS-01. In addition, cadmium was detected in a concentration greater than that determined for site-specific and Monmouth County maximum background at Charles Wood. However, in accordance with the NJDEP *Cleanup Standards for Contaminated Sites* (NJDEP, 1992), the arithmetic mean of cadmium was calculated from the 10 surface soil samples at sites CW-6 and CW-9, since the samples were collected within the same sampling interval (0 to 6 inches). The arithmetic mean or concentration was then compared with the NJDEP SCC and established background. The arithmetic mean (1 mg/kg) was found at a level equal to the NJDEP SCC (1 mg/kg). However, sites CW-06 and CW-09 are located on a golf course. *A Summary of Selected Soil Constituents and Contaminants at Background Locations in New Jersey*, 1993, provides a separate background concentration level for cadmium in golf course areas. When comparing the arithmetic mean of the analytical results at the two sites with the arithmetic mean for cadmium on golf courses in Table 9 of that document (2.26 mg/kg), the analytical result is found in a concentration below established background. Cadmium is reported in higher concentrations on golf courses due to the direct application of fertilizers, herbicides, and pesticides (Field et al., 1993). Therefore, cadmium is not considered a compounds of concern. Although metals were sampled for in surface soil location SS-01, a metals analysis was not proposed in the original scope of work.

4.3.8.6 Groundwater Sampling Results

Monitor wells MW-34 and MW-1 were sampled for the analytical parameters listed in Table 3.8-1. The analytical results for groundwater samples from the individual sampling rounds are listed in Appendix D. Table 4.3-11 compares the average concentrations of the detected compounds from the February and March sampling rounds with the NJDEP GWQC, and then compares the results with the subsequent site-specific and Monmouth County maximum background concentrations, where appropriate.

Table 4.3-11
Fort Monmouth - Charles Wood
Summary of Average Concentrations of Detected Compounds in Groundwater - Site CW-6

COMPOUND	METHOD DETECTION LIMIT (µg/L)	NJDEP GROUNDWATER QUALITY CRITERIA (µg/L)	MAXIMUM BACKGROUND CONCENTRATION (µg/L)	ANALYTICAL RESULTS (µg/L) SAMPLING DATE	
				MW34 2/10/95, 3/13/95 (avg.)	MW01 5/10/95, 5/27/95 (avg.)
VOC (µg/L)					
Benzene	2.4**	1*	ND	ND	**8**
Ethylbenzene	3.1	700	ND	ND	1J
Xylene (total)	3.8	40	ND	ND	2J
Pesticide and PCB's (µg/L)					
4,4'-DDD	0.097	0.1	ND	ND	0.086J
gamma-chlordane	0.046	NLE	ND	ND	.035JP
alpha-chlordane	0.046	NLE	ND	ND	0.0545

Compounds exceeding NJDEP groundwater quality criteria are noted by bold numbers.

NJDEP groundwater quality criteria consist of the higher number between the PQL or STANDARD

*PQL - Practical Quantitation Limit -was used as the NJDEP groundwater quality criteria

ND - Indicates that the compound was not detected

J - Indicates that the concentration value was estimated due to detection at or near the detection limits

** - Method detection limit exceeded NJDEP groundwater quality criteria

P - Percent difference between the results from the GC columns is greater than 25%, the lower of the two values is reported

VOCs

One VOC (benzene) was detected above the laboratory quantitation limit in MW-1 from the February sampling round only. In addition, benzene was found in a concentration exceeding the NJDEP GWQC. Figure 4.3-15 presents the locations of the compounds detected above both background and criteria.

SVOCs

SVOCs were not detected above laboratory quantitation limits in site monitor wells MW-34 and MW-1 from either sampling round. In addition, SVOCs were detected below the NJDEP GWQC.

Pesticides/PCBs

One pesticide (alpha-chlordane) was detected in a concentration slightly above the laboratory quantitation limit in MW-1; however, NJDEP GWQCs are not established for alpha-chlordane. PCBs were not detected in site monitor wells from either sampling round.

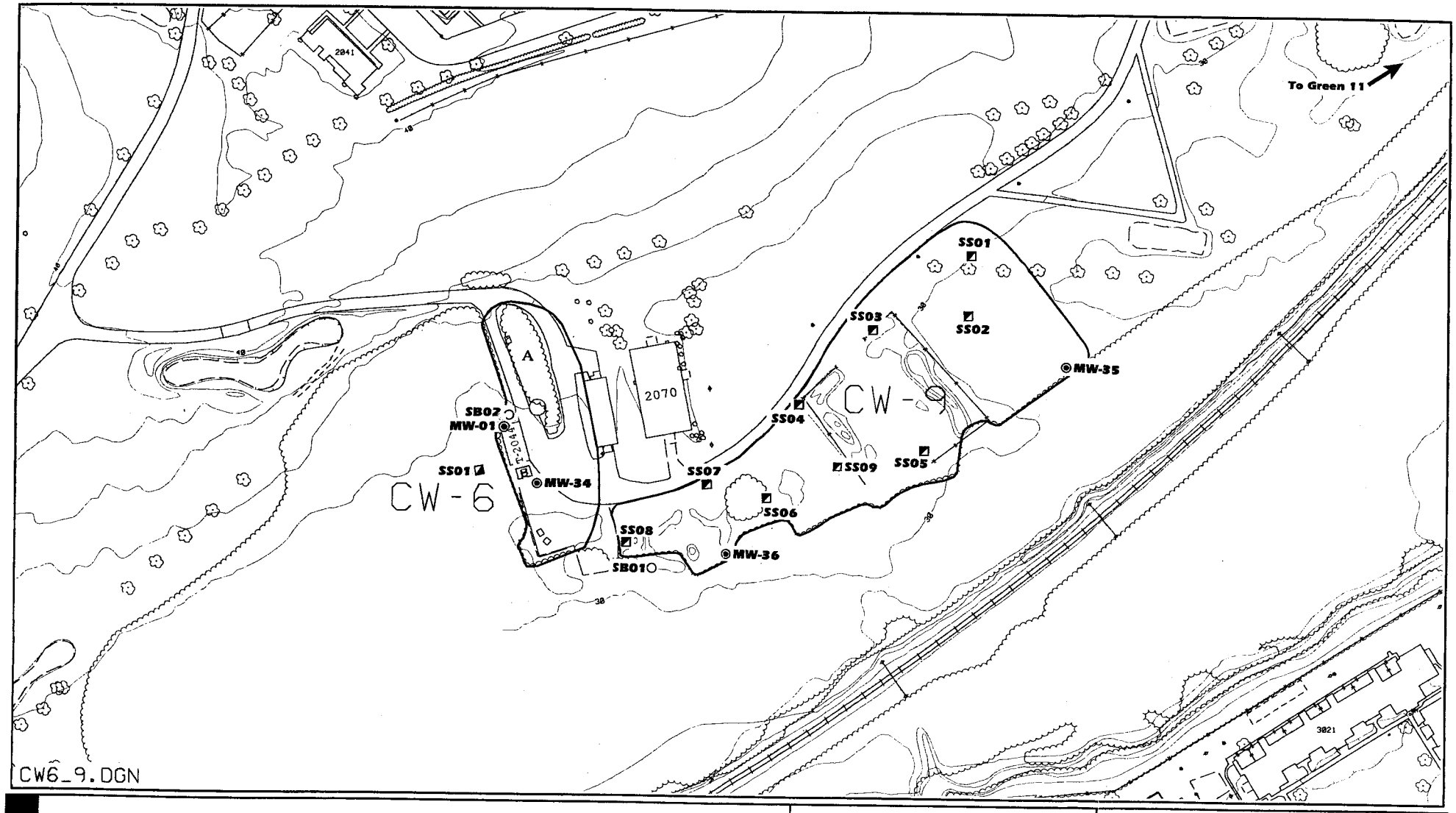
4.3.8.7 Recommendations

The pesticide dieldrin and the metal cadmium were detected in the soil at two different locations, each at levels that exceeded NJDEP SCC and background. However, the average concentrations of dieldrin and cadmium in surface soil samples at CW-6 and CW-9 did not exceed the NJDEP SCC. Cadmium is typically present at elevated levels at golf courses. Groundwater samples indicated that benzene was detected in the existing monitor well (MW-1), which is attributed to a previously removed UST. Benzene was not detected in downgradient wells. Pesticides were not detected in any groundwater samples above NJDEP criteria.

NJDEP groundwater criteria were exceeded for one VOC, but the measured value was just slightly above the GWQC. Therefore, no immediate remedial action is necessary.

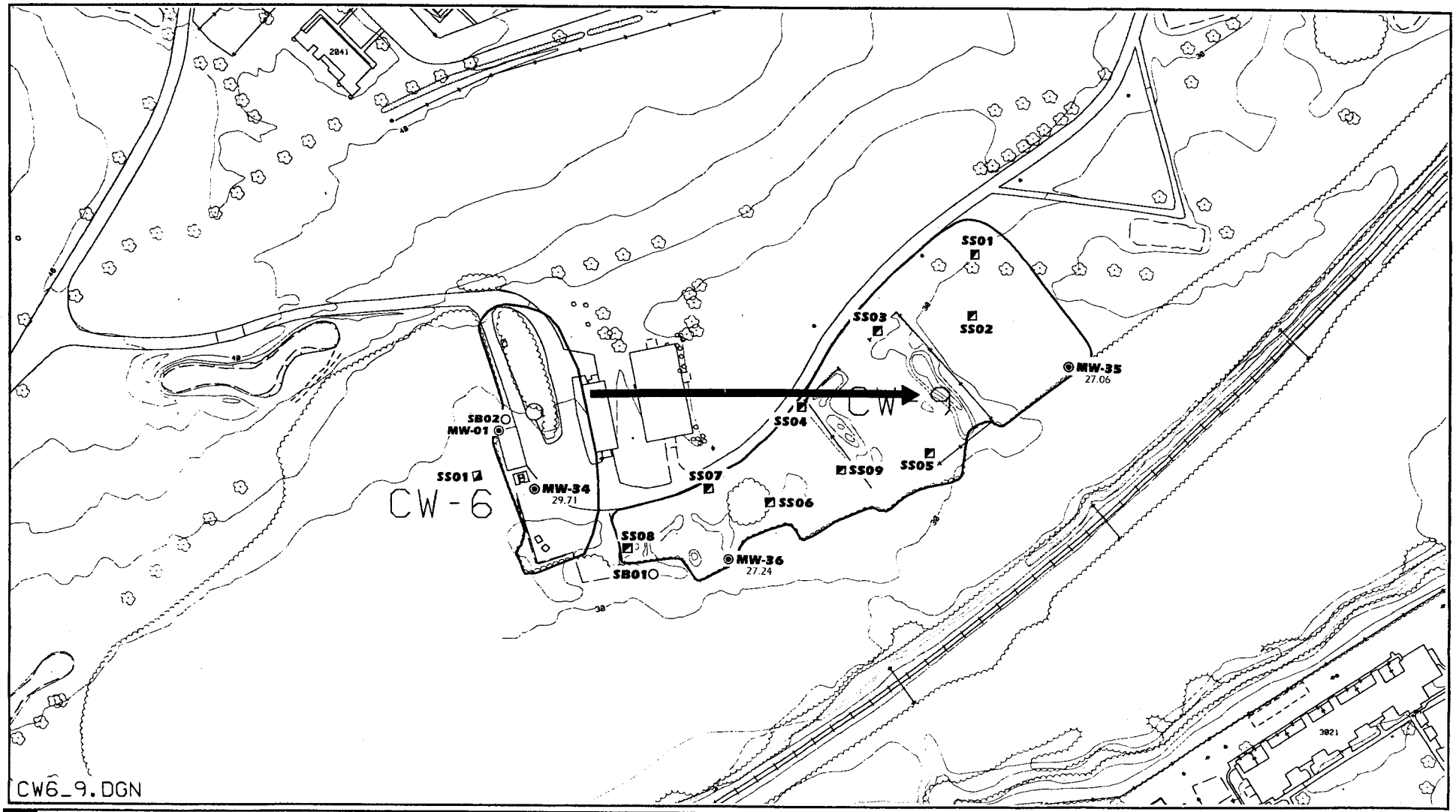
DPW proposes that a long-term groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further

evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells. Compounds of concern identified in the first two rounds of sampling would be targeted for the monitoring program.



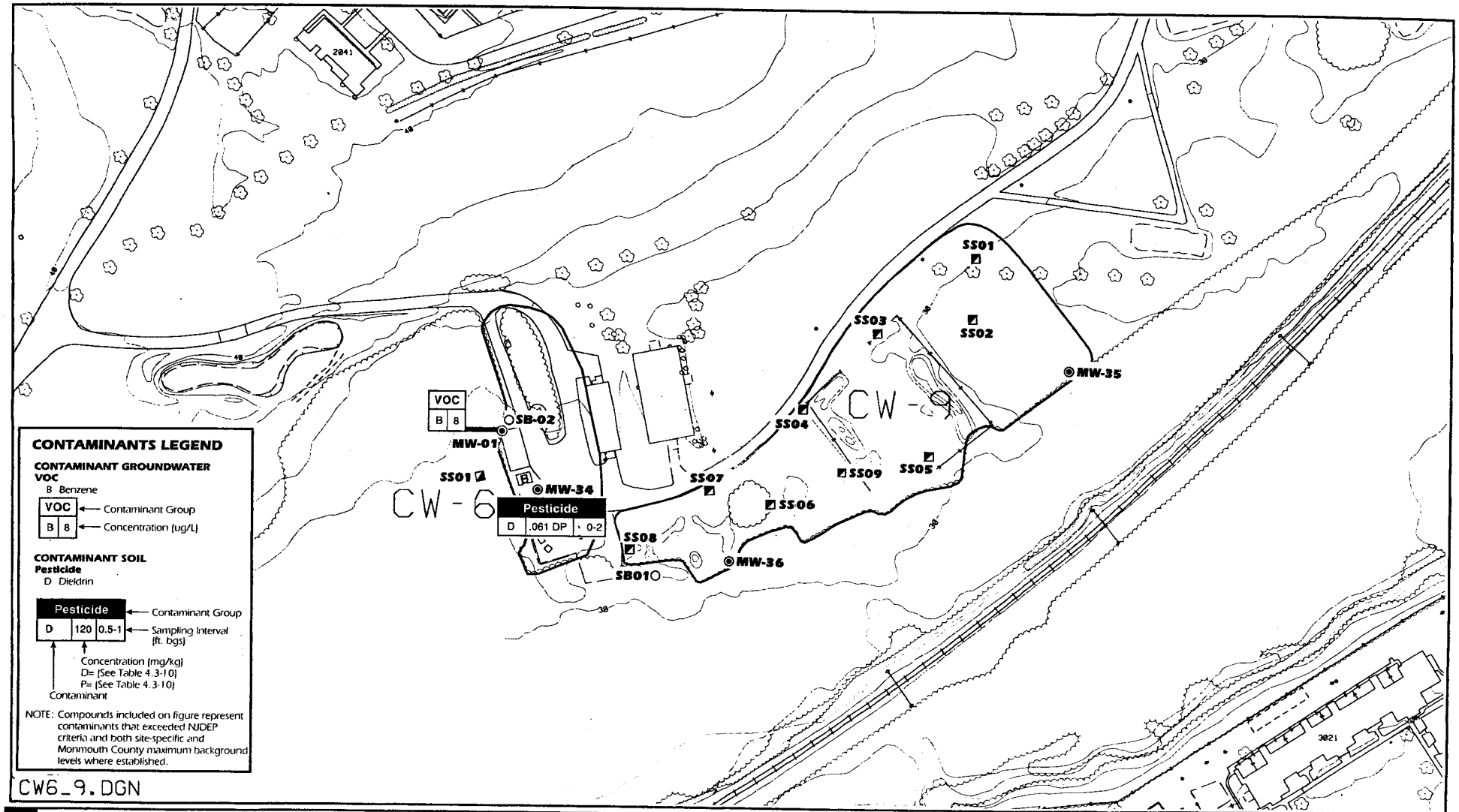
Fort Monmouth, Charles Wood

FIGURE 4.3-13
PESTICIDE STORAGE BUILDING (CW-6)
AND SLUDGE DUMP (CW-9)
SAMPLING LOCATIONS



Fort Monmouth, Charles Wood

FIGURE 4.3-14
PESTICIDE STORAGE BUILDING (CW-6)
AND SLUDGE DUMP (CW-9)
APPROXIMATE GROUNDWATER FLOW DIRECTIONS
(Groundwater Elevations Recorded from March 1995 Sampling Round)


2041
3021
CW-6
CW-9
SB-02
MW-01
MW-34
MW-35
MW-36
SB01
SS01
SS02
SS03
SS04
SS05
SS06
SS07
SS08
SS09
VOC
B 8
Pesticide
D .061 DP 0-2
CONTAMINANTS LEGEND
CONTAMINANT GROUNDWATER
VOC
B Benzene
VOC
B 8
Contaminant Group
Concentration (ug/L)
CONTAMINANT SOIL
Pesticide
D Dieldrin
Pesticide
D 120 0.5-1
Contaminant Group
Sampling Interval (ft. bgs)
Concentration (mg/kg)
D= (See Table 4.3-10)
P= (See Table 4.3-10)
Contaminant
NOTE: Compounds included on figure represent contaminants that exceeded NJDEP criteria and both site-specific and Monmouth County maximum background levels where established.
CW6_9.DGN
LEGEND
Soil Boring
Monitor Well
Surface Soil Sampling Location
Road (paved)
Road/Trails (unpaved)
Fence
Building
Wooded Area
Tree/Bush
Light Pole
Utility Pole
Site
Brook/Creek
Base Boundary
Marshy Area
Approximate Boundary
0
100
200
SCALE IN FEET
95P:3187
6/23/95
Fort Monmouth, Charles Wood
FIGURE 4.3-15
PESTICIDE STORAGE BUILDING (CW-6)
AND SLUDGE DUMP (CW-9)
DISTRIBUTION OF CONTAMINANTS IN SITE SOIL

Site CW-9

4.3.9 Sludge Dump (CW-9)

4.3.9.1 Site Location

The sludge dump (CW-9) as identified in the IA is located in the southern part of Charles Wood, south and southeast of Building 2070 and west of green 11 and tee 12 of the golf course (Figure 4.3-13). The approximate area of site CW-9 is 79,933 ft^2 (1.8 acres).

4.3.9.2 Site History

Since the 1940s, sludge generated at the STPs has been stored in this area before being used as a soil conditioner and fertilizer on the golf course. Sludge piles are visible in the 1957, 1961, 1974, and 1981 aerial photographs. During the 1993 site visit, a pile of sludge removed from fairway 1 on the golf course was observed south of Building 2070. According to long-term Fort Monmouth employees, at least three other fairways (8, 10, and 11) have 4 to 5 inches of sludge over the native sand; sludge may have been used to fill in low areas.

4.3.9.3 Sampling Effort

Two monitor wells were installed (MW-35 and MW-36), one soil sample from soil boring SB-01 and nine from surface soil locations SS-01 through SS-09 were collected, and two rounds of groundwater sampling were conducted in an effort to evaluate the impact of past site activities on soil and groundwater quality. Monitor wells MW-35 and MW-36 and soil boring SB-01 were analyzed for TCL +30 parameters and TAL metals. Surface soil locations SS-01 through SS-09 were analyzed for TAL metals only. The sampling locations are presented in Figure 4.3-13. MW-35 was relocated from site CW-6 because an existing monitor well was located at the proposed well location. The monitor well (MW-35) was then relocated to a downgradient location at CW-9 to monitor groundwater quality downgradient of the area under investigation.

4.3.9.4 Hydrogeologic Interpretation

Lithologic logs from MW-35 and MW-36 indicate that the lithology consists of a thin soil cover (0.3 ft) underlain by an orange-olive-brown predominantly medium-grained quartz sand with silt laminae. Saturation was observed at 4 ft bgs. Monitor wells were screened across the water table, with total depths of 14.5 and 14 ft bgs in MW-35 and MW-36, respectively. Water-level elevation data, measured on 6 March 1995, prior to the March 1995 sampling round, indicate that the local groundwater flow direction is east (Figure 4.3-14). Based on groundwater elevation measurements, monitor wells MW-35 and MW-36 are downgradient of the area under investigation.

4.3.9.5 Soil Sampling Results

One soil sample was collected from the 2- to 4-ft bgs sampling interval in a boring installed to a depth of 6 ft bgs. One sample from each surface soil location was collected from the 0- to 0.5-ft bgs interval. The soil samples collected were analyzed for the parameters listed in Table 3.6-1. The analytical results for site soil are listed in Appendix D. Tables 4.3-12 and 4.3-13 compare the compounds detected with the NJDEP SCC, and then compare the results with the subsequent site-specific and Monmouth County maximum background concentrations, where appropriate.

VOCs

VOCs were not detected in site soil.

SVOCs

SVOCs were not detected above laboratory quantitation limits in site soil.

Table 4.3-12
Fort Monmouth - Charles Wood
Summary of Detected Compounds in Soil from Boring Location SB-01
Site CW-9

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	RESIDENTAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	MAXIMUM BACKGROUND CONCENTRATION (mg/kg)	ANALYTICAL RESULTS SB01-A02 1/4/95 (2-4 ft bgs)
SVOCs (mg/kg)				
Di-n-butylphthalate	0.215	5700	ND	0.076
PESTICIDES (mg/kg)				
4,4'-DDE	0.0037	2	0.071	0.0076 P
4,4'-DDT	0.0037	2	0.053	0.008 P
METALS TOTAL (mg/kg)				
Aluminum	3.9	NLE	15700	3830
Arsenic	0.35	20	31.6	2.6
Barium	0.17	700	26	6.6
Beryllium	0.1	1	1.7	0.39
Calcium	2.2	NLE	653	366
Cobalt	0.71	NLE	4.5	1
Chromium	1.6	500	128	44
Copper	2.2	600	7.27[1]	2.3
Iron	0.58	NLE	45500	9720
Lead	0.4	400[2]	15.1[1]	3.9
Magnesium	9.6	NLE	3960	698
Manganese	0.18	NLE	120[1]	11.9
Mercury	0.49	14	ND	0.12
Nickel	1.4	250	8.3	2.8
Potassium	(12.3-25.8)	NLE	10600	1480
Sodium	3.8	NLE	56.8	21.4
Vanadium	0.53	370	59.6	27.4
Zinc	0.41	1500	55.6	12.8

Compounds exceeding NJDEP soil cleanup criteria are noted by bold numbers.
ND - Compound was not detected at or below the quantification limits
NLE - No Level Established
P- the percent difference between the results from the two GC columns is greater than 25%, the lower of the two values is reported
Note: MDL's for metal analysis is actually the highest detection limit with potassium given as a range due to high variability.

[1] Monmouth County maximum background concentrations.

[2] NJDEP criteria are referenced in Site Remediation News, Winter 1995.

Table 4.3-13
Fort Monmouth - Charles Wood
Summary of Detected Compounds in Soil from Surface Locations
Site CW-9

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	MAXIMUM BACKGROUND CONCENTRATION (mg/kg)	ANALYTICAL RESULTS 11/30/94								
				SS01-A01	SS02-A01	SS03-A01	SS04-A01	SS05-A01	SS06-A01	SS07-A01	SS08-A01	SS09-A01
METALS TOTAL (mg/kg) Sample Interval :0"-6" ft bgs												
Aluminum	3.9	NLE	15700	7350	5730	3600	4380	6930	5450	3910	4070	7700
Arsenic	0.35	20	31.6	13.6	12.1	6.9	6.3	15.6	9.3	10.5	7.2	7.7
Barium	0.17	700	26	23.4	28.9	65.4	51.2	32.5	33	40.7	19.2	40.8
Beryllium	0.1	1	1.7	0.73	0.68	0.57	0.55	0.9	0.72	0.58	0.56	1
Calcium	2.2	NLE	653	2680	2650	1960	19600	3570	3610	4370	1630	3440
Cadmium	0.86	1	0.135[1]	ND	ND	ND	ND	ND	ND	**2.6**	ND	ND
Cobalt	0.71	NLE	4.5	ND	ND	ND	1.3	1.9	1.7	ND	ND	1.8
Chromium	1.6	500	128	56.7	57.2	24.9	28.3	60.5	46.9	164	56.2	70
Copper	2.2	600	7.27[1]	9.6	10.3	5	17.7	8.8	11.1	17.4	9	9.6
Iron	0.58	NLE	45500	20600	18200	10800	12200	22200	17900	9880	11300	25600
Lead	0.49	400[2]	15.1[1]	19.9	30.1	13.5	56.8	27.4	17	82.3	35.5	20.1
Magnesium	9.6	NLE	3960	1910	2010	815	2260	2280	1720	1620	893	2590
Manganese	0.18	NLE	120[1]	85.1	46.8	22.3	106	59.2	56	140	37	69.5
Mercury	0.49	14	ND	0.2	0.23	ND	ND	0.14	ND	7.9	0.69	ND
Nickel	1.4	250	8.3	6	3.3	ND	5.7	6.9	4.9	4.3	2.4	5.8
Potassium	(12.3-25.8)	NLE	10600	1600	2620	1460	2060	3950	3180	1720	1250	5130
Silver	0.54	110	0.26[1]	2.5	2.8	ND	ND	0.77	0.71	1.2	3.3	1.3
Sodium	3.8	NLE	56.8	35.6	33.9	77.4	118	49.7	49.7	40.6	34.5	60.9
Selenium	0.30	63	0.85	0.56	0.62	0.75	0.28	0.63	0.41	0.57	0.6	0.48
Vanadium	0.53	370	59.6	45.7	34	15.7	22.9	33.1	30.3	15.6	29.3	32
Zinc	0.41	1500	55.6	53.7	61.2	25.8	92.5	47.8	62.3	77	36	48.1

Compounds exceeding NJDEP soil cleanup criteria are noted by bold numbers.
ND - Compound was not detected at or below the quantitation limits
NLE - No Level Established
Note: MDL's for metal analysis is actually the highest detection limit with potassium given as a range due to high variability.
[1] Monmouth County maximum background concentrations.
[2] NJDEP criteria are referenced in Site Remediation News, Winter 1995.
Note: Metals detected in a duplicate sample from SS-01 were detected below the NJDEP SCC.

Pesticides/PCBs

Two pesticides (4,4'-DDE and 4,4'-DDT) were detected above laboratory quantitation limits in SB-01. Both compounds were detected well below their respective SCCs. PCBs were not detected in site soil.

Metals

As indicated in Tables 4.3-12 and 4.3-13, of the 21 metals detected in site soil, only beryllium and cadmium were found in concentrations equal to or greater than the NJDEP SCC. In addition, cadmium was detected in SS-07 at a concentration (Table 4.3-13) greater than the site-specific and Monmouth County maximum background levels established at Charles Wood. However, in accordance with NJDEP *Cleanup Standards for Contaminated Sites* (NJDEP, 1992), the concentration of cadmium at sites CW-06 and CW-09 were averaged and then compared to the NJDEP SCC and established background. The average concentration of cadmium was found to be equal to the SCC when compared with the soil sampling results in the area. Cadmium was not considered to be of a high concentration (see "Metals" in Subsection 4.3.8.5). Cadmium was not detected at any other surface soil location. Although beryllium was found in a concentration greater than the Monmouth County maximum background level, beryllium was detected in a concentration below the site-specific level. Beryllium was found at only one location (SS-09) at a concentration equal to the NJDEP SCC. The concentration of beryllium was also averaged and when compared to the NJDEP SCC, was found at a concentration below the NJDEP SCC and maximum background.

4.3.9.6 Groundwater Sampling Results

Monitor wells at site CW-9 were sampled for the analytical parameters listed in Table 3.8-1. Table 4.3-14 compares the average concentrations of the detected compounds from the February and March sampling rounds with the NJDEP GWQC, and then compares the results with the subsequent site-specific and Monmouth County maximum background levels, where appropriate.

Table 4.3-14
Fort Monmouth - Charles Wood
Summary of Average Concentrations of Detected Compounds in Groundwater - Site CW-9

COMPOUND	METHOD DETECTION LIMIT (µg/L)	NJDEP GROUNDWATER QUALITY CRITERIA (µg/L)	MAXIMUM BACKGROUND CONCENTRATION (µg/L)	ANALYTICAL RESULTS (µg/L) SAMPLING DATE	
				MW35 2/20/95, 3/13/95 (avg.)	MW36 2/20/95, 3/13/95 (avg.)
SVOCs (µg/L)					
bis-(2ethylhexyl)phthalate	9.7	30*	600	ND	4 J
METALS TOTAL (µg/L)					
Aluminum	24	200	8210	**226**	**575**
Barium	1.7	2000	400[1]	37.25	31.3
Beryllium	0.9	20*	2.8	0.175	ND
Calcium	10.4	NLE	8700	23400	35050
Cobalt	2.3	NLE	30.6	2.45	2.85
Chromium	2.9	100	49.6	ND	5.7
Iron	6.4	300	27000[1]	104.2	**1250**
Lead	1.1	10*	<100[1]	ND	2
Magnesium	18.3	NLE	25000[1]	5875	7835
Manganese	1.8	50	480[1]	40.1	**217**
Nickel	10.8	100	48.3	5.65	5.65
Potassium	685	NLE	10000[1]	2035	4000
Sodium	30.5	50000	197000[1]	4480	5900
Vanadium	2.3	NLE	28.9	ND	3.85
Zinc	3.8	5000	133	26.75	27

Compounds exceding NJDEP groundwater quality criteria are noted by bold numbers.

NJDEP groundwater quality criteria consist of the higher number between the PQL or STANDARD

*PQL - Practical Quantitation Limit -was used as the NJDEP groundwater quality criteria

ND - Indicates that the compound was not detected

J - Indicates that the concentration value was estimated due to detection at or near the detection limits

[1] - Monmouth County maximum background concentration.

VOCs

VOCs were not detected in site monitor wells from either sampling round.

SVOCs

SVOCs were not detected above laboratory quantitation limits in site monitor wells from either sampling round.

Pesticides/PCBs

Pesticides/PCBs were not detected in site monitor wells from either sampling round.

Metals

As indicated in Table 4.3-14, of the 15 metals detected in site groundwater, only 3 (aluminum, iron, and magnesium) were found in concentrations exceeding the NJDEP GWQC; however, all three metals were detected in concentrations below the site-specific and Monmouth County maximum background levels.

4.3.9.7 Recommendations

The average concentrations of cadmium and beryllium in surface soil samples at CW-6 and CW-9 do not exceed the NJDEP SCC. Cadmium is typically present at elevated levels at golf courses. No compounds of concern were detected in site groundwater above NJDEP criteria.

No further action will be taken.

Site AOC-7

4.3.10 Former Hazardous Waste Storage Area (AOC-7)

4.3.10.1 Site Location

NJDEP identified this site as an area of concern (AOC) (NJDEP, 1990). A temporary hazardous waste storage area was located in an approximately 1-acre fenced site to the east of Building 2708 (Figure 4.3-16). The site is currently a grassy field surrounded by a 7-ft high fence. A former gas station (Building T-2500) is located to the east of the site. The approximate area of site AOC-7 is 41,000 ft^2 (0.9 acre).

4.3.10.2 Site History

Reviews of aerial photographs from 1961 to 1986 show that this site was a fenced storage area. The 1961 photographs show that the fenced area extended about 50 feet farther to the west than it does today. This western area is now part of the fenced area around Building 2708, which is part of the Pulse Power Laboratory. Large rectangular objects are visible next to the fence on all four sides. These may be cargo or truck vans. The 1969 photograph is similar, but there are three irregular groups of objects at the northwest corner of the lot. The 1974 photograph is similar, except there are five circular igloos along the west fence. In 1986, the site is smaller because the Pulse Power Laboratory is in the western portion of the site. There are objects that appear to be drums along the fence on the south and southeast of the site. The objects are densely packed in a 10- to 20-ft band next to the fence. There are additional objects along the north fence and possibly along the west fence. Personnel interviews indicate that the site was used for a 6-month period in 1987 for temporary storage of hazardous waste (in drums). As part of a program to remove all improperly labeled drums from Fort Monmouth, the facility collected the drums and staged them at this site.

The drums were stored on wood pallets, generally along the fence line. The pallets were not usually stored on a plastic ground cover. Clean Venture, Inc. sampled the drums, labeled them, completed manifests, and arranged for disposal. For the most part, the drums contained solvents, degreasers, and oils. The drums were screened for external radiation and none was detected. Clean Venture did not characterize the drums to the extent of identifying specific compounds,

but some of the solvents that were used at Fort Monmouth at that time are 1,1,2-trichloroethane, 1,1,1-trichloroethane, and benzene.

The only known release of material during the operation occurred on 7 October 1987. A pallet of 5-gallon containers of malathion, a pesticide, was picked up at Sandy Hook. The containers were deteriorated, so the pallet was placed on a plastic ground cover. During the night, the top popped off one of the containers. A security guard became temporarily nauseated from the fumes. The next day the containers were repacked in a drum. The quantity of material that was released is considered small, and it is believed that little, if any, material was spilled on the ground.

4.3.10.3 Sampling Effort

Six soil borings were completed and soil samples collected in an effort to identify the nature and extent of past site activities on soil quality. Soil borings were drilled to groundwater and the soil cuttings were screened with a photoionization detector (PID). Since no elevated PID readings were recorded, soil samples were collected from the interval just above the water table. The total depths of the borings varied from 12 to 14 ft bgs. Lithologic logs from the site borings indicate that the lithology consists of a thin soil cover (0.3 ft) underlain by coarsening downward olive-brown silty medium-grained sand to olive-brown medium-grained sand sequence. The locations of the soil borings were biased toward the fence line, as shown in Figure 4.3-16, because an examination of aerial photographs showed that materials were stored next to the fence. Soil samples were analyzed for TCL +30 parameters and TAL metals.

4.3.10.4 Soil Sampling Results

Six soil samples, one from each boring, were collected from intervals ranging from 8 to 14 ft bgs. Site soil samples were analyzed for the parameters listed in Table 3.6-1. Table 4.3-15 compares the detected compounds in site soil with the NJDEP SCC, and then compares the results with the site-specific and Monmouth County maximum background levels, where

Table 4.3-15
Fort Monmouth - Charles Wood
Summary of Detected Compounds in
Soil from Site AOC- 7 (CW-7)

COMPOUND	METHOD DETECTION LIMIT (mg/kg)	RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	MAXIMUM BACKGROUND CONCENTRATION (mg/kg)	ANALYTICAL RESULTS					
				SB01-A02 12/21/95 (10-12 ft bgs)	SB02-A02 12/21/95 (10-12 ft bgs)	SB03-A02 12/21/95 (6-8 ft bgs)	SB04-A02 12/21/95 (8-10 ft bgs)	SB05-A02 12/21/95 (8-10 ft bgs)	SB06-A03 12/21/95 (12-14 ft bgs)
VOC's (mg/kg)									
2 - Butanone	0.0041	1000	ND	ND	0.002 J	ND	ND	ND	ND
SVOCs (mg/kg)									
bis(2-Ethylhexyl)phthalate	0.32	49	0.17 J	0.075 J	ND	0.34 J	ND	ND	ND
PESTICIDES (mg/kg)									
4,4'-DDT	0.0037	2	0.053	ND	ND	0.004	ND	ND	ND
METALS TOTAL (mg/kg)									
Aluminum	3.9	NLE	15700	3650	4340	3820	5170	3490	3610
Arsenic	0.35	20	31.6	8.6	1.7	8.4	12.7	2.8	5.9
Barium	0.17	700	26	2.5	4.5	4.5	6.2	3.6	2.4
Beryllium	0.1	1	1.7	0.31	0.29	0.28	0.45	0.3	0.26
Calcium	2.2	NLE	653	69	91.9	134	275	63.9	43.7
Cobalt	0.7	NLE	4.5	ND	0.94	0.68	ND	ND	ND
Chromium	1.6	500	128	61.1	61.6	73.6	83.4	64.7	61.1
Copper	2.2	600	7.27[1]	1.6	1.6	1.8	2.2	1.4	1.3
Iron	0.58	NLE	45500	10800	12400	11100	15900	11400	11000
Lead	0.4	400[2]	15.1[1]	6.3	6.9	4.5	8.5	6.3	4.9
Magnesium	9.6	NLE	3960	694	852	602	919	720	766
Manganese	0.18	NLE	120[1]	3.6	8.2	12.7	11.3	2.8	1.8
Nickel	1.4	250	8.3	1.8	2.6	1.9	2.1	1.6	1.3
Potassium	(12.3-25.8)	NLE	10600	2060	2360	1740	2570	2200	2280
Sodium	3.8	NLE	56.8	18.8	12	11.7	13.8	14.7	11.5
Selenium	0.3	63	0.85	0.26	0.2	ND	0.3	0.26	ND
Zinc	0.41	1500	55.6	8.9	12	10.5	15.8	9	9.1

Compounds exceeding NJDEP soil cleanup criteria are noted by bold numbers.
J - Indicates that the concentration value was estimated due to detection at or near the quantification limits
NLE - No Level Established
ND - Indicates that the compound was not detected at or below the quantification limits
[1] Monmouth County maximum background concentrations.
[2] NJDEP criteria are referenced in Site Remediation News, Winter 1995.

appropriate. In addition, the results were compared with the impact to groundwater SCC because no monitor wells were installed at the site.

VOCs

VOCs were not detected above laboratory quantitation limits in site soil.

SVOCs

SVOCs were not detected above laboratory quantitation limits in site soil.

Pesticides/PCBs

One pesticide (4,4'-DDT) was detected above the laboratory quantitation limit in SB-02; however, 4,4'-DDT was detected in a concentration well below both the NJDEP residential direct contact SCCs and impact to groundwater SCC. PCBs were not detected in site soil from any boring location.

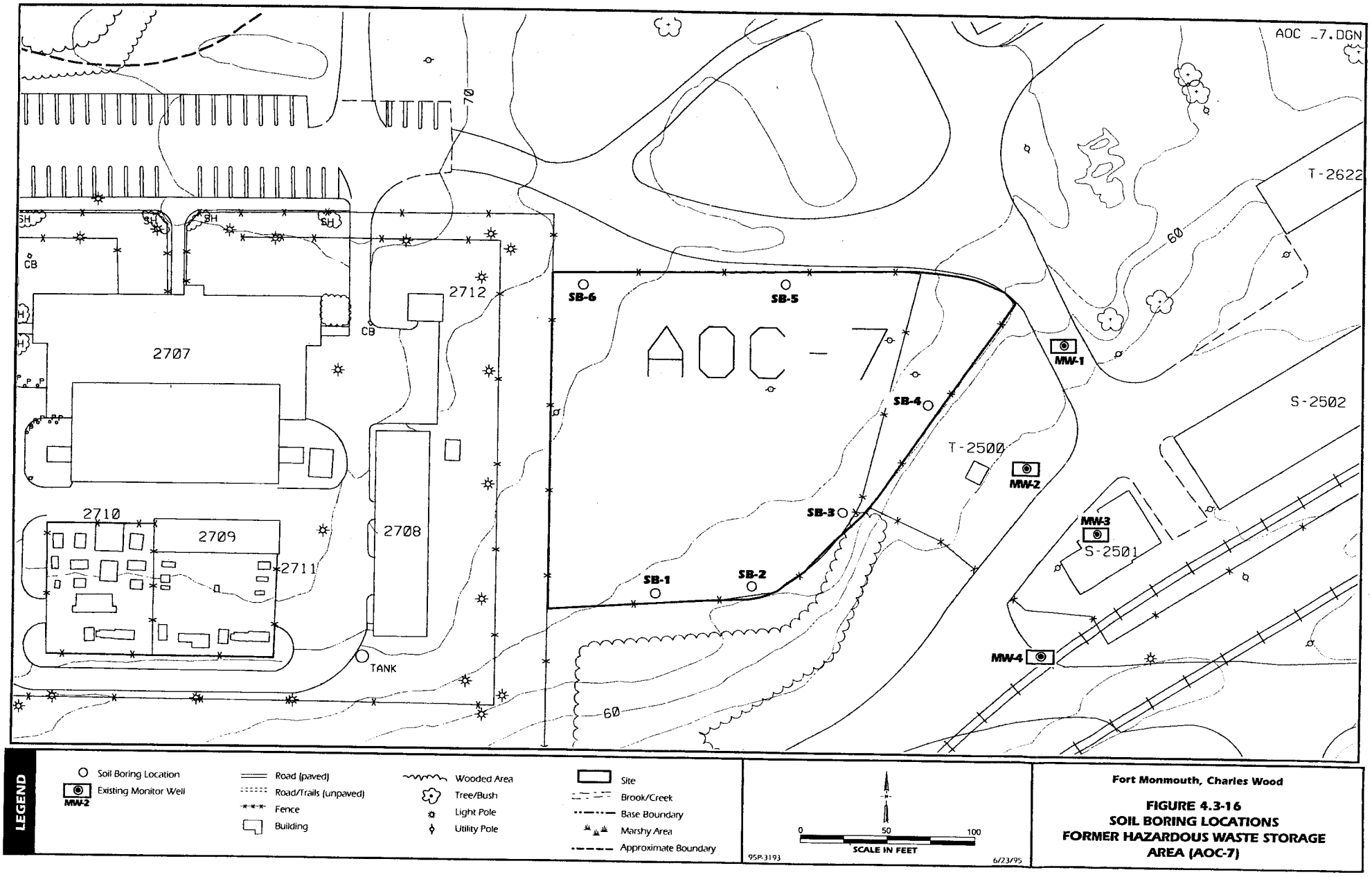
Metals

As indicated in Table 4.3-15, all metals detected in site soil were found in concentrations below the NJDEP SCC.

4.3.10.5 Recommendations

No compounds of concern were detected at this site at levels that exceeded NJDEP criteria.

No further action will be taken.


AOC _7.DGN
AOC - 7
SB-1
SB-2
SB-3
SB-4
SB-5
SB-6
MW-1
MW-2
MW-3
MW-4
2707
2708
2709
2710
2711
2712
T-2500
T-2622
S-2501
S-2502
TANK
CB
SH
70
60
LEGEND
Soil Boring Location
Existing Monitor Well
MW-2
Road (paved)
Road/Trails (unpaved)
Fence
Building
Wooded Area
Tree/Bush
Light Pole
Utility Pole
Site
Brook/Creek
Base Boundary
Marshy Area
Approximate Boundary
0
50
100
SCALE IN FEET
95P-3193
6/23/95
Fort Monmouth, Charles Wood
FIGURE 4.3-16
SOIL BORING LOCATIONS
FORMER HAZARDOUS WASTE STORAGE
AREA (AOC-7)

Charles Wood
PCB Transformers

4.3.11 PCB Transformers

4.3.11.1 Site Location

During the 1993 investigation (WESTON, 1993), all locations where PCB transformers had formerly been located were inspected for evidence of spills. Three sites were identified where a PCB transformer was either formerly located over soil and thus evidence of a spill could not be determined visually, or formerly located on concrete and there was discoloration in the concrete. These locations are listed in Table 3.5-1 and identified in Figure 4.3-17.

4.3.11.2 Site History

All PCB transformers (contain greater than 500 ppm PCBs) have been removed from Fort Monmouth; however, the former locations of these transformers were not previously investigated for spilled PCBs. The concrete pad outside Building 2000 was removed between the time of the 1993 investigation and the current field effort.

4.3.11.3 Sampling Effort

As discussed in Subsection 3.5, soil samples were taken from below pole-mounted transformers. Because the concrete pad near Building 2000 had been removed, four soil samples were taken downgradient of the former pad location, as indicated in Figure 4.3-18.

4.3.11.4 PCB Sampling Results

The results of the PCB transformer sampling are presented in Table 4.3-16. One of the four transformer sites sampled at the Charles Wood area was found to have PCBs in soil or concrete above NJDEP SCC.

PCBs were detected in four discrete soil samples above NJDEP SCC. The soil samples were collected downslope of the former location of transformer CW035, which was an exterior pad transformer northeast of Building 2000. This pad had been removed prior to sampling.

Table 4.3-16
Results of Transformer Site Sampling on Charles Wood

Location (Building No.)	Sample ID	Method Detection Limt (mg/kg)	Medium	NJDEP Soil Criteria (mg/kg)	Total PCBs (mg/kg)
2000	CW07-TR01	23*	Soil	0.49	**100**
2000	CW07-TR02	4.4*	Soil	0.49	**27**
2000	CW07-TR03	4.4*	Soil	0.49	**26**
2000	CW07-TR04	.91*	Soil	0.49	**6**
2018	CW07-TR05	4.5*	Soil	0.49	ND
2018	CW07-TR06	0.47	Soil	0.49	ND
2276	CWAE-TR01	0.21	Soil	0.49	ND

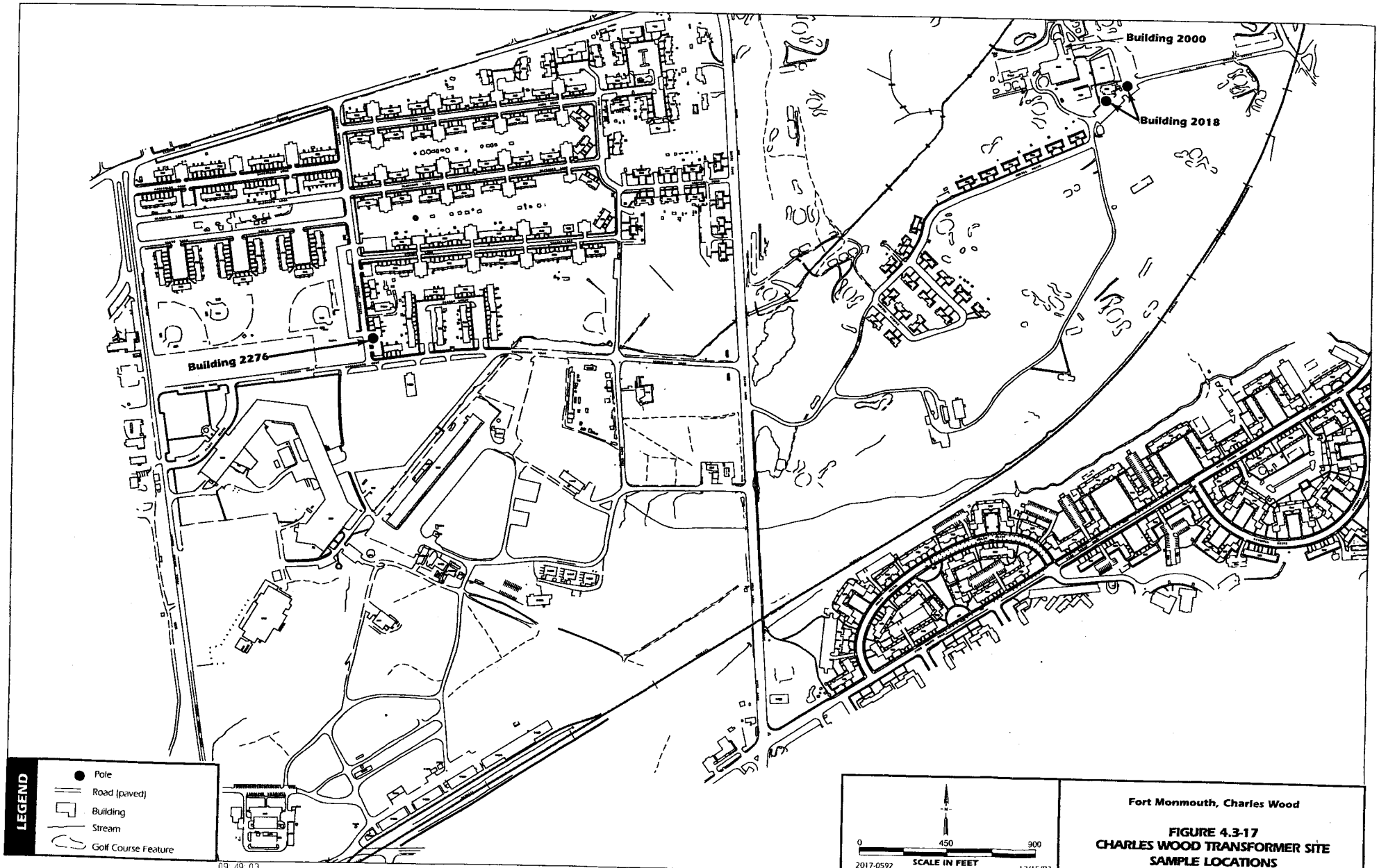
Compounds exceeding NJDEP cleanup criteria are noted by bold numbers
ND - Indicates that the compound was not detected at the quantification limit.
* = Method Detection Limit exceeded NJDEP criteria.

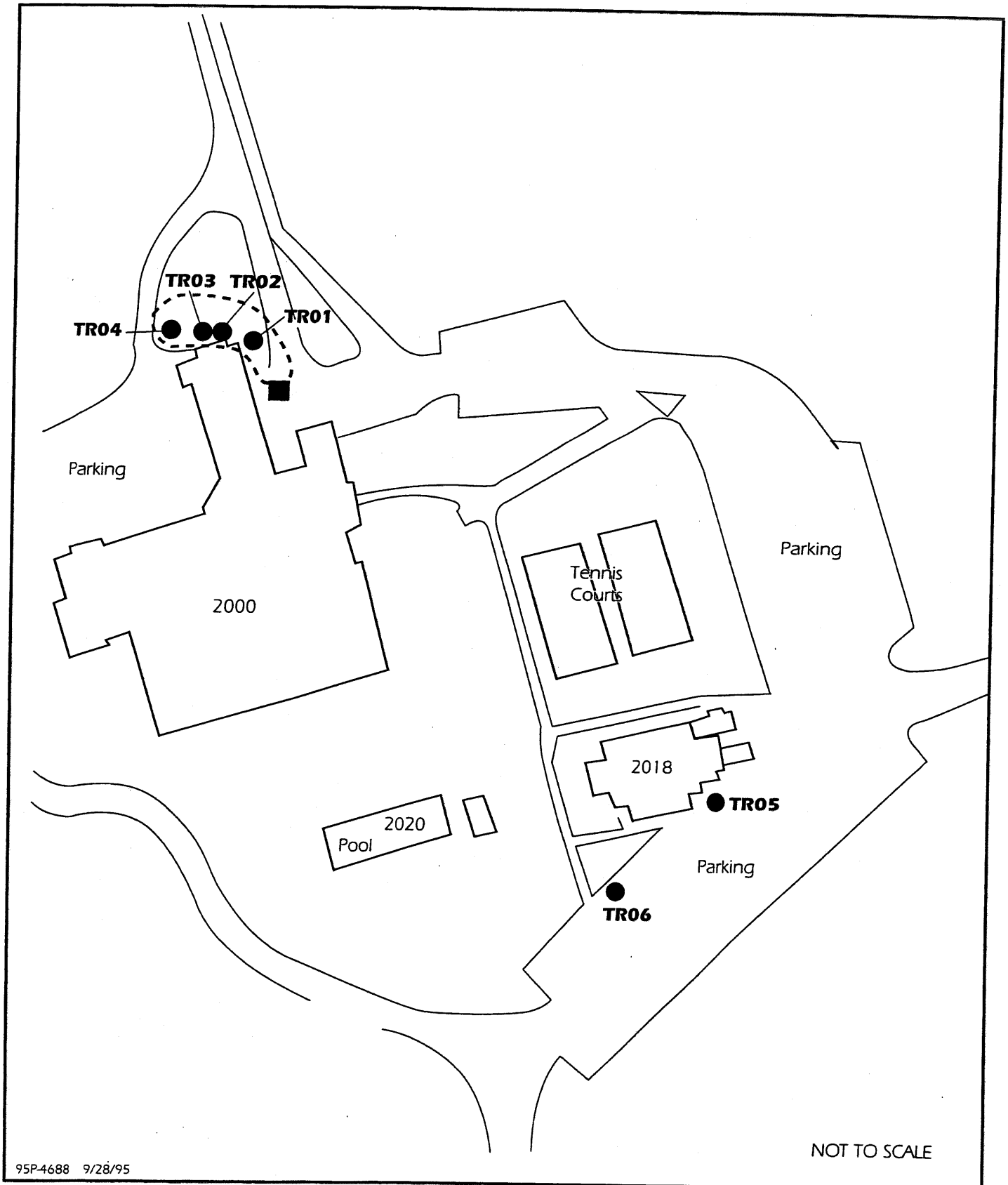
All other transformers sampled in the Charles Wood area either had results below detection limits, or had detectable levels of PCBs below applicable cleanup criteria.

4.3.11.5 Recommendations

PCBs were detected above the NJDEP criteria in each of the four soil samples collected downgradient of the former transformer location northeast of Building 2000 (transformer CW-035). PCBs were not detected above NJDEP criteria in samples collected from the other three sampling locations.

Additional samples will be taken to further delineate the extent of contamination and the contaminated soil will be removed and disposed of in accordance with applicable regulations. The depth of contamination is assumed to be 6 inches. Excavation will be performed in conjunction with confirmatory soil sampling to ensure that NJDEP SCC are achieved.


Building 2000
Building 2018
Building 2276
LEGEND
Pole
Road (paved)
Building
Stream
Golf Course Feature
09:49:03
0
450
900
SCALE IN FEET
2017-0592
12/15/93
Fort Monmouth, Charles Wood
FIGURE 4.3-17
CHARLES WOOD TRANSFORMER SITE
SAMPLE LOCATIONS



LEGEND

- Sampling Location
- Former Transformer Pad
- Soil Remediation Boundary

Fort Monmouth, Charles Wood

FIGURE 4.3-18
EXTENT OF REMEDIATION AT TRANSFORMER SITE – BUILDING 2000

SECTION 5
DATA QUALITY

SECTION 5

DATA QUALITY

5.1 INTRODUCTION

Quality assurance/quality control (QA/QC) procedures were incorporated into the Fort Monmouth site investigation program to ensure collection of quality data for each area of the site investigated. Additionally, such QA/QC procedures were employed to ensure that all information, data, and resulting decisions of the site investigation are technically sound, statistically valid (accurate and precise), properly documented, and ensure the completeness of the data. The mechanism for employing the project QA/QC procedures was the CDAP. Procedures in the CDAP facilitated identifying and monitoring the proper sample collection, handling, and laboratory protocols to be used during the site investigation.

Chemical analyses were conducted to determine the type and concentration of contaminants present in the various media at the site and to provide environmental data, as was discussed in Section 2 of this report. Overall, analyses or tests were chosen based on the compounds produced or used within the specific area or the environmental data needed.

The analytical methods that were used for sample analysis are listed in Table 5.1-1. Information on sample containers, preservation, and holding times is presented in Table 5.1-2.

All analytical work completed for the site investigation was performed or administered by WESTON's Environmental Metrics Division. WESTON's Gulf Coast Laboratory, located in University Park, IL, performed all analytical analyses. This laboratory is certified by NJDEP (certification number 54669).

Table 5.1-1

Analytical Methods for Sample Analysis

Matrix	Parameter*
Sediment	TCL Volatiles TCL Semivolatiles TCL Pesticides/PCBs TAL Metals Cyanide
Surface Water	TCL Volatiles TCL Semivolatiles TCL Pesticides/PCBs TAL Metals (Filtered) TAL Metals (Unfiltered) Cyanide
Soil	TCL Volatiles TCL Semivolatiles TCL Pesticides/PCBs TCL Pesticides PCBs (SW 8080) TAL Metals Cyanide TPH (EPA 418.1)
Concrete	PCBs (SW 8080)
Groundwater	TCL Volatiles TCL Semivolatiles TCL Pesticides/PCBs TAL Metals (Unfiltered) TAL Metals (Filtered) Cyanide TPH (EPA 418.1) Sulfate (EPA 375.4) Ammonia (EPA 350.2)

* All analytical methods derived from *Test Methods for Evaluation of Solid Waste,* SW-846, Third Edition, 1992; EPA CLP Document Nos. OLM01.8 and ILM02.1; "Methods for Chemical Analysis of Water and Waste," EPA 600/4-79-020.

Table 5.1-2

Summary of Sample Containers, Volume, Preservation, and Maximum Holding Times

Parameter	Sample Container	Container Volume	Preservation	Maximum Holding Time
Nonaqueous				
Cyanide	Flint glass bottle, black phenolic cap, polyethylene liner	4, 8, 16, or 32 oz	4°C until analysis	12 days
Metals	Flint glass bottle, black phenolic cap, polyethylene liner	4, 8, 16, or 32 oz	4°C until analysis	180 days except for Hg, which is 26 days
Pesticides/PCBs	Amber glass, Teflon-lined cap	1,000 mL	Cool, 4°C, dark	Extraction must be started within 14 days. Analysis - 40 days from VTSR.
Semivolatile Organics	Amber glass, Teflon-lined cap	1,000 mL	Cool, 4°C, dark	Extraction must be started within 14 days. Analysis - 40 days from VTSR.
Sulfates	Plastic, glass	100 mL	Cool, 4°C	28 days
TPH	Glass	4 oz	Cool, 4°C	28 days; gasoline in soil, 7 days
Volatile Organics	Glass, polypropylene cap, white teflon liner	120 mL	Cool, 4°C	10 days
Aqueous				
Cyanide	Plastic bottle, plastic cap, plastic liner	1,000 mL	0.6 g ascorbic acid if residual Cl_2, NaOH to pH>12, cool, 4°C until analysis. $CaCO_3$ in presence of sulfide.	12 days
Metals	Plastic bottle, plastic cap, plastic liner	1,000 mL	HNO_3 to pH<2	180 days
Pesticide/PCBs	Amber glass, Teflon-lined cap	1,000 mL	Cool, 4°C, dark	Extraction aqueous continuous liquid-liquid extraction must be started within 7 days. Analysis - 40 days from VTSR.

Table 5.1-2
Summary of Sample Containers, Volume, Preservation, and Maximum Holding Time
(Continued)

Parameter	Sample Container	Container Volume	Preservation	Maximum Holding Time
Semivolatile Organics	Amber glass, Teflon-lined cap	1,000 mL	Cool, 4°C, dark	Extraction aqueous continuous liquid-liquid extraction must be started within 7 days. Analysis - 40 days from VTSR.
Sulfates	Plastic, glass	100 mL	Cool, 4°C	28 days
TPH	Glass	1 liter	Cool, 4°C	7 days
Volatile Organics	Glass, black phenolic plastic screw cap, Teflon-lined septum	40 mL	Cool, 4°C, dark, 0.08% $Na_2S_2O_3$ if residual Cl_2	10 days

TPH - Total Petroleum Hydrocarbons
VTSR - Validated time of sample receipt (at the laboratory)

5.2 QUALITY CONTROL PROCEDURES

To meet the QA/QC objectives of the project, the field work and laboratory analyses followed the standardized methods or procedures that were described in the CDAP and are summarized in the subsections that follow.

5.2.1 Field and Laboratory Quality Control Samples

Standard analytical QC checks instituted by field and laboratory personnel included (but were not limited to):

- Field/rinsate blanks — Samples prepared using analyte-free water supplied by the laboratory or purchased from commercial sources that certify the quality of the water. Field/rinsate blanks were routed through decontaminated sampling equipment prior to collection. Preservatives or additives were added as required, and the blank sample was then sealed. The field/rinsate blank was shipped with real samples collected for the same parameter group. During field sampling, a field/rinsate blank was collected and analyzed from each group of water or soil/solid samples for every 10 samples received daily.

- Trip blanks — Volatile organic sample containers prepared in the laboratory using analyte-free water. The trip blanks accompanied the field samples during transport to the site; during collection, packaging, and transport to the laboratory; and during analysis, and were contained in the same type of sample container as those used in the specific sampling effort. One trip blank sample was included with each shipment of aqueous samples designated for VOC analysis.

- Duplicate samples — Samples collected from the same sampling location at the same time. Soil duplicates were homogenized (with the exception of VOC samples). At least one duplicate sample was analyzed from each group of samples of a similar matrix type for every 20 samples received.

- Matrix spike/matrix spike duplicate (MS/MSD) — Samples in which compounds are added before extraction and analysis. The recoveries for spiked compounds can be used to assess how well the method used for analysis recovers target compounds (i.e., a measure of matrix interference in the sample). When reviewed in conjunction with other QC data, MS/MSDs may indicate reanalysis using a more appropriate method. At least one spiked sample analysis was performed on each group of samples of a similar matrix type and concentration for each batch of samples or for every 20 samples received, whichever was more frequent.

- Surrogate spiking — Samples in which surrogate compounds are added before sample preparation for organics analysis. The review for spiked surrogate compounds can be used to assess method accuracy for each sample matrix.

5.2.2 Field Activities

The accuracy of field measurements obtained from site instruments was maintained on-site by appropriate calibration procedures, as described in detail in the CDAP.

The field investigation procedures used to perform the site investigation were presented in the Fort Monmouth CDAP. The field procedures included:

- Surface and subsurface soil sampling.
- Installation of monitor wells.
- Groundwater sampling.
- Monitor well casing elevation surveying.
- Surface-water and sediment sampling.
- Concrete pad sampling.
- Ancillary field activities, such as decontamination, field measurements, and fluids management.

Sample identification and documentation procedures were followed in the field as specified in the CDAP, including:

- Sample containers were labeled with the appropriate information.
- The sample was entered into the chain-of-custody record.
- A unique sample code was assigned to each sample collected.
- Signed custody seals were applied on opposite sides of the container lid.
- Samples were shipped to WESTON's laboratories as environmental samples and complied with all DOT requirements for such shipment.

A bound field notebook was maintained by the Field Team Leader at the site to record daily activities, including sample collection and tracking information. Quantitative field data, such as water-level measurements, were recorded in bound field notebooks. Qualitative or descriptive field data (such as soil textures) obtained from soil borings and monitor wells were recorded in the field in field notebooks, reduced using a standardized lithologic coding system.

5.2.3 Laboratory Activities

5.2.3.1 Laboratory Equipment Quality Control

The reliability and credibility of laboratory analytical instruments and QA of analytical results were ensured by documented calibration procedures and QC samples (such as method blanks and method spikes). A review of the calibration procedures and the calibration frequencies that are standard operating procedures (SOPs) employed by WESTON's Environmental Metrics Division is provided in the CDAP. The following instruments were used to analyze environmental samples:

- Gas chromatograph (GC).
- Gas chromatograph/mass spectrometer (GC/MS).
- Atomic absorption spectrophotometer: furnace (AA).
- Inductively coupled plasma spectrometer (ICP).
- Cold vapor mercury analyzer: flameless AA.
- Spectrophotometer.

Certain TCL VOCs, such as methylene chloride, acetone, 2-butanone, and toluene, are commonly detected as laboratory contaminants. In order to ensure that the data reported are not biased by potential laboratory contamination, certain QA procedures, including reagent blank analysis, were taken. Assessment of the reagent blanks is discussed in Subsection 5.3.2.

5.2.3.2 Laboratory Data

In addition to the data collected in the field and recorded on the chain-of-custody forms, data describing the processing of samples were accumulated in the laboratory and recorded in laboratory notebooks.

Data reduction was performed by the individual analysts and consisted of calculating concentrations in samples from the raw data obtained from the measuring instruments. The complexity of the data reduction was dependent on the specific analytical method and the number of discrete operations (e.g., extractions, dilutions, and concentrations) involved in obtaining a sample that could be measured.

System reviews were performed at all levels. The individual analyst constantly reviewed the quality of data through calibration checks, QC sample results, and performance evaluation (PE) samples. The Section Manager and/or the Analytical Project Manager reviewed data for consistency and reasonableness with other generated data and to determine if program requirements had been satisfied. Selected hard copy output of data (e.g., chromatograms, spectra, etc.) was reviewed to ensure that results were interpreted correctly. The Quality Assurance Officer independently conducted a review of selected projects to determine if laboratory and client QA/QC requirements had been met. The final routine review was performed by the Laboratory Manager prior to reporting the results to the client.

5.3 DATA QUALITY

5.3.1 Data Reporting

Laboratory reports contain final results, methods of analysis, levels of detection, surrogate recovery data, and method blank data. In addition, special analytical problems and/or any modifications of referenced methods were noted.

5.3.2 Data Validation/Usability Review

Separate from the laboratory's internal data review/data validation, an independent review of the final analytical data packages was performed to validate results and to determine usability. The validation was performed by URS Consultants, Inc. (URS) as a subcontractor to Malcolm Pirnie, Inc.

The data validation was performed in accordance with U.S. Environmental Protection Agency (EPA) *Region II Modifications to the National Functional Guidelines for Organic Data Review, Multimedia, Multiconcentration* (January 1992) and *Region II Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analysis* (January 1992). For non-CLP procedures, the data were validated following the intent of the National Functional Guidelines.

5.3.3 Results of Data Validation/Usability Review

Malcolm Pirnie issued a Data Validation Report (June 1995) that gave the results of their validation. URS performed data validation services on 84 environmental samples. The matrix type and number of samples were as follows:

Matrix	No. of Samples
Groundwater	33
Surface water	5
Sediment	6
Surface soil	10
Soil boring	24
Transformer soil	4
Concrete	2

URS reported that a majority of the analytical results were usable as reported, despite minor deviations from EPA CLP criteria, which do not jeopardize the chemical representativeness of the data.

There were several instances, however, where compounds or whole fractions were rejected by URS based on deviations from CLP methodologies and/or data validation criteria.

Sample ID	Compound or Fraction
B9-SB01-A02	Acetone
B9-SB01-C02	Acetone
MPA3-SB01-A02	Acetone
MP08-SD01-A01	Semivolatiles, pesticides/PCBs
MP16-SS01-A01	Dieldrin
CW06-SS01-A01	Heptachlor epoxide
MP02-MW01-A01	Total and dissolved aluminum, chromium, and iron

The results for these samples are provided in this report, but are flagged in the Results summary tables. The Data Validation Report includes a discussion of the data quality and completeness.

5.3.4 Results of Field and Trip Blanks

During the Fort Monmouth site investigation, field/rinsate blanks and trip blanks were submitted for analysis (numbers of samples are shown in Tables 5.3-1 and 5.3-2), as discussed in Section 3 of this report. The results of the analyses of the field/rinsate blanks were used to assess the efficiency of the equipment decontamination procedures in preventing cross-contamination between samples, and to determine if the compounds detected in the characterization samples were attributable to the sampling equipment or to the site. The results of trip blank analyses were used to determine if compounds detected in samples analyzed for volatile organics were introduced during shipment or from containers and were not attributable to the site. A discussion of the difference between the samples contracted in the scope of work and the actual effort is included in Section 4.

A summary of the compounds detected in field/rinsate blanks is provided in Table 5.3-3. Inorganics, VOCs, and SVOCs were each detected in at least one field/rinsate blank collected during field activities. All of the organic compounds detected are common laboratory contaminants and were likely introduced into the samples during laboratory analysis.

Table 5.3-1
Main Post Samples Collected

MEDIA/PARAMETER	INVESTIGATION SAMPLES		QA/QC SAMPLES *		TOTAL SAMPLES	
	Scope of Work	Taken	Scope of Work	Taken	Scope of Work	Taken
Surface and shallow soil						
TCL VOA	4	4	1	2	5	6
TCL BNA	4	6	1	0	5	6
TCL pesticide/PCB	6	6	1	0	7	6
TCL PCB	8	8	1	0	9	8
TAL Metals	2	2	1	0	3	2
Soil Borings						
TCL VOA	38	31	2	2	40	33
TCL BNA	26	15	1	1	27	16
Pesticide/PCB	15	15	1	1	16	16
TAL Metal	13	16	1	1	14	17
TAL Cyanide	12	11	1	1	13	12
TPH	24	15	2	0	26	15
Sediment						
TCL VOA	3	3	1	3	4	6
TCL BNA	3	3	1	1	4	4
Pesticide/PCB	3	3	1	1	4	4
TAL Metal	4	6	1	1	5	7
TAL Cyanide	3	4	1	1	4	5
Concrete						
TCL PCB	6	4	1	1	7	5
Surface Water						
TCL VOA	8	8	1	1	9	9
TCL BNA	8	8	1	1	9	9
Pesticide/PCB	8	8	1	1	9	9
TAL Metal (Total)	8	8	1	1	9	9
TAL Metals (Dissolved)	8	8	1	1	9	9
TAL Cyanide	8	8	1	1	9	9
Groundwater						
TCL VOA	60	60	25	38	85	98
TCL BNA	60	60	9	16	69	76
Pesticide/PCB	60	60	9	16	69	76
TAL Metal (Total)	58	56	9	15	67	71
TAL Metals (Dissolved)	58	56	9	15	67	71
TAL Cyanide	52	52	9	10	61	62
Sulfate	12	12	2	4	14	15
Ammonia	8	8	2	4	10	13
TPH	6	6	2	5	8	11

* QA/QC samples are trip blanks, field blanks, and duplicates.

Table 5.3-2
Charles Wood Samples Collected

MEDIA/PARAMETER	INVESTIGATION SAMPLES			QA/QC SAMPLES *			TOTAL SAMPLES		
	Scope of Work	Taken	Analyzed	Scope of Work	Taken	Analyzed	Scope of Work	Taken	Analyzed
Surface and shallow soil									
TCL VOA	1	1	1	1	2	2	2	3	3
TCL BNA	1	1	1	1	0	0	2	1	1
TCL pesticide/PCB	1	1	1	1	0	0	2	1	1
TCL PCB	6	7	7	1	1	1	7	8	8
TAL Metals	13	11	11	1	1	1	14	12	12
Soil Borings									
TCL VOA	52	32	32	3	1	1	55	33	33
TCL BNA	52	31	31	3	1	1	55	32	32
Pesticide/PCB	52	31	31	3	1	1	55	32	32
TAL Metal	48	31	31	3	2	2	51	33	33
TAL Cyanide	12	12	12	1	1	1	13	13	13
TPH	0	1	1	0	0	0	0	1	1
Sediment									
TCL VOA	3	3	3	1	0	0	4	3	3
TCL BNA	3	3	3	1	0	0	4	3	3
Pesticide/PCB	3	3	3	1	0	0	4	3	3
TAL Metal	3	4	4	1	0	0	4	4	4
TAL Cyanide	3	3	3	1	0	0	4	3	3
Concrete									
TCL PCB	1	0	0	1	0	0	2	0	0
Surface Water									
TCL VOA	2	2	2	1	0	0	3	2	2
TCL BNA	2	2	2	1	0	0	3	2	2
Pesticide/PCB	2	2	2	1	0	0	3	2	2
TAL Metal (Total)	2	2	2	1	0	0	3	2	2
TAL Metals (Dissolved)	2	2	2	1	0	0	3	2	2
TAL Cyanide	2	2	2	1	0	0	3	2	2
Groundwater									
TCL VOA	38	34	34	22	25	25	60	59	59
TCL BNA	38	34	34	6	6	6	44	40	40
Pesticide/PCB	38	34	34	6	6	6	44	40	40
TAL Metal (Total)	34	30	30	6	4	4	40	34	34
TAL Metals (Dissolved)	34	30	30	6	4	4	40	34	34
TAL Cyanide	10	10	10	2	2	2	12	12	12

* QA/QC samples are trip blanks, field blanks, and duplicates.

Table 5.3-3
Summary of Field/Rinsate and Trip Blanks (µg/l)

Sample ID	Inorganics	VOC's	SVOC's	Pesticides/ PCBs
Trip Blanks				
CW01-SB26-D02	N/A	ND	N/A	N/A
CW01-SB31-D02	N/A	ND	N/A	N/A
CW02-SB31-D02	N/A	ND	N/A	N/A
CW02-SB33-D02	N/A	ND	N/A	N/A
CW05-SB01-D02	N/A	ND	N/A	N/A
CW06-SB34-D02	N/A	ND	N/A	N/A
CW09-SB01-D02	silver (.93), aluminum (3830), arsenic (2.6), barium (6.6), beryllium (.39), calcium (366), cobalt (1.0), chromium (44), copper (2.3), iron (9720), mercury (.12), manganese (11.9), lead (3.9), vanadium (27.4), zinc (12.8), sodium (21.4), nickel (2.8), potassium (1480)	ND	N/A	N/A
CWA7-SB04-D02	N/A	ND	N/A	N/A
MPA-SB01-D02	N/A	ND	N/A	N/A
MPA-SB02-D02	N/A	ND	N/A	N/A
MP18-SB07-D01	N/A	ND	N/A	N/A
MP18-SB25-D02	N/A	acetone (30), chloroform (3J)	N/A	N/A
B3-SB01-D03	N/A	ND	N/A	N/A
B4-SB01-D01	N/A	ND	N/A	N/A
B5-SB01-D02	N/A	ND	N/A	N/A
B9-SB01-D02	N/A	acetone (8,300,000), benzene (6J)	N/A	N/A
B10-SB01-D02	N/A	acetone (22)	N/A	N/A
CW09-SS01-D01	N/A	ND	N/A	N/A
MP16-SS01-D01	N/A	ND	N/A	N/A
MP08-SD01-D01	N/A	ND	N/A	N/A
CW01-MW26-D02	N/A	ND	N/A	N/A
CW01-MW29-D01	N/A	acetone (20), 2-butanone (36)	N/A	N/A
CW06-MW01-D02	N/A	ND	N/A	N/A
CW06-MW34-D01	N/A	2-butanone (30)	N/A	N/A
MP04-MW07-D01	N/A	acetone (13), 2-butanone (27)	N/A	N/A
MP05-MW11-D02	ND	ND	ND	ND
MP08-MW12-D02	ND	ND	ND	ND
MP08-MW15-D01	ND	acetone (20), 2-butanone (37)	ND	ND
MP14-MW20-D02	ND	ND	ND	ND
B3-MW03B-D01	N/A	2-butanone (15)	ND	ND
B3-MW03B-D02	N/A	ND	ND	ND
B10-MW10B-D01	N/A	2-butanone (14)	ND	ND
B10-MW10B-D02	N/A	ND	ND	ND

Table 5.3-3
Summary of Field/Rinsate and Trip Blanks (µg/l)
(continued)

Sample ID	Inorganics	VOC's	SVOC's	Pesticides/ PCBs
Field/Rinsate Blanks				
CW01-SB31-E02	N/A	ND	N/A	N/A
CW09-SB01-E02 SOL	N/A	acetone (5200), chloroform (3J)	N/A	N/A
MPA-SB01-E02	N/A	acetone (240 B), chloroform (6J)	N/A	N/A
B9-SB01-E02	N/A	acetone (130)	N/A	N/A
CW09-SS01-E01	N/A	ND	N/A	N/A
MP16-SS01-E01	N/A	ND	N/A	N/A
MP08-SD01-E01	N/A	ND	N/A	N/A
CW01-MW26-E02	aluminum (20.2), calcium (105), iron (12.0), potassium (67.9), magnesium (34.3), sodium (132), lead (2.6)	ND	N/A	N/A
CW01-MW26-E02 SOL	aluminum (18.4), calcium (115), iron (16.8), potassium (119), magnesium (47.6), sodium (156), lead (1.5), antimony (13.2)	N/A	N/A	N/A
CW01-MW29-E01	calcium (113), sodium (321)	ND	N/A	N/A
CW01-MW29-E01 SOL	calcium (72.3), sodium (137), nickel (12.9)	ND	N/A	N/A
CW06-MW01-E02	N/A	N/A	N/A	N/A
CW09-MW35-E01	aluminum (231), barium (40.8), calcium (21100), cobalt (4.0), iron (85.8), potassium (2090), magnesium (5580), manganese (43.9), sodium (7230), nickel (10.8), zinc (60.7)	acetone (12), 2-butanone (25)	ND	ND
CW09-MW35-E01 SOL	calcium (191), iron (3.8), potassium (82.5), sodium (654), vanadium (2.8), zinc (2.6)	N/A	N/A	N/A
MP04-MW07-E01	aluminum (18.1), barium (.81), calcium (57.4), iron (62.7), sodium (116), zinc (3.8)	acetone (10), 2-butanone (27)	ND	ND
MP04-MW07-E01 SOL	beryllium (.31), calcium (82.6), iron (4.3), potassium (68.8), sodium (81.4), zinc (2.4)	N/A	N/A	N/A
MP05-MW11-E02	calcium (289), potassium (737), sodium (165)	chloroform (33)	ND	ND
MP05-MW11-E02 SOL	sodium (147), calcium (55.4)	N/A	N/A	N/A
MP08-MW12-E02	aluminum (27), calcium (109), iron (13.2), sodium (87.3), vanadium (3.0), copper (2.1)	ND	bis (2-Ethylhexyl) phthalate (2J)	ND
MP08-MW12-E02 SOL	calcium (95.7), iron (7.4), sodium (120), zinc (4.1)	N/A	N/A	N/A
MP08-MW15-E01	calcium (107), sodium (140), nickel (11.4)	2-butanone (38)	bis (2-Ethylhexyl) phthalate (3JB)	ND
MP08-MW15-E01 SOL	calcium (57.1), sodium (156)	N/A	N/A	N/A
MP14-MW20-E02	calcium (103), iron (9.6), sodium (56.3), lead (1.5), zinc (3.9)	ND	ND	ND
MP14-MW20-E02 SOL	barium (1.2), calcium (102), iron (9.2), sodium (142), zinc (4.2)	N/A	N/A	N/A
MP18-MW03-E01	aluminum(33.2), barium(.92), calcium(65.6), cobalt(2.2), chromium(2.2), iron(19.3), manganese(1.1),sodium(101),			

Table 5.3-3
Summary of Field/Rinsate and Trip Blanks (µg/l)
(continued)

Sample ID	Inorganics	VOC's	SVOC's	Pesticides/ PCBs
MP18-MW03-E01 SOL	aluminum(20.5), calcium(45.4), cobalt(2.2), chromium(4.1), iron(13.1), manganese(.72), sodium(94.1)			
MP18-MW24-E01	alumnium (25), calcium (282), iron (13.4), magnesium (20), sodium (160), antimony (21)	2-butanone (21)	ND	ND
MP18-MW24-E01 SOL	alumnium (28.4), calcium (161), copper (2.7), iron (13.5), magnesium (23.9), sodium(118)	N/A	N/A	N/A
MP18-MW24-E02	alumnium (20), calcium (460), copper (5.4), iron (24.5), sodium (75.8)	ND	bis (2-Ethylhexyl) pthalate (140)	ND
MP18-MW24-E02 SOL	calcium (106), copper (4), iron (15.7), sodium (97.2)	N/A	N/A	N/A
B3-MW03B-E01	aluminum (26.2), barium (1.0), calcium (123), iron (16.5), sodium (820), zinc (2.0)	2-butanone (17)	ND	ND
B3-MW03B-E01 SOL	aluminum (173), barium (113), calcium (25400), cobalt (7.3), iron (109), potassium (13200), magnesium (5790), manganese (90.1), sodium (20800), nickel (61.5), antimony (16.7), zinc (27)	N/A	N/A	N/A
B3-MW03B-E02	aluminum(27.1), calcium(368), iron(10.1), magnesium(46), sodium(296)	1,1,1-trichloroethane (8J)	ND	ND
B3-MW03B-E02 SOL	aluminum (17.2), calcium (163), iron (9.3), magnesium (61.3), sodium (179)	N/A	N/A	N/A
B10-MW10B-E01	calcium (33.6), manganese (2.7), sodium (95)	2-butanone (15)	ND	ND
B10-MW10B-E01 SOL	calcium (111), sodium (70.4)	N/A	N/A	N/A
B10-MW10B-E02	calcium (141), iron (9.3), magnesium (24), sodium (170), zinc (6.5)	ND	diethylphthalate (2JB)	ND
B10-MW10B-E02 SOL	calcium (130), iron (9.8), zinc (6.4), sodium (231)	N/A	N/A	N/A

Note: Numbers in () represent the concentration.
N/A - Not Applicable/No Sample
ND - Not Detected

Additionally, the low contaminant concentrations detected in the field blanks indicate that significant cross-contamination between samples did not occur. VOCs were detected in several of the trip blanks submitted for laboratory analysis. All of the VOCs detected are common laboratory contaminants and, similar to the field/rinsate blanks, were likely introduced into the samples during laboratory analysis. A summary of the analytical results for trip blanks is provided in Table 5.3-3.

5.3.5 Duplicates

Duplicate samples for groundwater, surface water, sediment, and soil were collected following the protocols in the *Site Investigation Fort Monmouth, NJ, Main Post and Charles Wood Areas, Chemical Data Acquisition Plan* (WESTON, December 1994) and are discussed in the subsections that follow. The degree of variation between the sample values (not including values below the quantitation limit) is presented in Table 5.3-4 by media.

5.3.5.1 Groundwater

Of the groundwater duplicate results, 70% were within 10% of the routine sample value and only 16% were not within 20% of the routine sample value. These data indicate reasonable agreement among the groundwater results. Groundwater sample results generally exhibit slight variation due to the homogeneous characteristics of liquid samples.

5.3.5.2 Surface Water

Of the surface-water duplicate results, 63% were within 10% of the routine sample and only 1 sample result was not within 20% of the routine sample. These data indicate reasonable agreement among the surface-water results. Surface-water sample results generally exhibit little variation due to the homogeneous characteristics of liquid samples.

Table 5.3-4
Duplicate Sample Data Within Given Ranges of Percent Variation

Medium	Variation in Duplicate Results										
	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	>100
Soil Borings and Surface Soils	31	11	7	4	1	3	7	7	1		3
Sediment	9	7		2							
Surface Water	12	6					1				
Groundwater	106	20	12	5	1	3		1	1	1	1

5.3.5.3 Sediments

Of the sediment duplicate results, 50% were within 10% of the routine sample and only 11% were not within 30% of the routine sample. These data indicate reasonable agreement among the sediment sample results. Sediment sample results tend to show more variation due to the heterogeneity of solid samples.

5.3.5.4 Soils

Of the soil duplicate results, 41% (surface soil and soil boring samples) were within 10% of the routine sample and 35% were not within 30% of the routine sample. These data indicate reasonable agreement among the soil sample results. Soil sample results tend to show more variation, in general, due to the nonhomogeneous nature of solid samples.

5.4 TENTATIVELY IDENTIFIED COMPOUNDS (TICs)

Tentatively identified compounds (TICs) were identified for volatile and semivolatile analyses. The sum of all TICs for every sample is provided in the data tables in Appendix D. In general, the sum of the TICs was small, less than 1 mg/kg for most solids and less than 600 µg/L for water. Significant amounts of TICs occurred in the sediment samples and the soil boring samples. The highest concentration of TICs for any sediment sample was 72 mg/kg, and the highest concentration for any soil sample was 18 mg/kg, both for semivolatile samples. By comparison, the proposed NJDEP cleanup criteria have a limit for total organics of 10,000 mg/kg. The highest concentration of volatile TICs for any solid sample was 1.1 mg/kg. By comparison, the proposed NJDEP limit for total volatile compounds is 1,000 mg/kg. Therefore, the concentration of TICs in solid samples will have no impact on whether it is less than the NJDEP cleanup criteria.

5.5 COMPARISON OF ANALYTICAL DETECTION LIMITS AND REMEDIATION STANDARDS

For certain compounds, the analytical method detection limits exceeded the NJDEP remediation standards. The compounds for which this occurred, along with the most stringent NJDEP remediation standard values and laboratory detection limits, are presented in Table 5.5-1.

The laboratory performed the analysis using the EPA Contract Laboratory Program (CLP) Statement of Work, "Organics Analysis, Multimedia, Multiconcentration," and "Inorganics Analysis, Multimedia, Multiconcentration," for TCL/TAL analyses as specified in the report *Investigation of Suspected Hazardous Waste Sites at Fort Monmouth, New Jersey*, and as approved by NJDEP in a letter dated 20 April 1994. The detection limits are generally in accordance with the method standards.

The detection limits for many surface-water analyses, including VOCs, SVOCs, and pesticides/PCBs, exceeded the most stringent NJDEP criteria. However, additional sampling is proposed at all surface-water sites.

For groundwater, 19 compounds, including VOCs, SVOCs, and pesticides, exceeded the NJDEP criteria. However, additional sampling is proposed for all monitor wells.

Only one compound exceeded NJDEP criteria in soil samples; i.e., toxaphene. Toxaphene was not present in significant quantities in the 1979 inventory of pesticides contained in the IA. Remedial action or additional sampling is proposed for the two pesticide storage areas, i.e., M-16 at the Main Post and CW-6 at Charles Wood.

For sediment, 13 compounds exceeded NJDEP criteria, including SVOCs, pesticides/PCBs, and 2 metals. Because sediment samples were taken at former locations of STP outfalls (STP had not been operating for at least 20 years), metals are the compounds that are of most concern. The detection limit of mercury was generally only slightly above the NJDEP criteria. The detection limit for antimony was generally close to the regulatory limit. Antimony is not believed to have been used in significant quantities at Fort Monmouth because the major activities have been training and research in electronics.

Table 5.5-1
COMPOUNDS FOR WHICH THE ANALYTICAL DETECTION LIMIT EXCEEDS NJDEP REMEDIATION STANDARDS

COMPOUND	NJDEP STANDARD	METHOD DETECTION LIMIT
SURFACE WATER (µg/L)		
1,2-Dichloroethane	0.291	2.4
2,4,6-Trichlorophenol	2.14	5.6
2,4-Dinitrotoluene	0.11	5.8
3,3'-Dichlorobenzidine	0.0386	2.8
4,4'-DDE	0.000588	0.1
4,4'-DDT	0.000588	0.1
Aldrin	0.000135	0.05
alpha-BHC	0.00391	0.05
alph-Chlordane	0.000277	0.05
Aroclor-1016	0.000244	1
Aroclor-1221	0.000244	2
Aroclor-1232	0.000244	1
Aroclor-1242	0.000244	1
Aroclor-1248	0.000244	1
Aroclor-1254	0.000244	1
Aroclor-1260	0.000244	1
Benzene	0.15	3.3
Benzo(a)anthracene	0.0028	4.9
Benzo(a)pyrene	0.0028	4.9
Benzo(b)fluoranthene	0.0028	5.7
Benzo(k)fluoranthene	0.0028	6.2
bis(2-Chloroethyl) ether	0.0311	9.7
bis(2-Ethylhexy)phthalate	1.76	9.7
Carbon Tetrachloride	0.363	1.5
Chrysene	0.0028	4.4
cis-1,3-Dichloropropene		3
Dibenz(a,h)anthracene	0.0028	6
Dieldrin	0.0019	0.1
Endosulfan sulfate	0.93	0.1
Endrin	0.0023	0.1
gamma-Chlordane		0.05
Heptachlor	0.000208	0.05
Heptachlor epoxide	0.000103	0.05
Hexachlorobenzene	0.000748	5.5
Hexachloroethane	2.73	5.3
Indeno(1,2,3-cd)pyrene	0.0028	7.1
Methoxychlor	0.03	0.5
Methylene Chloride	2.49	2.7
Toxaphene	0.0002	5
Vinyl Chloride	0.083	7.9
GOUNDWATER (µg/L)		
1,1,2,2-Tetrachloroethene	2	4.2
1,1,2-Trichloroethane	3	4.3

Table 5.5-1
(Continued)

1,2,4-Trichlorobenzene	9	9.6
1,2-Dichloroethane	0.3	2.4
1,2-Dichloropropane	0.5	1.7
Aldrin	0.002	0.05
alpha-BHC	0.006	0.05
Benzene	0.2	3.3
Bromodichloromethane	0.3	2
cis-1,3-Dichloropropene	0.2	3
Dieldrin	0.002	0.1
Hexachlorobutadiene	1	4.6
Methylene Chloride	2	2.7
Pentachlorophenol	0.3	4
Toxaphene	0.03	5
trans-1,3-Dichloropropene	0.2	2.4
SOIL (mg/kg)		
Toxaphene	0.1	210
SEDIMENT (mg/kg)		
2-Methylnaphthalene	65	580
Acenaphthene	150	580
Anthracene	85	580
Dibenzo (a,h) anthracene	60	580
Mercury	0.15	0.13
Antimony	2	5.4
2-BHC	0.394	2.9
Heptachlor	0.148	2.9
Endrin	0.0654	5.9
4,4' DDT	1.83	5.9
alpha-Chlordane	0.5	2.9
gamma-Chlordane	0.5	2.9
Aroclor	38.7	59

SECTION 6
CONCLUSIONS AND RECOMMENDATIONS

SECTION 6

CONCLUSIONS AND RECOMMENDATIONS

6.1 MAIN POST

The conclusions and recommendations discussed in the following subsections are for the Main Post area of Fort Monmouth, and are based on the results of the site investigation activities. These conclusions and recommendations are also presented with the site-specific discussions in Section 4 and are summarized in Table 6.1-1.

6.1.1 Landfill 2 (M-2)

Investigation activities performed at site M-2 included the following:

- Sampling of two surface-water locations.
- Installation and sampling of three monitor wells.
- Tidal monitoring.

6.1.1.1 Conclusions

The surface-water sampling results indicate that two VOCs were detected at the two surface-water locations at concentrations greater than NJDEP surface-water criteria, and above maximum background concentrations. In addition, soluble lead was detected at a concentration greater than NJDEP criteria and the maximum background concentrations. Because the site formerly had a New Jersey Pollutant Discharge Elimination System (NJPDES) permit (permit No. 0057274), surface water has been sampled since 1985. The results from the current round of surface-water sampling for VOCs are less than the maximum results from previous rounds.

Chlorobenzene was detected in the groundwater at concentrations exceeding the NJDEP GWQC and background in both downgradient monitor wells from both sampling rounds and in the upgradient well during one sampling round.

Table 6.1-1

Main Post Site Summary and Recommendations

Site	Compounds that Exceed NJDEP Criteria and Maximum Background	Recommendations
M-2 Landfill	Groundwater: Chlorobenzene in 3 wells Surface water: Tetrachloroethene Trichloroethene	Conduct groundwater and surface-water monitoring on a long-term basis.
M-3 Landfill	Groundwater: Chlorobenzene (low value) in 1 well Lead in 1 sample Surface water: None	Conduct groundwater and surface-water monitoring on a long-term basis. Excavate partially exposed drum and conduct confirmatory sampling.
M-4 Landfill	Groundwater: DDT (low value) in 1 well	Conduct groundwater monitoring on a long-term basis.
M-5 Landfill	Groundwater: Tetrachloroethene in 1 well	Conduct groundwater monitoring and sampling of surface-water location SS-6 on a long-term basis.
M-8 Landfill	Groundwater: Tetrachloroethene in 1 well Benzene in 1 well Chlorobenzene in 2 wells	Conduct groundwater monitoring and sampling of surface-water location SS-7 on a long-term basis.
M-12 Landfill	Groundwater: None	Conduct groundwater monitoring on a long-term basis.
M-14 Landfill	Groundwater: None Surface water: None	Conduct groundwater and surface-water monitoring on a long-term basis.
M-15 Water Tank	Soil: DDT DDE Lead Cadmium Zinc	Excavate contaminated soil and perform confirmatory sampling.
M-16 Former Pesticide Bldg.	Soil: Aldrin in 1 sample Dieldrin in 4 samples Heptachlor in 1 sample DDE in 1 sample DDT in 2 samples Groundwater: None	Excavate contaminated soil and perform confirmatory sampling. Abandon site monitor well.
M-18 Former Training Area	Soil: Chrysene (all SVOCs in 1 sample) Benzo(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Groundwater: DDD in 1 well Lead in 1 well	Locate and excavate possible UST and any contaminated soil and perform confirmatory sampling. Excavate stained soil at SB-06 and conduct confirmatory sampling. Conduct groundwater monitoring on a long-term basis.

Table 6.1-1

Main Post Site Summary and Recommendations (Continued)

Site	Compounds that Exceed NJDEP Criteria and Maximum Background	Recommendations
AOC-3 Former Sewage Treatment Plant	Soil: None Sediment: None	No further action.
Pre-1941 Treatment Plant	Sediment: Arsenic Cadmium Chromium Zinc	No further action.
PCB Transformers	Soil: Building 292 Concrete: Buildings 1002, 1208, 1209	Remediate stained concrete when transformers are removed. Conduct confirmatory sampling. Sample soil at Bldg. 292 to determine extent of contamination.

The results of the tidal monitoring indicate that there is no apparent relationship between the changing creek levels and the water levels in upgradient monitor well MW-1; however, a direct relationship was observed between changing creek levels and the water levels in downgradient monitor wells MW-2 and MW-3. Conductivity and salinity results indicate the presence of freshwater in the creek at site M-2. Freshwater was indicated at monitor wells MW-1 and MW-3. A moderate to high specific conductance was measured at monitor well MW-2, which is unexplained.

6.1.1.2 Recommendations

Although groundwater sample results at site M-2 exceeded NJDEP criteria for one VOC, and surface-water results were slightly exceeded by two VOCs, immediate remedial action is not required for several reasons. Immediate remedial action is usually based on an immediate threat to human health. Shallow groundwater flows toward Mill Creek, as indicated by water-level measurements in site monitor wells, and there are no known uses of groundwater at or downgradient of the site. Although there is slight VOC contamination in Mill Creek, there is no use of this water for human consumption. In fact, Mill Creek becomes saline immediately downgradient of site M-2. Therefore, the groundwater and surface waters are not used for drinking water.

In addition, surface-water sampling has been performed at this site since 1986, and since the landfill has not been used for decades, the concentrations of VOCs seem, at worst, to be stable and possibly decreasing. Presumably, since no material is being added to the source (the landfill), natural degradation will decrease groundwater and surface-water contamination levels in the future. Although downgradient surface-water samples were not taken during this round, previous sampling at site M-8 indicated that NJDEP surface-water criteria were not exceeded for VOCs. Therefore, the only portion of Mill Creek for which NJDEP surface-water criteria are exceeded is the portion between sites M-2 and M-8. All of this portion is on Fort Monmouth property and, therefore, access to it is restricted.

Since the existing monitor wells and surface-water sampling locations are adequately placed to monitor downgradient groundwater and surface water, the Fort Monmouth Directorate of Public Works (DPW) proposes that a long-term surface-water and groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells, and surface-water samples would be collected from points yet to be determined. Compounds of concern identified in the first two rounds of sampling would be targeted for the monitoring program.

6.1.2 Landfill 3 (M-3)

Investigation activities performed at site M-3 included the following:

- Geophysical surveys.
- Installation and sampling of three monitor wells.
- Sampling of three surface-water locations.

6.1.2.1 Conclusions

The geophysical surveys indicate that the extent of the identified waste material is within the suspected boundaries of the landfill. Site monitor wells have been installed in appropriate locations to monitor groundwater quality upgradient and downgradient of the waste material. In an isolated area of the site the GPR results indicated hyperbolic radar signatures typical of a buried drum or drums. A partially exposed drum was also observed at this location.

Groundwater quality results indicate that chlorobenzene was detected in one downgradient well below laboratory quantitation limits, but just above NJDEP GWQC and background from one sampling round. Lead was also detected at levels above NJDEP GWQC and background.

The surface-water quality results indicate that no organic or inorganic concentrations exceeded both NJDEP surface-water criteria and the maximum background concentration. Because the site formerly had an NJPDES permit, surface water has been sampled since 1986. The results from

the current round of surface-water sampling for VOCs are less than the maximum results from previous rounds.

6.1.2.2 Recommendations

Although NJDEP groundwater criteria were exceeded for one VOC, immediate remedial action is not required for several reasons. First, the measured value for the VOC was below the quantitation limit and just slightly above the GWQC. In addition, the shallow groundwater flows toward Lafetra Creek, as indicated by water-level measurements in site monitor wells, and there are no known uses of groundwater at or downgradient of the site. Surface-water samples did not exceed NJDEP surface-water criteria. Therefore, there is no immediate threat to human health.

In addition, because surface-water sampling has been performed at this site since 1986, and the landfill has not been used for decades, the concentrations of VOCs seem, at worst, to be stable and possibly decreasing. Presumably, since no material is being added to the source (the landfill), natural degradation will decrease groundwater and surface-water contamination levels in the future.

Since the existing monitor wells and surface-water sampling locations are adequately placed to monitor downgradient groundwater and surface water, DPW proposes that a long-term surface-water and groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells, and surface-water samples would be collected from points yet to be determined. Compounds of concern identified in the first two rounds of sampling would be the targeted for the monitoring program.

The partially exposed drum will be excavated. The area immediately around and under the drum will be investigated for additional drums. Any excavated drums will be examined to determine if hazardous materials were present or still exist. The drum and the excavation will be monitored with a photoionization detector (PID). NJDEP will be requested to send a representative to

monitor the excavation. If there is no indication that the drum contained, or still contains, hazardous materials and elevated readings are not observed on the PID, the excavation will be backfilled and no further action will be taken. If contamination is identified, additional sampling will be conducted in accordance with the *Technical Requirements for Site Remediation* (NJDEP, 1993).

6.1.3 Landfill 4 (M-4)

Investigation activities performed at site M-4 included the following:

- Installation and sampling of three monitor wells.

6.1.3.1 Conclusions

One pesticide compound was detected at a concentration just above the NJDEP GWQC and background in the upgradient well in both the routine and duplicate samples. The pesticide was not detected in downgradient monitor wells, and also was not detected during previous sampling at downgradient location SS-5 (WESTON, 1993).

6.1.3.2 Recommendations

Although NJDEP groundwater criteria were exceeded for one pesticide, no immediate remedial action is required. The measured value of the pesticide was just slightly above the GWQC. Shallow groundwater flows toward Mill Creek, as indicated by water-level measurements in site monitor wells, and there are no known uses of groundwater at or downgradient of the site. No surface-water sampling was performed at this site during this project. The surface water was previously sampled downstream, but was not analyzed for pesticides. Since Mill Creek flows on Fort Monmouth property between sites M-4 and M-8, access to this stream is restricted.

In addition, surface-water sampling has been performed at this site since 1986, and since the landfill has not been used for decades, the concentrations of VOCs seem, at worst, to be stable

and possibly decreasing. Presumably, since no material is being added to the source (the landfill), natural degradation will decrease groundwater and surface-water contamination levels in the future.

Since the existing monitor well locations are adequately placed to monitor downgradient groundwater, DPW proposes that a long-term groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells. Compounds of concern (including pesticides) identified in the first two rounds of sampling would be targeted for the long-term groundwater and surface-water monitoring program.

6.1.4 Landfill 5 (M-5)

Investigation activities performed at site M-5 included the following:

- Installation and sampling of two monitor wells.

6.1.4.1 Conclusions

PCE was detected in the upgradient well in concentrations exceeding NJDEP GWQC and background from both sampling rounds. Because the site formerly had an NJPDES permit, surface water has been sampled since 1986. During previous investigations, PCE was also detected at downgradient surface-water sampling location SS-6 (WESTON, 1993). Surface water was not sampled at site M-5 during this investigation because the maximum VOC concentrations at this site during previous rounds of sampling were less than the maximum concentrations at site M-2, which is upgradient. For site M-2, the results of the current round of surface-water sampling for VOCs are less than the maximum results from previous rounds.

6.1.4.2 Recommendations

Although groundwater sample results exceeded NJDEP criteria for one VOC, immediate remedial action is not required. Shallow groundwater at the site flows toward Mill Creek and Lafetra Creek, and there are no known uses of groundwater at or downgradient of the site. No surface-water sampling was performed at this site during this project. Previous sampling rounds have indicated that some VOC concentrations exceed NJDEP surface-water criteria in Mill Creek adjacent to site M-5. However, previous rounds of sampling have indicated that VOC concentrations do not exceed surface-water criteria at site M-8, which is downgradient of site M-5. Therefore, there is little immediate threat to human health.

In addition, surface-water sampling has been performed at this site since 1986, and since the landfill has not been used for decades, the concentrations of VOCs seem, at worst, to be stable and possibly decreasing. Presumably, since no material is being added to the source (the landfill), natural degradation will decrease groundwater and surface-water contamination levels in the future.

Since the existing monitor wells and surface-water sampling locations are adequately placed to monitor downgradient groundwater and surface water, DPW proposes that a long-term surface-water and groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells and surface-water samples would be collected from points yet to be determined. Compounds of concern identified in the first two rounds of sampling would be targeted for the monitoring program.

6.1.5 Landfill 8 (M-8)

Investigation activities performed at site M-8 included the following:

- Abandonment of previously installed monitor wells and piezometers.
- Installation and sampling of four monitor wells.

- Tidal monitoring.

6.1.5.1 Conclusions

Due to highly turbid conditions and poor water-level recovery of the original monitor wells, all original monitor wells and piezometers were abandoned.

Groundwater sampling results indicate low concentrations of benzene and chlorobenzene were detected in two downgradient monitor wells, and PCE concentrations were detected in the upgradient well (MW-12) exceeding NJDEP GWQC. Additionally, PCE and other VOCs were previously detected at location SS-7, downgradient of site M-8.

Because the site formerly had an NJPDES permit, surface water has been sampled since 1986. However, surface water was not sampled at site M-8 during this investigation because the maximum VOC concentrations at this site during previous rounds of sampling were less than the maximum concentrations at sites M-2 and M-3, which are upstream. The concentrations of VOCs at site M-8 for previous rounds were less than the NJDEP surface-water criteria.

The results of the tidal monitoring indicate that there is no apparent relationship between creek levels and water levels in MW-12 because of its distance from the creek. A poor to moderate relationship was measured between MW-14 and creek levels. A direct relationship was observed between creek levels and MW-13 and MW-15. The conductivity and salinity measurements in Parkers Creek indicate the presence of brackish to salty water at site M-8. Groundwater sampled from MW-12 indicates freshwater. Monitor wells MW-13, MW-14, and MW-15 indicate brackish to salty water in an area of the water-bearing unit close to Parkers Creek.

6.1.5.2 Recommendations

Although groundwater sample results exceeded NJDEP criteria for three VOCs, immediate remedial action is not required. Groundwater flows toward Lafetra Creek, as indicated by water-level measurements in site monitor wells, and there are no known uses of groundwater at or

downgradient of the site. In fact, groundwater at three of the four monitor wells is brackish and unsuitable for drinking. The brackish water is a result of the proximity of the wells to Parkers Creek, and the direct relationship of tidal fluctuations and site groundwater levels. No surface-water sampling was performed at this site during this project. Previous sampling rounds have indicated that VOC concentrations did not exceed NJDEP surface-water criteria in the stream. Therefore, there is little immediate threat to human health.

In addition, surface-water sampling has been performed at this site since 1986, and since the landfill has not been used for decades, the concentrations of VOCs seem, at worst, to be stable and possibly decreasing. Presumably, since no material is being added to the source (the landfill), natural degradation will decrease groundwater and surface-water contamination levels in the future.

Since the existing monitor wells and surface-water sampling locations are adequately placed to monitor downgradient groundwater and surface water, DPW proposes that a long-term surface-water and groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells and surface-water samples would be collected from points yet to be determined. Compounds of concern identified in the first two rounds of sampling would be targeted for the monitoring program.

6.1.6 Landfill 12 (M-12)

Investigation activities performed at site M-12 included the following:

- Geophysical surveys.
- Installation and sampling of three monitor wells.
- Tidal monitoring.

6.1.6.1 Conclusions

The results of the geophysical surveys indicate that the identified fill and buried ferrous material are present within the suspected boundaries of the landfill. Monitor wells are positioned to adequately monitor groundwater downgradient of these areas.

Groundwater sampling results indicate that no compounds of concern exceeded NJDEP GWQC from upgradient and downgradient wells.

The results of the tidal monitoring relate to both sites M-12 and M-14. The data indicate that there is no apparent relationship between creek levels and water levels in MW-19 and MW-20. A poor to moderate relationship was measured between MW-16, MW-17, and MW-18 and creek levels. A direct relationship was observed between creek levels and MW-21. The conductivity and salinity measurements in Husky Brook indicate the presence of brackish to salty water at sites M-12 and M-14. Groundwater sampled from monitor wells at each location indicates freshwater.

6.1.6.2 Recommendations

Although no compounds of concern were identified at site M-12, because of the site's history of being used as a landfill, DPW proposes that a long-term groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a long-term basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells. Contaminants identified in the first two rounds of sampling would be targeted for the monitoring program.

6.1.7 Landfill 14 (M-14)

Investigation activities performed at site M-14 included the following:

- Geophysical surveys.
- Installation and sampling of three monitor wells.

- Sampling of two surface-water locations.
- Tidal monitoring.

6.1.7.1 Conclusions

The results of the geophysical surveys indicate that fill and some metallic debris exist throughout the site; however, a discrete landfill boundary was not identified at site M-14. This may be due in part to the composition of the fill material and the small amount of subsurface metallic material present at the site.

The groundwater and surface-water sampling results indicate that no compounds of concern were detected above NJDEP GWQC and surface-water criteria.

Tidal monitoring was conducted at site M-12 and site M-14 simultaneously. The results of the tidal monitoring are discussed in Subsection 6.1.6.

6.1.7.2 Recommendations

Although no compounds of concern were identified at site M-14, because of the site's history of being used as a landfill, DPW proposes that a long-term surface-water and groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells and surface-water samples would be collected from points yet to be determined. Contaminants identified in the first two rounds of sampling would be targeted for the monitoring program.

6.1.8 Water Tank (M-15)

Investigation activities performed at site M-15 included the following:

- Collection of two surface soil samples near the water tank.

6.1.8.1 Conclusions

Two pesticide compounds and three metals, cadmium, zinc, and lead, were detected in surface soil at levels that exceeded NJDEP residential SCC and maximum background.

6.1.8.2 Recommendations

DPW has submitted the necessary documentation to Headquarters, Army Materiel Command/Army Environmental Center (HQAMC/AEC) to obtain the proper funding to remediate the site in FY 1996. Depending on funding availability, the affected soil will be excavated and disposed of in accordance with the applicable regulations. The area of contamination encompasses the perimeter of the tank, about 10 feet at the widest point. The depth of contamination is assumed to be 6 inches. Excavation will be performed in conjunction with confirmatory soil sampling to ensure that NJDEP SCC are achieved. It is estimated that 13 yd^3 of soil will be excavated, assuming that soil is excavated to a depth of 6 inches. NJDEP will be requested to send a representative to observe the excavation.

6.1.9 Former Pesticide Storage Building (M-16)

Investigation activities performed at site M-16 included the following:

- Collection of four surface soil samples.
- Collection of two soil samples from discrete depth intervals at one soil boring location.
- Installation and sampling of one monitor well.

6.1.9.1 Conclusions

Pesticide compounds were detected at four surface soil sampling locations and in one soil boring sample (0 to 2-foot interval) in concentrations above NJDEP criteria and background.

No compounds of concern were detected in the groundwater above NJDEP criteria.

6.1.9.2 Recommendations

DPW has submitted the necessary documentation to HQAMC/AEC to obtain the proper funding to remediate the site in FY 1996. Depending on funding availability, the affected soil will be excavated and disposed of in accordance with the applicable regulations. The area of contamination is approximately 50 feet by 20 feet. The depth of contamination is assumed to be 12 inches. Excavation will be conducted in conjunction with confirmatory soil sampling to ensure that NJDEP SCC are achieved. It is estimated that 56 yd^3 of soil will be excavated, assuming that soil will be excavated to a depth of 12 inches. NJDEP will be requested to send a representative to observe the excavation.

The site monitor well will be properly abandoned due to the nondetection of compounds of concern in groundwater. The remedial activities proposed will remediate potential source areas of pesticides detected in soil.

6.1.10 Former Training Area (M-18)

Investigation activities performed at site M-18 included the following:

- Geophysical surveys.
- Soil sampling at nine soil boring locations.
- Installation and sampling of two monitor wells.

6.1.10.1 Conclusions

The geophysical surveys identified several anomalies indicative of buried waste and fill material within the suspected boundaries of the site M-18 area. One anomaly was indicative of a UST or storage tank component. The geophysical results indicate that soil borings and monitor wells were appropriately located to evaluate subsurface conditions downgradient and within landfill boundaries.

The soil sampling results indicated that six SVOCs were detected at SB-06 in concentrations that exceeded the NJDEP criteria and established background concentrations.

The groundwater sampling results indicate that 4,4-DDD was detected at a concentration just above the NJDEP GWQC in one well (MW-24) from both sampling rounds. Lead was detected in one location above NJDEP GWQC and background. TPH concentrations were also detected just above laboratory quantitation limits in MW-24 and MW-25 in both sampling rounds.

6.1.10.2 Recommendations

Trenching will be performed at the suspected UST or UST component location to confirm the geophysical results and to excavate if necessary. A PID will be used to conduct field screening during the excavation. The excavation will be performed in conjunction with confirmatory sampling, in accordance with the *Technical Requirements for Site Remediation* (NJDEP, 1993), if a UST is encountered to ensure that NJDEP SCC are achieved. NJDEP will be requested to send a representative to observe the excavation.

Additionally, soil at soil boring SB-06 will be excavated. If it is determined that the suspected UST is the source of contamination at SB-06, this location will be remediated in conjunction with the UST. Confirmatory sampling will also be conducted.

DPW proposes that a long-term groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells. Compounds of concern identified in the first two rounds of sampling would be targeted for the monitoring program.

6.1.11 Former Main Post Sanitary Treatment Plant (AOC-3)

Investigation activities performed at site AOC-3 included the following:

- Collection of two soil samples from two soil boring locations.
- Collection of one sediment sample from one location in the Parkers Creek outfall area.

6.1.11.1 Conclusions

The results of the soil and sediment sampling indicated that compounds of concern were not detected above the NJDEP criteria and established background concentrations.

6.1.11.2 Recommendations

No further action will be taken.

6.1.12 Pre-1941 Sanitary Treatment Plant

Investigation activities performed at the former STP included the following:

- Collection of one sediment sample from the outfall area.

6.1.12.1 Conclusions

Nine metals were detected above NJDEP criteria in the sediment sample collected at the outfall area. In addition, four metals (arsenic, cadmium, chromium, and zinc) exceeded their respective maximum background concentrations. The other five metals were detected below established background concentrations.

6.1.12.2 Recommendations

Although four metals were detected in sediment at levels exceeding NJDEP criteria and background, in the worst case the criteria were exceeded by a factor of three. Since the samples was taken at the outfall of the STP, the results are believed to be the worst case and the area of

contamination is probably small. Access to this portion of Lafetra Creek is restricted although the stream is on the property boundary. The STP has not been used since 1941, and, presumably, the local ecology has reached an equilibrium. Therefore, since remediation would disrupt the ecology of the site, no further action will be taken.

6.1.13 PCB Transformers — Main Post

Investigation activities relative to the former location of PCB transformers included the following:

- Collection of soil and concrete samples for PCB analysis.

6.1.13.1 Conclusions

PCB levels in stained concrete were found to exceed NJDEP guidance levels in indoor vaults at Buildings 1002, 1208, and 1209. PCBs were also detected above applicable soil standards in the soil beneath transformer MP-062 on the northwest side of Building 292.

6.1.13.2 Recommendations

Since the indoor vaults are normally locked and are accessible by a very limited number of facility personnel, and the stained concrete cannot be removed without significantly disrupting electrical service, remedial work will be performed when the transformers are removed from service and the stained areas are made accessible. A warning sign will be posted, and workers entering the vaults will be trained to take precautions to prevent contamination.

Because the concentration of PCBs is only slightly above the SCC, additional sampling will be conducted beneath the former location of transformer MP-062 to determine the vertical and horizontal extent of PCBs in soil. The soil sampling will be performed in accordance with the NJDEP *Technical Requirements for Site Remediation* (NJDEP, 1993).

6.2 CHARLES WOOD

The conclusions and recommendations discussed in the following subsections are for the Charles Wood area of Fort Monmouth, and are based on the results of the site investigation activities.

These conclusions and recommendations are also presented with the site-specific discussions in Section 4 and are summarized in Table 6.2-1.

6.2.1 Wastewater Treatment Lime Pit 1 (CW-1)

Investigation activities performed at site CW-1 included the following:

- Collection of soil samples from four soil borings.
- Installation and sampling of four monitor wells at each of the soil boring locations.

6.2.1.1 Conclusions

The soil sample results indicate that compounds of concern were either not detected or were below laboratory quantitation limits and NJDEP criteria.

The groundwater sampling results indicate that TCE, PCE, and 1,2-dichlorobenzene were detected in the groundwater downgradient of the site at levels that exceeded the NJDEP criteria.

6.2.1.2 Recommendations

Although NJDEP groundwater criteria were exceeded by three VOCs at this site, immediate remedial action is not required. The probable source of contamination has been eliminated since chemicals are not being disposed of in the pit. The pit was cleaned in October 1992 and the limestone sludge was removed and disposed of as a hazardous waste. Hazardous waste is

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Table 6.2-1

Charles Wood Site Summary and Recommendations

Site	Compounds that Exceed NJDEP Criteria and Maximum Background	Recommendations
CW-1 Acid Pit	Soil: None Groundwater: 1,2-Dichloroethene in 1 well Trichloroethene in 2 wells Tetrachloroethene in 1 well	Conduct soil-gas survey. Based on the results of the survey, install and sample two additional monitor wells. Conduct groundwater monitoring on a long-term basis for existing and newly installed monitor wells.
CW-2 Acid Pit	Soil: PCBs in 1 sample Groundwater: Tetrachloroethene in 1 well	Conduct soil-gas survey. Based on the results of the survey, install and sample two additional monitor wells. Collect soil samples for PCBs from monitor well borings. Conduct groundwater monitoring on a long-term basis for existing and newly installed monitor wells.
CW-3	No samples collected.	Facility will perform trenching to investigate site. If there is no indication of subsurface contamination, then no further action will be taken.
CW-3A Debris Site	Geophysics survey	Facility will investigate geophysics anomalies by backhoe trenching. If there is no indication of subsurface contamination, no further action will be taken.
CW-4 Indoor Firing Range	Soil: Lead	The contaminated soil will be excavated and confirmatory sampling will be performed.
CW-5 Former Sewage Treatment Plant	Soil: None Sediment: None	No further action.
CW-6 Pesticide Storage Building	Soil: Cadmium in 1 sample Dieldrin in 1 sample Groundwater: Benzene in 1 sample	Conduct groundwater monitoring on a long-term basis.
CW-9 Sludge Dump	Soil: Cadmium in 1 sample Groundwater: None	No further action.
AOC-7 Former Drum Storage Area	Soil: None	No further action.
PCB Transformers	Soil: Building 2000 (4 samples)	Excavate contaminated soil and conduct confirmatory sampling.

currently collected for proper disposal off-site and waste is no longer disposed of in the pit. Shallow groundwater flows toward and discharges to the headwaters of Wampum Brook, as indicated by water-level measurements in site monitor wells. There are no known uses of groundwater between the acid neutralization pit and Wampum Brook. Surface-water samples were taken in Wampum Brook in the Charles Wood area and Mill Creek (as Wampum Brook is called further to the east) for use as background samples. No VOCs were detected in these samples, therefore, there is no immediate threat to human health.

The extent of VOC concentrations in groundwater will be investigated by soil-gas survey techniques. The soil-gas survey will be performed on an established grid pattern to estimate the lateral extent of VOCs in the vicinity of the neutralization pit. The results of the soil-gas survey will be used to locate two additional monitor wells, if necessary, at the downgradient edge of the plume. DPW proposes that a long-term groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells and the two newly installed monitor wells. Compounds of concern identified in the first two rounds of sampling would be targeted for the monitoring program.

6.2.2 Wastewater Treatment Lime Pit 2 (CW-2)

Investigation activities performed at site CW-2 included the following:

- Collection of soil samples from four soil borings.
- Installation and sampling of four monitor wells at each of the soil boring locations.

6.2.2.1 Conclusions

The results of the soil sampling indicate that one PCB compound (Aroclor-1254) was detected in SB-30 at a concentration slightly above the NJDEP SCC. PCB compounds were not detected

in the other three soil borings. In addition, PCBs were not detected in groundwater samples in the corresponding well location, MW-30.

Groundwater sampling results indicate that PCE was detected in the groundwater in one of the four wells (MW-32) in one of the two sampling rounds at levels slightly exceeding the NJDEP GWQC.

6.2.2.2 Recommendations

Although NJDEP groundwater criteria were exceeded by one VOC at this site, immediate remedial action is not required. The source of contamination has been eliminated since chemicals are not being disposed of in the pit. The pit was cleaned in October 1992 and the limestone sludge was removed and disposed of as a hazardous waste. Hazardous waste is currently collected for proper disposal off-site and waste is no longer disposed of in the pit. Shallow groundwater flows toward and discharges to the headwaters of Wampum Brook, as indicated by water-level measurements in site monitor wells. There are no known uses of groundwater between the acid neutralization pit and Wampum Brook. Surface-water samples were taken in Wampum Brook in the Charles Wood area and Mill Creek (as Wampum Brook is called further to the east) for use as background samples. No VOCs were detected in these samples, therefore, there is no immediate threat to human health.

The extent of PCE concentrations in groundwater will be investigated by soil-gas survey techniques. The soil-gas survey will be performed on an established grid pattern to estimate the lateral extent of VOCs in the vicinity of the neutralization pit. The results of the soil-gas survey will be used to locate two additional monitor wells if necessary. DPW proposes that a long-term groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells and from the two newly installed monitor wells. Compounds of concern identified in the first two rounds of sampling would be targeted for the monitoring program. When the additional monitor wells are

installed, soil samples will be collected for PCB analysis because of the detection of PCBs in a soil sample collected from SB-30.

6.2.3 Landfill 3 (CW-3)

Investigation activities were not conducted as part of this investigation because of construction rubble that was present at the site during the field effort, which prohibited sample collection as planned. The rubble was removed and properly disposed of in June 1995 and exploratory trenches are planned to determine if any subsurface debris or soil staining is present. Field screening will be performed during excavation using a PID. NJDEP will be requested to send a representative to observe the investigation. In the absence of any elevated PID readings or evidence of subsurface debris, the excavation will be backfilled and no further action will be taken. If contamination is identified, then sampling will be conducted in accordance with the *Technical Requirements for Site Remediation* (NJDEP, 1993). Soil sample analytes will be collected and analyzed for the full range of contaminants.

6.2.4 Debris Site (CW-3A)

Investigation activities performed at site CW-3A included only geophysical surveys to evaluate accessible areas for potential subsurface waste.

6.2.4.1 Conclusions

Geophysical surveys indicated two areas where subsurface metallic debris may be present.

6.2.4.2 Recommendations

Exploratory trenching will be performed to investigate areas where subsurface metallic debris may be present. Field screening will be conducted with a PID during the excavation. NJDEP will be requested to send a representative to observe the excavation. In the absence of elevated PID readings or evidence of subsurface debris, the excavation will be backfilled and no further

action will be taken. If contamination is identified, then sampling will be conducted in accordance with the *Technical Requirements for Site Remediation* (NJDEP, 1993). Soil sample analytes will be collected and analyzed for the full range of contaminants.

6.2.5 Range (Small Arms) (CW-4)

Investigation activities performed at site CW-4 included the following:

- Collection of one surface soil sample.
- Collection of one soil boring sample.

6.2.5.1 Conclusions

Soil sampling results indicate that only lead was detected at a concentration exceeding the NJDEP SCC at the spent round disposal area.

6.2.5.2 Recommendations

DPW has submitted the necessary documentation to HQAMC/AEC to obtain the proper funding to remediate the site in FY 1996. Depending on funding availability, the affected soil will be excavated and disposed of in accordance with the applicable regulations.

The contaminated soil will be removed and disposed of in accordance with applicable regulations. The area of contamination is approximately 8 feet in diameter. The estimated depth of excavation is assumed to be 7 feet. Excavation will be performed in conjunction with confirmatory sampling to ensure that NJDEP SCC are achieved. It is estimated that 17 yd^3 of soil will be excavated, assuming that soil is excavated to a depth of 7 feet. NJDEP will be requested to send a representative to observe the excavation.

6.2.6 Former Sanitary Treatment Plant (CW-5)

Investigation activities performed at site CW-5 included the following:

- Collection of one sediment sample from the outfall area east of Hope Road.
- Installation of two soil borings and collection of two soil samples, one from each boring.

6.2.6.1 Conclusions

Three compounds (4,4'-DDT, 4,4'-DDD, and 4,4'-DDE) were detected in the sediment at levels that were above the NJDEP sediment guidance criteria but below background. Soil results were below the NJDEP SCC and established maximum background.

6.2.6.2 Recommendations

No further action will be taken.

6.2.7 Pesticide Storage Building T-2044 (CW-6)

Investigation activities performed at site CW-6 included the following:

- Installation of two soil borings and collection of two samples from SB-34 and one from SB-01.
- Installation and sampling of one monitor well.
- Sampling of existing monitor well MW-1.
- Collection of one surface soil sample from a drainage ditch.

6.2.7.1 Conclusions

The pesticide dieldrin and the metal cadmium were detected in the soil at two different locations, each at levels that exceeded NJDEP SCC and background. However, the average concentrations of dieldrin and cadmium in surface soil samples at CW-6 and CW-9 did not exceed the NJDEP SCC. Cadmium is typically present at elevated levels at golf courses. Groundwater samples indicated that benzene was detected in the existing monitor well (MW-1), which is attributed to a previously removed UST. Benzene was not detected in downgradient wells. Pesticides were not detected in any groundwater samples above NJDEP criteria.

6.2.7.2 Recommendations

NJDEP groundwater criteria were exceeded for one VOC, but the measured value was just slightly above the GWQC. In addition, one pesticide was detected in soils at a level above criteria and background, but was just slightly above the SCC. Therefore, no immediate remedial action is necessary.

DPW proposes that a long-term groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells. Compounds of concern identified in the first two rounds of sampling would be targeted for the monitoring program.

6.2.8 Sludge Dump (CW-9)

Investigation activities performed at site CW-9 included the following:

- Installation and sampling of two monitor wells.
- Collection of one soil sample from a soil boring.
- Collection of nine surface soil samples.

6.2.8.1 Conclusions

The average concentration of cadmium in surface soil samples at CW-6 and CW-9 and beryllium in surface soil location SS-09 at site CW-9 do not exceed the NJDEP SCC. Cadmium is typically present at elevated levels at golf courses. No compounds of concern were detected in site groundwater above NJDEP criteria.

6.2.8.2 Recommendations

No further action will be taken.

6.2.9 Former Hazardous Waste Storage Area (AOC-7)

Investigation activities performed at site AOC-7 included the installation of six soil borings. One soil sample was collected from each boring at depths ranging from 8 to 14 feet.

6.2.9.1 Conclusions

No compounds of concern were detected at this site at levels that exceeded NJDEP criteria.

6.2.9.2 Recommendations

No further action will be taken.

6.2.10 PCB Transformers — Charles Wood

Investigation activities performed at the former PCB transformer locations included the collection of seven surface soil samples for PCB analysis.

6.2.10.1 Conclusions

PCBs were detected above the NJDEP criteria in each of the four soil samples collected downgradient of the former transformer location northeast of Building 2000 (transformer CW-035). PCBs were not detected above NJDEP criteria in samples collected from the other three sampling locations.

6.2.10.2 Recommendations

Additional samples will be taken to further delineate the extent of contamination and the contaminated soil will be removed and disposed of in accordance with applicable regulations. The depth of contamination is assumed to be 6 inches. Excavation will be performed in conjunction with confirmatory soil sampling to ensure that NJDEP SCC are achieved.

ACRONYMS/REFERENCES

LIST OF ACRONYMS

AA	atomic absorption spectrophotometer
ACM	asbestos-containing material
AMC	U.S. Army Materiel Command
AOC	area of concern
ASTM	American Society for Testing and Materials
ATV	all terrain vehicle
AVRADA	U.S. Army Aviation Research and Development Activity
AWQC	ambient water quality criteria
bgs	below ground surface
BNA	base/neutral/acid
BRAC	Base Realignment and Closure Program
CDAP	Chemical Data Acquisition Plan
CECOM	U.S. Army Communications and Electronics Command
CFR	Code of Federal Regulations
CLP	Contract Laboratory Program
DCAA	Defense Contract Audit Agency
DENTAC	U.S. Army Dental Activity
DIS	Defense Investigation Services
DOI	U.S. Department of the Interior
DOP	di-octyl-phthalate
DOT	U.S. Department of Transportation
DPW	Directorate of Public Works, Fort Monmouth, New Jersey
DQOs	data quality objectives
EM	electromagnetic
EPA	U.S. Environmental Protection Agency
EqP	equilibrium partitioning
ER-L	Effects Range-Low (NOAA)
FSP	Field Sampling Plan
ft^2	square feet
ft msl	feet above mean sea level
FWS	U.S. Fish and Wildlife Service
GC/MS	gas chromatograph/mass spectrometer
GC	gas chromatograph
GOGO	government-owned, government-operated
gpm	gallons per minute
GPR	ground penetrating radar
GWQC	NJDEP Groundwater Quality Criteria
HHCs	halogenated hydrocarbons
HQAMC/AEC	Headquarters, Army Materiel Command/Army Environmental Center
IA	Installation Assessment
IATA	International Air Transport Association
ICP	inductively coupled plasma spectrometer
ID	inside diameter
ISC	U.S. Army Information Systems Command

LIST OF ACRONYMS
(Continued)

ISMA	U.S. Army Information System Management Agency
kHz	kiloHertz
LABCOM	U.S. Army Laboratory Command
m^3	cubic meter
MAG	magnetometry
MCSS	Monmouth County Soil Survey
MEDDAC	U.S. Army Medical Department Activities
mg/cm^2	milligrams per square centimeter
mg/g	milligrams per gram
mg/kg	milligrams per kilogram
mg/m^3	milligrams per cubic meter
MHz	megaHertz
mS/m	milliSiemens per meter
MS	matrix spike
MSD	matrix spike duplicate
msl	mean sea level
µg/g	microgram per gram
µg/kg	microgram per kilogram
µg/L	microgram per liter
NJAC	New Jersey Administrative Code
NJDEP	New Jersey Department of Environmental Protection
NMCRSA	Northeast Monmouth County Regional Sewerage Authority
NOAA	National Oceanic and Atmospheric Administration
nT	nanoTesla
OVA	organic vapor analyzer
OVM	organic vapor monitor
PAH	polyaromatic hydrocarbon
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
PE	performance evaluation
PID	photoionization detector
ppm	parts per million
ppth	parts per thousand
PQL	practical quantitation levels
PVC	polyvinyl chloride pipe
QA/QC	quality assurance/quality control
QC	quality control
R&D	research and development
SBA	Small Business Administration
SCC	Soil Cleanup Criteria
SHERP	Safety, Health and Emergency Response Plan
SI	site investigation
SIR	Subsurface Interface Radar™

LIST OF ACRONYMS
(Continued)

SOP	standard operating procedure
STP	sanitary treatment plant
SVOC	semivolatile organic compound
TAL	Target Analyte List
TCL	Target Compound List
TIC	tentatively identified compound
TOC	site-specific organic carbon
TPH	total petroleum hydrocarbons
TRI-TAC	Joint Tactical Communications Office
TSCA	Toxic Substances Control Act
URS	URS Consultants, Inc.
USACE	U.S. Army Corps of Engineers
USACHCS	U.S. Army Chaplain Center and School
USAMPS	U.S. Army Military Preparatory School
USATHAMA	U.S. Army Toxic and Hazardous Materials Agency
USC	Unified Soil Classification
UST	underground storage tank
vac	vacuum
VOA	volatile organic analysis
VOC	volatile organic compound
WESTON®	Roy F. Weston, Inc.
yd^3	cubic yard

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APPENDIX A

MAIN POST AND CHARLES WOOD
BOREHOLE LOGS AND WELL COMPLETION SUMMARIES

APPENDIX B

SURVEY DATA

APPENDIX C

WELL DEVELOPMENT LOGS

APPENDIX D

SAMPLING RESULTS

ORGANIC GLOSSARY OF DATA QUALIFIERS AND ABBREVIATIONS

Organic Data Qualifiers

A	TIC is a suspected aldol-condensation product
B	Compound was found in the blank and the sample
C	Pesticide identification was confirmed by GC/MS
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis
E	Concentration exceeds the instrument calibration range and was subsequently diluted
I	Appears on the "results spreadsheet" and "quant reports" to indicate an interference, or it appears on pesticide Form 8 to indicate an instrument blank without a surrogate
J	Result is an estimated value below the reporting limit or a tenatively identified compound (TIC)
NQ	Result was qualitatively confirmed, but not quantified
P	The percent difference between the results from two GC columns is greater than 25%, the lower of the two values is reported
SP	Blank Spike, Blank Spike Duplicate, Matrix Spike or Matrix Spike Duplicate
T	Compound was found in the TCLP extraction blank and the sample
U	Compound was not detected at or above the reporting limit
X	Other specific flags may be required to properly qualify the result
*	QC result was outside the laboratory control limits

Abbreviations

BS	Blank Spike analysis was conducted on reagent grade water or a matrix free from the analyte(s) of interest
BSD	Blank Spike Duplicate
BRL	Below Reporting Limit
Batch	Identifies a specific extraction, digestion or preparation set (equivalent to Prep Batch)
CD	Calculation Factor used by the laboratory's Information Management System (LIMS)
Contract	Contract Laboratory Identification Code
DF	Dilution Factor
DL	Appears in the sample ID to indicate a secondary dilution
LCS/LC	Denotes Laboratory Control Standard
LAB ID	The full 12 character WESTON Laboratory Identification Number (equivalent to RFW#)
MB	Method Blank or (PB) preparation blank
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NA	Not Applicable
NR	Not Required
NS	Not Spiked
RE	Appears in the sample ID to indicate a Re-analysis
REP	Replicate analysis
Reprep	Sample was reprepared and then reanalyzed
RFW#	The full 12 character WESTON Laboratory Identification Number (equivalent to LAB ID)
RFW Lot	The first 8 characters of the RFW#
RPD	Relative Percent Difference of duplicate analyses
RRF	Relative Response Factor
RT	Retention Time/Retention Time Window
WO#	Work Order No. Weston Code used to define a specific clinet, job phase and task

NOTES:

- One or a combination of these data qualifiers and abbreviations may appear in the analytical report.
- Soil, sediment and sludge results are reported on a dry weight basis except when analyzed for landfill disposal or incineration parameters. All other results on a solid matrix are reported on an "as received" basis unless noted differently.
- Reporting limits are adjusted for preparation sample size, sample dilutions, and sample moisture content if analyzed on a dry weight basis.

INORGANIC GLOSSARY OF DATA QUALIFIERS AND ABBREVIATIONS

Inorganic Data Qualifiers

B	Result is less than the CRDL, but greater than or equal to the instrument detection limit
E	Result is estimated due to interference
M	Analyte concentrations are greater than the CRDL, and the RSD of duplicate injections was greater than 20%
N	Matrix Spike recovery was outside the control limits
S	Result was determined by the Method of Standard Additions (MSA)
T	Analyte was found in the TCLP extraction blank and sample
U	Analyte was not detected at or above the reporting limit
W	Post-digestion spike was outside 85-115% control limits, sample absorbance is less than 50% of spike absorbance
+	MSA correlation coefficient is less than 0.995
*	Duplicate analysis was outside the control limits

Abbreviations

A	Analyzed by flame A.A. direct aspiration
Batch	Identifies a specific extraction, digestion or preparation set (equivalent to Prep Batch)
BS	Blank Spike analysis was conducted on reagent grade water or a matrix free from the analyte(s) of interest
BSD	Blank Spike Duplicate
BRL	Below Reporting Limit
C	Cyanide analyte flag on CLP forms
CCV	Continuing Calibration Verification
CCB	Continuing Calibration Blank
CD	Calculation Factor used by the laboratory's Information Management System (LIMS)
CV	Analyzed by the cold vapor generation method for Mercury
Contract	Contract Laboratory Identification Code
DF	Dilution Factor
F	Analyzed by graphite furnace atomic absorption spectroscopy
ICV	Initial Calibration Verification
ICB	Initial Calibration Blank
LCS/LC	Denotes Laboratory Control Standard
LAB ID	The full 12 character WESTON Laboratory Identification Number (equivalent to RFW#)
MB	Method Blank or (PB) for Preparation Blank
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NA	Not Applicable
NC	Non-calculable precision due to insufficient concentration of analyte present in the sample
NR	Not Required
NS	Not Spiked
P	Analyzed by inductively coupled argon plasma
REP	Replicate analysis
RFW#	The full 12 character WESTON Laboratory Idenficiation number (equivalent to LAB ID)
RFW Lot	The first 8 characters of the RFW#
RPD	Relative Percent Difference of duplicate analyses
X	Result obtained indirectly through calculation based on results from other analyses
WO#	Work Order No. Weston Code used to define a specific clinet, job phase and task

NOTES:

- One or a combination of these data qualifiers and abbreviations may appear in the analytical report.
- Soil, sediment and sludge results are reported on a dry weight basis except when analyzed for landfill disposal or incineration parameters. All other results on a solid matrix are reported on an "as received" basis unless noted differently.
- Reporting limits are adjusted for preparation sample size, sample dilutions, and sample moisture content if analyzed on a dry weight basis.

Revised 12/09/94

MAIN POST

MAIN POST
SEDIMENT VOLATILES

Geographical Location				AOC3		AOC3		AOC3		AOC3	
Sample				MP08-SD01-A01		MP08-SD01-C01		MP08-SD01-D01		MP08-SD01-E01	
Sample Type						Duplicate		Trip Blank		Field Rinsate Blank	
Batch#				9412G921		9412G921		9412G921		9412G921	
Prep#				94GVT028		94GVT028		94GVE348		94GVE348	
RFW#				013		014		016		017	
Sample Depth				0-6"		0-6"		0-6"		0-6"	
Dilution Factor				1.00		1.00		1.00		1.00	
Matrix				soil		soil		water		water	
Units	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg		mg/l		mg/l	
Sampling Date				12/1/94		12/1/94		12/1/94		12/1/94	
Analysis Date				12/6/94		12/6/94		12/9/94		12/9/94	
Analysis	Standard	Standard	MDL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL
	fresh water	salt water		Result		Result		Result		Result	
Chloromethane			0.0073	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Bromomethane			0.0067	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Vinyl Chloride			0.0079	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Chloroethane			0.0091	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Methylene Chloride			0.0027	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Acetone			0.0069	0.1 B	0.018	0.14 B	0.017	0.01 U	0.01	0.01 U	0.01
Carbon Disulfide			0.0044	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
1,1-Dichloroethene			0.0049	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
1,1-Dichloroethane			0.003	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
1,2-Dichloroethene (total)			0.0044	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Chloroform			0.0029	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
1,2-Dichloroethane			0.0024	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
2-Butanone			0.0041	0.02	0.018	0.014 J	0.017	0.01 U	0.01	0.01 U	0.01
1,1,1-Trichloroethane			0.0017	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Carbon Tetrachloride			0.0015	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Bromodichloromethane			0.002	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
1,2-Dichloropropane			0.0017	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
cis-1,3-Dichloropropene			0.003	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Trichloroethene			0.002	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Dibromochloromethane			0.0024	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
1,1,2-Trichloroethane			0.0043	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Benzene			0.0033	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
trans-1,3-Dichloropropene			0.0024	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Bromoform			0.0031	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
4-Methyl-2-pentanone			0.0055	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
2-Hexanone			0.0039	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Tetrachloroethene			0.004	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
1,1,2,2-Tetrachloroethane			0.0042	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Toluene			0.0027	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Chlorobenzene			0.0027	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Ethylbenzene			0.0031	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Styrene			0.0038	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Xylene (total)			0.0038	0.018 U	0.018	0.017 U	0.017	0.01 U	0.01	0.01 U	0.01
Method:TCL Volatiles											

MAIN POST
SEDIMENT VOLATILES (OFFSITE DATA)

Geographical Location				Background SS01		Background SS01		Background SS02	
Sample				SS01-SD02-A01		SS01-SD01-A01DL		SS01-SD02-A01	
Batch#				9412G922		9412G922		9412G922	
Prep#				94GVT028 & 29		94GVT029		94GVT028 & 29	
RFW#				005		005		005	
Sample Depth				0-6"		0-6"		0-6"	
Dilution Factor				1.00		1.00		1.00	
Matrix				soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg	
Sampling Date				12/1/94		12/1/94		12/1/94	
Analysis Date				12/6/94		12/17/94		12/6/94	
Analysis	Standard	Standard	MDL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL
	fresh water	salt water		Result		Result		Result	
Chloromethane			0.0073	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Bromomethane			0.0067	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Vinyl Chloride			0.0079	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Chloroethane			0.0091	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Methylene Chloride			0.0027	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Acetone			0.0069	0.47 B	.074 *	0.17 B	0.035	0.47 B	.074 *
Carbon Disulfide			0.0044	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
1,1-Dichloroethene			0.0049	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
1,1-Dichloroethane			0.003	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
1,2-Dichloroethene (total)			0.0044	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Chloroform			0.0029	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
1,2-Dichloroethane			0.0024	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
2-Butanone			0.0041	0.1	0.015	0.041	0.035	0.1	0.015
1,1,1-Trichloroethane			0.0017	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Carbon Tetrachloride			0.0015	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Bromodichloromethane			0.002	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
1,2-Dichloropropane			0.0017	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
cis-1,3-Dichloropropene			0.003	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Trichloroethene			0.002	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Dibromochloromethane			0.0024	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
1,1,2-Trichloroethane			0.0043	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Benzene			0.0033	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
trans-1,3-Dichloropropene			0.0024	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Bromoform			0.0031	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
4-Methyl-2-pentanone			0.0055	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
2-Hexanone			0.0039	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Tetrachloroethene			0.004	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
1,1,2,2-Tetrachloroethane			0.0042	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Toluene			0.0027	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Chlorobenzene			0.0027	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Ethylbenzene			0.0031	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Styrene			0.0038	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Xylene (total)			0.0038	0.015 U	0.015	0.035 U	0.035	0.015 U	0.015
Total Est. Conc. of TIC.				.05 *				.05 *	
Dilution Factor				* = 5.00				* = 5.00	
Method:TCL Volatiles									

MAIN POST
SEDIMENT SEMIVOLATILES

Geographical Location				AOC3		AOC3		AOC3	
Sample				MP08-SD01-A01		MP08-SD01-A01RE		MP08-SD01-C01	
Sample Type								Duplicate	
Batch#				9412G921		9412G921		941G9213	
Prep#				94GBO809		94GBO809		94GBO809	
RFW#				013		013RE		014	
Sample Depth				0-6"		0-6"		0-6"	
Dilution Factor				1.00		1.00		1.00	
Matrix				soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg	
Sampling Date				12/1/94		12/1/94		12/1/94	
Analysis Date				12/22/94		12/22/94		12/22/94	
Analysis	Standard	Standard	MDL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL
	fresh water	salt water		Result		Result		Result	
Phenol			0.234	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
bis(2-Chloroethyl) ether			0.32	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
2-Chlorophenol			0.241	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
1,3-Dichlorobenzene			0.175	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
1,4-Dichlorobenzene			0.158	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
1,2-Dichlorobenzene			0.188	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
2-Methylphenol			0.221	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
2,2'-oxybis(1-Chloropropane)			0.231	0.58 U	0.58	0.57 U	0.57	0.061 J	0.54
4-Methylphenol			0.426	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
N-Nitroso-di-n-propylamine			0.264	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Hexachloroethane			0.175	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Nitrobenzene			0.244	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Isophorone			0.129	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
2-Nitrophenol			0.231	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
2,4-Dimethylphenol			0.158	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
bis(2-Chloroethoxy) methane			0.201	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
2,4-Dichlorophenol			0.145	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
1,2,4-Trichlorobenzene			0.317	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Naphthalene			0.277	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
4-Chloroaniline			0.096	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Hexachlorobutadiene			0.152	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
4-Chloro-3-methylphenol			0.102	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
2-Methylnaphthalene			0.287	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Hexachlorocyclopentadiene			0.119	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
2,4,6-Trichlorophenol			0.185	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
2,4,5-Trichlorophenol			0.155	1.5 U	1.5	1.4 U	1.4	1.4 U	1.4
2-Chloronaphthalene			0.271	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
2-Nitroaniline			0.201	1.5 U	1.5	1.4 U	1.4	1.4 U	1.4
Dimethylphthalate			0.145	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Acenaphthylene			0.198	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
2,6-Dinitrotoluene			0.172	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
3-Nitroaniline			0.172	1.5 U	1.5	1.4 U	1.4	1.4 U	1.4
Acenaphthene			0.221	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
2,4-Dinitrophenol			0.152	1.5 U	1.5	1.4 U	1.4	1.4 U	1.4
4-Nitrophenol			0.248	1.5 U	1.5	1.4 U	1.4	1.4 U	1.4

MAIN POST
SEDIMENT SEMIVOLATILES

Geographical Location				AOC3		AOC3		AOC3	
Sample				MP08-SD01-A01		MP08-SD01-A01RE		MP08-SD01-C01	
Sample Type								Duplicate	
Batch#				9412G921		9412G921		941G9213	
Prep#				94GBO809		94GBO809		94GBO809	
RFW#				013		013RE		014	
Sample Depth				0-6"		0-6"		0-6"	
Dilution Factor				1.00		1.00		1.00	
Matrix				soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg	
Sampling Date				12/1/94		12/1/94		12/1/94	
Analysis Date				12/22/94		12/22/94		12/22/94	
Analysis	Standard	Standard	MDL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL
	fresh water	salt water		Result		Result		Result	
Dibenzofuran			0.215	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
2,4-Dinitrotoluene			0.191	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Diethylphthalate			0.178	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
4-Chlorophenyl-phenylether			0.231	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Fluorene			0.208	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
4-Nitroaniline			0.211	1.5 U	1.5	1.4 U	1.4	1.4 U	1.4
4,6-Dinitro-2-methylphenol			0.175	1.5 U	1.5	1.4 U	1.4	1.4 U	1.4
N-Nitrosodiphenylamine (1)			0.139	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
4-Bromophenyl-phenylether			0.175	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Hexachlorobenzene			0.182	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Pentachlorophenol			0.132	1.5 U	1.5	1.4 U	1.4	1.4 U	1.4
Phenanthrene	0.225	0.74	0.165	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Anthracene			0.152	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Carbazole			0.145	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Di-n-butylphthalate			0.215	0.098 J	0.58	0.68 J	0.57	0.1 J	0.54
Fluoranthene	0.6	0.6	0.198	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Pyrene	0.35	0.665	0.178	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Butylbenzylphthalate			0.175	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
3,3'-Dichlorobenzidine			0.092	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Benzo(a)anthracene	0.23	0.261	0.162	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Chrysene	0.4	0.984	0.145	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
bis(2-Ethylhexy)phthalate			0.32	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Di-n-octyl phthalate			0.185	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Benzo(b)fluoranthene			0.188	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Benzo(k)fluoranthene			0.205	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Benzo(a)pyrene	0.4	0.43	0.162	0.58 U	0.58	0.57 U	0.57	0.079 J	0.54
Indeno(1,2,3-cd)pyrene			0.234	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Dibenzo(a,h)anthracene			0.198	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Benzo(g,h,i)perylene			0.224	0.58 U	0.58	0.57 U	0.57	0.54 U	0.54
Petroleum hydrocarbons									
Total Est. Conc. of TIC				21.4 J		23.5 J		16.2 J	
Method:TCL Semivolatiles									

MAIN POST
SEDIMENT SEMIVOLATILES (OFFSITE DATA)

Geographical Location				Background SS01		Background SS02	
Sample				SS01-SD01-A01		SS01-SD02-A01	
Batch#				9412G922		9412G922	
Prep#				94GBO809		94GBO809	
RFW#				006		005	
Sample Depth				0-6"		0-6"	
Dilution Factor				1.00		1.00	
Matrix				soil		soil	
Units	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	
Sampling Date				12/2/94		12/2/94	
Analysis Date				12/22/94		12/22/94	
Analysis	Standard	Standard	MDL	Analytical	CRQL	Analytical	CRQL
	fresh water	salt water		Result		Result	
Phenol			0.234	1.1 U	1.1	0.48 U	0.48
bis(2-Chloroethyl) ether			0.32	1.1 U	1.1	0.48 U	0.48
2-Chlorophenol			0.241	1.1 U	1.1	0.48 U	0.48
1,3-Dichlorobenzene			0.175	1.1 U	1.1	0.48 U	0.48
1,4-Dichlorobenzene			0.158	1.1 U	1.1	0.48 U	0.48
1,2-Dichlorobenzene			0.188	1.1 U	1.1	0.48 U	0.48
2-Methylphenol			0.221	1.1 U	1.1	0.48 U	0.48
2,2'-oxybis(1-Chloropropane)			0.231	1.1 U	1.1	0.48 U	0.48
4-Methylphenol			0.426	1.1 U	1.1	0.48 U	0.48
N-Nitroso-di-n-propylamine			0.264	1.1 U	1.1	0.48 U	0.48
Hexachloroethane			0.175	1.1 U	1.1	0.48 U	0.48
Nitrobenzene			0.244	1.1 U	1.1	0.48 U	0.48
Isophorone			0.129	1.1 U	1.1	0.48 U	0.48
2-Nitrophenol			0.231	1.1 U	1.1	0.48 U	0.48
2,4-Dimethylphenol			0.158	1.1 U	1.1	0.48 U	0.48
bis(2-Chloroethoxy) methane			0.201	1.1 U	1.1	0.48 U	0.48
2,4-Dichlorophenol			0.145	1.1 U	1.1	0.48 U	0.48
1,2,4-Trichlorobenzene			0.317	1.1 U	1.1	0.48 U	0.48
Naphthalene			0.277	1.1 U	1.1	0.48 U	0.48
4-Chloroaniline			0.096	1.1 U	1.1	0.48 U	0.48
Hexachlorobutadiene			0.152	1.1 U	1.1	0.48 U	0.48
4-Chloro-3-methylphenol			0.102	1.1 U	1.1	0.48 U	0.48
2-Methylnaphthalene			0.287	1.1 U	1.1	0.48 U	0.48
Hexachlorocyclopentadiene			0.119	1.1 U	1.1	0.48 U	0.48
2,4,6-Trichlorophenol			0.185	1.1 U	1.1	0.48 U	0.48
2,4,5-Trichlorophenol			0.155	2.9 U	2.9	1.2 U	1.2
2-Chloronaphthalene			0.271	1.1 U	1.1	0.48 U	0.48
2-Nitroaniline			0.201	2.9 U	2.9	1.2 U	1.2
Dimethylphthalate			0.145	1.1 U	1.1	0.48 U	0.48
Acenaphthylene			0.198	1.1 U	1.1	0.48 U	0.48
2,6-Dinitrotoluene			0.172	1.1 U	1.1	0.48 U	0.48
3-Nitroaniline			0.172	2.9 U	2.9	1.2 U	1.2
Acenaphthene			0.221	1.1 U	1.1	0.48 U	0.48
2,4-Dinitrophenol			0.152	2.9 U	2.9	1.2 U	1.2
4-Nitrophenol			0.248	2.9 U	2.9	1.2 U	1.2

MAIN POST
SEDIMENT SEMIVOLATILES (OFFSITE DATA)

Geographical Location				Background SS01		Background SS02	
Sample				SS01-SD01-A01		SS01-SD02-A01	
Batch#				9412G922		9412G922	
Prep#				94GBO809		94GBO809	
RFW#				006		005	
Sample Depth				0-6"		0-6"	
Dilution Factor				1.00		1.00	
Matrix				soil		soil	
Units	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	
Sampling Date				12/2/94		12/2/94	
Analysis Date				12/22/94		12/22/94	
Analysis	Standard	Standard	MDL	Analytical	CRQL	Analytical	CRQL
	fresh water	salt water		Result		Result	
Dibenzofuran			0.215	1.1 U	1.1	0.48 U	0.48
2,4-Dinitrotoluene			0.191	1.1 U	1.1	0.48 U	0.48
Diethylphthalate			0.178	1.1 U	1.1	0.48 U	0.48
4-Chlorophenyl-phenylether			0.231	1.1 U	1.1	0.48 U	0.48
Fluorene			0.208	1.1 U	1.1	0.48 U	0.48
4-Nitroaniline			0.211	2.9 U	2.9	1.2 U	1.2
4,6-Dinitro-2-methylphenol			0.175	2.9 U	2.9	1.2 U	1.2
N-Nitrosodiphenylamine (1)			0.139	1.1 U	1.1	0.48 U	0.48
4-Bromophenyl-phenylether			0.175	1.1 U	1.1	0.48 U	0.48
Hexachlorobenzene			0.182	1.1 U	1.1	0.48 U	0.48
Pentachlorophenol			0.132	2.9 U	2.9	1.2 U	1.2
Phenanthrene	0.225	0.74	0.165	1.1 U	1.1	0.39 J	0.48
Anthracene			0.152	1.1 U	1.1	0.061 J	0.48
Carbazole			0.145	1.1 U	1.1	0.051 J	0.48
Di-n-butylphthalate			0.215	0.26 JB	1.1	0.086 JB	0.48
Fluoranthene	0.6	0.6	0.198	0.44 J	1.1	1.5	0.48
Pyrene	0.35	0.665	0.178	0.66 J	1.1	2	0.48
Butylbenzylphthalate			0.175	1.1 U	1.1	0.48 U	0.48
3,3'-Dichlorobenzidine			0.092	1.1 U	1.1	0.48 U	0.48
Benzo(a)anthracene	0.23	0.261	0.162	0.34 J	1.1	1.3	0.48
Chrysene	0.4	0.984	0.145	0.37 J	1.1	0.13 J	0.48
bis(2-Ethylhexy)phthalate			0.32	0.43 J	1.1	0.23 J	0.48
Di-n-octyl phthalate			0.185	1.1 U	1.1	0.48 U	0.48
Benzo(b)fluoranthene			0.188	0.59 J	1.1	1.8	0.48
Benzo(k)fluoranthene			0.205	0.21 J	1.1	0.58	0.48
Benzo(a)pyrene	0.4	0.43	0.162	0.27 J	1.1	1.2	0.48
Indeno(1,2,3-cd)pyrene			0.234	0.19 J	1.1	0.7	0.48
Dibenzo(a,h)anthracene			0.198	1.1 U	1.1	0.12 J	0.48
Benzo(g,h,i)perylene			0.224	0.19 J	1.1	0.67	0.48
Petroleum hydrocarbons							
Total Organic Carbon				5.7	0.10	3.7	0.11
Total Est. Conc. of TIC				71.5		15.9	
Method:TCL Semivolatiles							

MAIN POST
SEDIMENT INORGANICS

Geographical Location			Pre-1941 STP		AOC3		AOC3	
Sample			MPST-SD01-A01		MP08-SD01-A01		MP08-SD01-C01	
Sample Type							Duplicate	
Batch#			9412G921		9412G921		9412G921	
Prep#			94GTS473		94GTS473		94GTS473	
RFW#			015		013		014	
Sample Depth			0-6"		0-6"		0-6"	
Dilution Factor			1.00		1.00		1.00	
Matrix			soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg	
Sampling Date			12/1/94		12/1/94		12/1/94	
Analysis Date			12/19/94		12/19/94		12/19/94	
Analysis	Standard	Standard	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting
	fresh water	salt water	Result	Limit	Result	Limit	Result	Limit
% Solids			50.4	0.10	56.5	0.10	60.1	0.10
Silver	1	1	5.2	0.97	0.78 U	0.78	0.96 U	0.96
Aluminum			9240	8.3	8830	6.7	8170	8.2
Arsenic	33	8.2	24.2	2.5 *	13.2	1.1 *	14.3	0.87 *
Barium			27.6	0.66	13.0	0.53	12.6	0.65
Beryllium			1.3	0.47	1.4	0.38	1.3	0.46
Calcium			1010	3.8	1290	3.0	1240	3.7
Cadmium	5	1.2	4.2	1.1	0.86 U	0.86	1.0 U	1.0
Cobalt			13.5	0.88	5.5	0.71	4.7	0.86
Chromium	80	81	93.5	2.0	74.0	1.6	66.3	2.0
Copper	70	34	35.2	0.75	3.1	0.61	3.2	0.74
Iron			49200	1.5	40300	1.2	37600	1.4
Mercury	0.15	0.15	0.57	0.20	0.13 U	0.13	0.17 U	0.17
Potassium			6760	256	6640	207	5550	253
Magnesium			3390	11.9	3670	9.7	3070	11.8
Manganese			39.5	0.62	51.7	0.51	46.6	0.62
Sodium			2330	4.8	3090	3.9	2160	4.7
Nickel	30	20.9	26.5	4.0	14.0	3.2	11.8	3.9
Lead	35	46.7	59.0	9.9 **	6.5	2.1 **	5.7	1.7 **
Antimony			6.7 U	6.7	5.4 U	5.4	6.6 U	6.6
Selenium			0.88	0.28	0.42	0.30	0.58	0.25
Thallium			0.34 U	0.34	0.37 U	0.37	0.30 U	0.30
Vanadium			49.5	0.91	39.3	0.73	38.2	0.89
Zinc	120	150	386	0.88	68.8	0.71	57.8	0.86
Cyanide			0.96	0.59	0.81 U	0.81	0.71 U	0.71
Dilution Factor			* = 5.0, ** = 20.0		* = 2.00, ** = 4.00		* = 2.00, ** = 4.00	
Method:TAL Metals, Cyanide								

MAIN POST
SEDIMENT INORGANICS (OFFSITE DATA)

Geographical Location			Background SS01		Background SS02	
Sample			SS01-SD01-A01		SS01-SD02-A01	
Batch#			9412G922		9412G922	
Prep#			94GTS473		94GTS473	
RFW#			006		005	
Sample Depth			0-6"		0-6"	
Dilution Factor			1.00		1.00	
Matrix			soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg	
Sampling Date			12/1/94		12/1/94	
Analysis Date			12/9/94		12/9/94	
Analysis	Standard	Standard	Analytical	Reporting	Analytical	Reporting
	fresh water	salt water	Result	Limit	Result	Limit
% Solids			28.7	0.10	68.1	0.10
Silver	1	1	2.1 U	2.1	0.80 U	0.80
Aluminum			9060	18.1	8200	6.9
Arsenic	33	8.2	13.6	2.0 *	14.5	1.8 *
Barium			87.6	1.4	76.6	0.54
Beryllium			3.2	1.0	1.4	0.39
Calcium			2060	8.1	3180	3.1
Cadmium	5	1.2	2.3 U	2.3	0.88 U	0.88
Cobalt			119	1.9	5.7	0.72
Chromium	80	81	88.1	4.3	85.8	1.6
Copper	70	34	48.4	1.6	5.5	0.62
Iron			26500	3.2	61900	1.2
Mercury	0.15	0.15	1.7	0.32	0.14 U	0.14
Potassium			3410	555	10200	211
Magnesium			1470	25.8	3280	9.8
Manganese			67.4	1.4	70.2	0.52
Sodium			189	10.4	77.5	4.0
Nickel	30	20.9	131	8.7	11.8	3.3
Lead	35	46.7	64.1	5.0 **	21.2	3.6 **
Antimony			14.5 U	14.5	5.5 U	5.5
Selenium			1.7	0.56	0.21	0.20
Thallium			0.68 U	0.68	0.25 U	0.25
Vanadium			49.1	2.0	47.0	0.75
Zinc	120	150	162	1.9	117	0.72
Cyanide			3.1	1.7	0.49 U	0.49
Dilution Factor			* = 2.00, ** = 5.00		* = 5.00, ** = 10.0	
Method:TAL Metals, Cyanide						

MAIN POST
SEDIMENT PESTICIDES/PCBS

Geographical Location			AOC3		AOC3		AOC3	
Sample			MP08-SD01-A01		MP08-SD01-A01RE		MP08-SD01-C01	
Sample Type							Duplicate	
Batch#			9412G921		9412G921		9412G921	
Prep#			94GP1049		95GP0044		94GP1049	
RFW#			013		013RE		014	
Sample Depth			0-6"		0-6"		0-6"	
Dilution Factor			1.00		1.00		1.00	
Matrix			soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg	
Sampling Date			12/1/94		12/1/94		12/1/94	
Analysis Date			1/11/95		1/17/95		1/11/95	
Analysis	Standard	Standard	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting
	fresh water	salt water	Result	Limit	Result	Limit	Result	Limit
alpha-BHC			0.0029 U	0.0029	0.0029 U	0.0029	0.0028 U	0.0028
beta-BHC			0.0029 U	0.0029	0.0029 U	0.0029	0.0028 U	0.0028
delta-BHC			0.0029 U	0.0029	0.0029 U	0.0029	0.0028 U	0.0028
gamma-BHC (Lindane)			0.0029 U	0.0029	0.0029 U	0.0029	0.0028 U	0.0028
Heptachlor			0.0029 U	0.0029	0.0029 U	0.0029	0.0028 U	0.0028
Aldrin			0.0029 U	0.0029	0.0029 U	0.0029	0.0028 U	0.0028
Heptachlor epoxide			0.0029 U	0.0029	0.0029 U	0.0029	0.0028 U	0.0028
Endosulfan I			0.0029 U	0.0029	0.0029 U	0.0029	0.0028 U	0.0028
Dieldrin			0.0059 U	0.0059	0.0058 U	0.0058	0.0055 U	0.0055
4,4'-DDE	0.002	0.0022	0.0059 U	0.0059	0.0058 U	0.0058	0.0055 U	0.0055
Endrin			0.0059 U	0.0059	0.0058 U	0.0058	0.0055 U	0.0055
Endosulfan II			0.0059 U	0.0059	0.0058 U	0.0058	0.0055 U	0.0055
4,4'-DDD	0.002		0.0059 U	0.0059	0.0058 U	0.0058	0.0055 U	0.0055
Endosulfan sulfate			0.0059 U	0.0059	0.0058 U	0.0058	0.0055 U	0.0055
4,4'-DDT	0.00183	0.00158	0.0059 U	0.0059	0.0058 U	0.0058	0.0055 U	0.0055
Methoxychlor			0.029 U	0.029	0.029 U	0.029	0.028 U	0.028
Endrin ketone			0.0059 U	0.0059	0.0058 U	0.0058	0.0055 U	0.0055
Endrin aldehyde			0.0059 U	0.0059	0.0058 U	0.0058	0.0055 U	0.0055
alpha-Chlordane			0.0029 U	0.0029	0.0029 U	0.0029	0.0028 U	0.0028
gamma-Chlordane			0.0029 U	0.0029	0.0029 U	0.0029	0.0028 U	0.0028
Toxaphene			0.29 U	0.29	0.29 U	0.29	0.28 U	0.28
Aroclor-1016			0.059 U	0.059	0.058 U	0.058	0.055 U	0.055
Aroclor-1221			0.12 U	0.12	0.12 U	0.12	0.11 U	0.11
Aroclor-1232			0.059 U	0.059	0.058 U	0.058	0.055 U	0.055
Aroclor-1242			0.059 U	0.059	0.058 U	0.058	0.055 U	0.055
Aroclor-1248			0.059 U	0.059	0.058 U	0.058	0.055 U	0.055
Aroclor-1254			0.059 U	0.059	0.058 U	0.058	0.055 U	0.055
Aroclor-1260			0.059 U	0.059	0.058 U	0.058	0.055 U	0.055
Method:TCL Pesticides/PCBs								

MAIN POST
SEDIMENT PESTICIDES/PCBS (OFFSITE DATA)

Geographical Location			Background SS01		Background SS02	
Sample			SS01-SD01-A01		SS01-SD02-A01	
Batch#			9412G922		9412G922	
Prep#			94GP1049		94GP1049	
RFW#			006		005	
Sample Depth			0-6"		0-6"	
Dilution Factor			1.00		1.00	
Matrix			soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg	
Sampling Date			12/2/94		12/2/94	
Analysis Date			1/12/95		1/12/95	
Analysis	Standard	Standard	Analytical	Reporting	Analytical	Reporting
	fresh water	salt water	Result	Limit	Result	Limit
alpha-BHC			0.0057 U	0.0057	0.0024 U	0.0024
beta-BHC			0.0057 U	0.0057	0.0024 U	0.0024
delta-BHC			0.0057 U	0.0057	0.0024 U	0.0024
gamma-BHC (Lindane)			0.0057 U	0.0057	0.0024 U	0.0024
Heptachlor			0.0057 U	0.0057	0.0024 U	0.0024
Aldrin			0.0057 U	0.0057	0.0024 U	0.0024
Heptachlor epoxide			0.0057 U	0.0057	0.014 P	0.0024
Endosulfan I			0.0057 U	0.0057	0.0024 J	0.0024
Dieldrin			0.011 U	0.011	0.0049 U	0.0049
4,4'-DDE	0.002	0.0022	0.0092 J	0.011	0.002 JP	0.0049
Endrin			0.011 U	0.011	0.0049 U	0.0049
Endosulfan II			0.011 U	0.011	0.0049 U	0.0049
4,4'-DDD	0.002		0.013	0.011	0.0049 U	0.0049
Endosulfan sulfate			0.011 U	0.011	0.0049 U	0.0049
4,4'-DDT	0.00183	0.00158	0.0057 JP	0.011	0.0024 JP	0.0049
Methoxychlor			0.057 U	0.057	0.024 U	0.024
Endrin ketone			0.011 U	0.011	0.0049 U	0.0049
Endrin aldehyde			0.011 U	0.011	0.0049 U	0.0049
alpha-Chlordane			0.011 P	0.0057	0.0024 P	0.0024
gamma-Chlordane			0.0092 P	0.0057	0.0015 JP	0.0024
Toxaphene			0.57 U	0.57	0.24 U	0.24
Aroclor-1016			0.11 U	0.11	0.049 U	0.049
Aroclor-1221			0.23 U	0.23	0.098 U	0.098
Aroclor-1232			0.11 U	0.11	0.049 U	0.049
Aroclor-1242			0.11 U	0.11	0.049 U	0.049
Aroclor-1248			0.11 U	0.11	0.049 U	0.049
Aroclor-1254			0.11 U	0.11	0.049 U	0.049
Aroclor-1260			0.11 U	0.11	0.049 U	0.049
Method:TCL Pesticides/PCBs						

MAIN POST
SURFACE WATER VOLATILES

Geographical Location				M2		M2		M3		M3		M3		M14		M14	
Sample				MP02-SW01-A01		MP02-SW02-A01		MP06-SW01-A01		MP06-SW01-C01		MP10-SW01-A01		MP14-SW01-A01		MP14-SW02-A01	
Sample Type										Duplicate							
Batch#				9412G921		9412G921		9412G921		9412G921		9412G922		9412G921		9412G921	
Prep#				94GVE343		94GVE343		94GVE343		94GVE343		94GVE348		94GVE348		94GVE343	
RFW#				007		009		003		005		001		018		011	
Dilution Factor				1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix				water		water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date				12/1/94		12/1/94		12/1/94		12/1/94		12/1/94		12/1/94		12/1/94	
Analysis Date				12/7/94		12/7/94		12/7/94		12/7/94		12/9/94		12/9/94		12/7/94	
Analysis	Standard	Standard	MDL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL
	fresh water	salt water		Result		Result		Result		Result		Result		Result		Result	
Chloromethane	5.7		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane	48.4	4000	6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	0.083	525	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane			9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2.49	1600	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone			6.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Disulfide			4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene	4.81		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane			3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)			4.4	3 J	10	2 J	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	5.67	470	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	4 J	10	5 J	10
1,2-Dichloroethane	0.291	99	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone			4.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,1-Trichloroethane	127		1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	0.363	6.31	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	0.266	22	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane			1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene			3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1.09	81	2.0	2 J	10	2 J	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	72.6		2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	13.5		4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	0.15	71	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.193	1700	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4.38	360	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone			5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone			3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	0.388	4.29	4.0	5 J	10	5 J	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	1.72		4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	7440	200000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	22	21000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	3030	27900	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene			3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)			3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Method:TCL Volatiles																	

MAIN POST
SURFACE WATER VOLATILES (OFFSITE DATA)

Geographical Location				Background SS01		Background SS02	
Sample				SS01-SW01-A01		SS01-SW02-A01	
Batch#				9412G922		9412G922	
Prep#				94GGVE348		94GGVE348	
RFW#				001		003	
Dilution Factor				1.00		1.00	
Matrix				water		water	
Units	ug/l	ug/l	ug/l	ug/l		ug/l	
Sampling Date				12/1/94		12/1/94	
Analysis Date				12/9/94		12/9/94	
Analysis	Standard	Standard	MDL	Analytical	CRQL	Analytical	CRQL
	fresh water	salt water		Result		Result	
Chloromethane	5.7		7.3	10 U	10	10 U	10
Bromomethane	48.4	4000	6.7	10 U	10	10 U	10
Vinyl Chloride	0.083	525	7.9	10 U	10	10 U	10
Chloroethane			9.1	10 U	10	10 U	10
Methylene Chloride	2.49	1600	2.7	10 U	10	10 U	10
Acetone			6.9	10 U	10	10 U	10
Carbon Disulfide			4.4	10 U	10	10 U	10
1,1-Dichloroethene	4.81		4.9	10 U	10	10 U	10
1,1-Dichloroethane			3.0	10 U	10	10 U	10
1,2-Dichloroethene (total)			4.4	10 U	10	10 U	10
Chloroform	5.67	470	2.9	10 U	10	10 U	10
1,2-Dichloroethane	0.291	99	2.4	10 U	10	10 U	10
2-Butanone			4.1	10 U	10	10 U	10
1,1,1-Trichloroethane	127		1.7	10 U	10	10 U	10
Carbon Tetrachloride	0.363	6.31	1.5	10 U	10	10 U	10
Bromodichloromethane	0.266	22	2.0	10 U	10	10 U	10
1,2-Dichloropropane			1.7	10 U	10	10 U	10
cis-1,3-Dichloropropene			3.0	10 U	10	10 U	10
Trichloroethene	1.09	81	2.0	10 U	10	10 U	10
Dibromochloromethane	72.6		2.4	10 U	10	10 U	10
1,1,2-Trichloroethane	13.5		4.3	10 U	10	10 U	10
Benzene	0.15	71	3.3	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.193	1700	2.4	10 U	10	10 U	10
Bromoform	4.38	360	3.1	10 U	10	10 U	10
4-Methyl-2-pentanone			5.5	10 U	10	10 U	10
2-Hexanone			3.9	10 U	10	10 U	10
Tetrachloroethene	0.388	4.29	4.0	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	1.72		4.2	10 U	10	10 U	10
Toluene	7440	200000	2.7	10 U	10	10 U	10
Chlorobenzene	22	21000	2.7	10 U	10	10 U	10
Ethylbenzene	3030	27900	3.1	10 U	10	10 U	10
Styrene			3.8	10 U	10	10 U	10
Xylene (total)			3.8	10 U	10	10 U	10
Total Est. Conc. of TIC.							
Method:TCL Volatiles							

MAIN POST
SURFACE WATER SEMIVOLATILES

Geographical Location				M2		M2		M3		M3		M3		M14		M14	
Sample				MP02-SW01-A01		MP02-SW02-A01		MP06-SW01-A01		MP06-SW01-C01		MP10-SW01-A01		MP14-SW01-A01		MP14-SW02-A01	
Sample Type										Duplicate							
Batch#				9412G921		9412G921		9412G921		9412G921		9412G922		9412G921		9412G921	
Prep#				94GBO800		94GBO800		94GBO800		94GBO800		94GBO800		94GBO809		94GBO800	
RFW#				007		009		003		005		001		018		011	
Dilution Factor				1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix				water		water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date				12/1/94		12/1/94		12/1/94		12/1/94		12/1/94		12/1/94		12/1/94	
Analysis Date				12/22/94		12/22/94		12/22/94		12/22/94		12/22/94		12/22/94		12/22/94	
Analysis	Standard	Standard	MDL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL
	fresh water	salt water		Result		Result		Result		Result		Result		Result		Result	
Phenol	20900	4600000	7.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
bis(2-Chloroethyl) ether	0.0311	1.4	9.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Chlorophenol	122	402	7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,3-Dichlorobenzene	2620	22200	5.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,4-Dichlorobenzene	343	3159	4.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichlorobenzene	2520	16500	5.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Methylphenol			6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2,2'-oxybis(1-Chloropropane)			7.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methylphenol			12.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
N-Nitroso-di-n-propylamine			8.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Hexachloroethane	2.73	12.4	5.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Nitrobenzene	16	1900	7.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Isophorone	552		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Nitrophenol			7.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2,4-Dimethylphenol			4.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
bis(2-Chloroethoxy) methane			6.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2,4-Dichlorophenol	92.7	794	4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2,4-Trichlorobenzene	30.6	113	9.6	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Naphthalene			8.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Chloroaniline			2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Hexachlorobutadiene	6.94		4.6	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Chloro-3-methylphenol			3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Methylnaphthalene			8.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Hexachlorocyclopentadiene	245	17000	3.6	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2,4,6-Trichlorophenol	2.14	6.53	5.6	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2,4,5-Trichlorophenol	2580	9790	4.7	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25
2-Chloronaphthalene			8.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Nitroaniline			6.1	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25
Dimethyl phthalate	313000	2900000	4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acenaphthylene			6.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2,6-Dinitrotoluene			5.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
3-Nitroaniline			5.2	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25
Acenaphthene			6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2,4-Dinitrophenol	69.7	14000	4.6	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25
4-Nitrophenol			7.5	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25

MAIN POST
SURFACE WATER SEMIVOLATILES

Geographical Location				M2		M2		M3		M3		M3		M14		M14	
Sample				MP02-SW01-A01		MP02-SW02-A01		MP06-SW01-A01		MP06-SW01-C01		MP10-SW01-A01		MP14-SW01-A01		MP14-SW02-A01	
Sample Type										Duplicate							
Batch#				9412G921		9412G921		9412G921		9412G921		9412G922		9412G921		9412G921	
Prep#				94GBO800		94GBO800		94GBO800		94GBO800		94GBO800		94GBO809		94GBO800	
RFW#				007		009		003		005		001		018		011	
Dilution Factor				1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix				water		water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date				12/1/94		12/1/94		12/1/94		12/1/94		12/1/94		12/1/94		12/1/94	
Analysis Date				12/22/94		12/22/94		12/22/94		12/22/94		12/22/94		12/22/94		12/22/94	
Analysis	Standard	Standard	MDL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL
	fresh water	salt water		Result		Result		Result		Result		Result		Result		Result	
Dibenzofuran			6.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2,4-Dinitrotoluene	0.11	9.1	5.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Diethyl phthalate	21200	111000	5.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Chlorophenyl-phenylether			7.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Fluorene	1340		6.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Nitroaniline			6.4	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25
4,6-Dinitro-2-methylphenol			5.3	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25
N-Nitrosodiphenylamine (1)			4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Bromophenyl-phenylether			5.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Hexachlorobenzene	0.000748	0.000775	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Pentachlorophenol	0.282	7.9	4.0	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25	25 U	25
Phenanthrene			5.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Anthracene	9570	108000	4.6	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbazole			4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Di-n-butylphthalate	3530	15700	6.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Fluoranthene	310	393	6.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Pyrene	797	8970	5.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Butylbenzylphthalate	239	416	5.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
3,3'-Dichlorobenzidine	0.0386	0.0767	2.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzo(a)anthracene	0.0028	0.031	4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chrysene	0.0028	0.031	4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
bis(2-Ethylhexy)phthalate	1.76	5.92	9.7	10 U	10	4 J	10	10 U	10	10 U	10	10 U	10	10 U	10	2 J	10
Di-n-octyl phthalate			5.6	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzo(b)fluoranthene	0.0028	0.031	5.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzo(k)fluoranthene	0.0028	0.031	6.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzo(a)pyrene	0.0028	0.031	4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Indeno(1,2,3-cd)pyrene	0.0028	0.031	7.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibenz(a,h)anthracene	0.0028	0.031	6.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzo(g,h,i)perylene			6.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Total Est. Conc. of TIC				11		17		28		3		10		11		2	
Method:TCL Semivolatiles																	

MAIN POST
SURFACE WATER SEMIVOLATILES (OFFSITE DATA)

Geographical Location				Background SS01		Background SS02	
Sample				SS01-SW01-A01		SS01-SW02-A01	
Batch#				9412G921		9412G922	
Prep#				94GBO800		94GBO800	
RFW#				001		003	
Dilution Factor				1.00		1.00	
Matrix				water		water	
Units	ug/l	ug/l	ug/l	ug/l		ug/l	
Sampling Date				12/1/94		12/1/94	
Analysis Date				12/22/94		12/22/94	
Analysis	Standard	Standard	MDL	Analytical	CRQL	Analytical	CRQL
	fresh water	salt water		Result		Result	
Phenol	20900	4600000	7.1	10 U	10	10 U	10
bis(2-Chloroethyl) ether	0.0311	1.4	9.7	10 U	10	10 U	10
2-Chlorophenol	122	402	7.3	10 U	10	10 U	10
1,3-Dichlorobenzene	2620	22200	5.3	10 U	10	10 U	10
1,4-Dichlorobenzene	343	3159	4.8	10 U	10	10 U	10
1,2-Dichlorobenzene	2520	16500	5.7	10 U	10	10 U	10
2-Methylphenol			6.7	10 U	10	10 U	10
2,2'-oxybis(1-Chloropropane)			7.0	10 U	10	10 U	10
4-Methylphenol			12.9	10 U	10	10 U	10
N-Nitroso-di-n-propylamine			8.0	10 U	10	10 U	10
Hexachloroethane	2.73	12.4	5.3	10 U	10	10 U	10
Nitrobenzene	16	1900	7.4	10 U	10	10 U	10
Isophorone	552		3.9	10 U	10	10 U	10
2-Nitrophenol			7.0	10 U	10	10 U	10
2,4-Dimethylphenol			4.8	10 U	10	10 U	10
bis(2-Chloroethoxy) methane			6.1	10 U	10	10 U	10
2,4-Dichlorophenol	92.7	794	4.4	10 U	10	10 U	10
1,2,4-Trichlorobenzene	30.6	113	9.6	10 U	10	10 U	10
Naphthalene			8.4	10 U	10	10 U	10
4-Chloroaniline			2.9	10 U	10	10 U	10
Hexachlorobutadiene	6.94		4.6	10 U	10	10 U	10
4-Chloro-3-methylphenol			3.1	10 U	10	10 U	10
2-Methylnaphthalene			8.7	10 U	10	10 U	10
Hexachlorocyclopentadiene	245	17000	3.6	10 U	10	10 U	10
2,4,6-Trichlorophenol	2.14	6.53	5.6	10 U	10	10 U	10
2,4,5-Trichlorophenol	2580	9790	4.7	25 U	25	25 U	25
2-Chloronaphthalene			8.2	10 U	10	10 U	10
2-Nitroaniline			6.1	25 U	25	25 U	25
Dimethylphthalate	313000	2900000	4.4	10 U	10	10 U	10
Acenaphthylene			6.0	10 U	10	10 U	10
2,6-Dinitrotoluene			5.2	10 U	10	10 U	10
3-Nitroaniline			5.2	25 U	25	25 U	25
Acenaphthene			6.7	10 U	10	10 U	10
2,4-Dinitrophenol	69.7	14000	4.6	25 U	25	25 U	25
4-Nitrophenol			7.5	25 U	25	25 U	25

MAIN POST
SURFACE WATER SEMIVOLATILES (OFFSITE DATA)

Geographical Location				Background SS01		Background SS02	
Sample				SS01-SW01-A01		SS01-SW02-A01	
Batch#				9412G921		9412G922	
Prep#				94GBO800		94GBO800	
RFW#				001		003	
Dilution Factor				1.00		1.00	
Matrix				water		water	
Units	ug/l	ug/l	ug/l	ug/l		ug/l	
Sampling Date				12/1/94		12/1/94	
Analysis Date				12/22/94		12/22/94	
Analysis	Standard	Standard	MDL	Analytical	CRQL	Analytical	CRQL
	fresh water	salt water		Result		Result	
Dibenzofuran			6.5	10 U	10	10 U	10
2,4-Dinitrotoluene	0.11	9.1	5.8	10 U	10	10 U	10
Diethylphthalate	21200	111000	5.4	10 U	10	10 U	10
4-Chlorophenyl-phenylether			7.0	10 U	10	10 U	10
Fluorene	1340		6.3	10 U	10	10 U	10
4-Nitroaniline			6.4	25 U	25	25 U	25
4,6-Dinitro-2-methylphenol			5.3	25 U	25	25 U	25
N-Nitrosodiphenylamine (1)			4.2	10 U	10	10 U	10
4-Bromophenyl-phenylether			5.3	10 U	10	10 U	10
Hexachlorobenzene	0.000748	0.000775	5.5	10 U	10	10 U	10
Pentachlorophenol	0.282	7.9	4.0	25 U	25	25 U	25
Phenanthrene			5.0	10 U	10	10 U	10
Anthracene	9570	108000	4.6	10 U	10	10 U	10
Carbazole			4.4	10 U	10	10 U	10
Di-n-butylphthalate	3530	15700	6.5	10 U	10	10 U	10
Fluoranthene	310	393	6.0	10 U	10	10 U	10
Pyrene	797	8970	5.4	10 U	10	10 U	10
Butylbenzylphthalate	239	416	5.3	10 U	10	10 U	10
3,3'-Dichlorobenzidine	0.0386	0.0767	2.8	10 U	10	10 U	10
Benzo(a)anthracene	0.0028	0.031	4.9	10 U	10	10 U	10
Chrysene	0.0028	0.031	4.4	10 U	10	10 U	10
bis(2-Ethylhexy)phthalate	1.76	5.92	9.7	10 U	10	10 U	10
Di-n-octyl phthalate			5.6	10 U	10	10 U	10
Benzo(b)fluoranthene	0.0028	0.031	5.7	10 U	10	10 U	10
Benzo(k)fluoranthene	0.0028	0.031	6.2	10 U	10	10 U	10
Benzo(a)pyrene	0.0028	0.031	4.9	10 U	10	10 U	10
Indeno(1,2,3-cd)pyrene	0.0028	0.031	7.1	10 U	10	10 U	10
Dibenz(a,h)anthracene	0.0028	0.031	6.0	10 U	10	10 U	10
Benzo(g,h,i)perylene			6.8	10 U	10	10 U	10
Petroleum hydrocarbons				0.26 U	0.26	0.27 U	0.27
Total Est. Conc. of TIC				13		15	
Method:TCL Semivolatiles							

MAIN POST
SURFACE WATER INORGANICS

Geographical Location			M2		M2		M2		M2		M3		M3	
Sample			MP02-SW01-A01		MP02-SW01-A01 SOL		MP02-SW02-A01		MP02-SW02-A01SOL		MP06-SW01-A01		MP06-SW01-A01 SOL	
Sample Type														
Batch#			9412G921		9412G921		9412G921		9412G921		9412G921		9412G921	
Prep#			94GCN260		94GI180		94GCN260		94GI180		94GCN264		94GI180	
RFW#			007		008		009		010		003		004	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water, filtered		water		water, filtered		water		water, filtered	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			12/1/94		12/1/94		12/1/94		12/1/94		12/1/94		12/1/94	
Analysis Date			12/13/94		12/19/94		12/13/94		12/19/94		12/14/94		12/19/94	
Analysis	Standard	Standard	Analytical	MDL	Analytical	MDL	Analytical	MDL	Analytical	MDL	Analytical	MDL	Analytical	MDL
	fresh water	salt water	Result		Result		Result		Result		Result		Result	
Silver	164		3.1 U	3.1	3.1 U	3.1	3.1 U	3.1	3.1 U	3.1	3.1 U	3.1	3.1 U	3.1
Aluminum			258	26.7	26.7 U	26.7	263	26.7	26.7 U	26.7	155	26.7	26.7 U	26.7
Arsenic	0.017	0.136	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6
Barium	2000		42.7	2.1	38.2	2.1	47	2.1	41.8	2.1	32.6	2.1	27.7	2.1
Beryllium			1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5
Calcium			18000	12.0	17700	12.0	19400	12.0	19000	12.0	32100	12.0	30400	12.0
Cadmium	10		3.4 U	3.4	3.4 U	3.4	3.4 U	3.4	3.4 U	3.4	3.4 U	3.4	3.4 U	3.4
Cobalt			4.5	2.8	4.1	2.8	4.8	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8
Chromium	160	3230	6.4 U	6.4	6.4 U	6.4	6.4 U	6.4	6.4 U	6.4	6.4 U	6.4	6.4 U	6.4
Copper			3.1	2.4	4.2	2.4	2.9	2.4	4.9	2.4	2.4 U	2.4	2.4 U	2.4
Iron			2760	4.7	493	4.7	3020	4.7	681	4.7	2850	4.7	412	4.7
Mercury	0.144	0.146	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20 U	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium			2840	821	2860	821	2980	821	3180	821	5630	821	5170	821
Magnesium			2930	38.2	2860	38.2	3170	38.2	3070	38.2	9360	38.2	8840	38.2
Manganese	100		89.9	2.0	86.1	2.0	97.6	2.0	92.8	2.0	101	2.0	94.3	2.0
Sodium			25400	15.4	25200	15.4	27500	15.4	26900	15.4	52800	15.4	49800	15.4
Nickel	516	3900	12.8 U	12.8	14.7	12.8	12.8 U	12.8	12.8 U	12.8	12.8 U	12.8	12.8 U	12.8
Lead	5		3.1	1.6	7.6	1.6	2.3	1.6	1.6 U	1.6	4	1.6	1.6 U	1.6
Antimony	12.2	4300	21.5 U	21.5	21.5 U	21.5	21.5 U	21.5	21.5 U	21.5	21.5 U	21.5	21.5 U	21.5
Selenium	10	71	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90 U	0.90 U	0.90	1.1	0.90	0.90 U	0.90
Thallium	1.7	6.22	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1
Vanadium			2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9
Zinc			29.1	2.8	19.4	2.8	32.9	2.8	21.1	2.8	12.1	2.8	7.8	2.8
Cyanide	5.2	1	10 U	10			10 U	10			10 U	10.0		
Method:TAL Metals, Cyanide														

MAIN POST
SURFACE WATER INORGANICS

Geographical Location			M3		M3		M3		M3		M14		M14	
Sample			MP06-SW01-C01		MP06-SW01-C01 SOL		MP10-SW01-A01		MP10-SW01-A01 SOL		MP14-SW01-A01		MP14-SW01-A01 SOL	
Sample Type			Duplicate		Duplicate									
Batch#			9412G921		9412G921		9412G922		9412G922		9412G921		9412G921	
Prep#			94GCN260		94GI180		94GCN264		94GI186		94GCN260		94GI180	
RFW#			005		006		001		002		018		019	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water, filtered		water		water, filtered		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			12/1/94		12/1/94		12/1/94		12/1/94		12/1/94		12/1/94	
Analysis Date			12/13/94		12/13/94		12/14/94		12/21/94		12/13/94		12/19/94	
Analysis	Standard	Standard	Analytical	MDL	Analytical	MDL	Analytical	MDL	Analytical	MDL	Analytical	MDL	Analytical	MDL
	fresh water	salt water	Result		Result		Result		Result		Result		Result	
Silver	164		3.1 U	3.1	3.1 U	3.1	3.1 U	3.1	3.1 U	3.1	3.1 U	3.1	3.1 U	3.1
Aluminum			179	26.7	26.7 U	26.7	69.0	26.7	26.7 U	26.7	188	26.7	26.7 U	26.7
Arsenic	0.017	0.136	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6
Barium	2000		33.3	2.1	27.6	2.1	34.6	2.1	29.1	2.1	30.0	2.1	27.2	2.1
Beryllium			1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5
Calcium			32100	12.0	30300	12.0	30000	12.0	29400	12.0	16200	12.0	16300	12.0
Cadmium	10		3.4 U	3.4	3.4 U	3.4	3.4 U	3.4	3.4 U	3.4	3.4 U	3.4	3.4 U	3.4
Cobalt			2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8
Chromium	160	3230	6.4 U	6.4	6.4 U	6.4	6.4 U	6.4	6.4 U	6.4	6.4 U	6.4	6.4 U	6.4
Copper			2.4 U	2.4	4.3	2.4	2.4 U	2.4	3.9	2.4	2.9	2.4	5.6	2.4
Iron			2940	4.7	465	4.7	2180	4.7	355	4.7	1920	4.7	839	4.7
Mercury	0.144	0.146	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium			6260	821	5840	821	4320	821	4280	821	4840	821	4240	821
Magnesium			9790	38.2	9030	38.2	5340	38.2	5160	38.2	9770	38.2	9540	38.2
Manganese	100		102	2.0	94.1	2.0	98.7	2.0	96.2	2.0	65.6	2.0	63.6	2.0
Sodium			56500	15.4	52300	15.4	18200	15.4	17700	15.4	70100	15.4	69100	15.4
Nickel	516	3900	12.8 U	12.8	12.8 U	12.8	12.8 U	12.8	12.8 U	12.8	14.2	12.8	12.8 U	12.8
Lead	5		4.8	1.6	1.6 U	1.6	1.6	1.6	1.6 U	1.6	3.4	1.6	3.1	1.6
Antimony	12.2	4300	21.5 U	21.5	21.5 U	21.5	21.5 U	21.5	21.5 U	21.5	21.5 U	21.5	21.5 U	21.5
Selenium	10	71	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90
Thallium	1.7	6.22	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1
Vanadium			2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9
Zinc			12.2	2.8	2.8	2.8	16	2.8	7.9	2.8	23.7	2.8	14.4	2.8
Cyanide	5.2	1	10 U	10			10 U	10			10 U	10		
Method:TAL Metals, Cyanide														

MAIN POST
SURFACE WATER INORGANICS

Geographical Location			M14		M14	
Sample			MP14-SW02-A01		MP14-SW02-A01SOL	
Sample Type						
Batch#			9412G921		9412G921	
Prep#			94GCN260		94GI180	
RFW#			011		012	
Dilution Factor			1.00		1.00	
Matrix			water		water, filtered	
Units	ug/l	ug/l	ug/l		ug/l	
Sampling Date			12/1/94		12/1/94	
Analysis Date			12/13/94		12/19/94	
Analysis	Standard	Standard	Analytical	MDL	Analytical	MDL
	fresh water	salt water	Result		Result	
Silver	164		3.1 U	3.1	3.1 U	3.1
Aluminum			205	26.7	26.7	26.7
Arsenic	0.017	0.136	1.6 U	1.6	1.6 U	1.6
Barium	2000		33.1	2.1	31.2	2.1
Beryllium			1.5 U	1.5	1.5 U	1.5
Calcium			20400	12.0	20300	12.0
Cadmium	10		3.4 U	3.4	3.4 U	3.4
Cobalt			2.8 U	2.8	2.8 U	2.8
Chromium	160	3230	6.4 U	6.4	6.4 U	6.4
Copper			5.3	2.4	4.9	2.4
Iron			2070	4.7	999	4.7
Mercury	0.144	0.146	0.20 U	0.20	0.20 U	0.20
Potassium			8320	821	8220	821
Magnesium			21400	38.2	21600	38.2
Manganese	100		68.4	2.0	66.1	2.0
Sodium			168000	15.4	171000	15.4
Nickel	516	3900	12.8 U	12.8	12.8 U	12.8
Lead	5		2.8	1.6	3.2	1.6
Antimony	12.2	4300	21.5 U	21.5	21.5 U	21.5
Selenium	10	71	0.90 U	0.90	0.90 U	0.90
Thallium	1.7	6.22	1.1 U	1.1	1.1 U	1.1
Vanadium			2.9 U	2.9	2.9 U	2.9
Zinc			23.4	2.8	13.2	2.8
Cyanide	5.2	1	10 U	10		
Method:TAL Metals, Cyanide						

MAIN POST
SURFACE WATER INORGANICS (OFFSITE DATA)

Geographical Location			Background SS01		Background SS01		Background SS02		Background SS02	
Sample			SS01-SW01-A01		SS01-SW01-A01 SOL		SS01-SW02-A01		SS01-SW02-A01 SOL	
Batch#			9412G921		9412G921		9412G922		9412G922	
Prep#			94GCN260		94GI180		94GCN264		94GI186	
RFW#			001		002		003		004	
Dilution Factor			1.00		1.00		1.00		1.00	
Matrix			water		water, filtered		water		water, filtered	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l	
Sampling Date			12/1/94		12/1/94		12/1/94		12/1/94	
Analysis Date			12/13/94		12/19/94		12/14/94		12/21/94	
Analysis	Standard	Standard	Analytical	MDL	Analytical	MDL	Analytical	MDL	Analytical	MDL
	fresh water	salt water	Result		Result		Result		Result	
Silver	164		3.1 U	3.1	3.1 U	3.1	3.1 U	3.1	3.1 U	3.1
Aluminum			388	26.7	26.7 U	26.7	748	26.7	26.7 U	26.7
Arsenic	0.017	0.136	1.6 U	1.6	1.6 U	1.6	2.6	1.6	1.6 U	1.6
Barium	2000		44.7	2.1	39.4	2.1	42.3	2.1	31.3	2.1
Beryllium			1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5
Calcium			17300	12.0	17400	12.0	31600	12.0	30900	12.0
Cadmium	10		3.4 U	3.4	3.4 U	3.4	3.4 U	3.4	3.4 U	3.4
Cobalt			8.1	2.8	4.1	2.8	2.8 U	2.8	2.8 U	2.8
Chromium	160	3230	6.4 U	6.4	6.4 U	6.4	7.5	6.4	6.4 U	6.4
Copper			3.2	2.4	4	2.4	3.1	2.4	3.1	2.4
Iron			3010	4.7	405	4.7	6210	4.7	335	4.7
Mercury	0.144	0.146	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium			2990	821	2670	821	5060	821	4280	821
Magnesium			2880	38.2	2860	38.2	5440	38.2	5120	38.2
Manganese	100		93.3	2.0	90.7	2.0	113	2.0	98.6	2.0
Sodium			26700	15.4	26200	15.4	17600	15.4	17400	15.4
Nickel	516	3900	22.9	12.8	16.1	12.8	12.8	12.8	12.8 U	12.8
Lead	5		2.4	1.6	1.6 U	1.6	10.0	1.6	1.6 U	1.6
Antimony	12.2	4300	21.5 U	21.5	21.5 U	21.5	21.5 U	21.5	21.5 U	21.5
Selenium	10	71	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90
Thallium	1.7	6.22	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1
Vanadium			2.9 U	2.8	2.9 U	2.8	5.8	2.9	2.9 U	2.9
Zinc			35.1	2.9	23.8	2.9	31.8	2.8	8.8	2.8
Cyanide	5.2	1	10 U	10.0			10 U	10		
Method:TAL Metals, Cyanide										

MAIN POST
SURFACE WATER PESTICIDES/PCBS

Geographical Location			M2		M2		M3		M3		M3		M14		M14	
Sample			MP02-SW01-A01		MP02-SW02-A01		MP06-SW01-A02		MP06-SW01-C01		MP10-SW01-A01		MP14-SW01-A01		MP14-SW02-A01	
Sample Type									Duplicate							
Batch#			9412G921		9412G921		9412G921		9412G921		9412G922		9412G921		9412G921	
Prep#			94GP1038		94GP1038		94GP1038		94GP1038		94GP1038		94GP1038		94GP1038	
RFW#			007		009		003		005		001		018		011	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			12/1/94		12/1/94		12/1/94		12/1/94		12/1/94		12/1/94		12/1/94	
Analysis Date			12/16/94		12/16/94		12/16/94		12/16/94		12/16/94		12/16/94		12/16/94	
Analysis	Standard	Standard	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting
	fresh water	salt water	Result	Limit	Result	Limit	Result	Limit	Result	Limit	Result	Limit	Result	Limit	Result	Limit
alpha-BHC	0.00391	0.0131	0.050 U	0.050	0.050 U	0.050	0.054 U	0.054	0.050 U	0.050	0.054 U	0.054	0.049 U	0.049	0.053 U	0.053
beta-BHC	0.137	0.460	0.050 U	0.050	0.050 U	0.050	0.054 U	0.054	0.050 U	0.050	0.054 U	0.054	0.049 U	0.049	0.053 U	0.053
delta-BHC			0.050 U	0.050	0.050 U	0.050	0.054 U	0.054	0.050 U	0.050	0.054 U	0.054	0.049 U	0.049	0.053 U	0.053
gamma-BHC (Lindane)	0.08	0.16	0.050 U	0.050	0.050 U	0.050	0.054 U	0.054	0.050 U	0.050	0.054 U	0.054	0.049 U	0.049	0.053 U	0.053
Heptachlor	0.000208	0.000214	0.050 U	0.050	0.050 U	0.050	0.054 U	0.054	0.050 U	0.050	0.054 U	0.054	0.049 U	0.049	0.053 U	0.053
Aldrin	0.000135	0.000144	0.050 U	0.050	0.050 U	0.050	0.054 U	0.054	0.050 U	0.050	0.054 U	0.054	0.049 U	0.049	0.053 U	0.053
Heptachlor epoxide	0.000103	0.000106	0.050 U	0.050	0.050 U	0.050	0.054 U	0.054	0.050 U	0.050	0.054 U	0.054	0.049 U	0.049	0.053 U	0.053
Endosulfan I			0.050 U	0.050	0.050 U	0.050	0.054 U	0.054	0.050 U	0.050	0.054 U	0.054	0.049 U	0.049	0.053 U	0.053
Dieldrin	0.000135	0.000144	0.10 U	0.10	0.099 U	0.099	0.11 U	0.11	0.10 U	0.10	0.11 U	0.11	0.098 U	0.098	0.11 U	0.11
4,4'-DDE	0.000588	0.000591	0.10 U	0.10	0.099 U	0.099	0.11 U	0.11	0.10 U	0.10	0.11 U	0.11	0.098 U	0.098	0.11 U	0.11
Endrin	0.0023	0.0023	0.10 U	0.10	0.099 U	0.099	0.11 U	0.11	0.10 U	0.10	0.11 U	0.11	0.098 U	0.098	0.11 U	0.11
Endosulfan II			0.10 U	0.10	0.099 U	0.099	0.11 U	0.11	0.10 U	0.10	0.11 U	0.11	0.098 U	0.098	0.11 U	0.11
4,4'-DDD	0.000832	0.000837	0.10 U	0.10	0.099 U	0.099	0.11 U	0.11	0.10 U	0.10	0.11 U	0.11	0.098 U	0.098	0.11 U	0.11
Endosulfan sulfate	0.93	2.0	0.10 U	0.10	0.099 U	0.099	0.11 U	0.11	0.10 U	0.10	0.11 U	0.11	0.098 U	0.098	0.11 U	0.11
4,4'-DDT	0.000588	0.000591	0.10 U	0.10	0.099 U	0.099	0.11 U	0.11	0.10 U	0.10	0.11 U	0.11	0.098 U	0.098	0.11 U	0.11
Methoxychlor	0.03	0.03	0.50 U	0.50	0.50 U	0.50	0.05 U	0.05	0.50 U	0.50	0.54 U	0.54	0.49 U	0.49	0.53 U	0.53
Endrin ketone			0.10 U	0.10	0.099 U	0.099	0.11 U	0.11	0.10 U	0.10	0.11 U	0.11	0.098 U	0.098	0.11 U	0.11
Endrin aldehyde	0.76	0.81	0.10 U	0.10	0.099 U	0.099	0.11 U	0.11	0.10 U	0.10	0.11 U	0.11	0.098 U	0.098	0.11 U	0.11
alpha-Chlordane	0.000277	0.000283	0.050 U	0.050	0.050 U	0.050	0.054 U	0.054	0.050 U	0.050	0.054 U	0.054	0.049 U	0.049	0.053 U	0.053
gamma-Chlordane			0.050 U	0.050	0.050 U	0.050	0.054 U	0.054	0.050 U	0.050	0.054 U	0.054	0.049 U	0.049	0.053 U	0.053
Toxaphene	0.00073	0.000747	5.0 U	5.0	5.0 U	5.0	5.4 U	5.4	5.0 U	5.0	5.4 U	5.4	4.9 U	4.9	5.3 U	5.3
Aroclor-1016	0.000244	0.000247	1.0 U	1.0	0.99 U	0.10	1.1 U	1.1	1.0 U	1.0	1.1 U	1.1	0.98 U	0.98	1.1 U	1.1
Aroclor-1221	0.000244	0.000247	2.0 U	2.0	2.0 U	2.0	2.2 U	2.2	2.0 U	2.0	2.2 U	2.2	2.0 U	2.0 U	2.1 U	2.1
Aroclor-1232	0.000244	0.000247	1.0 U	1.0	0.99 U	0.10	1.1 U	1.1	1.0 U	1.0	1.1 U	1.1	0.98 U	0.98	1.1 U	1.1
Aroclor-1242	0.000244	0.000247	1.0 U	1.0	0.99 U	0.10	1.1 U	1.1	1.0 U	1.0	1.1 U	1.1	0.98 U	0.98	1.1 U	1.1
Aroclor-1248	0.000244	0.000247	1.0 U	1.0	0.99 U	0.10	1.1 U	1.1	1.0 U	1.0	1.1 U	1.1	0.98 U	0.98	1.1 U	1.1
Aroclor-1254	0.000244	0.000247	1.0 U	1.0	0.99 U	0.10	1.1 U	1.1	1.0 U	1.0	1.1 U	1.1	0.98 U	0.98	1.1 U	1.1
Aroclor-1260	0.000244	0.000247	1.0 U	1.0	0.99 U	0.10	1.1 U	1.1	1.0 U	1.0	1.1 U	1.1	0.98 U	0.98	1.1 U	1.1
Method:TCL Pesticides/PCBs																

MAIN POST
SURFACE WATER PESTICIDES/PCBS (OFFSITE DATA)

Geographical Location			Background SS01		Background SS02	
Sample			SS01-SW01-A01		SS01-SW02-A01	
Batch#			9412G921		9412G922	
Prep#			94GP1038		94GP1038	
RFW#			001		003	
Dilution Factor			1.00		1.00	
Matrix			water		water	
Units	ug/l	ug/l	ug/l		ug/l	
Sampling Date			12/1/94		12/1/94	
Analysis Date			12/16/94		1/17/95	
Analysis	Standard	Standard	Analytical	Reporting	Analytical	Reporting
	fresh water	salt water	Result	Limit	Result	Limit
alpha-BHC	0.00391	0.0131	0.046 U	0.046	0.053 U	0.053
beta-BHC	0.137	0.460	0.046 U	0.046	0.053 U	0.053
delta-BHC			0.046 U	0.046	0.053 U	0.053
gamma-BHC (Lindane)	0.08	0.16	0.046 U	0.046	0.053 U	0.053
Heptachlor	0.000208	0.000214	0.046 U	0.046	0.053 U	0.053
Aldrin	0.000135	0.000144	0.046 U	0.046	0.053 U	0.053
Heptachlor epoxide	0.000103	0.000106	0.046 U	0.046	0.053 U	0.053
Endosulfan I			0.046 U	0.046	0.053 U	0.053
Dieldrin	0.000135	0.000144	0.091 U	0.091	0.11 U	0.11
4,4'-DDE	0.000588	0.000591	0.091 U	0.091	0.11 U	0.11
Endrin	0.0023	0.0023	0.091 U	0.091	0.11 U	0.11
Endosulfan II			0.091 U	0.091	0.11 U	0.11
4,4'-DDD	0.000832	0.000837	0.091 U	0.091	0.11 U	0.11
Endosulfan sulfate	0.93	2.0	0.091 U	0.091	0.11 U	0.11
4,4'-DDT	0.000588	0.000591	0.091 U	0.091	0.11 U	0.11
Methoxychlor	0.03	0.03	0.46 U	0.46	0.53 U	0.53
Endrin ketone			0.091 U	0.091	0.11 U	0.11
Endrin aldehyde	0.76	0.81	0.091 U	0.091	0.11 U	0.11
alpha-Chlordane	0.000277	0.000283	0.046 U	0.046	0.053 U	0.053
gamma-Chlordane			0.046 U	0.046	0.053 U	0.053
Toxaphene	0.00073	0.000747	4.6 U	4.6	5.3 U	5.3
Aroclor-1016	0.000244	0.000247	0.91 U	0.09	1.1 U	1.1
Aroclor-1221	0.000244	0.000247	1.8 U	1.8	2.1 U	2.1
Aroclor-1232	0.000244	0.000247	0.91 U	0.09	1.1 U	1.1
Aroclor-1242	0.000244	0.000247	0.91 U	0.09	1.1 U	1.1
Aroclor-1248	0.000244	0.000247	0.91 U	0.09	1.1 U	1.1
Aroclor-1254	0.000244	0.000247	0.91 U	0.09	1.1 U	1.1
Aroclor-1260	0.000244	0.000247	0.91 U	0.09	1.1 U	1.1
Method:TCL Semivolatiles						

MAIN POST
SURFACE SOIL VOLATILES

Geographical Location			M16		M16		M16		M16		M16		M16	
Sample			MP16-SS01-A01		MP16-SS01-D01		MP16-SS01-E01		MP16-SS02-A01		MP16-SS03-A01		MP16-SS04-A01	
Sample Type					Trip Blank		Field Rinsate Blank							
Batch#			9411G832		9411G832		9411G832		9411G832		9411G832		9411G832	
Prep#			94GVT027		94GVE343		94GVE343		94GVT028		94GVT027		94GVT027	
RFW#			012		016		017		013		015		014	
Sample Depth			0-6"		0-6"		0-6"		0-6"		0-6"		0-6"	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			soil		water		water		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/l		mg/l		mg/kg		mg/kg		mg/kg	
Sampling Date			11/29/94		11/29/94		11/29/94		11/29/94		11/29/94		11/29/94	
Analysis Date			12/5/94		12/6/94		12/6/94		12/6/94		12/5/94		12/5/94	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane	520	0.0073	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Bromomethane	79	0.0067	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Vinyl Chloride	2	0.0079	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Chloroethane		0.0091	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Methylene Chloride	49	0.0027	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Acetone	1000	0.0069	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.018 B		0.011 U	0.011	0.012 U	0.012
Carbon Disulfide		0.0044	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
1,1-Dichloroethene	8	0.0049	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
1,1-Dichloroethane	570	0.003	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
1,2-Dichloroethene (total)	79	0.0044	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Chloroform	19	0.0029	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
1,2-Dichloroethane	6	0.0024	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
2-Butanone	1000	0.0041	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
1,1,1-Trichloroethane	210	0.0017	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Carbon Tetrachloride	2	0.0015	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Bromodichloromethane	11	0.002	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
1,2-Dichloropropane	10	0.0017	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
cis-1,3-Dichloropropene	4	0.003	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Trichloroethene	23	0.002	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Dibromochloromethane	110	0.0024	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
1,1,2-Trichloroethane	22	0.0043	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Benzene	3	0.0033	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
trans-1,3-Dichloropropene	4	0.0024	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Bromoform	86	0.0031	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
4-Methyl-2-pentanone	1000	0.0055	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
2-Hexanone		0.0039	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Tetrachloroethene	4	0.004	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
1,1,2,2-Tetrachloroethane	34	0.0042	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Toluene	1000	0.0027	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Chlorobenzene	37	0.0027	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Ethylbenzene	1000	0.0031	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Styrene	23	0.0038	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Xylene (total)	410	0.0038	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012
Method:TCL Volatiles														

MAIN POST
SURFACE SOIL SEMIVOLATILES

Geographical Location			M15		M15		M16		M16		M16		M16	
Sample			MP15-SS01-A01		MP15-SS02-A01		MP16-SS01-A01		MP16-SS02-A01		MP16-SS03-A01		MP16-SS04-A01	
Batch#			9411G832		9411G832		9411G832		9411G832		9411G832		9411G832	
Prep#			94GB0796		94GB0796		94GB0796		94GB0796		94GB0796		94GB0796	
RFW#			010		011		012		013		015		014	
Sample Depth			0-6"		0-6"		0-6"		0-6"		0-6"		0-6"	
Dilution Factor			1.00		1.00		1.00		25.0		1.00		1.00	
Matrix			soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			11/29/94		11/29/94		11/29/94		11/29/94		11/29/94		11/29/94	
Analysis Date			12/21/94		12/21/94		12/21/94		12/21/94		12/21/94		12/21/94	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	10000	0.234	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
bis(2-Chloroethyl) ether	0.66	0.32	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
2-Chlorophenol	280	0.241	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
1,3-Dichlorobenzene	5100	0.175	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
1,4-Dichlorobenzene	570	0.158	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
1,2-Dichlorobenzene	5100	0.188	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
2-Methylphenol	2800	0.221	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
2,2'-oxybis(1-Chloropropane)		0.231	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
4-Methylphenol	2800	0.426	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
N-Nitroso-di-n-propylamine	0.66	0.264	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
Hexachloroethane	6	0.175	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
Nitrobenzene	28	0.244	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
Isophorone	1100	0.129	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
2-Nitrophenol		0.231	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
2,4-Dimethylphenol	1100	0.158	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
bis(2-Chloroethoxy) methane		0.201	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
2,4-Dichlorophenol	170	0.145	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
1,2,4-Trichlorobenzene	68	0.317	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
Naphthalene	230	0.277	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
4-Chloroaniline	230	0.096	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
Hexachlorobutadiene	1	0.152	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
4-Chloro-3-methylphenol	10000	0.102	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
2-Methylnaphthalene		0.287	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
Hexachlorocyclopentadiene	400	0.119	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
2,4,6-Trichlorophenol	62	0.185	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
2,4,5-Trichlorophenol	5600	0.155	0.96 U	0.96	1 U	1	0.92 U	0.92	25 U	25	0.92 U	0.92	0.94 U	0.94
2-Chloronaphthalene		0.271	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
2-Nitroaniline		0.201	0.96 U	0.96	1 U	1	0.92 U	0.92	25 U	25	0.92 U	0.92	0.94 U	0.94
Dimethylphthalate	10000	0.145	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
Acenaphthylene		0.198	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
2,6-Dinitrotoluene	1	0.172	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
3-Nitroaniline		0.172	0.96 U	0.96	1 U	1	0.92 U	0.92	25 U	25	0.92 U	0.92	0.94 U	0.94
Acenaphthene	3400	0.221	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
2,4-Dinitrophenol	110	0.152	0.96 U	0.96	1 U	1	0.92 U	0.92	25 U	25	0.92 U	0.92	0.94 U	0.94
4-Nitrophenol		0.248	0.96 U	0.96	1 U	1	0.92 U	0.92	25 U	25	0.92 U	0.92	0.94 U	0.94
Dibenzofuran		0.215	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38

MAIN POST
SURFACE SOIL SEMIVOLATILES

Geographical Location			M15		M15		M16		M16		M16		M16	
Sample			MP15-SS01-A01		MP15-SS02-A01		MP16-SS01-A01		MP16-SS02-A01		MP16-SS03-A01		MP16-SS04-A01	
Batch#			9411G832		9411G832		9411G832		9411G832		9411G832		9411G832	
Prep#			94GB0796		94GB0796		94GB0796		94GB0796		94GB0796		94GB0796	
RFW#			010		011		012		013		015		014	
Sample Depth			0-6"		0-6"		0-6"		0-6"		0-6"		0-6"	
Dilution Factor			1.00		1.00		1.00		25.0		1.00		1.00	
Matrix			soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			11/29/94		11/29/94		11/29/94		11/29/94		11/29/94		11/29/94	
Analysis Date			12/21/94		12/21/94		12/21/94		12/21/94		12/21/94		12/21/94	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
2,4-Dinitrotoluene	1	0.191	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
Diethylphthalate	10000	0.178	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
4-Chlorophenyl-phenylether		0.231	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
Fluorene	2300	0.208	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
4-Nitroaniline		0.211	0.96 U	0.96	1 U	1	0.92 U	0.92	25 U	25	0.92 U	0.92	0.94 U	0.94
4,6-Dinitro-2-methylphenol		0.175	0.96 U	0.96	1 U	1	0.92 U	0.92	25 U	25	0.92 U	0.92	0.94 U	0.94
N-Nitrosodiphenylamine (1)	140	0.139	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
4-Bromophenyl-phenylether		0.175	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
Hexachlorobenzene	0.66	0.182	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
Pentachlorophenol	6	0.132	0.96 U	0.96	1 U	1	0.92 U	0.92	25 U	25	0.92 U	0.92	0.94 U	0.94
Phenanthrene		0.165	0.37 J		0.17 J		0.37 U	0.37	9.9 U	9.9	0.045 J		0.38 U	0.38
Anthracene	10000	0.152	0.041 J		0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
Carbazole		0.145	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
Di-n-butylphthalate	5700	0.215	0.1 JB		0.13 JB		0.086 JB		9.9 U	9.9	0.088 JB		0 JB	
Fluoranthene	2300	0.198	0.53		0.36 J		0.046 J		9.9 U	9.9	0.1 J		0.073 J	
Pyrene	1700	0.178	0.72		0.43		0.06 J		9.9 U	9.9	0.14 J		0.096 J	
Butylbenzylphthalate	1100	0.175	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
3,3'-Dichlorobenzidine	2	0.092	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
Benzo(a)anthracene	0.9	0.162	0.31 J		0.18 J		0.37 U	0.37	9.9 U	9.9	0.069 J		0.039 J	
Chrysene	9	0.145	0.33 J		0.23 J		0.37 U	0.37	9.9 U	9.9	0.063 J		0.043 J	
bis(2-Ethylhexy)phthalate	49	0.32	0.069 J		0.077 J		0.084 J		1.1 J		0.26 J		0.64	
Di-n-octyl phthalate	1100	0.185	0.39 U	0.39	0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
Benzo(b)fluoranthene	0.9	0.188	0.45		0.35 J		0.37 U	0.37	9.9 U	9.9	0.12 J		0.065 J	
Benzo(k)fluoranthene	0.9	0.205	0.13 J		0.11 J		0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
Benzo(a)pyrene	0.66	0.162	0.27 J		0.2 J		0.37 U	0.37	9.9 U	9.9	0.057 J		0.046 J	
Indeno(1,2,3-cd)pyrene	0.9	0.234	0.16 J		0.12 J		0.37 U	0.37	9.9 U	9.9	0.049 J		0.04 J	
Dibenzo(a,h)anthracene	0.66	0.198	0.041 J		0.41 U	0.41	0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
Benzo(g,h,i)perylene		0.224	0.16 J		0.11 J		0.37 U	0.37	9.9 U	9.9	0.37 U	0.37	0.38 U	0.38
Method:TCL Semivolatiles														

MAIN POST
SURFACE SOIL INORGANICS

Geographical Location		MP15		MP15	
Sample		MP15-SS01-A01		MP15-SS02-A01	
Batch#		9411G832		9411G832	
Prep#		94GTS468		94GTS468	
RFW#		010		011	
Sample Depth		0-6"		0-6"	
Dilution Factor		1.00		1.00	
Matrix		soil		soil	
Units	mg/kg	mg/kg		mg/kg	
Sampling Date		11/29/94		11/29/94	
Analysis Date		12/6/94		12/6/94	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
% Solids		86.2	0.10	81.3	0.10
Silver	110	1.4	0.56	1.5	0.61
Aluminum		5300	4.8	5030	5.2
Arsenic	20	8.3	0.6 *	8.9	0.38
Barium	700	68.4	0.38	101	0.41
Beryllium	1	0.6	0.27	0.69	0.29
Calcium		815	2.2	1860	2.4
Cadmium	1	2.9	0.51	4.5	0.55
Cobalt		6.1	0.49	7.8	0.53
Chromium		109	0.54	95.5	0.59
Copper	600	34	0.42	66.5	0.45
Iron		33400	0.85	37700	0.92
Mercury	14	0.11 U	0.11	0.12 U	0.12
Potassium		2990	149	2770	160
Magnesium		1560	4.4	1600	4.8
Manganese		159	0.36	187	0.39
Sodium		23.4	2.8	33.1	3
Nickel	250	8.3	2.3	6.9	2.5
Lead	400	5340	4.6	6130	4.9
Antimony	14	3.9 U	3.9	4.2 U	4.2
Selenium	63	0.45	0.17	2.1	0.21
Thallium	2	0.21 U	0.21	0.26 U	0.26
Vanadium	370	27.5	0.53	25.9	0.57
Zinc	1500	7750	0.51	12800	0.55
Dilution Factor		* = 2.00			
Method:TAL Metals					

MAIN POST
SURFACE SOIL PESTICIDES/PCBS

Geographical Location		M15		M15		M15		M15		M16		M16	
Sample		MP15-SS01-A01		MP15-SS01-A01		MP15-SS02-A01		MP15-SS02-A01		MP16-SS01-A01		MP16-SS01-A01	
Batch#		9411G832		9411G832		9411G832		9411G832		9411G832		9411G832	
Prep#		94GP1033		94GP1033		94GP1033		94GP1033		94GP1033		94GP1033	
RFW#		010		010 DL		011		011 DL		012		012 DL	
Sample Depth		0-6"		0-6"		0-6"		0-6"		0-6"		0-6"	
Dilution Factor		10.0		500		1.00		20.0		1.00		20.0	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		11/29/94		11/29/94		11/29/94		11/29/94		11/29/94		11/29/94	
Analysis Date		12/17/94		12/14/94		12/17/94		12/14/94		12/17/94		12/13/94	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
alpha-BHC		0.019 U	0.019	0.95 U	0.95	0.002 U	0.002	0.04 U	0.04	0.0019 U	0.0019	0.037 U	0.037
beta-BHC		0.019 U	0.019	0.95 U	0.95	0.002 U	0.002	0.04 U	0.04	0.0019 U	0.0019	0.037 U	0.037
delta-BHC		0.019 U	0.019	0.95 U	0.95	0.002 U	0.002	0.04 U	0.04	0.0019 U	0.0019	0.037 U	0.037
gamma-BHC (Lindane)	0.52	0.019 U	0.019	0.95 U	0.95	0.002 U	0.002	0.04 U	0.04	0.0034		0.037 U	0.037
Heptachlor	0.15	0.019 U	0.019	0.95 U	0.95	0.002 U	0.002	0.04 U	0.04	0.0019 U	0.0019	0.037 U	0.037
Aldrin	0.04	0.019 U	0.019	0.95 U	0.95	0.002 U	0.002	0.04 U	0.04	0.0019 U	0.0019	0.037 U	0.037
Heptachlor epoxide		0.019 U	0.019	0.95 U	0.95	0.002 U	0.002	0.04 U	0.04	0.0019 U	0.0019	0.037 U	0.037
Endosulfan I	340	0.019 U	0.019	0.95 U	0.95	0.002 U	0.002	0.04 U	0.04	0.0019 U	0.0019	0.037 U	0.037
Dieldrin	0.042	0.038 U	0.038	1.9 U	1.9	0.004 U	0.004	0.081 U	0.081	0.017		0.075 U	0.075
4,4'-DDE	2	3.1 C		6.6 CD		0.32 C		1 CD		0.27 C		.35 CD	
Endrin	17	0.038 U	0.038	1.9 U	1.9	0.004 U	0.004	0.081 U	0.081	0.0037 U	0.0037	0.075 U	0.075
Endosulfan II	340	0.038 U	0.038	1.9 U	1.9	0.004 U	0.004	0.081 U	0.081	0.0037 U	0.0037	0.075 U	0.075
4,4'-DDD	3	0.038 U	0.038	1.9 U	1.9	0.004 U	0.004	0.081 U	0.081	0.078		.13 D	
Endosulfan sulfate		0.038 U	0.038	1.9 U	1.9	0.004 U	0.004	0.081 U	0.081	0.0037 U	0.0037	0.075 U	0.075
4,4'-DDT	2	3.4 C		7.9 CD		0.35 C		1 CD		0.33 C		1.1 CD	
Methoxychlor	280	0.19 U	0.19	9.5 U	9.5	0.02 U	0.02	0.4 U	0.4	0.019 U	0.019	0.37 U	0.37
Endrin ketone		0.038 U	0.038	1.9 U	1.9	0.004 U	0.004	0.081 U	0.081	0.0037 U	0.0037	0.075 U	0.075
Endrin aldehyde		0.038 U	0.038	1.9 U	1.9	0.004 U	0.004	0.081 U	0.081	0.0037 U	0.0037	0.075 U	0.075
alpha-Chlordane		0.019 U	0.019	0.95 U	0.95	0.002 U	0.002	0.04 U	0.04	0.043		.05 D	
gamma-Chlordane		0.019 U	0.019	0.95 U	0.95	0.002 U	0.002	0.04 U	0.04	0.046		.05 D	
Toxaphene	0.1	1.9 U	1.9	95 U	95	0.2 U	0.2	4 U	4	0.19 U	0.19	3.7 U	3.7
Aroclor-1016	0.49	0.38 U	0.38	19 U	19	0.04 U	0.04	0.81 U	0.81	0.037 U	0.037	0.75 U	0.75
Aroclor-1221	0.49	0.76 U	0.76	38 U	38	0.081 U	0.081	1.6 U	1.6	0.075 U	0.075	1.5 U	1.5
Aroclor-1232	0.49	0.38 U	0.38	19 U	19	0.04 U	0.04	0.81 U	0.81	0.037 U	0.037	0.75 U	0.75
Aroclor-1242	0.49	0.38 U	0.38	19 U	19	0.04 U	0.04	0.81 U	0.81	0.037 U	0.037	0.75 U	0.75
Aroclor-1248	0.49	0.38 U	0.38	19 U	19	0.04 U	0.04	0.81 U	0.81	0.037 U	0.037	0.75 U	0.75
Aroclor-1254	0.49	0.38 U	0.38	19 U	19	0.04 U	0.04	0.81 U	0.81	0.037 U	0.037	0.75 U	0.75
Aroclor-1260	0.49	0.38 U	0.38	19 U	19	0.04 U	0.04	0.81 U	0.81	0.037 U	0.037	0.75 U	0.75
Method:Pesticides/PCBs													

MAIN POST
SURFACE SOIL PESTICIDES/PCBS

Geographical Location		M16		M16		M16		M16		M16		M16	
Sample		MP16-SS02-A01		MP16-SS02-A01		MP16-SS03-A01		MP16-SS03-A01		MP16-SS04-A01		MP16-SS04-A01	
Batch#		9411G832		9411G832		9411G832		9411G832		9411G832		9411G832	
Prep#		94GP1033		94GP1033		94GP1033		94GP1033		94GP1033		94GP1033	
RFW#		013		013 DL		015		015 DL		014		014 DL	
Sample Depth		0-6"		0-6"		0-6"		0-6"		0-6"		0-6"	
Dilution Factor		10.0		500		1.00		50.0		2.00		50.0	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		11/29/94		11/29/94		11/29/94		11/29/94		11/29/94		11/29/94	
Analysis Date		12/17/94		12/14/94		12/17/94		12/13/94		12/17/94		12/14/94	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
alpha-BHC		0.02 U	0.02	1 U	1	0.0018 U	0.0018	0.092 U	0.092	0.0038 U	0.0038	0.095 U	0.095
beta-BHC		0.02 U	0.02	1 U	1	0.0018 U	0.0018	0.092 U	0.092	0.0038 U	0.0038	0.095 U	0.095
delta-BHC		0.02 U	0.02	1 U	1	0.0018 U	0.0018	0.092 U	0.092	0.0038 U	0.0038	0.095 U	0.095
gamma-BHC (Lindane)	0.52	0.17		1 U	1	0.0059		0.092 U	0.092	0.0038 U	0.0038	0.095 U	0.095
Heptachlor	0.15	2 C		2.5 CD		0.0099		0.092 U	0.092	0.0038 U	0.0038	0.095 U	0.095
Aldrin	0.04	0.17 C		1 U	1	0.0018 U	0.0018	0.092 U	0.092	0.0038 U	0.0038	0.095 U	0.095
Heptachlor epoxide		0.02 U	0.02	1 U	1	0.0018 U	0.0018	0.092 U	0.092	0.0038 U	0.0038	0.095 U	0.095
Endosulfan I	340	0.02 U	0.02	1 U	1	0.0018 U	0.0018	0.092 U	0.092	0.0038 U	0.0038	0.095 U	0.095
Dieldrin	0.042	1.9 C		2 CD		0.15		.21 D		0.37 C		.37 CD	
4,4'-DDE	2	2 C		3.5 CD		0.11 C		.48 CD		0.46 C		.57 CD	
Endrin	17	0.04 U	0.04	2 U	2	0.0037 U	0.0037	0.18 U	0.18	0.0076 U	0.0076	0.19 U	0.19
Endosulfan II	340	0.04 U	0.04	2 U	2	0.0037 U	0.0037	0.18 U	0.18	0.0076 U	0.0076	0.19 U	0.19
4,4'-DDD	3	0.04 U	0.04	2 U	2	0.13		.22 D		0.68 C		1.6 CD	
Endosulfan sulfate		0.04 U	0.04	2 U	2	0.0037 U	0.0037	0.18 U	0.18	0.0076 U	0.0076	0.19 U	0.19
4,4'-DDT	2	3.3 C		23 CD		0.31 C		2 CD		0.66 C		1.7 CD	
Methoxychlor	280	0.2 U	0.2	10 U	10	0.018 U	0.018	0.92 U	0.92	0.038 U	0.038	0.95 U	0.95
Endrin ketone		0.092		2 U	2	0.0037 U	0.0037	0.18 U	0.18	0.0076 U	0.0076	0.19 U	0.19
Endrin aldehyde		0.04 U	0.04	2 U	2	0.0037 U	0.0037	0.18 U	0.18	0.0076 U	0.0076	0.19 U	0.19
alpha-Chlordane		1.9 C		11 CD		0.18		.2 D		0.45 C		.86 CD	
gamma-Chlordane		2 C		13 CD		0.19		.2 D		0.45 C		.92 CD	
Toxaphene	0.1	2 U	2	100 U	100	0.18 U	0.18	9.2 U	9.2	0.38 U	0.38	9.5 U	9.5
Aroclor-1016	0.49	0.4 U	0.4	20 U	20	0.037 U	0.037	1.8 U	1.8	0.076 U	0.076	1.9 U	1.9
Aroclor-1221	0.49	0.8 U	0.8	40 U	40	0.073 U	0.073	3.7 U	3.7	0.15 U	0.15	3.8 U	3.8
Aroclor-1232	0.49	0.4 U	0.4	20 U	20	0.037 U	0.037	1.8 U	1.8	0.076 U	0.076	1.9 U	1.9
Aroclor-1242	0.49	0.4 U	0.4	20 U	20	0.037 U	0.037	1.8 U	1.8	0.076 U	0.076	1.9 U	1.9
Aroclor-1248	0.49	0.4 U	0.4	20 U	20	0.037 U	0.037	1.8 U	1.8	0.076 U	0.076	1.9 U	1.9
Aroclor-1254	0.49	0.4 U	0.4	20 U	20	0.037 U	0.037	1.8 U	1.8	0.076 U	0.076	1.9 U	1.9
Aroclor-1260	0.49	0.4 U	0.4	20 U	20	0.037 U	0.037	1.8 U	1.8	0.076 U	0.076	1.9 U	1.9
Method:Pesticides/PCBs													

MAIN POST
SOIL BORING VOLATILES

Geographical Location			M-AOC3		M-AOC3		M-AOC3		M-AOC3		M-AOC3		M-AOC3		M-AOC3		M-AOC3		M16	
Sample			MPA3-SB01-A02		MPA3-SB01-C02		MPA3-SB01-D02		MPA3-SB01-E02		MPA3-SB02-A02		MPA3-SB02-D02		MPA3-SB03-E02		MP16-SB01-A01	
Sample Type					Duplicate		Trip Blank		Field Rinsate Blank				Trip Blank		Field Rinsate Blank			
Batch#			9412G130		9412G130		9412G155		9412G130		9412G155		9412G155		9505G825		9412G155	
Prep#			94GVT030 & 31		94GVT030 & 31		94GVB439		94GVB439		94GVT030		94GVB439		95GVC137		94GVT031	
RFW#			001		002		005		003		003		004		007		001	
Sample Depth (bgs)			6 - 9.5'		6 - 9.5'						6 - 9.5'						0 - 2'	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			soil		soil		water		water		soil		water		water		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/l		mg/l		mg/kg		mg/l		mg/l		mg/kg	
Sampling Date			12/14/94		12/14/94		12/15/94		12/14/94		12/15/94		12/15/94		5/10/95		12/15/94	
Analysis Date			12/19/94		12/19/94		12/20/94		12/19/94		12/19/94		12/20/94		5/20/95		12/20/94	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane	520	0.0073	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Bromomethane	79	0.0067	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Vinyl Chloride	2	0.0079	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Chloroethane		0.0091	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Methylene Chloride	49	0.0027	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Acetone	1000	0.0069	0.68 B	.056 *	2 B	110 *	0.01 U	0.01	0.24 B	0.01	0.19 B	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Carbon Disulfide		0.0044	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.076 B	0.012
1,1-Dichloroethene	8	0.0049	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
1,1-Dichloroethane	570	0.003	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
1,2-Dichloroethene (total)	79	0.0044	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Chloroform	19	0.0029	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.006 J	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
1,2-Dichloroethane	6	0.0024	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
2-Butanone	1000	0.0041	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
1,1,1-Trichloroethane	210	0.0017	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Carbon Tetrachloride	2	0.0015	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Bromodichloromethane	11	0.002	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
1,2-Dichloropropane	10	0.0017	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
cis-1,3-Dichloropropene	4	0.003	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Trichloroethene	23	0.002	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Dibromochloromethane	110	0.0024	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
1,1,2-Trichloroethane	22	0.0043	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Benzene	3	0.0033	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
trans-1,3-Dichloropropene	4	0.0024	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Bromoform	86	0.0031	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
4-Methyl-2-pentanone	1000	0.0055	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
2-Hexanone		0.0039	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Tetrachloroethene	4	0.004	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
1,1,2,2-Tetrachloroethane	34	0.0042	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Toluene	1000	0.0027	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Chlorobenzene	37	0.0027	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Ethylbenzene	1000	0.0031	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Styrene	23	0.0038	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Xylene (total)	410	0.0038	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.011 U	0.011	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012
Total Est. Conc. of TIC.			0.009 J		.060 J*													
Dilution Factor			* = 5.0		* = 10.0													
Method:TCL Volatiles																		

MAIN POST
SOIL BORING VOLATILES

Geographical Location			M16		M18		M18		M18		M18		M18		M18		M18	
Sample			MP16-SB01-A02		MP18-SB01-A01		MP18-SB01-A02		MP18-SB02-A01		MP18-SB02-A02		MP18-SB03-A01		MP18-SB03-A02		M18-SB04-A01	
Sample Type																		
Batch#			9412G155		9501G632		9501G632		9501G632		9501G632		9501G632		9501G632		9501G587	
Prep#			94GVT030		95GVT016 & 8		95GVT016 & 9		95GVT008		95GVT016 & 9		95GVT008 & 9		95GVT008		95GVF013	
RFW#			002		003		004		005		006		007		008		003	
Sample Depth (bgs)			2 - 4'		1 - 1.5'		2'		1 - 1.5'		4 - 6'		1 - 1.5'		4 - 7.5'		1 - 1.5'	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			12/15/94		1/12/95		1/12/95		1/12/95		1/12/95		1/12/95		1/12/95		1/11/95	
Analysis Date			12/19/94		1/18/95		1/18/95		1/19/95		1/18/95		1/19/95		1/19/95		1/16/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane	520	0.0073	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Bromomethane	79	0.0067	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Vinyl Chloride	2	0.0079	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Chloroethane		0.0091	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Methylene Chloride	49	0.0027	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Acetone	1000	0.0069	0.027 B	0.013	0.59 B	.12 *	2.3 B	1.2 *	0.13 B	0.011	0.63 B	.62 *	0.34 B	0.06	0.074 B	0.012	0.011 U	0.011
Carbon Disulfide		0.0044	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
1,1-Dichloroethene	8	0.0049	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
1,1-Dichloroethane	570	0.003	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
1,2-Dichloroethene (total)	79	0.0044	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Chloroform	19	0.0029	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
1,2-Dichloroethane	6	0.0024	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
2-Butanone	1000	0.0041	0.013 U	0.013	0.039	0.012	0.054 B	12	0.023	0.011	0.14	0.012	0.13	0.012	0.013	0.012	0.011 U	0.011
1,1,1-Trichloroethane	210	0.0017	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Carbon Tetrachloride	2	0.0015	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Bromodichloromethane	11	0.002	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
1,2-Dichloropropane	10	0.0017	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
cis-1,3-Dichloropropene	4	0.003	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Trichloroethene	23	0.002	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Dibromochloromethane	110	0.0024	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
1,1,2-Trichloroethane	22	0.0043	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Benzene	3	0.0033	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
trans-1,3-Dichloropropene	4	0.0024	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Bromoform	86	0.0031	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
4-Methyl-2-pentanone	1000	0.0055	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
2-Hexanone		0.0039	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Tetrachloroethene	4	0.004	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
1,1,2,2-Tetrachloroethane	34	0.0042	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Toluene	1000	0.0027	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Chlorobenzene	37	0.0027	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Ethylbenzene	1000	0.0031	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Styrene	23	0.0038	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Xylene (total)	410	0.0038	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011
Total Est. Conc. of TIC.							.008 J, .6 J *				.009 J, .3 J *		0.068 J		0.06 J			
Dilution Factor					* = 10.00		* = 100				* = 50.0		* = 5.00					
Method:TCL Volatiles																		

MAIN POST
SOIL BORING VOLATILES

Geographical Location			M18		M18		M18		M18		M18		M18		M18		M18	
Sample			M18-SB04-A02		M18-SB05-A01		M18-SB05-A02		M18-SB06-A01		M18-SB06-A02		MP18-SB07-A01		MP18-SB07-D01		MP18-SB24-A01	
Sample Type															Trip Blank			
Batch#			9401G587		9501G587		9501G587		9501G587		9501G587		9501G632		9501G632		9501G632	
Prep#			95GVF013		95GVF014		95GVF013		95GVF013		95GVT008		95GVT008		95GVC008		95GVT009	
RFW#			004		001		002		005		006		009		010		001	
Sample Depth (bgs)			4 - 6'		1 - 1.5'		2 - 5'		1 - 1.5'		2 - 5'		1 - 1.5'				1 - 1.5'	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			1/11/95		1/11/95		1/11/95		1/11/95		1/11/95		1/12/95		1/12/95		1/12/95	
Analysis Date			1/16/95		1/17/95		1/16/95		1/16/95		1/18/95		1/19/95		1/23/95		1/19/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane	520	0.0073	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Bromomethane	79	0.0067	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Vinyl Chloride	2	0.0079	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Chloroethane		0.0091	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Methylene Chloride	49	0.0027	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Acetone	1000	0.0069	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.03 B	0.012	0.049 B	0.014	0.24	0.011	0.01 U	0.01	0.012 U	0.012
Carbon Disulfide		0.0044	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
1,1-Dichloroethene	8	0.0049	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
1,1-Dichloroethane	570	0.003	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
1,2-Dichloroethene (total)	79	0.0044	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Chloroform	19	0.0029	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
1,2-Dichloroethane	6	0.0024	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
2-Butanone	1000	0.0041	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.013 J	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
1,1,1-Trichloroethane	210	0.0017	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Carbon Tetrachloride	2	0.0015	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Bromodichloromethane	11	0.002	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
1,2-Dichloropropane	10	0.0017	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
cis-1,3-Dichloropropene	4	0.003	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Trichloroethene	23	0.002	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Dibromochloromethane	110	0.0024	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
1,1,2-Trichloroethane	22	0.0043	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Benzene	3	0.0033	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
trans-1,3-Dichloropropene	4	0.0024	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Bromoform	86	0.0031	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
4-Methyl-2-pentanone	1000	0.0055	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
2-Hexanone		0.0039	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Tetrachloroethene	4	0.004	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
1,1,2,2-Tetrachloroethane	34	0.0042	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Toluene	1000	0.0027	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Chlorobenzene	37	0.0027	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Ethylbenzene	1000	0.0031	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.002 J	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Styrene	23	0.0038	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Xylene (total)	410	0.0038	0.011 U	0.011	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.013 J	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Total Est. Conc. of TIC.											1.15 J		0.006 J				0.007 J	
Dilution Factor																		
Method:TCL Volatiles																		

MAIN POST
SOIL BORING VOLATILES

Geographical Location			M18		M18		M18		M18		B1		B1		B2		B2	
Sample			MP18-SB24-A02		MP18-SB25-A01		MP18-SB25-A02		MP18-SB25-D02		B1-SB01-A01		B1-SB01-A02		B2-SB01-A01		B2-SB01-A02	
Sample Type									Trip Blank									
Batch#			9501G632		9501G656		9501G656		9501G656		9501G527		9501G527		9501G500		9501G500	
Prep#			95GVT016		95GVT010		95GVT010		95GVC007		95GVF012		95GVF011		95GVF011 & 13		95GVF011	
RFW#			002		001		002		003		001		002		001		002	
Sample Depth (bgs)			2 - 4'		1 - 1.5'		2 - 4'				1 - 2'		2 - 4'		1 - 2'		6 - 8'	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		water		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/l		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			1/12/95		1/13/95		1/13/95		1/13/95		1/9/94		1/9/94		1/6/95		1/6/95	
Analysis Date			1/18/95		1/20/95		1/20/95		1/21/95		1/15/94		1/13/94		1/13/95		1/13/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane	520	0.0073	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
Bromomethane	79	0.0067	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
Vinyl Chloride	2	0.0079	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
Chloroethane		0.0091	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
Methylene Chloride	49	0.0027	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.015 B	0.012
Acetone	1000	0.0069	0.095 B	0.012	0.012 U	0.012	0.066 B	0.011	0.03	0.01	0.011 U	0.011	0.001 J	0.013	0.61 B	*	0.53	*
Carbon Disulfide		0.0044	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
1,1-Dichloroethene	8	0.0049	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
1,1-Dichloroethane	570	0.003	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
1,2-Dichloroethene (total)	79	0.0044	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
Chloroform	19	0.0029	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.003 J	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
1,2-Dichloroethane	6	0.0024	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
2-Butanone	1000	0.0041	0.014	0.012	0.012 U	0.012	0.011	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
1,1,1-Trichloroethane	210	0.0017	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
Carbon Tetrachloride	2	0.0015	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
Bromodichloromethane	11	0.002	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
1,2-Dichloropropane	10	0.0017	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
cis-1,3-Dichloropropene	4	0.003	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
Trichloroethene	23	0.002	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
Dibromochloromethane	110	0.0024	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
1,1,2-Trichloroethane	22	0.0043	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
Benzene	3	0.0033	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
trans-1,3-Dichloropropene	4	0.0024	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
Bromoform	86	0.0031	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
4-Methyl-2-pentanone	1000	0.0055	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
2-Hexanone		0.0039	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
Tetrachloroethene	4	0.004	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
1,1,2,2-Tetrachloroethane	34	0.0042	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
Toluene	1000	0.0027	0.012 U	0.012	0.012 U	0.012	0.002 J	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
Chlorobenzene	37	0.0027	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
Ethylbenzene	1000	0.0031	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
Styrene	23	0.0038	0.012 U	0.012	0.012 U	0.012	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
Xylene (total)	410	0.0038	0.012 U	0.012	0.012 U	0.012	0.006 J	0.011	0.01 U	0.01	0.011 U	0.011	0.013 U	0.013	0.012 U	0.012	0.012 U	0.012
Total Est. Conc. of TIC.			0.064 J				0.118 J		0.008 J									
Dilution Factor															* = ?		* = 10.0	
Method:TCL Volatiles																		

MAIN POST
SOIL BORING VOLATILES

Geographical Location			B3		B3		B3		B4		B4		B4		B4		B5	
Sample			B3-SB01-A01		B3-SB01-A03		B3-SB01-D03		B4-SB01-A01		B4-SB01-A02		B4-SB01-C01		B4-SB01-D01		B5-SB01-A01	
Sample Type							Trip Blank						Duplicate		Trip Blank			
Batch#			9501G500		9501G500		9401G500		9501G527		9501G527		9501G527		9501G527		9501G587	
Prep#			95GVF011		95GVF011		95GB0012		95GVF012		95GVF012 & 13		95GVF012		95GVE012		95GVF016	
RFW#			003		004		005		003		004		005		006		007	
Sample Depth (bgs)			1 - 2'		16 - 18'				1 - 2'		6 - 8'						1 - 2'	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			soil		soil		water		soil		soil		soil		water		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/l		mg/kg		mg/kg		mg/kg		mg/l		mg/kg	
Sampling Date			1/6/95		1/6/95		1/6/95		1/9/95		1/9/95		1/9/95		1/9/95		1/11/95	
Analysis Date			1/13/95		1/12/95		1/13/95		1/15/95		1/15/95		1/15/95		1/12/95		1/18/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane	520	0.0073	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Bromomethane	79	0.0067	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Vinyl Chloride	2	0.0079	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Chloroethane		0.0091	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Methylene Chloride	49	0.0027	0.011 U	0.011	0.032 B	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Acetone	1000	0.0069	0.011 U	0.011	0.036	0.014	0.01 U	0.01	0.011 U	0.011	0.83 B	27 *	0.016	0.011	0.01 U	0.01	0.012 U	0.012
Carbon Disulfide		0.0044	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
1,1-Dichloroethene	8	0.0049	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
1,1-Dichloroethane	570	0.003	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
1,2-Dichloroethene (total)	79	0.0044	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Chloroform	19	0.0029	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
1,2-Dichloroethane	6	0.0024	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
2-Butanone	1000	0.0041	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
1,1,1-Trichloroethane	210	0.0017	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Carbon Tetrachloride	2	0.0015	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Bromodichloromethane	11	0.002	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
1,2-Dichloropropane	10	0.0017	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
cis-1,3-Dichloropropene	4	0.003	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Trichloroethene	23	0.002	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Dibromochloromethane	110	0.0024	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
1,1,2-Trichloroethane	22	0.0043	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Benzene	3	0.0033	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
trans-1,3-Dichloropropene	4	0.0024	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Bromoform	86	0.0031	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
4-Methyl-2-pentanone	1000	0.0055	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
2-Hexanone		0.0039	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Tetrachloroethene	4	0.004	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
1,1,2,2-Tetrachloroethane	34	0.0042	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Toluene	1000	0.0027	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.004 J	0.011	0.01 U	0.01	0.012 U	0.012
Chlorobenzene	37	0.0027	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Ethylbenzene	1000	0.0031	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Styrene	23	0.0038	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.011 U	0.011	0.01 U	0.01	0.012 U	0.012
Xylene (total)	410	0.0038	0.011 U	0.011	0.014 U	0.014	0.01 U	0.01	0.011 U	0.011	0.014 U	0.014	0.004 J	0.011	0.01 U	0.01	0.012 U	0.012
Total Est. Conc. of TIC.																	0.023 J	
Dilution Factor											* = 20.0							
Method:TCL Volatiles																		

MAIN POST
SOIL BORING VOLATILES

Geographical Location			B5		B5	
Sample			B5-SB01-A02		B5-SB01-D02	
Sample Type					Trip Blank	
Batch#			9501G587		9501G587	
Prep#			95GVF014		95GVC005	
RFW#			008		009	
Sample Depth (bgs)			2 - 4'			
Dilution Factor			1.00		1.00	
Matrix			soil		water	
Units	mg/kg	mg/kg	mg/kg		mg/l	
Sampling Date			1/11/95		1/11/95	
Analysis Date			1/17/95		1/16/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane	520	0.0073	0.012 U	0.012	0.01 U	0.01
Bromomethane	79	0.0067	0.012 U	0.012	0.01 U	0.01
Vinyl Chloride	2	0.0079	0.012 U	0.012	0.01 U	0.01
Chloroethane		0.0091	0.012 U	0.012	0.01 U	0.01
Methylene Chloride	49	0.0027	0.012 U	0.012	0.01 U	0.01
Acetone	1000	0.0069	0.012 U	0.012	0.01 U	0.01
Carbon Disulfide		0.0044	0.012 U	0.012	0.01 U	0.01
1,1-Dichloroethene	8	0.0049	0.012 U	0.012	0.01 U	0.01
1,1-Dichloroethane	570	0.003	0.012 U	0.012	0.01 U	0.01
1,2-Dichloroethene (total)	79	0.0044	0.012 U	0.012	0.01 U	0.01
Chloroform	19	0.0029	0.012 U	0.012	0.01 U	0.01
1,2-Dichloroethane	6	0.0024	0.012 U	0.012	0.01 U	0.01
2-Butanone	1000	0.0041	0.012 U	0.012	0.01 U	0.01
1,1,1-Trichloroethane	210	0.0017	0.012 U	0.012	0.01 U	0.01
Carbon Tetrachloride	2	0.0015	0.012 U	0.012	0.01 U	0.01
Bromodichloromethane	11	0.002	0.012 U	0.012	0.01 U	0.01
1,2-Dichloropropane	10	0.0017	0.012 U	0.012	0.01 U	0.01
cis-1,3-Dichloropropene	4	0.003	0.012 U	0.012	0.01 U	0.01
Trichloroethene	23	0.002	0.012 U	0.012	0.01 U	0.01
Dibromochloromethane	110	0.0024	0.012 U	0.012	0.01 U	0.01
1,1,2-Trichloroethane	22	0.0043	0.012 U	0.012	0.01 U	0.01
Benzene	3	0.0033	0.012 U	0.012	0.01 U	0.01
trans-1,3-Dichloropropene	4	0.0024	0.012 U	0.012	0.01 U	0.01
Bromoform	86	0.0031	0.012 U	0.012	0.01 U	0.01
4-Methyl-2-pentanone	1000	0.0055	0.012 U	0.012	0.01 U	0.01
2-Hexanone		0.0039	0.012 U	0.012	0.01 U	0.01
Tetrachloroethene	4	0.004	0.012 U	0.012	0.01 U	0.01
1,1,2,2-Tetrachloroethane	34	0.0042	0.012 U	0.012	0.01 U	0.01
Toluene	1000	0.0027	0.012 U	0.012	0.01 U	0.01
Chlorobenzene	37	0.0027	0.012 U	0.012	0.01 U	0.01
Ethylbenzene	1000	0.0031	0.012 U	0.012	0.01 U	0.01
Styrene	23	0.0038	0.012 U	0.012	0.01 U	0.01
Xylene (total)	410	0.0038	0.012 U	0.012	0.01 U	0.01
Total Est. Conc. of TIC.						
Dilution Factor						
Method:TCL Volatiles						

MAIN POST
SOIL BORING SEMIVOLATILES

Geographical Location			AOC3		AOC3		AOC3		M16		M16	
Sample			MPA3-SB01-A02		MPA3-SB01-C02		MPA3-SB02-A02		MP16-SB01-A01		MP16-SB01-A02	
Sample Type					Duplicate							
Batch#			9412G130		9412G130		9412G155		9412G155		9412G155	
Prep#			94GBO835		94GBO835		94GBO835		94GB0835		94GB0835	
RFW#			001		002		003		001		002	
Sample Depth (bgs)												
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			12/14/94		12/14/94		12/15/94		12/15/94		12/15/94	
Analysis Date			12/27/94		12/27/94		12/23/94		12/23/94		12/27/94	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	10000	0.234	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
bis(2-Chloroethyl) ether	0.66	0.32	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
2-Chlorophenol	280	0.241	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
1,3-Dichlorobenzene	5100	0.175	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
1,4-Dichlorobenzene	570	0.158	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
1,2-Dichlorobenzene	5100	0.188	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
2-Methylphenol	2800	0.221	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
2,2'-oxybis(1-Chloropropane)		0.231	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
4-Methylphenol	2800	0.426	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
N-Nitroso-di-n-propylamine	0.66	0.264	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
Hexachloroethane	6	0.175	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
Nitrobenzene	28	0.244	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
Isophorone	1100	0.129	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
2-Nitrophenol		0.231	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
2,4-Dimethylphenol	1100	0.158	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
bis(2-Chloroethoxy) methane		0.201	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
2,4-Dichlorophenol	170	0.145	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
1,2,4-Trichlorobenzene	68	0.317	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
Naphthalene	230	0.277	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
4-Chloroaniline	230	0.096	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
Hexachlorobutadiene	1	0.152	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
4-Chloro-3-methylphenol	10000	0.102	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
2-Methylnaphthalene		0.287	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
Hexachlorocyclopentadiene	400	0.119	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
2,4,6-Trichlorophenol	62	0.185	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
2,4,5-Trichlorophenol	5600	0.155	0.92 U	0.92	0.89 U	0.89	0.88 U	0.88	0.96 U	0.96	1 U	1
2-Chloronaphthalene		0.271	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
2-Nitroaniline		0.201	0.92 U	0.92	0.89 U	0.89	0.88 U	0.88	0.96 U	0.96	1 U	1
Dimethylphthalate	10000	0.145	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
Acenaphthylene		0.198	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
2,6-Dinitrotoluene	1	0.172	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
3-Nitroaniline		0.172	0.92 U	0.92	0.89 U	0.89	0.88 U	0.88	0.96 U	0.96	1 U	1
Acenaphthene	3400	0.221	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
2,4-Dinitrophenol	110	0.152	0.92 U	0.92	0.89 U	0.89	0.88 U	0.88	0.96 U	0.96	1 U	1
4-Nitrophenol		0.248	0.92 U	0.92	0.89 U	0.89	0.88 U	0.88	0.96 U	0.96	1 U	1

MAIN POST
SOIL BORING SEMIVOLATILES

Geographical Location			AOC3		AOC3		AOC3		M16		M16	
Sample			MPA3-SB01-A02		MPA3-SB01-C02		MPA3-SB02-A02		MP16-SB01-A01		MP16-SB01-A02	
Sample Type					Duplicate							
Batch#			9412G130		9412G130		9412G155		9412G155		9412G155	
Prep#			94GBO835		94GBO835		94GBO835		94GB0835		94GB0835	
RFW#			001		002		003		001		002	
Sample Depth (bgs)												
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			12/14/94		12/14/94		12/15/94		12/15/94		12/15/94	
Analysis Date			12/27/94		12/27/94		12/23/94		12/23/94		12/27/94	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Dibenzofuran		0.215	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
2,4-Dinitrotoluene	1	0.191	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
Diethylphthalate	10000	0.178	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
4-Chlorophenyl-phenylether		0.231	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
Fluorene	2300	0.208	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
4-Nitroaniline		0.211	0.92 U	0.92	0.89 U	0.89	0.88 U	0.88	0.96 U	0.96	1 U	1
4,6-Dinitro-2-methylphenol		0.175	0.92 U	0.92	0.89 U	0.89	0.88 U	0.88	0.96 U	0.96	1 U	1
N-Nitrosodiphenylamine (1)	140	0.139	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
4-Bromophenyl-phenylether		0.175	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
Hexachlorobenzene	0.66	0.182	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
Pentachlorophenol	6	0.132	0.92 U	0.92	0.89 U	0.89	0.88 U	0.88	0.96 U	0.96	1 U	1
Phenanthrene		0.165	0.09 J	0.37	0.078 J	0.36	0.35 U	0.35	0.14 J	0.38	0.42 U	0.42
Anthracene	10000	0.152	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
Carbazole		0.145	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
Di-n-butylphthalate	5700	0.215	0.093 JB	0.37	0.17 JB	0.36	0.084 JB	0.35	0.092 JB	0.38	0.094 JB	0.42
Fluoranthene	2300	0.198	0.11 J	0.37	0.11 J	0.36	0.35 U	0.35	0.33 J	0.38	0.42 U	0.42
Pyrene	1700	0.178	0.15 J	0.37	0.14 J	0.36	0.35 U	0.35	0.22 J	0.38	0.42 U	0.42
Butylbenzylphthalate	1100	0.175	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
3,3'-Dichlorobenzidine	2	0.092	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
Benzo(a)anthracene	0.9	0.162	0.077 J	0.37	0.078 J	0.36	0.35 U	0.35	0.092 J	0.38	0.42 U	0.42
Chrysene	9	0.145	0.099 J	0.37	0.11 J	0.36	0.35 U	0.35	0.15 J	0.38	0.42 U	0.42
bis(2-Ethylhexy)phthalate	49	0.32	0.057 J	0.37	0.11 J	0.36	0.053 J	0.35	0.38 U	0.38	0.23 J	0.42
Di-n-octyl phthalate	1100	0.185	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
Benzo(b)fluoranthene	0.9	0.188	0.077 J	0.37	0.093 J	0.36	0.35 U	0.35	0.15 J	0.38	0.42 U	0.42
Benzo(k)fluoranthene	0.9	0.205	0.37 U	0.37	0.037 J	0.36	0.35 U	0.35	0.069 J	0.38	0.42 U	0.42
Benzo(a)pyrene	0.66	0.162	0.055 J	0.37	0.069 J	0.36	0.35 U	0.35	0.084 J	0.38	0.43	0.42
Indeno(1,2,3-cd)pyrene	0.9	0.234	0.046 J	0.37	0.057 J	0.36	0.35 U	0.35	0.067 J	0.38	0.42 U	0.42
Dibenzo(a,h)anthracene	0.66	0.198	0.37 U	0.37	0.36 U	0.36	0.35 U	0.35	0.38 U	0.38	0.42 U	0.42
Benzo(g,h,i)perylene		0.224	0.049 J	0.37	0.055 J	0.36	0.35 U	0.35	0.063 J	0.38	0.42 U	0.42
Petroleum hydrocarbons												
Total Est. Conc. of TIC			17.3		17.3		.18 J, 10.28 JB		14.8		14.2	
Dilution Factor												
Method:TCL Semivolatiles												

MAIN POST
SOIL BORING SEMIVOLATILES

Geographical Location			M16		M18		M18		M18		M18		M18		M18	
Sample			MP16-SB02-A02		M18-SB04-A01		M18-SB04-A02		M18-SB05-A01		M18-SB05-A02		M18-SB06-A01		M18-SB06-A02	
Sample Type																
Batch#			9412G155		9501G587		9501G587		9501G587		9501G587		9501G587		9501G587	
Prep#			94GB0835		95GTS014		95GTS014		95GTS014		95GTS014		95GTS014		95GP0035	
RFW#			003		003		004		001		002		005		006	
Sample Depth (bgs)																
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			12/15/94		1/11/95		1/11/95		1/11/95		1/11/95		1/11/95		1/11/95	
Analysis Date			12/28/94		1/20/95		1/20/95		1/20/95		1/20/95		1/20/95		2/22/95	
Analysis	Standard	MDL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL
			Result		Result		Result		Result		Result		Result		Result	
Phenol	10000	0.234	0.35 U	0.35											0.46 U	0.46
bis(2-Chloroethyl) ether	0.66	0.32	0.35 U	0.35											0.46 U	0.46
2-Chlorophenol	280	0.241	0.35 U	0.35											0.46 U	0.46
1,3-Dichlorobenzene	5100	0.175	0.35 U	0.35											0.46 U	0.46
1,4-Dichlorobenzene	570	0.158	0.35 U	0.35											0.46 U	0.46
1,2-Dichlorobenzene	5100	0.188	0.35 U	0.35											0.46 U	0.46
2-Methylphenol	2800	0.221	0.35 U	0.35											0.46 U	0.46
2,2'-oxybis(1-Chloropropane)		0.231	0.35 U	0.35											0.46 U	0.46
4-Methylphenol	2800	0.426	0.35 U	0.35											0.46 U	0.46
N-Nitroso-di-n-propylamine	0.66	0.264	0.35 U	0.35											0.46 U	0.46
Hexachloroethane	6	0.175	0.35 U	0.35											0.46 U	0.46
Nitrobenzene	28	0.244	0.35 U	0.35											0.46 U	0.46
Isophorone	1100	0.129	0.35 U	0.35											0.46 U	0.46
2-Nitrophenol		0.231	0.35 U	0.35											0.46 U	0.46
2,4-Dimethylphenol	1100	0.158	0.35 U	0.35											0.46 U	0.46
bis(2-Chloroethoxy) methane		0.201	0.35 U	0.35											0.46 U	0.46
2,4-Dichlorophenol	170	0.145	0.35 U	0.35											0.46 U	0.46
1,2,4-Trichlorobenzene	68	0.317	0.35 U	0.35											0.46 U	0.46
Naphthalene	230	0.277	0.35 U	0.35											1.2	0.46
4-Chloroaniline	230	0.096	0.35 U	0.35											0.46 U	0.46
Hexachlorobutadiene	1	0.152	0.35 U	0.35											0.46 U	0.46
4-Chloro-3-methylphenol	10000	0.102	0.35 U	0.35											0.46 U	0.46
2-Methylnaphthalene		0.287	0.35 U	0.35											0.27 U	0.46
Hexachlorocyclopentadiene	400	0.119	0.35 U	0.35											0.46 U	0.45
2,4,6-Trichlorophenol	62	0.185	0.35 U	0.35											0.46 U	0.46
2,4,5-Trichlorophenol	5600	0.155	0.88 U	0.88											1.1 U	1.1
2-Chloronaphthalene		0.271	0.35 U	0.35											0.46 U	0.46
2-Nitroaniline		0.201	0.88 U	0.88											1.1 U	1.1
Dimethylphthalate	10000	0.145	0.35 U	0.35											0.46 U	0.46
Acenaphthylene		0.198	0.35 U	0.35											0.46 U	0.46
2,6-Dinitrotoluene	1	0.172	0.35 U	0.35											0.46 U	0.46
3-Nitroaniline		0.172	0.88 U	0.88											1.1 U	1.1
Acenaphthene	3400	0.221	0.35 U	0.35											52	9.2 *
2,4-Dinitrophenol	110	0.152	0.88 U	0.88											1.1 U	1.1
4-Nitrophenol		0.248	0.88 U	0.88											1.1 U	1.1

MAIN POST
SOIL BORING SEMIVOLATILES

Geographical Location			M16		M18		M18		M18		M18		M18		M18	
Sample			MP16-SB02-A02		M18-SB04-A01		M18-SB04-A02		M18-SB05-A01		M18-SB05-A02		M18-SB06-A01		M18-SB06-A02	
Sample Type																
Batch#			9412G155		9501G587		9501G587		9501G587		9501G587		9501G587		9501G587	
Prep#			94GB0835		95GTS014		95GTS014		95GTS014		95GTS014		95GTS014		95GP0035	
RFW#			003		003		004		001		002		005		006	
Sample Depth (bgs)																
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			12/15/94		1/11/95		1/11/95		1/11/95		1/11/95		1/11/95		1/11/95	
Analysis Date			12/28/94		1/20/95		1/20/95		1/20/95		1/20/95		1/20/95		2/22/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Dibenzofuran		0.215	0.35 U	0.35											31	9.2 *
2,4-Dinitrotoluene	1	0.191	0.35 U	0.35											0.460 U	0.46
Diethylphthalate	10000	0.178	0.35 U	0.35											0.460 U	0.46
4-Chlorophenyl-phenylether		0.231	0.35 U	0.35											0.460 U	0.46
Fluorene	2300	0.208	0.35 U	0.35											40	9.2 *
4-Nitroaniline		0.211	0.88 U	0.88											1.1 U	1.1
4,6-Dinitro-2-methylphenol		0.175	0.88 U	0.88											1.1 U	1.1
N-Nitrosodiphenylamine (1)	140	0.139	0.35 U	0.35											0.46 U	0.46
4-Bromophenyl-phenylether		0.175	0.35 U	0.35											0.46 U	0.46
Hexachlorobenzene	0.66	0.182	0.35 U	0.35											0.46 U	0.46
Pentachlorophenol	6	0.132	0.88 U	0.88											1.1 U	1.1
Phenanthrene		0.165	0.35 U	0.35											140	46 **
Anthracene	10000	0.152	0.35 U	0.35											16	9.2 *
Carbazole		0.145	0.35 U	0.35											4.8 J	9.2 *
Di-n-butylphthalate	5700	0.215	0.084 JB	0.35											0.36 JB	0.46
Fluoranthene	2300	0.198	0.35 U	0.35											46	9.2 *
Pyrene	1700	0.178	0.35 U	0.35											48	9.2 *
Butylbenzylphthalate	1100	0.175	0.35 U	0.35											0.45 J	0.46
3,3'-Dichlorobenzidine	2	0.092	0.35 U	0.35											0.46 U	0.46
Benzo(a)anthracene	0.9	0.162	0.35 U	0.35											11	9.2 *
Chrysene	9	0.145	0.35 U	0.35											10	9.2 *
bis(2-Ethylhexy)phthalate	49	0.32	0.053 J	0.35											0.17 J	0.46
Di-n-octyl phthalate	1100	0.185	0.35 U	0.35											0.46 U	0.46
Benzo(b)fluoranthene	0.9	0.188	0.35 U	0.35											7.6 J	9.2 *
Benzo(k)fluoranthene	0.9	0.205	0.35 U	0.35											2.3	0.46
Benzo(a)pyrene	0.66	0.162	0.35 U	0.35											3.8 J	9.2 *
Indeno(1,2,3-cd)pyrene	0.9	0.234	0.35 U	0.35											2.1	0.46
Dibenzo(a,h)anthracene	0.66	0.198	0.35 U	0.35											0.45 J	0.46
Benzo(g,h,i)perylene		0.224	0.35 U	0.35											0.21 J	0.46
Petroleum hydrocarbons					27.8 U	27.8	26.8 U	26.8	117	28.7	30.0 U	30.0	221	28.6	2300	348
Total Est. Conc. of TIC			10.46												17.8	
Dilution Factor															* = 20.0, ** = 100	
Method:TCL Semivolatiles																

MAIN POST
SOIL BORING SEMIVOLATILES

Geographical Location			M18		M18		M18		M18		M18		M18	
Sample			M18-SB06-A02RE		MP18-SB01-A01		MP18-SB01-A02		MP18-SB02-A01		MP18-SB02-A02		MP18-SB03-A01	
Sample Type														
Batch#			9501G587		9412G632		9412G632		9412G632		9412G632		9412G632	
Prep#			95GP0083		94GTS038		94GTS038		94GTS038		94GTS038		94GTS038	
RFW#			006		003		004		005		006		006	
Sample Depth (bgs)														
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			1/11/95		1/12/95		1/12/95		1/12/95		1/12/95		1/12/95	
Analysis Date			2/11/95		1/30/95		1/30/95		1/30/95		1/30/95		1/30/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	10000	0.234	0.46 U	0.46										
bis(2-Chloroethyl) ether	0.66	0.32	0.46 U	0.46										
2-Chlorophenol	280	0.241	0.46 U	0.46										
1,3-Dichlorobenzene	5100	0.175	0.46 U	0.46										
1,4-Dichlorobenzene	570	0.158	0.46 U	0.46										
1,2-Dichlorobenzene	5100	0.188	0.46 U	0.46										
2-Methylphenol	2800	0.221	0.46 U	0.46										
2,2'-oxybis(1-Chloropropane)		0.231	0.46 U	0.46										
4-Methylphenol	2800	0.426	0.46 U	0.46										
N-Nitroso-di-n-propylamine	0.66	0.264	0.46 U	0.46										
Hexachloroethane	6	0.175	0.46 U	0.46										
Nitrobenzene	28	0.244	0.46 U	0.46										
Isophorone	1100	0.129	0.46 U	0.46										
2-Nitrophenol		0.231	0.46 U	0.46										
2,4-Dimethylphenol	1100	0.158	0.46 U	0.46										
bis(2-Chloroethoxy) methane		0.201	0.46 U	0.46										
2,4-Dichlorophenol	170	0.145	0.46 U	0.46										
1,2,4-Trichlorobenzene	68	0.317	0.46 U	0.46										
Naphthalene	230	0.277	0.94	0.46										
4-Chloroaniline	230	0.096	0.46 U	0.46										
Hexachlorobutadiene	1	0.152	0.46 U	0.46										
4-Chloro-3-methylphenol	10000	0.102	0.46 U	0.46										
2-Methylnaphthalene		0.287	0.18 J	0.46										
Hexachlorocyclopentadiene	400	0.119	0.46 U	0.46										
2,4,6-Trichlorophenol	62	0.185	0.46 U	0.46										
2,4,5-Trichlorophenol	5600	0.155	1.2 U	1.2										
2-Chloronaphthalene		0.271	0.46 U	0.46										
2-Nitroaniline		0.201	1.2 U	1.2										
Dimethylphthalate	10000	0.145	0.46 U	0.46										
Acenaphthylene		0.198	0.46 U	0.46										
2,6-Dinitrotoluene	1	0.172	0.46 U	0.46										
3-Nitroaniline		0.172	1.2 U	1.2										
Acenaphthene	3400	0.221	E	0.46										
2,4-Dinitrophenol	110	0.152	1.2 U	1.2										
4-Nitrophenol		0.248	1.2 U	1.2										

MAIN POST
SOIL BORING SEMIVOLATILES

Geographical Location			M18		M18		M18		M18		M18		M18	
Sample			M18-SB06-A02RE		MP18-SB01-A01		MP18-SB01-A02		MP18-SB02-A01		MP18-SB02-A02		MP18-SB03-A01	
Sample Type														
Batch#			9501G587		9412G632		9412G632		9412G632		9412G632		9412G632	
Prep#			95GP0083		94GTS038		94GTS038		94GTS038		94GTS038		94GTS038	
RFW#			006		003		004		005		006		006	
Sample Depth (bgs)														
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			1/11/95		1/12/95		1/12/95		1/12/95		1/12/95		1/12/95	
Analysis Date			2/11/95		1/30/95		1/30/95		1/30/95		1/30/95		1/30/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Dibenzofuran		0.215	E	0.46										
2,4-Dinitrotoluene	1	0.191	0.46 U	0.46										
Diethylphthalate	10000	0.178	0.46 U	0.46										
4-Chlorophenyl-phenylether		0.231	0.46 U	0.46										
Fluorene	2300	0.208	E	0.46										
4-Nitroaniline		0.211	1.2 U	1.2										
4,6-Dinitro-2-methylphenol		0.175	1.2 U	1.2										
N-Nitrosodiphenylamine (1)	140	0.139	0.46 U	0.46										
4-Bromophenyl-phenylether		0.175	0.46 U	0.46										
Hexachlorobenzene	0.66	0.182	0.46 U	0.46										
Pentachlorophenol	6	0.132	1.2 U	1.2										
Phenanthrene		0.165	E	0.46										
Anthracene	10000	0.152	E	0.46										
Carbazole		0.145	E	0.46										
Di-n-butylphthalate	5700	0.215	1.6 B	0.46										
Fluoranthene	2300	0.198	E	0.46										
Pyrene	1700	0.178	E	0.46										
Butylbenzylphthalate	1100	0.175	0.46 U	0.46										
3,3'-Dichlorobenzidine	2	0.092	0.46 U	0.46										
Benzo(a)anthracene	0.9	0.162	E	0.46										
Chrysene	9	0.145	E	0.46										
bis(2-Ethylhexy)phthalate	49	0.32	0.18 J	0.46										
Di-n-octyl phthalate	1100	0.185	0.46 U	0.46										
Benzo(b)fluoranthene	0.9	0.188	E	0.46										
Benzo(k)fluoranthene	0.9	0.205	1.3	0.46										
Benzo(a)pyrene	0.66	0.162	3.1	0.46										
Indeno(1,2,3-cd)pyrene	0.9	0.234	1.7	0.46										
Dibenzo(a,h)anthracene	0.66	0.198	0.46 U	0.46										
Benzo(g,h,i)perylene		0.224	1.5	0.46										
Petroleum hydrocarbons					367	27.5	84.9	28.5	188	27.8	612	30.6	6330	719
Total Est. Conc. of TIC			21.2											
Dilution Factor														
Method:TCL Semivolatiles														

MAIN POST
SOIL BORING SEMIVOLATILES

Geographical Location			M18		M18		M18		M18		M18	
Sample			MP18-SB03-A01		MP18-SB07-A02		MP18-SB24-A01		MP18-SB24-A02		MP18-SB25-A01	
Sample Type												
Batch#			9412G632		9412G632		9412G632		9412G632		9501G656	
Prep#			94GTS038		94GTS038		94GTS038		94GTS038		95GTS038	
RFW#			007		008		001		002		001	
Sample Depth (bgs)												
Dilution Factor			1.00		1.00		1.00		1.00		10.0	
Matrix			soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			1/12/95		1/12/95		1/12/95		1/12/95		1/11/95	
Analysis Date			1/30/95		1/30/95		1/30/95		1/30/95		1/13/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	10000	0.234										
bis(2-Chloroethyl) ether	0.66	0.32										
2-Chlorophenol	280	0.241										
1,3-Dichlorobenzene	5100	0.175										
1,4-Dichlorobenzene	570	0.158										
1,2-Dichlorobenzene	5100	0.188										
2-Methylphenol	2800	0.221										
2,2'-oxybis(1-Chloropropane)		0.231										
4-Methylphenol	2800	0.426										
N-Nitroso-di-n-propylamine	0.66	0.264										
Hexachloroethane	6	0.175										
Nitrobenzene	28	0.244										
Isophorone	1100	0.129										
2-Nitrophenol		0.231										
2,4-Dimethylphenol	1100	0.158										
bis(2-Chloroethoxy) methane		0.201										
2,4-Dichlorophenol	170	0.145										
1,2,4-Trichlorobenzene	68	0.317										
Naphthalene	230	0.277										
4-Chloroaniline	230	0.096										
Hexachlorobutadiene	1	0.152										
4-Chloro-3-methylphenol	10000	0.102										
2-Methylnaphthalene		0.287										
Hexachlorocyclopentadiene	400	0.119										
2,4,6-Trichlorophenol	62	0.185										
2,4,5-Trichlorophenol	5600	0.155										
2-Chloronaphthalene		0.271										
2-Nitroaniline		0.201										
Dimethylphthalate	10000	0.145										
Acenaphthylene		0.198										
2,6-Dinitrotoluene	1	0.172										
3-Nitroaniline		0.172										
Acenaphthene	3400	0.221										
2,4-Dinitrophenol	110	0.152										
4-Nitrophenol		0.248										

MAIN POST
SOIL BORING SEMIVOLATILES

Geographical Location			M18		M18		M18		M18		M18	
Sample			MP18-SB03-A01		MP18-SB07-A02		MP18-SB24-A01		MP18-SB24-A02		MP18-SB25-A01	
Sample Type												
Batch#			9412G632		9412G632		9412G632		9412G632		9501G656	
Prep#			94GTS038		94GTS038		94GTS038		94GTS038		95GTS038	
RFW#			007		008		001		002		001	
Sample Depth (bgs)												
Dilution Factor			1.00		1.00		1.00		1.00		10.0	
Matrix			soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			1/12/95		1/12/95		1/12/95		1/12/95		1/11/95	
Analysis Date			1/30/95		1/30/95		1/30/95		1/30/95		1/13/95	
Analysis	Standard	MDL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL
			Result		Result		Result		Result		Result	
Dibenzofuran		0.215										
2,4-Dinitrotoluene	1	0.191										
Diethylphthalate	10000	0.178										
4-Chlorophenyl-phenylether		0.231										
Fluorene	2300	0.208										
4-Nitroaniline		0.211										
4,6-Dinitro-2-methylphenol		0.175										
N-Nitrosodiphenylamine (1)	140	0.139										
4-Bromophenyl-phenylether		0.175										
Hexachlorobenzene	0.66	0.182										
Pentachlorophenol	6	0.132										
Phenanthrene		0.165										
Anthracene	10000	0.152										
Carbazole		0.145										
Di-n-butylphthalate	5700	0.215										
Fluoranthene	2300	0.198										
Pyrene	1700	0.178										
Butylbenzylphthalate	1100	0.175										
3,3'-Dichlorobenzidine	2	0.092										
Benzo(a)anthracene	0.9	0.162										
Chrysene	9	0.145										
bis(2-Ethylhexy)phthalate	49	0.32										
Di-n-octyl phthalate	1100	0.185										
Benzo(b)fluoranthene	0.9	0.188										
Benzo(k)fluoranthene	0.9	0.205										
Benzo(a)pyrene	0.66	0.162										
Indeno(1,2,3-cd)pyrene	0.9	0.234										
Dibenzo(a,h)anthracene	0.66	0.198										
Benzo(g,h,i)perylene		0.224										
Petroleum hydrocarbons			1100	29.0	29.9	28.6	695	28.8	993	31.1	311	29.6
Total Est. Conc. of TIC												
Dilution Factor					These can be found in the Inorganics data packages.							
Method:TCL Semivolatiles												

MAIN POST
SOIL BORING SEMIVOLATILES

Geographical Location			M18		B1		B1		B1		B2	
Sample			MP18-SB25-A02		B1-SB01-A01		B1-SB01-A01RE		B1-SB01-A02		B2-SB01-A01	
Sample Type												
Batch#			9501G656		9401G527		9401G527		9401G527		9401G500	
Prep#			95GTS038		95GB0017		95GB0017		95GB0017		95GB0017	
RFW#			002		001		001		002		001	
Sample Depth (bgs)												
Dilution Factor			10.0		1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			1/11/95		1/9/95		1/9/95		1/9/95		1/6/95	
Analysis Date			1/13/95		1/21/94		2/8/94		2/8/94		1/21/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	10000	0.234			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
bis(2-Chloroethyl) ether	0.66	0.32			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
2-Chlorophenol	280	0.241			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
1,3-Dichlorobenzene	5100	0.175			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
1,4-Dichlorobenzene	570	0.158			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
1,2-Dichlorobenzene	5100	0.188			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
2-Methylphenol	2800	0.221			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
2,2'-oxybis(1-Chloropropane)		0.231			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
4-Methylphenol	2800	0.426			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
N-Nitroso-di-n-propylamine	0.66	0.264			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Hexachloroethane	6	0.175			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Nitrobenzene	28	0.244			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Isophorone	1100	0.129			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
2-Nitrophenol		0.231			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
2,4-Dimethylphenol	1100	0.158			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
bis(2-Chloroethoxy) methane		0.201			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
2,4-Dichlorophenol	170	0.145			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
1,2,4-Trichlorobenzene	68	0.317			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Naphthalene	230	0.277			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
4-Chloroaniline	230	0.096			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Hexachlorobutadiene	1	0.152			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
4-Chloro-3-methylphenol	10000	0.102			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
2-Methylnaphthalene		0.287			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Hexachlorocyclopentadiene	400	0.119			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
2,4,6-Trichlorophenol	62	0.185			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
2,4,5-Trichlorophenol	5600	0.155			0.94 U	0.94	0.94 U	0.94	1 U	1	1 U	1
2-Chloronaphthalene		0.271			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
2-Nitroaniline		0.201			0.94 U	0.94	0.94 U	0.94	1 U	1	1 U	1
Dimethylphthalate	10000	0.145			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Acenaphthylene		0.198			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
2,6-Dinitrotoluene	1	0.172			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
3-Nitroaniline		0.172			0.94 U	0.94	0.94 U	0.94	1 U	1	1 U	1
Acenaphthene	3400	0.221			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
2,4-Dinitrophenol	110	0.152			0.94 U	0.94	0.94 U	0.94	1 U	1	1 U	1
4-Nitrophenol		0.248			0.94 U	0.94	0.94 U	0.94	1 U	1	1 U	1

MAIN POST
SOIL BORING SEMIVOLATILES

Geographical Location			M18		B1		B1		B1		B2	
Sample			MP18-SB25-A02		B1-SB01-A01		B1-SB01-A01RE		B1-SB01-A02		B2-SB01-A01	
Sample Type												
Batch#			9501G656		9401G527		9401G527		9401G527		9401G500	
Prep#			95GTS038		95GB0017		95GB0017		95GB0017		95GB0017	
RFW#			002		001		001		002		001	
Sample Depth (bgs)												
Dilution Factor			10.0		1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			1/11/95		1/9/95		1/9/95		1/9/95		1/6/95	
Analysis Date			1/13/95		1/21/94		2/8/94		2/8/94		1/21/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Dibenzofuran		0.215			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
2,4-Dinitrotoluene	1	0.191			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Diethylphthalate	10000	0.178			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
4-Chlorophenyl-phenylether		0.231			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Fluorene	2300	0.208			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
4-Nitroaniline		0.211			0.94 U	0.94	0.94 U	0.94	1 U	1	1 U	1
4,6-Dinitro-2-methylphenol		0.175			0.94 U	0.94	0.94 U	0.94	1 U	1	1 U	1
N-Nitrosodiphenylamine (1)	140	0.139			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
4-Bromophenyl-phenylether		0.175			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Hexachlorobenzene	0.66	0.182			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Pentachlorophenol	6	0.132			0.94 U	0.94	0.94 U	0.94	1 U	1	1 U	1
Phenanthrene		0.165			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.067 J	0.41
Anthracene	10000	0.152			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Carbazole		0.145			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Di-n-butylphthalate	5700	0.215			0.16 JB	0.38	0.11 JB	0.38	0.078 JB	0.42	0.068 JB	0.41
Fluoranthene	2300	0.198			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.042 J	0.41
Pyrene	1700	0.178			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.081 J	0.41
Butylbenzylphthalate	1100	0.175			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
3,3'-Dichlorobenzidine	2	0.092			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Benzo(a)anthracene	0.9	0.162			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Chrysene	9	0.145			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
bis(2-Ethylhexy)phthalate	49	0.32			0.041 J	0.38	0.083 J	0.38	0.42 U	0.42	0.067 J	0.41
Di-n-octyl phthalate	1100	0.185			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Benzo(b)fluoranthene	0.9	0.188			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Benzo(k)fluoranthene	0.9	0.205			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Benzo(a)pyrene	0.66	0.162			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Indeno(1,2,3-cd)pyrene	0.9	0.234			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Dibenzo(a,h)anthracene	0.66	0.198			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Benzo(g,h,i)perylene		0.224			0.38 U	0.38	0.38 U	0.38	0.42 U	0.42	0.41 U	0.41
Petroleum hydrocarbons			2500	141								
Total Est. Conc. of TIC					12.1		5.15		5.58		11.5	
Dilution Factor												
Method:TCL Semivolatiles												

MAIN POST
SOIL BORING SEMIVOLATILES

Geographical Location			B2		B3		B3		B4		B4	
Sample			B2-SB01-A02		B3-SB01-A01		B3-SB01-A03		B4-SB01-A01		B4-SB01-A01RE	
Sample Type												
Batch#			9401G500		9401G500		9401G500		9401G527		9401G527	
Prep#			95GB0017		95GB0017		95GB0017		95GB0017		95GB0017	
RFW#			002		003		004		003		003	
Sample Depth (bgs)												
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			1/6/95		1/6/95		1/6/95		1/9/95		1/9/95	
Analysis Date			1/21/95		1/21/95		1/21/95		2/8/94		2/9/94	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	10000	0.234	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
bis(2-Chloroethyl) ether	0.66	0.32	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
2-Chlorophenol	280	0.241	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
1,3-Dichlorobenzene	5100	0.175	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
1,4-Dichlorobenzene	570	0.158	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
1,2-Dichlorobenzene	5100	0.188	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
2-Methylphenol	2800	0.221	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
2,2'-oxybis(1-Chloropropane)		0.231	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
4-Methylphenol	2800	0.426	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
N-Nitroso-di-n-propylamine	0.66	0.264	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
Hexachloroethane	6	0.175	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
Nitrobenzene	28	0.244	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
Isophorone	1100	0.129	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
2-Nitrophenol		0.231	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
2,4-Dimethylphenol	1100	0.158	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
bis(2-Chloroethoxy) methane		0.201	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
2,4-Dichlorophenol	170	0.145	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
1,2,4-Trichlorobenzene	68	0.317	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
Naphthalene	230	0.277	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
4-Chloroaniline	230	0.096	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
Hexachlorobutadiene	1	0.152	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
4-Chloro-3-methylphenol	10000	0.102	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
2-Methylnaphthalene		0.287	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
Hexachlorocyclopentadiene	400	0.119	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
2,4,6-Trichlorophenol	62	0.185	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
2,4,5-Trichlorophenol	5600	0.155	1 U	1	0.94 U	0.94	1.1 U	1.1	0.94 U	0.94	0.94 U	0.94
2-Chloronaphthalene		0.271	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
2-Nitroaniline		0.201	1 U	1	0.94 U	0.94	1.1 U	1.1	0.94 U	0.94	0.94 U	0.94
Dimethylphthalate	10000	0.145	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
Acenaphthylene		0.198	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.039 J	0.38	0.38 U	0.38
2,6-Dinitrotoluene	1	0.172	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
3-Nitroaniline		0.172	1 U	1	0.94 U	0.94	1.1 U	1.1	0.94 U	0.94	0.94 U	0.94
Acenaphthene	3400	0.221	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
2,4-Dinitrophenol	110	0.152	1 U	1	0.94 U	0.94	1.1 U	1.1	0.94 U	0.94	0.94 U	0.94
4-Nitrophenol		0.248	1 U	1	0.94 U	0.94	1.1 U	1.1	0.94 U	0.94	0.94 U	0.94

MAIN POST
SOIL BORING SEMIVOLATILES

Geographical Location			B2		B3		B3		B4		B4	
Sample			B2-SB01-A02		B3-SB01-A01		B3-SB01-A03		B4-SB01-A01		B4-SB01-A01RE	
Sample Type												
Batch#			9401G500		9401G500		9401G500		9401G527		9401G527	
Prep#			95GB0017		95GB0017		95GB0017		95GB0017		95GB0017	
RFW#			002		003		004		003		003	
Sample Depth (bgs)												
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			1/6/95		1/6/95		1/6/95		1/9/95		1/9/95	
Analysis Date			1/21/95		1/21/95		1/21/95		2/8/94		2/9/94	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Dibenzofuran		0.215	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
2,4-Dinitrotoluene	1	0.191	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
Diethylphthalate	10000	0.178	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
4-Chlorophenyl-phenylether		0.231	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
Fluorene	2300	0.208	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
4-Nitroaniline		0.211	1 U	1	0.94 U	0.94	1.1 U	1.1	0.94 U	0.94	0.94 U	0.94
4,6-Dinitro-2-methylphenol		0.175	1 U	1	0.94 U	0.94	1.1 U	1.1	0.94 U	0.94	0.94 U	0.94
N-Nitrosodiphenylamine (1)	140	0.139	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
4-Bromophenyl-phenylether		0.175	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
Hexachlorobenzene	0.66	0.182	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
Pentachlorophenol	6	0.132	1 U	1	0.94 U	0.94	1.1 U	1.1	0.94 U	0.94	0.94 U	0.94
Phenanthrene		0.165	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.39	0.38	0.37 J	0.38
Anthracene	10000	0.152	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.092 J	0.38	0.071 J	0.38
Carbazole		0.145	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
Di-n-butylphthalate	5700	0.215	0.073 JB	0.41	0.058 JB	0.38	0.071 JB	0.45	0.056 JB	0.38	0.057 JB	0.38
Fluoranthene	2300	0.198	0.41 U	0.41	0.07 J	0.38	0.45 U	0.45	0.44	0.38	0.46	0.38
Pyrene	1700	0.178	0.41 U	0.41	0.062 J	0.38	0.45 U	0.45	1.5	0.38	1.1	0.38
Butylbenzylphthalate	1100	0.175	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
3,3'-Dichlorobenzidine	2	0.092	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
Benzo(a)anthracene	0.9	0.162	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.54	0.38	0.65	0.38
Chrysene	9	0.145	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.64	0.38	0.58	0.38
bis(2-Ethylhexy)phthalate	49	0.32	0.047 J	0.41	0.38 U	0.38	0.078 J	0.45	0.069 J	0.38	0.064 J	0.38
Di-n-octyl phthalate	1100	0.185	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.38 U	0.38	0.38 U	0.38
Benzo(b)fluoranthene	0.9	0.188	0.41 U	0.41	0.055 J	0.38	0.45 U	0.45	0.83	0.38	0.83	0.38
Benzo(k)fluoranthene	0.9	0.205	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.37 J	0.38	0.43	0.38
Benzo(a)pyrene	0.66	0.162	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.51	0.38	0.57	0.38
Indeno(1,2,3-cd)pyrene	0.9	0.234	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.3 J	0.38	0.46	0.38
Dibenzo(a,h)anthracene	0.66	0.198	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.05 JB	0.38	0.38 U	0.38
Benzo(g,h,i)perylene		0.224	0.41 U	0.41	0.38 U	0.38	0.45 U	0.45	0.33 JB	0.38	0.54 B	0.38
Petroleum hydrocarbons												
Total Est. Conc. of TIC			11.58		10.47				4.53		0.86	
Dilution Factor												
Method:TCL Semivolatiles												

MAIN POST
SOIL BORING SEMIVOLATILES

Geographical Location			B4		B4		B4		B4		B5	
Sample			B4-SB01-A02		B4-SB01-A02RE		B4-SB01-C01		B4-SB01-C01RE		B5-SB01-A01	
Sample Type							Duplicate		Duplicate			
Batch#			9401G527		9401G527		9401G527		9401G527		9501G587	
Prep#			95GB0017		95GB0017		95GB0017		95GB0017		95GP0035	
RFW#			004		004		005		005		007	
Sample Depth (bgs)												
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			1/9/95		1/9/95		1/9/95		1/9/95		1/11/95	
Analysis Date			2/8/94		2/9/94		2/8/95		2/9/95		2/10/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	10000	0.234	0.42 J	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
bis(2-Chloroethyl) ether	0.66	0.32	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
2-Chlorophenol	280	0.241	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
1,3-Dichlorobenzene	5100	0.175	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
1,4-Dichlorobenzene	570	0.158	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
1,2-Dichlorobenzene	5100	0.188	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
2-Methylphenol	2800	0.221	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
2,2'-oxybis(1-Chloropropane)		0.231	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
4-Methylphenol	2800	0.426	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
N-Nitroso-di-n-propylamine	0.66	0.264	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
Hexachloroethane	6	0.175	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
Nitrobenzene	28	0.244	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
Isophorone	1100	0.129	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
2-Nitrophenol		0.231	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
2,4-Dimethylphenol	1100	0.158	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
bis(2-Chloroethoxy) methane		0.201	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
2,4-Dichlorophenol	170	0.145	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
1,2,4-Trichlorobenzene	68	0.317	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
Naphthalene	230	0.277	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
4-Chloroaniline	230	0.096	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
Hexachlorobutadiene	1	0.152	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
4-Chloro-3-methylphenol	10000	0.102	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
2-Methylnaphthalene		0.287	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
Hexachlorocyclopentadiene	400	0.119	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
2,4,6-Trichlorophenol	62	0.185	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
2,4,5-Trichlorophenol	5600	0.155	1.1 U	1.1	1.1 U	1.1	0.93 U	0.93	0.93 U	0.93	0.98 U	0.98
2-Chloronaphthalene		0.271	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
2-Nitroaniline		0.201	1.1 U	1.1	1.1 U	1.1	0.93 U	0.93	0.93 U	0.93	0.98 U	0.98
Dimethylphthalate	10000	0.145	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
Acenaphthylene		0.198	0.45 U	0.45	0.45 U	0.45	0.041 J	0.37	0.37 U	0.37	0.39 U	0.39
2,6-Dinitrotoluene	1	0.172	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
3-Nitroaniline		0.172	1.1 U	1.1	1.1 U	1.1	0.93 U	0.93	0.93 U	0.93	0.98 U	0.98
Acenaphthene	3400	0.221	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
2,4-Dinitrophenol	110	0.152	1.1 U	1.1	1.1 U	1.1	0.93 U	0.93	0.93 U	0.93	0.98 U	0.98
4-Nitrophenol		0.248	1.1 U	1.1	1.1 U	1.1	0.93 U	0.93	0.93 U	0.93	0.98 U	0.98

MAIN POST
SOIL BORING SEMIVOLATILES

Geographical Location			B4		B4		B4		B4		B5	
Sample			B4-SB01-A02		B4-SB01-A02RE		B4-SB01-C01		B4-SB01-C01RE		B5-SB01-A01	
Sample Type							Duplicate		Duplicate			
Batch#			9401G527		9401G527		9401G527		9401G527		9501G587	
Prep#			95GB0017		95GB0017		95GB0017		95GB0017		95GP0035	
RFW#			004		004		005		005		007	
Sample Depth (bgs)												
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			1/9/95		1/9/95		1/9/95		1/9/95		1/11/95	
Analysis Date			2/8/94		2/9/94		2/8/95		2/9/95		2/10/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Dibenzofuran		0.215	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
2,4-Dinitrotoluene	1	0.191	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
Diethylphthalate	10000	0.178	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
4-Chlorophenyl-phenylether		0.231	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
Fluorene	2300	0.208	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
4-Nitroaniline		0.211	1.1 U	1.1	1.1 U	1.1	0.93 U	0.93	0.93 U	0.93	0.98 U	0.98
4,6-Dinitro-2-methylphenol		0.175	1.1 U	1.1	1.1 U	1.1	0.93 U	0.93	0.93 U	0.93	0.98 U	0.98
N-Nitrosodiphenylamine (1)	140	0.139	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
4-Bromophenyl-phenylether		0.175	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
Hexachlorobenzene	0.66	0.182	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
Pentachlorophenol	6	0.132	1.1 U	1.1	1.1 U	1.1	0.93 U	0.93	0.93 U	0.93	0.98 U	0.98
Phenanthrene		0.165	0.45 U	0.45	0.45 U	0.45	0.11 J	0.37	0.1 J	0.37	0.39 U	0.39
Anthracene	10000	0.152	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.04 J	0.37	0.39 U	0.39
Carbazole		0.145	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
Di-n-butylphthalate	5700	0.215	0.22 JB	0.45	0.22 JB	0.45	0.062 JB	0.37	0.067 JB	0.37	0.082 JB	0.39
Fluoranthene	2300	0.198	0.45 U	0.45	0.45 U	0.45	0.3 J	0.37	0.36 J	0.37	0.046 J	0.39
Pyrene	1700	0.178	0.45 U	0.45	0.45 U	0.45	1.1	0.37	0.81	0.37	0.041 J	0.39
Butylbenzylphthalate	1100	0.175	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
3,3'-Dichlorobenzidine	2	0.092	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
Benzo(a)anthracene	0.9	0.162	0.45 U	0.45	0.45 U	0.45	0.54	0.37	0.58	0.37	0.39 U	0.39
Chrysene	9	0.145	0.45 U	0.45	0.45 U	0.45	0.61	0.37	0.65	0.37	0.39 U	0.39
bis(2-Ethylhexy)phthalate	49	0.32	0.45 U	0.45	0.45 U	0.45	0.04 J	0.37	0.37 U	0.37	0.39 U	0.39
Di-n-octyl phthalate	1100	0.185	0.45 U	0.45	0.45 U	0.45	0.37 U	0.37	0.37 U	0.37	0.39 U	0.39
Benzo(b)fluoranthene	0.9	0.188	0.45 U	0.45	0.45 U	0.45	0.75	0.37	0.9	0.37	0.056 J	0.39
Benzo(k)fluoranthene	0.9	0.205	0.45 U	0.45	0.45 U	0.45	0.23 J	0.37	0.26 J	0.37	0.39 U	0.39
Benzo(a)pyrene	0.66	0.162	0.45 U	0.45	0.45 U	0.45	0.59	0.37	0.6	0.37	0.39 U	0.39
Indeno(1,2,3-cd)pyrene	0.9	0.234	0.45 U	0.45	0.45 U	0.45	0.26 J	0.37	0.44	0.37	0.39 U	0.39
Dibenzo(a,h)anthracene	0.66	0.198	0.45 U	0.45	0.45 U	0.45	0.058 JB	0.37	0.079 JB	0.37	0.39 U	0.39
Benzo(g,h,i)perylene		0.224	0.45 U	0.45	0.45 U	0.45	0.39 B	0.37	0.64 B	0.37	0.39 U	0.39
Petroleum hydrocarbons												
Total Est. Conc. of TIC			4.88		5.18		5.6		5.02		6.35	
Dilution Factor												
Method:TCL Semivolatiles												

MAIN POST
SOIL BORING SEMIVOLATILES

Geographical Location			B5		B5		B5	
Sample			B5-SB01-A01RE		B5-SB01-A01RE		B5-SB01-A02	
Sample Type								
Batch#			9501G587		9501G587		9501G587	
Prep#			95GP0035		95GP0035		95GP0035	
RFW#			007		008		008	
Sample Depth (bgs)								
Dilution Factor			1.00		1.00		1.00	
Matrix			soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg	
Sampling Date			1/11/95		1/11/95		1/11/95	
Analysis Date			2/10/95		2/11/95		2/10/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	10000	0.234	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
bis(2-Chloroethyl) ether	0.66	0.32	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2-Chlorophenol	280	0.241	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
1,3-Dichlorobenzene	5100	0.175	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
1,4-Dichlorobenzene	570	0.158	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
1,2-Dichlorobenzene	5100	0.188	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2-Methylphenol	2800	0.221	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2,2'-oxybis(1-Chloropropane)		0.231	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
4-Methylphenol	2800	0.426	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
N-Nitroso-di-n-propylamine	0.66	0.264	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Hexachloroethane	6	0.175	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Nitrobenzene	28	0.244	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Isophorone	1100	0.129	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2-Nitrophenol		0.231	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2,4-Dimethylphenol	1100	0.158	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
bis(2-Chloroethoxy) methane		0.201	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2,4-Dichlorophenol	170	0.145	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
1,2,4-Trichlorobenzene	68	0.317	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Naphthalene	230	0.277	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
4-Chloroaniline	230	0.096	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Hexachlorobutadiene	1	0.152	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
4-Chloro-3-methylphenol	10000	0.102	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2-Methylnaphthalene		0.287	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Hexachlorocyclopentadiene	400	0.119	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2,4,6-Trichlorophenol	62	0.185	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2,4,5-Trichlorophenol	5600	0.155	0.98 U	0.98	0.99 U	0.99	0.98 U	0.98
2-Chloronaphthalene		0.271	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2-Nitroaniline		0.201	0.98 U	0.98	0.99 U	0.99	0.98 U	0.98
Dimethylphthalate	10000	0.145	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Acenaphthylene		0.198	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2,6-Dinitrotoluene	1	0.172	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
3-Nitroaniline		0.172	0.98 U	0.98	0.99 U	0.99	0.98 U	0.98
Acenaphthene	3400	0.221	0.1 J	0.39	0.4 U	0.4	0.39 U	0.39
2,4-Dinitrophenol	110	0.152	0.98 U	0.98	0.99 U	0.99	0.98 U	0.98
4-Nitrophenol		0.248	0.98 U	0.98	0.99 U	0.99	0.98 U	0.98

MAIN POST
SOIL BORING SEMIVOLATILES

Geographical Location			B5		B5		B5	
Sample			B5-SB01-A01RE		B5-SB01-A01RE		B5-SB01-A02	
Sample Type								
Batch#			9501G587		9501G587		9501G587	
Prep#			95GP0035		95GP0035		95GP0035	
RFW#			007		008		008	
Sample Depth (bgs)								
Dilution Factor			1.00		1.00		1.00	
Matrix			soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg	
Sampling Date			1/11/95		1/11/95		1/11/95	
Analysis Date			2/10/95		2/11/95		2/10/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Dibenzofuran		0.215	0.06 J	0.39	0.4 U	0.4	0.39 U	0.39
2,4-Dinitrotoluene	1	0.191	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Diethylphthalate	10000	0.178	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
4-Chlorophenyl-phenylether		0.231	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Fluorene	2300	0.208	0.074 J	0.39	0.4 U	0.4	0.39 U	0.39
4-Nitroaniline		0.211	0.98 U	0.98	0.99 U	0.99	0.98 U	0.98
4,6-Dinitro-2-methylphenol		0.175	0.98 U	0.98	0.99 U	0.99	0.98 U	0.98
N-Nitrosodiphenylamine (1)	140	0.139	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
4-Bromophenyl-phenylether		0.175	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Hexachlorobenzene	0.66	0.182	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Pentachlorophenol	6	0.132	0.98 U	0.98	0.99 U	0.99	0.98 U	0.98
Phenanthrene		0.165	0.3 J	0.39	0.4 U	0.4	0.39 U	0.39
Anthracene	10000	0.152	0.1 J	0.39	0.4 U	0.4	0.39 U	0.39
Carbazole		0.145	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Di-n-butylphthalate	5700	0.215	1.8 B	0.39	2.2 B	0.4	0.094 JB	0.39
Fluoranthene	2300	0.198	0.21 J	0.39	0.4 U	0.4	0.39 U	0.39
Pyrene	1700	0.178	0.2 J	0.39	0.4 U	0.4	0.39 U	0.39
Butylbenzylphthalate	1100	0.175	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
3,3'-Dichlorobenzidine	2	0.092	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Benzo(a)anthracene	0.9	0.162	0.047 J	0.39	0.4 U	0.4	0.39 U	0.39
Chrysene	9	0.145	0.056 J	0.39	0.4 U	0.4	0.39 U	0.39
bis(2-Ethylhexy)phthalate	49	0.32	0.39 U	0.39	0.19 J	0.4	0.39 U	0.39
Di-n-octyl phthalate	1100	0.185	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Benzo(b)fluoranthene	0.9	0.188	0.12 J	0.39	0.4 U	0.4	0.39 U	0.39
Benzo(k)fluoranthene	0.9	0.205	0.12 J	0.39	0.4 U	0.4	0.39 U	0.39
Benzo(a)pyrene	0.66	0.162	0.08 J	0.39	0.4 U	0.4	0.39 U	0.39
Indeno(1,2,3-cd)pyrene	0.9	0.234	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Dibenzo(a,h)anthracene	0.66	0.198	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Benzo(g,h,i)perylene		0.224	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Petroleum hydrocarbons								
Total Est. Conc. of TIC			10.68		12.2		4.85	
Dilution Factor								
Method:TCL Semivolatiles								

MAIN POST
SOIL BORING INORGANICS

Geographical Location		M-AOC3		M-AOC3		M-AOC3		M16		M16	
Sample		MPA3-SB01-A02		MPA3-SB01-C02		MPA3-SB02-A02		MP16-SB01-A01		MP16-SB01-A02	
Sample Type				Duplicate							
Batch#		9412G130		9412G130		9412G155		9412G155		9412G155	
Prep#		94GTS484		94GTS484		94GTS484		94GTS484		94GTS484	
RFW#		001		002		003		001		002	
Sample Depth (bgs)											
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		12/14/94		12/14/94		12/15/94		12/15/94		12/15/94	
Analysis Date		12/22/94		12/22/94		12/22/94		12/22/94		12/22/94	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
% Solids		90.1	0.10	90.1	0.10	93.0	0.1	86.1	0.10	77.9	0.10
Silver	110	0.43 U	0.43	0.52 U	0.52	0.69	0.42	0.40 U	0.40	0.60 U	0.60
Aluminum		3000	1.8	3580	2.2	4020	1.8	6840	1.7	11900	2.6
Arsenic	20	2.8	0.31	3.4	0.27	4.2	0.33	8.8	0.31	16.0	2.0 *
Barium	700	14.4	0.14	11.6	0.17	12.5	0.14	36.3	0.13	29.7	0.20
Beryllium	1	0.34	0.072	0.39	0.087	0.63	0.069	0.84	0.067	0.80	0.10
Calcium		310	1.6	406	1.9	226	1.5	1500	1.5	1200	2.2
Cadmium	1	0.61 U	0.61	0.74 U	0.74	0.59 U	0.59	0.57 U	0.57	0.86 U	0.86
Cobalt		0.72	0.51	1.4	0.61	1.5	0.49	5.0	0.47	2.8	0.70
Chromium		39.9	1.2	45.2	1.4	61.0	1.1	54.6	1.1	59.5	1.6
Copper	600	1.9	0.43	1.9	0.52	1.7	0.42	24.2	0.40	11.7	0.60
Iron		15000	0.42	18900	0.50	21700	0.40	21300	0.39	36200	0.58
Mercury	14	0.09 U	0.09	0.073 U	0.073	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12
Potassium		1760	18.5	1950	22.3	4240	17.7	2990	17.2	3660	25.7
Magnesium		690	6.9	760	8.3	1490	6.6	1670	6.4	2340	9.6
Manganese		13.8	0.11	19.6	0.13	15.6	0.10	74.5	0.10	37.7	0.15
Sodium		17.4	2.4	21.6	2.9	18.6	2.3	283	2.2	232	3.3
Nickel	250	1.9	0.58	2.5	0.70	3.0	0.55	8.0	0.54	5.4	0.81
Lead	400	8.3	2.7 *	28.6	2.4 *	11.5	2.9	35.3	5.4 *	16.3	1.7
Antimony	14	2.1 U	2.1	2.5 U	2.5	2.0 U	2.0	1.9 U	1.9	2.9 U	2.9 *
Selenium	63	0.17 U	0.17	0.18	0.15	0.19 U	0.19	0.67	0.17	0.96	0.22
Thallium	2	0.21 U	0.21	0.19 U	0.19	0.23 U	0.23	0.21 U	0.21	0.27 U	0.27
Vanadium	370	28.0	0.38	28.4	0.46	32.9	0.36	37.6	0.35	43.5	0.53
Zinc	1500	19.1	0.38	25.3	0.46	30.8	0.36	93.0	0.35	42.1	0.53
Cyanide	1100	0.48 U	0.48	0.45 U	0.45						
Dilution Factor		* = 10.0		* = 10.0				* = 20.0		* = 5.00	
Method:TAL Metals, Cyanide											

MAIN POST
SOIL BORING INORGANICS

Geographical Location		M18		M18		M18		M18		M18	
Sample		M18-SB06-A02		MP18-SB01-A01		MP18-SB01-A02		MP18-SB02-A01		MP18-SB02-A02	
Sample Type											
Batch#		9501G587		9501G632		9501G632		9501G632		9501G632	
Prep#		95GTS013		95GTS038		95GTS038		95GTS038		95GTS038	
RFW#		006		003		004		005		006	
Sample Depth (bgs)											
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		1/11/95		1/12/95		1/12/95		1/12/95		1/12/95	
Analysis Date		1/13/95		1/30/95		1/30/95		1/30/95		1/30/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
% Solids		72.1	0.10	86.0	0.10	84.0	0.10	87.6	0.10	80.5	0.10
Silver	110	0.57 U	0.57								
Aluminum		6130	3.9								
Arsenic	20	5.8	0.44								
Barium	700	31.0	0.18								
Beryllium	1	0.07 U	0.07								
Calcium		11100	1.9								
Cadmium	1	0.66 U	0.66								
Cobalt		6.3	0.53								
Chromium		35.3	1.1								
Copper	600	218	0.92								
Iron		17700	0.57								
Mercury	14	0.61	0.11								
Potassium		2190	15.6								
Magnesium		3380	7.9								
Manganese		168	0.21								
Sodium		181	4.4								
Nickel	250	12.6	0.96								
Lead	400	127	4.6 *								
Antimony	14	2.5 U	2.5								
Selenium	63	0.78	0.35								
Thallium	2	0.16 U	0.16								
Vanadium	370	27.3	0.48								
Zinc	1500	72.6	0.44								
Cyanide	1100										
Dilution Factor		* = 20.0									
Method:TAL Metals, Cyanide											

MAIN POST
SOIL BORING INORGANICS

Geographical Location		M18		M18		M18		M18		M18	
Sample		MP18-SB03-A01		MP18-SB03-A02		MP18-SB07-A01		MP18-SB24-A01		MP18-SB24-A02	
Sample Type											
Batch#		9501G632		9501G632		9501G632		9501G632		9501G632	
Prep#		95GTS038		95GTS038		95GTS038		95GTS038		95GTS038	
RFW#		007		008		009		001		002	
Sample Depth (bgs)											
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		1/12/95		1/12/95		1/12/95		1/12/95		1/12/95	
Analysis Date		1/30/95		1/30/95		1/30/95		1/30/95		1/30/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
% Solids		83.1	0.10	85.0	0.10	87.7	0.10	86.3	0.10	80.8	0.10
Silver	110										
Aluminum											
Arsenic	20										
Barium	700										
Beryllium	1										
Calcium											
Cadmium	1										
Cobalt											
Chromium											
Copper	600										
Iron											
Mercury	14										
Potassium											
Magnesium											
Manganese											
Sodium											
Nickel	250										
Lead	400										
Antimony	14										
Selenium	63										
Thallium	2										
Vanadium	370										
Zinc	1500										
Cyanide	1100										
Dilution Factor											
Method:TAL Metals, Cyanide											

MAIN POST
SOIL BORING INORGANICS

Geographical Location		M18		M18		M18		M18		M18	
Sample		MP18-SB25-A01		MP18-SB25-A02		M18-SB04-A01		M18-SB04-A02		M18-SB05-A01	
Sample Type											
Batch#		9501GG656		9501GG656		9501G587		9501G587		9501G587	
Prep#		95GTS038		95GTS038		95GTS013		95GTS013		95GTS013	
RFW#		001		002		003		004		001	
Sample Depth (bgs)											
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		1/13/95		1/13/95		1/11/95		1/11/95		1/11/95	
Analysis Date		1/30/95		1/30/95		1/13/95		1/13/95		1/13/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
% Solids		83.0	0.10	88.4	0.10	92.7	0.10	90.8	0.10	87.4	0.10
Silver	110										
Aluminum											
Arsenic	20										
Barium	700										
Beryllium	1										
Calcium											
Cadmium	1										
Cobalt											
Chromium											
Copper	600										
Iron											
Mercury	14										
Potassium											
Magnesium											
Manganese											
Sodium											
Nickel	250										
Lead	400										
Antimony	14										
Selenium	63										
Thallium	2										
Vanadium	370										
Zinc	1500										
Cyanide	1100										
Dilution Factor											
Method:TAL Metals, Cyanide											

MAIN POST
SOIL BORING INORGANICS

Geographical Location		M18		M18		M18		B1		B1	
Sample		M18-SB05-A02		M18-SB06-A01		MP18-MW03-A01		B1-SB01-A01		B1-SB01-A02	
Sample Type											
Batch#		9501G587		9501G587		9505G825		9512G527		9512G527	
Prep#		95GTS013		95GTS013		95GI713		95GTS007		95GTS007	
RFW#		002		005		006		001		002	
Sample Depth (bgs)											
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		water		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		1/11/95		1/11/95		5/10/95		1/9/95		1/9/95	
Analysis Date		1/13/95		1/13/95		5/24/95		1/11/95		1/11/95	
Analysis	Standard	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting
		Result	Limit	Result	Limit	Result	Limit	Result	Limit	Result	Limit
% Solids		79.8	0.10	87.0	0.10	85.9	0.10	88.0	0.10	79.0	0.10
Silver	110							0.51 U	0.51	0.53 U	0.53
Aluminum								4780	3.4	4680	3.5
Arsenic	20							5.8	0.31	4.7	0.32
Barium	700							6.5	0.16	6.3	0.17
Beryllium	1							0.54	0.061	0.75	0.063
Calcium								170	1.7	96.1	1.8
Cadmium	1							0.59 U	0.59	0.61 U	0.61
Cobalt								0.79	0.47	1.4	0.49
Chromium								64.6	0.96	84.8	0.99
Copper	600							2.0	0.82	2.0	0.84
Iron								14700	0.51	17400	0.53
Mercury	14							0.095 U	0.095	0.094 U	0.094
Potassium								3110	13.9	2730	14.3
Magnesium								1130	7.0	1070	7.2
Manganese								9.4	0.18	8.2	0.19
Sodium								15.1	3.9	12.6	4.0
Nickel	250							2.0	0.86	3.2	0.89
Lead	400							7.7	0.54 *	8.4	0.56 *
Antimony	14							2.2 U	2.2	2.3 U	2.3
Selenium	63							0.17 U	0.17	0.18 U	0.18
Thallium	2							0.21 U	0.21	0.22 U	0.22
Vanadium	370							43.9	0.43	94.1	0.44
Zinc	1500							20.2	0.39	19.6	0.40
Cyanide	1100					0.53 U	0.53	0.32 U	0.32	0.63 U	0.63
Dilution Factor								* = 2.00		* = 2.00	
Method:TAL Metals, Cyanide											

MAIN POST
SOIL BORING INORGANICS

Geographical Location		B2		B2		B3		B3		B4	
Sample		B2-SB01-A01		B2-SB01-A02		B3-SB01-A01		B3-SB01-A03		B4-SB01-A01	
Sample Type											
Batch#		9501G500		9501G500		9501G500		9501G500		9512G527	
Prep#		95GTS007		95GTS007		95GTS007		95GTS007		95GTS007	
RFW#		001		002		003		004		003	
Sample Depth (bgs)											
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		1/6/95		1/6/95		1/6/95		1/6/95		1/9/95	
Analysis Date		1/10/95		1/10/95		1/10/95		1/10/95		1/11/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
% Solids		81.2	0.10	80.1	0.10	88.1	0.1	73.3	0.10	88.8	0.10
Silver	110	0.88	0.64	0.86	0.66	0.73	0.59	1.1	0.70	0.52 U	0.52
Aluminum		9900	0.55	12700	5.7	7630	5.1	15200	6.0	4290	3.5
Arsenic	20	21.7	3.2 *	22.9	3.3 *	6.2	0.60 *	9.8	0.72 *	4.5	0.32
Barium	700	23.7	0.43	20.1	0.45	28.0	0.40	26.0	0.47	22.7	0.17
Beryllium	1	0.99	0.31	1.4	0.32	0.78	0.29	2.0	0.34	0.53	0.063
Calcium		427	2.5	343	2.6	921	2.3	511	2.7	642	1.8
Cadmium	1	0.57 U	0.57	0.60 U	0.60	0.53 U	0.53	0.63 U	0.63	0.60 U	0.60
Cobalt		1.6	0.55	1.1	0.58	1.0	0.52	0.97	0.61	0.98	0.48
Chromium		109	0.62	154	0.64	48.4	0.57	269	0.68	39.9	0.98
Copper	600	6.4	0.47	5.7	0.49	4.1	0.44	7.8	0.52	4.0	0.83
Iron		36800	0.96	39800	1.0	19700	0.90	55800	1.1	12900	0.52
Mercury	14	0.12 U	0.12	0.10 U	0.10	0.11 U	0.11	0.13 U	0.13	0.11 U	0.11
Potassium		5840	169	9290	175	3090	157	15400	185	2580	14.2
Magnesium		3030	5.0	4400	5.2	1920	4.7	7320	5.5	1290	7.2
Manganese		34.2	0.41	29.9	0.43	90.7	0.38	9.9	0.45	18.4	0.19
Sodium		24.9	3.2	23.8	3.3	22.3	2.9	51.6	3.5	18.7	4.0
Nickel	250	8.4	2.6	5.5	2.7	5.1	2.4	6.6	2.9	2.8	0.88
Lead	400	6.8	0.20	5.9	0.21	15.2	0.94 **	4.2	0.23	19.5	2.8 *
Antimony	14	4.4 U	4.4	4.6 U	4.6	4.1 U	4.1	4.8 U	4.8	2.3 U	2.3
Selenium	63	1.8	0.18	1.7	0.19	0.64	0.17	1.9	0.20	0.25	0.18
Thallium	2	0.22 U	0.22	0.23 U	0.23	0.21 U	0.21	0.25 U	0.25	0.22 U	0.22
Vanadium	370	39.4	0.60	53.9	0.62	29.1	0.55	50.3	0.65	19.9	0.44
Zinc	1500	39.9	0.57	39.1	0.60	35.0	0.53	81.4	0.63	24.1	0.40
Cyanide	1100	0.51 U	0.51	0.39 U	0.39	0.35 U	0.35	0.59 U	0.59	0.35 U	0.35
Dilution Factor		* = 10.0		* = 10.0		* = 2.00, ** = 5.00		* = 2.00		* = 10.0	
Method:TAL Metals, Cyanide											

MAIN POST
SOIL BORING INORGANICS

Geographical Location		B4		B4		B5		B5	
Sample		B4-SB01-A02		B4-SB01-C01		B5-SB01-A01		B5-SB01-A02	
Sample Type				Duplicate					
Batch#		9512G527		9512G527		9501G587		9501G587	
Prep#		95GTS007		95GTS007		95GTS013		95GTS013	
RFW#		004		005		007		008	
Sample Depth (bgs)									
Dilution Factor		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		1/9/95		1/9/95		1/11/95		1/11/95	
Analysis Date		1/11/95		1/11/95		1/13/95		1/13/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
% Solids		74.3	0.10	89.3	0.10	84.4	0.10	83.1	0.10
Silver	110	0.45 U	0.45	0.47 U	0.47	0.49 U	0.49	0.50 U	0.50
Aluminum		11700	3.1	4570	3.2	8020	3.3	8450	3.3
Arsenic	20	10	0.72 *	3.7	0.27	7.4	0.74 *	8.0	{0.76}
Barium	700	32.3	0.15	21.9	0.15	28.3	0.16	21.7	0.16
Beryllium	1	1.7	0.055	0.53	0.056	0.76	0.059	0.89	0.060
Calcium		104	1.5	601	1.6	738	1.7	517	1.7
Cadmium	1	0.53 U	0.53	0.55 U	0.55	0.57 U	0.57	0.58 U	0.58
Cobalt		2.5	0.42	0.58	0.43	2	0.45	1.5	0.46
Chromium		143	0.85	42.8	0.88	54.8	0.93	80.4	0.93
Copper	600	8.0	0.73	2.7	0.75	6.2	0.79	3.4	0.80
Iron		41400	0.45	13800	0.47	21200	0.49	25700	0.50
Mercury	14	0.13 U	0.13	0.083 U	0.083	0.09 U	0.09	0.09 U	0.09
Potassium		11800	12.4	2940	12.8	3770	13.4	3990	13.5
Magnesium		5430	6.2	1440	6.5	1840	6.8	1880	6.8
Manganese		9.5	0.16	16.7	0.17	46	0.18	14.0	0.18
Sodium		40.5	3.5	13.7	3.6	33.9	3.8	22.9	3.8
Nickel	250	5.0	0.76	2.4	0.79	3.7	0.83	3.5	0.84
Lead	400	3.8	0.32	9.7	1.2 *	19.0	2.0 **	5.7	0.20
Antimony	14	2.0 U	2.0	2.1 U	2.1	2.2 U	2.2	2.2 U	2.2
Selenium	63	0.20 U	0.20	0.28	0.15	0.67	0.29	1.2	0.30
Thallium	2	0.25 U	0.25	0.18 U	0.18	0.14 U	0.14	0.14 U	0.14
Vanadium	370	23.7	0.38	19.0	0.40	35.1	0.41	46.9	0.42
Zinc	1500	60.2	0.35	24.0	0.36	38.1	0.38	30.3	0.38
Cyanide	1100	0.45 U	0.45	0.49 U	0.49	0.35 U	0.35	0.39 U	0.39
Dilution Factor		* = 2.00		* = 5.00		* = 2.00, ** = 10.0		* = 2.00	
Method:TAL Metals, Cyanide									

MAIN POST
SOIL BORING PESTICIDES/PCBS

Geographical Location		M-AOC3		M-AOC3		M-AOC3		M-AOC3		M16		M16	
Sample		MPA3-SB01-A02		MPA3-SB01-C02		MPA3-SB02-A02		MPA3-SB02-A02DL		MP16-SB01-A01		MP16-SB01-A01DL	
Sample Type				Duplicate									
Batch#		9412G130		9412G130		9401G155		9401G155		9401G155		9401G155	
Prep#		94GP1090		94GP1090		94GP1090		94GP1090		94GP1090		94GP1090	
RFW#		001		002		003		003		001		001DL	
Sample Depth (bgs)													
Dilution Factor		1.00		1.00		1.00		10.0		10.0		100	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		12/14/94		12/14/94		12/15/94		12/15/94		12/15/94		12/15/94	
Analysis Date		1/3/95		1/3/95		1/3/95		1/3/95		1/3/95		1/4/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
alpha-BHC		0.0018 U	0.0018	0.0018 U	0.0018	0.0017 U	0.0017	0.017 U	0.017	0.019 U	0.019	0.19 U	0.19
beta-BHC		0.0018 U	0.0018	0.0018 U	0.0018	0.0017 U	0.0017	0.017 U	0.017	0.019 U	0.019	0.19 U	0.19
delta-BHC		0.0018 U	0.0018	0.0018 U	0.0018	0.0017 U	0.0017	0.017 U	0.017	0.019 U	0.019	0.19 U	0.19
gamma-BHC (Lindane)	0.52	0.0018 U	0.0018	0.0018 U	0.0018	0.0017 U	0.0017	0.017 U	0.017	0.019 U	0.019	0.19 U	0.19
Heptachlor	0.15	0.0018 U	0.0018	0.0018 U	0.0018	0.0017 U	0.0017	0.017 U	0.017	0.019 U	0.019	0.19 U	0.19
Aldrin	0.04	0.0018 U	0.0018	0.0018 U	0.0018	0.0017 U	0.0017	0.017 U	0.017	0.019 U	0.019	0.19 U	0.19
Heptachlor epoxide		0.0018 U	0.0018	0.0018 U	0.0018	0.0017 U	0.0017	0.017 U	0.017	0.019 U	0.019	0.19 U	0.19
Endosulfan I	340	0.0018 U	0.0018	0.0018 U	0.0018	0.0017 U	0.0017	0.017 U	0.017	0.019 U	0.019	0.19 U	0.19
Dieldrin	0.042	0.0037 U	0.0037	0.0036 U	0.0036	0.0035 U	0.0035	0.035 U	0.035	0.12	0.038	0.38 U	0.38
4,4'-DDE	2	0.044	0.0037	0.011	0.0036	0.022	0.0035	0.035 U	0.035	1 C	0.038	0.65 CD	0.38
Endrin	17	0.0037 U	0.0037	0.0036 U	0.0036	0.0035 U	0.0035	0.035 U	0.035	0.038 U	0.038	0.38 U	0.38
Endosulfan II	340	0.0037 U	0.0037	0.0036 U	0.0036	0.0035 U	0.0035	0.035 U	0.035	0.038 U	0.038	0.38 U	0.38
4,4'-DDD	3	0.024	0.0037	0.0097	0.0036	0.016	0.0035	0.035 U	0.035	1.5 C	0.038	1.1 CD	0.38
Endosulfan sulfate		0.0037 U	0.0037	0.0036 U	0.0036	0.0035 U	0.0035	0.035 U	0.035	0.04 U	0.038	0.38 U	0.38
4,4'-DDT	2	0.035 P	0.0037	0.017	0.0036	0.085	0.0035	.073 P	0.035	0.71 C	0.038	.62 D	0.38
Methoxychlor	280	0.018 U	0.018	0.018 U	0.018	0.02 U	0.017	0.17 U	0.17	0.19 U	0.19	1.9 U	0.38
Endrin ketone		0.0037 U	0.0037	0.0036 U	0.0036	0.0035 U	0.0035	0.035 U	0.035	0.038 U	0.038	0.38 U	0.38
Endrin aldehyde		0.0037 U	0.0037	0.0036 U	0.0036	0.0035 U	0.0035	0.035 U	0.035	0.038 U	0.038	0.38 U	0.38
alpha-Chlordane		0.0018 U	0.0018	0.0018 U	0.0018	0.0052	0.0017	0.017 U	0.017	0.042	0.019	0.19 U	0.19
gamma-Chlordane		0.0018 U	0.0018	0.0014 JP	0.0018	0.0035 P	0.0017	0.017 U	0.017	0.033 P	0.019	0.19 U	0.19
Toxaphene	0.1	0.18 U	0.18	0.18 U	0.18	0.17 U	0.17	1.7 U	1.7	1.9 U	1.9	19 U	19
Aroclor-1016	0.49	0.037 U	0.037	0.036 U	0.036	0.035 U	0.035	0.35 U	0.35	0.38 U	0.38	3.8 U	3.8
Aroclor-1221	0.49	0.073 U	0.073	0.072 U	0.072	0.07 U	0.07	0.7 U	0.7	0.77 U	0.77	7.7 U	7.7
Aroclor-1232	0.49	0.037 U	0.037	0.036 U	0.036	0.035 U	0.035	0.35 U	0.35	0.38 U	0.38	3.8 U	3.8
Aroclor-1242	0.49	0.037 U	0.037	0.036 U	0.036	0.035 U	0.035	0.35 U	0.35	0.38 U	0.38	3.8 U	3.8
Aroclor-1248	0.49	0.037 U	0.037	0.036 U	0.036	0.2 P	0.035	.25 JDP	0.35	0.38 U	0.38	3.8 U	3.8
Aroclor-1254	0.49	0.037 U	0.037	0.036 U	0.036	0.035 U	0.035	0.35 U	0.35	0.38 U	0.38	3.8 U	3.8
Aroclor-1260	0.49	0.037 U	0.037	0.036 U	0.036	0.035 U	0.035	0.35 U	0.35	0.38 U	0.38	3.8 U	3.8
Method:TCL Pesticides/PCBs													

MAIN POST
SOIL BORING PESTICIDES/PCBS

Geographical Location		M16		M16		M18		M18		B1		B1	
Sample		MP16-SB01-A02		MP16-SB01-A02DL		M18-SB06-A02		M18-SB06-A02DL		B1-SB01-A01		B1-SB01-A02	
Sample Type													
Batch#		9401G155		9401G155		9501G587		9501G587		9501G527		9501G527	
Prep#		94GP1090		94GP1090		95GP0050		95GP0050		95GP0028		95GP0028	
RFW#		002		002DL		006		006DL		001		002	
Sample Depth (bgs)													
Dilution Factor		1.00		10.0		1.00		10.0		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		12/15/94		12/15/94		1/11/95		1/11/95		1/9/95		1/9/95	
Analysis Date		1/3/95		1/3/95		2/2/95		2/2/95		1/18/95		1/18/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
alpha-BHC		0.0021 U	0.0021	0.021 U	0.021	0.0023 U	0.0023	0.023 U	0.023	0.0019 U	0.0019	0.0021 U	0.0021
beta-BHC		0.0021 U	0.0021	0.021 U	0.021	0.0023 U	0.0023	0.023 U	0.023	0.0019 U	0.0019	0.0021 U	0.0021
delta-BHC		0.0021 U	0.0021	0.021 U	0.021	0.0023 U	0.0023	0.023 U	0.023	0.0019 U	0.0019	0.0021 U	0.0021
gamma-BHC (Lindane)	0.52	0.0021 U	0.0021	0.021 U	0.021	0.0023 U	0.0023	0.023 U	0.023	0.0019 U	0.0019	0.0021 U	0.0021
Heptachlor	0.15	0.0021 U	0.0021	0.021 U	0.021	0.0023 U	0.0023	0.023 U	0.023	0.0019 U	0.0019	0.0021 U	0.0021
Aldrin	0.04	0.0021 U	0.0021	0.021 U	0.021	0.0023 U	0.0023	0.023 U	0.023	0.0019 U	0.0019	0.0021 U	0.0021
Heptachlor epoxide		0.0021 U	0.0021	0.021 U	0.021	0.03 P	0.0023	.038 DP	0.023	0.0019 U	0.0019	0.0021 U	0.0021
Endosulfan I	340	0.0021 U	0.0021	0.021 U	0.021	0.0023 U	0.0023	0.023 U	0.023	0.0019 U	0.0019	0.0021 U	0.0021
Dieldrin	0.042	0.0042 U	0.0042	0.042 U	0.042	0.0046 U	0.0046	0.046 U	0.046	0.0038 U	0.0038	0.0042 U	0.0042
4,4'-DDE	2	0.1	0.0042	.07 D	0.042	0.11	0.0046	.077 D	0.046	0.0038 U	0.0038	0.0042 U	0.0042
Endrin	17	0.0042 U	0.0042	0.042 U	0.042	0.0046 U	0.0046	0.046 U	0.046	0.0038 U	0.0038	0.0042 U	0.0042
Endosulfan II	340	0.0042 U	0.0042	0.042 U	0.042	0.0046 U	0.0046	0.046 U	0.046	0.0038 U	0.0038	0.0042 U	0.0042
4,4'-DDD	3	0.2	0.0042	.16 D	0.042	0.46 UX	0.0046	4.6 UX	0.046	0.0038 U	0.0038	0.0042 U	0.0042
Endosulfan sulfate		0.0042 U	0.0042	0.042 U	0.042	0.0046 U	0.0046	0.046 U	0.046	0.0038 U	0.0038	0.0042 U	0.0042
4,4'-DDT	2	0.072	0.0042	.063 D	0.042	0.032	0.0046	.038 JDP	0.046	0.0038 U	0.0038	0.0042 U	0.0042
Methoxychlor	280	0.021 U	0.021	0.21 U	0.21	0.023 U	0.023	0.23 U	0.23	0.019 U	0.019	0.021 U	0.021
Endrin ketone		0.0042 U	0.0042	0.042 U	0.042	0.0046 U	0.0046	0.046 U	0.046	0.0038 U	0.0038	0.0042 U	0.0042
Endrin aldehyde		0.0042 U	0.0042	0.042 U	0.042	0.0046 U	0.0046	0.046 U	0.046	0.0038 U	0.0038	0.0042 U	0.0042
alpha-Chlordane		0.0096	0.0021	0.021 U	0.021	0.0078	0.0023	0.023 U	0.023	0.0019 U	0.0019	0.0021 U	0.0021
gamma-Chlordane		0.0088 P	0.0021	0.021 U	0.021	0.02 P	0.0023	0.023 U	0.023	0.0019 U	0.0019	0.0021 U	0.0021
Toxaphene	0.1	0.21 U	0.21	2.1 U	2.1	0.23 U	0.23	2.3 U	2.3	0.19 U	0.19	0.21 U	0.21
Aroclor-1016	0.49	0.042 U	0.042	0.42 U	0.42	0.046 U	0.046	0.46 U	0.46	0.038 U	0.038	0.042 U	0.042
Aroclor-1221	0.49	0.083 U	0.083	0.83 U	0.83	0.092 U	0.092	0.92 U	0.92	0.076 U	0.076	0.084 U	0.084
Aroclor-1232	0.49	0.042 U	0.042	0.42 U	0.42	0.046 U	0.046	0.46 U	0.46	0.038 U	0.038	0.042 U	0.042
Aroclor-1242	0.49	0.042 U	0.042	0.42 U	0.42	0.046 U	0.046	0.46 U	0.46	0.038 U	0.038	0.042 U	0.042
Aroclor-1248	0.49	0.042 U	0.042	0.42 U	0.42	0.046 U	0.046	0.46 U	0.46	0.038 U	0.038	0.042 U	0.042
Aroclor-1254	0.49	0.042 U	0.042	0.42 U	0.42	0.046 U	0.046	0.46 U	0.46	0.038 U	0.038	0.042 U	0.042
Aroclor-1260	0.49	0.042 U	0.042	0.42 U	0.42	0.046 U	0.046	0.46 U	0.46	0.038 U	0.038	0.042 U	0.042
Method:TCL Pesticides/PCBs													

MAIN POST
SOIL BORING PESTICIDES/PCBS

Geographical Location		B2		B2		B3		B3		B4		B4	
Sample		B2-SB01-A01		B2-SB01-A02		B3-SB01-A01		B3-SB01-A03		B4-SB01-A01		B4-SB01-A01DL	
Sample Type													
Batch#		9501G500		9501G500		9501G500		9501G500		9501G527		9501G527	
Prep#		95GP0028		95GP0028		95GP0028		95GP0028		95GP0028		95GP0028	
RFW#		001		002		003		004		003		003	
Sample Depth (bgs)													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		10.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		1/6/95		1/6/95		1/6/95		1/6/95		1/9/95		1/9/95	
Analysis Date		1/18/95		1/18/95		1/18/95		1/18/95		1/18/95		1/18/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
alpha-BHC		0.002 U	0.002	0.002 U	0.002	0.0018 U	0.0018	0.0023 U	0.0023	0.0018 U	0.0018	0.018 U	0.018
beta-BHC		0.002 U	0.002	0.002 U	0.002	0.0018 U	0.0018	0.0023 U	0.0023	0.0018 U	0.0018	0.018 U	0.018
delta-BHC		0.002 U	0.002	0.002 U	0.002	0.0018 U	0.0018	0.0023 U	0.0023	0.0018 U	0.0018	0.018 U	0.018
gamma-BHC (Lindane)	0.52	0.002 U	0.002	0.002 U	0.002	0.0018 U	0.0018	0.0023 U	0.0023	0.0018 U	0.0018	0.018 U	0.018
Heptachlor	0.15	0.002 U	0.002	0.002 U	0.002	0.0018 U	0.0018	0.0023 U	0.0023	0.0018 U	0.0018	0.018 U	0.018
Aldrin	0.04	0.002 U	0.002	0.002 U	0.002	0.0018 U	0.0018	0.0023 U	0.0023	0.0018 U	0.0018	0.018 U	0.018
Heptachlor epoxide		0.002 U	0.002	0.002 U	0.002	0.0018 U	0.0018	0.0023 U	0.0023	0.0018 U	0.0018	0.037 U	0.037
Endosulfan I	340	0.002 U	0.002	0.002 U	0.002	0.0018 U	0.0018	0.0023 U	0.0023	0.0018 U	0.0018	0.037 U	0.037
Dieldrin	0.042	0.004 U	0.004	0.0041 U	0.0041	0.0037 U	0.0037	0.0045 U	0.0045	0.0037 U	0.0037	0.037 U	0.037
4,4'-DDE	2	0.004 U	0.004	0.0041 U	0.0041	0.0048 P	0.0037	0.0045 U	0.0045	0.086 P	0.0037	.097 D	0.037
Endrin	17	0.004 U	0.004	0.0041 U	0.0041	0.0037 U	0.0037	0.0045 U	0.0045	0.0037 U	0.0037	0.037 U	0.037
Endosulfan II	340	0.004 U	0.004	0.0041 U	0.0041	0.0037 U	0.0037	0.0045 U	0.0045	0.0037 U	0.0037	0.037 U	0.037
4,4'-DDD	3	0.0028 JP	0.004	0.0041 U	0.0041	0.0037 U	0.0037	0.0045 U	0.0045	0.0096 P	0.0037	0.037 U	0.037
Endosulfan sulfate		0.004 U	0.004	0.0041 U	0.0041	0.0037 U	0.0037	0.0045 U	0.0045	0.0037 U	0.0037	0.037 U	0.037
4,4'-DDT	2	0.0028 JP	0.004	0.0041 U	0.0041	0.0033 JP	0.0037	0.0045 U	0.0045	0.1 P	0.0037	.11 D	0.037
Methoxychlor	280	0.02 U	0.02	0.02 U	0.02	0.018 U	0.018	0.023 U	0.023	0.018 U	0.018	0.18 U	0.18
Endrin ketone		0.004 U	0.004	0.0041 U	0.0041	0.0037 U	0.0037	0.0045 U	0.0045	0.0037 U	0.0037	0.037 U	0.037
Endrin aldehyde		0.004 U	0.004	0.0041 U	0.0041	0.0037 U	0.0037	0.0045 U	0.0045	0.0037 U	0.0037	0.037 U	0.037
alpha-Chlordane		0.002 U	0.002	0.002 U	0.002	0.0018 U	0.0018	0.0023 U	0.0023	0.0018 U	0.0018	0.018 U	0.018
gamma-Chlordane		0.002 U	0.002	0.002 U	0.002	0.0018 U	0.0018	0.0023 U	0.0023	0.0018 U	0.0018	0.018 U	0.018
Toxaphene	0.1	0.2 U	0.2	0.2 U	0.2	0.18 U	0.18	0.23 U	0.23	0.18 U	0.18	1.8 U	1.8
Aroclor-1016	0.49	0.04 U	0.04	0.041 U	0.041	0.04 U	0.037	0.045 U	0.045	0.037 U	0.037	0.37 U	0.37
Aroclor-1221	0.49	0.08 U	0.08	0.082 U	0.082	0.07 U	0.074	0.09 U	0.09	0.074 U	0.074	0.74 U	0.74
Aroclor-1232	0.49	0.04 U	0.04	0.041 U	0.041	0.04 U	0.037	0.045 U	0.045	0.037 U	0.037	0.37 U	0.37
Aroclor-1242	0.49	0.04 U	0.04	0.041 U	0.041	0.04 U	0.037	0.045 U	0.045	0.037 U	0.037	0.37 U	0.37
Aroclor-1248	0.49	0.04 U	0.04	0.041 U	0.041	0.04 U	0.037	0.045 U	0.045	0.037 U	0.037	0.37 U	0.37
Aroclor-1254	0.49	0.04 U	0.04	0.041 U	0.041	0.04 U	0.037	0.045 U	0.045	0.037 U	0.037	0.37 U	0.37
Aroclor-1260	0.49	0.04 U	0.04	0.041 U	0.041	0.04 U	0.037	0.045 U	0.045	0.037 U	0.037	0.37 U	0.37
Method:TCL Pesticides/PCBs													

MAIN POST
SOIL BORING PESTICIDES/PCBS

Geographical Location		B4		B4		B4		B5		B5	
Sample		B4-SB01-A02		B4-SB01-C01		B4-SB01-C01DL		B5-SB01-A01		B5-SB01-A02	
Sample Type				Duplicate		Duplicate					
Batch#		9501G527		9501G527		9501G527		9501G587		9501G587	
Prep#		95GP0028		95GP0028		95GP0028		95GP0050		95GP0050	
RFW#		004		005		005		007		008	
Sample Depth (bgs)											
Dilution Factor		1.00		1.00		5.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		1/9/95		1/9/95		1/9/95		1/11/95		1/11/95	
Analysis Date		1/18/95		1/18/95		1/18/95		2/3/95		2/3/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
alpha-BHC		0.0022 U	0.0022	0.0018 U	0.0018	0.0092 U	0.0092	0.002 U	0.002	0.002 U	0.002
beta-BHC		0.0022 U	0.0022	0.0018 U	0.0018	0.0092 U	0.0092	0.002 U	0.002	0.002 U	0.002
delta-BHC		0.0022 U	0.0022	0.0018 U	0.0018	0.0092 U	0.0092	0.002 U	0.002	0.002 U	0.002
gamma-BHC (Lindane)	0.52	0.0022 U	0.0022	0.0018 U	0.0018	0.0092 U	0.0092	0.002 U	0.002	0.002 U	0.002
Heptachlor	0.15	0.0022 U	0.0022	0.0018 U	0.0018	0.0092 U	0.0092	0.002 U	0.002	0.002 U	0.002
Aldrin	0.04	0.0022 U	0.0022	0.0018 U	0.0018	0.0092 U	0.0092	0.002 U	0.002	0.002 U	0.002
Heptachlor epoxide		0.0022 U	0.0022	0.0018 U	0.0018	0.0092 U	0.0092	0.002 U	0.002	0.002 U	0.002
Endosulfan I	340	0.0022 U	0.0022	0.0018 U	0.0018	0.0092 U	0.0092	0.002 U	0.002	0.002 U	0.002
Dieldrin	0.042	0.0044 U	0.0044	0.0037 U	0.0037	0.018 U	0.018	0.0039 U	0.0039	0.004 U	0.004
4,4'-DDE	2	0.0044 U	0.0044	0.072 P	0.0037	.085 D	0.018	0.028	0.0039	0.004 U	0.004
Endrin	17	0.0044 U	0.0044	0.0037 U	0.0037	0.018 U	0.018	0.0039 U	0.0039	0.004 U	0.004
Endosulfan II	340	0.0044 U	0.0044	0.0037 U	0.0037	0.018 U	0.018	0.0039 U	0.0039	0.004 U	0.004
4,4'-DDD	3	0.0044 U	0.0044	0.0037 U	0.0037	0.018 U	0.018	0.0039 U	0.0039	0.004 U	0.004
Endosulfan sulfate		0.0044 U	0.0044	0.0037 U	0.0037	0.018 U	0.018	0.0039 U	0.0039	0.004 U	0.004
4,4'-DDT	2	0.0044 U	0.0044	0.078 P	0.0037	.092 DP	0.018	0.043	0.0039	0.004 U	0.004
Methoxychlor	280	0.022 U	0.022	0.018 U	0.018	0.092 U	0.092	0.02 U	0.02	0.02 U	0.02
Endrin ketone		0.0044 U	0.0044	0.0037 U	0.0037	0.018 U	0.018	0.0039 U	0.0039	0.004 U	0.004
Endrin aldehyde		0.0044 U	0.0044	0.0037 U	0.0037	0.018 U	0.018	0.0039 U	0.0039	0.004 U	0.004
alpha-Chlordane		0.0022 U	0.0022	0.0018 U	0.0018	0.0092 U	0.0092	0.002 U	0.002	0.002 U	0.002
gamma-Chlordane		0.0022 U	0.0022	0.0018 U	0.0018	0.0092 U	0.0092	0.002 U	0.002	0.002 U	0.002
Toxaphene	0.1	0.22 U	0.22	0.18 U	0.18	0.92 U	0.92	0.2 U	0.2	0.2 U	0.2
Aroclor-1016	0.49	0.044 U	0.044	0.037 U	0.037	0.18 U	0.18	0.039 U	0.039	0.04 U	0.04
Aroclor-1221	0.49	0.087 U	0.087	0.074 U	0.074	0.37 U	0.37	0.078 U	0.078	0.079 U	0.079
Aroclor-1232	0.49	0.044 U	0.044	0.037 U	0.037	0.18 U	0.18	0.039 U	0.039	0.04 U	0.04
Aroclor-1242	0.49	0.044 U	0.044	0.037 U	0.037	0.18 U	0.18	0.039 U	0.039	0.04 U	0.04
Aroclor-1248	0.49	0.044 U	0.044	0.037 U	0.037	0.18 U	0.18	0.039 U	0.039	0.04 U	0.04
Aroclor-1254	0.49	0.044 U	0.044	0.037 U	0.037	0.18 U	0.18	0.039 U	0.039	0.04 U	0.04
Aroclor-1260	0.49	0.044 U	0.044	0.037 U	0.037	0.18 U	0.18	0.039 U	0.039	0.04 U	0.04
Method:TCL Pesticides/PCBs											

MAIN POST
GROUNDWATER VOLATILES

Geographical Location			M2		M2		M2		M2		M2		M2		M3	
Sample			MP02-MW01-A01		MP02-MW01-A02		MP02-MW02-A01		MP02-MW02-A02		MP02-MW03-A01		MP02-MW03-A02		MP03-MW04-A01	
Sample Type																
Batch#			9502G197		9503G642		9502G197		9503G642		9502G197		9503G642		9502G219	
Prep#			95GVC034		95GVC054		95GVF029		95GVC054		95GVF029		95GVC054		95GVC030	
RFW#			001		001		003		003		005		005		001	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/15/95		3/8/95		2/15/95		3/8/95		2/15/95		3/8/95		2/16/95	
Analysis Date			2/22/95		3/10/95		2/20/95		3/10/95		2/21/95		3/10/95		2/21/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	25	10	33	10	25	10	10	10	10	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Total Est. Conc. of TIC.					20 J		10 J		20 J							
Method:TCL Volatiles																

MAIN POST
GROUNDWATER VOLATILES

Geographical Location			M3		M3		M3		M3		M3		M4		M4	
Sample			MP03-MW04-A02		MP03-MW05-A01		MP03-MW05-A02		MP03-MW06-A01		MP03-MW06-A02		MP04-MW07-A01		MP04-MW07-A02	
Sample Type																
Batch#			9503G642		9502G219		9503G660		9502G219		9503G660		9502G219		9503G660	
Prep#			95GVC054		95GVC030		95GVC055		95GVC030		95GVC055		95GVC030		95GVC055	
RFW#			009		003		003		005		001		007		005	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/8/95		2/16/95		3/9/95		2/16/95		3/9/95		2/16/95		3/9/95	
Analysis Date			3/10/95		2/21/95		3/10/95		2/21/95		3/10/95		2/21/95		3/10/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	4 J	10	10 U	10	3 J	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	5 J	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Total Est. Conc. of TIC.					30 J		30 J		30 J		30 J					
Method:TCL Volatiles																

MAIN POST
GROUNDWATER VOLATILES

Geographical Location			M4		M4		M4		M4		M4		M4		M4	
Sample			MP04-MW07-C01		MP04-MW07-C02		MP04-MW07-D01		MP04-MW07-E01		MP04-MW08-A01		MP04-MW08-A02		MP04-MW09-A01	
Sample Type			Duplicate		Duplicate		Trip Blank		Field Rinsate Blank							
Batch#			9502G219		9503G660		9502G219		9502G219		9502G219		9503G642		9502G219	
Prep#			95GVC030		95GVC055		95GVC030		95GVC031		95GVC031		95GVC054		95GVC031	
RFW#			009		007		011		012		014		007		016	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/16/95		3/9/95		2/16/95		2/16/95		2/16/95		3/8/95		2/16/95	
Analysis Date			2/21/95		3/10/95		2/21/95		2/21/95		2/21/95		3/10/95		2/21/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	13	10	10	10	10 U	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	10 U	10	10 U	10	27	10	27	10	10 U	10	10 U	10	10 U	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Total Est. Conc. of TIC.																
Method:TCL Volatiles																

MAIN POST
GROUNDWATER VOLATILES

Geographical Location			M4		M5		M5		M5		M5		M5		M5	
Sample			MP04-MW09-A02		MP05-MW10-A01		MP05-MW10-A02		MP05-MW11-A01		MP05-MW11-A02		MP05-MW11-D02		MP05-MW11-E02	
Sample Type													Trip Blank		Field Rinsate Blank	
Batch#			9503G660		9502G238		9503G660		9502G238		9503G660		9503G660		9503G660	
Prep#			95GVC055		95GVC032		95GVC055		95GVC032		95GVC055		95GVC055		95GVC055	
RFW#			009		010		011		012		013		015		016	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/9/95		2/17/95		3/9/95		2/17/95		3/9/95		3/9/95		3/9/95	
Analysis Date			3/11/95		2/22/95		3/11/95		2/22/95		3/11/95		3/11/95		3/11/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	33	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	10 U	10	10 U	10	130	10	88	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Total Est. Conc. of TIC.																
Method:TCL Volatiles																

MAIN POST
GROUNDWATER VOLATILES

Geographical Location			M8		M8		M8		M8		M8		M8	
Sample			MP08-MW12-A01		MP08-MW12-A02		MP08-MW12-C02		MP08-MW12-D02		MP08-MW12-E02		MP08-MW13-A01	
Sample Type							Duplicate		Trip Blank		Field Rinsate Blank			
Batch#			9502G238		9503G767		9503G767		9503G767		9503G767		9502G403	
Prep#			95GVC033		95GVE072		95GVE072		95GVE072		95GVE072		95GVC041	
RFW#			014		001		003		005		006		001	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/17/95		3/15/95		3/15/95		3/15/95		3/15/95		2/22/95	
Analysis Date			2/22/95		3/20/95		3/20/95		3/20/95		3/20/95		3/1/95	
Analysis	Standard	MDL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL
			Result		Result		Result		Result		Result		Result	
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	40	10	52	10	54	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Total Est. Conc. of TIC.														
Method:TCL Volatiles														

MAIN POST
GROUNDWATER VOLATILES

Geographical Location			M8		M8		M8		M8		M8		M8		M8	
Sample			MP08-MW13-A02		MP08-MW14-A01		MP08-MW14-A02		MP08-MW15-A01		MP08-MW15-A02		MP08-MW15-C01		MP08-MW15-D01	
Sample Type													Duplicate		Trip Blank	
Batch#			9503G767		9502G219		9503G767		9502G403		9503G767		9502G403		9502G403	
Prep#			95GVE072		95GVC031		95GVE072		95GVC041		95GVE072		95GVC042		95GVC042	
RFW#			008		018		010		003		012		005		007	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/15/95		2/16/95		3/15/95		2/22/95		3/15/95		2/22/95		2/22/95	
Analysis Date			3/21/95		2/21/95		3/20/95		3/1/95		3/20/95		3/1/95		3/1/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	20	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	37	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	3 J	10	5 J	10	4 J	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	4 J	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	8 J	10	33	10	39	10	36	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Total Est. Conc. of TIC.							5 J		10 J		15 J		10 J			
Method:TCL Volatiles																

MAIN POST
GROUNDWATER VOLATILES

Geographical Location			M8		M12		M12		M12		M12		M12		M12	
Sample			MP08-MW15-E01		MP12-MW16-A01		MP12-MW16-A02		MP12-MW17-A01		MP12-MW17-A02		MP12-MW18-A01		MP12-MW18-A02	
Sample Type			Field Rinsate Blank													
Batch#			9502G403		9502G299		9503G681		9502G299		9503G681		9502G299		9503G681	
Prep#			95GVC042		95GVC034		95GVE063		95GVC034		95GVE063		95GVC034		95GVE063	
RFW#			008		001		001		003		003		005		005	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/22/95		2/20/95		3/10/95		2/20/95		3/10/95		2/20/95		3/10/95	
Analysis Date			3/1/95		2/23/95		3/14/95		2/23/95		3/14/95		2/23/95		3/14/95	
Analysis	Standard	MDL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL
			Result		Result		Result		Result		Result		Result		Result	
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	38	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Total Est. Conc. of TIC.																
Method:TCL Volatiles																

MAIN POST
GROUNDWATER VOLATILES

Geographical Location			M14		M14		M14		M14		M14		M14	
Sample			MP14-MW19-A01		MP14-MW19-A02		MP14-MW20-A01		MP14-MW20-A02		MP14-MW20-D02		MP14-MW20-E02	
Sample Type											Trip Blank		Field Rinsate Blank	
Batch#			9502G299		9503G681		9502G403		9503G722		9503G767		9503G722	
Prep#			95GVC034		95GVE063		95GVC042		95GVE071		95GVE072		95GVE071	
RFW#			007		007		010		1		014		3	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/20/95		3/10/95		2/22/95		3/13/95		3/15/95		3/13/95	
Analysis Date			2/23/95		3/14/95		3/1/95		3/19/95		3/21/95		3/19/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Total Est. Conc. of TIC.														
Method:TCL Volatiles														

MAIN POST
GROUNDWATER VOLATILES

Geographical Location			M14		M14		M16		M16		M18		M18		M18	
Sample			MP14-MW21-A01		MP14-MW21-A02		MP16-MW22-A01		MP16-MW22-A02		MP18-MW03-A01		MP18-MW03-A02		MP18-MW03-D01	
Sample Type															Trip Blank	
Batch#			9502G403		9503G660		9502G238		9503G660		9505G825		9505G139		9505G825	
Prep#			95GVC042		95GVC055		95GVC033		95GVC055		95GVC137		95GVB148		95GVC137	
RFW#			012		019		016		018		001		001		003	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/22/95		3/9/95		2/17/95		3/9/95		5/10/95		5/27/95		5/10/95	
Analysis Date			3/1/95		3/11/95		2/22/95		3/11/95		5/20/95		6/1/95		5/20/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Total Est. Conc. of TIC.																
Method:TCL Volatiles																

MAIN POST
GROUNDWATER VOLATILES

Geographical Location			M18		M18		M18		M18		M18		M18	
Sample			MP18-MW03-E01		MP18-MW24-A01		MP18-MW24-A02		MP18-MW24-C02		MP18-MW24-D01		MP18-MW24-D02	
Sample Type			Field Rinsate Blank						Duplicate		Trip Blank		Trip Blank	
Batch#			9505G825		9502G238		9503G681		9503G681		9502G238		9503G681	
Prep#			95GVC137		95GVC032		95GVE063		95GVE063		95GVC031		95GVE063	
RFW#			004		001		009		011		003		013	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			5/10/95		2/17/95		3/10/95		3/10/95		2/17/95		3/10/95	
Analysis Date			5/20/95		2/21/95		3/14/95		3/14/95		2/21/95		3/14/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	12	10	7 J	10	8 J	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	10 U	10	10 U	10	10 U	10	10 U	10	23	10	10 U	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Total Est. Conc. of TIC.														
Method:TCL Volatiles														

MAIN POST
GROUNDWATER VOLATILES

Geographical Location			M18		M18		M18		M18		M18		B1	
Sample			MP18-MW24-E01		MP18-MW24-E02		MP18-MW25-A01		MP18-MW25-A02		MP18-MW25-C01		B1-MW01B-A01	
Sample Type			Field Rinsate Blank		Field Rinsate Blank						Duplicate			
Batch#			9502G238		9503G681		9502G238		9503G681		9502G238		9502G169	
Prep#			95GVC031		95GVE063		95GVC031		95GVE063		95GVC032		95GVC028	
RFW#			004		014		006		016		008		001	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/17/95		3/10/95		2/17/95		3/10/95		2/17/95		2/14/95	
Analysis Date			2/21/95		3/14/95		2/21/95		3/14/95		2/22/95		2/19/95	
Analysis	Standard	MDL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL
			Result		Result		Result		Result		Result		Result	
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	10	10	15	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	21	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Total Est. Conc. of TIC.														
Method:TCL Volatiles														

MAIN POST
GROUNDWATER VOLATILES

Geographical Location			B1		B2		B2		B3		B3		B3		B3	
Sample			B1-MW01B-A02		B2-MW02B-A01		B2-MW02B-A02		B3-MW03B-A01		B3-MW03B-A02		B3-MW03B-D01		B3-MW03B-D02	
Sample Type													Trip Blank		Trip Blank	
Batch#			9503G616		9502G169		9503G616		9502G169		9503G740		9502G169		9503G616	
Prep#			95GVC053		95GVC028		95GVC053		95GVC028		95GVE072		95GVC028		95GVC053	
RFW#			008		003		010		005		001		007		005	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/7/95		2/14/95		3/7/95		2/14/95		3/14/95		2/13/95		3/7/95	
Analysis Date			3/10/95		2/19/95		3/10/95		2/19/95		3/20/95		2/19/95		3/9/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	15	10	10 U	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Total Est. Conc. of TIC.																
Method:TCL Volatiles																

MAIN POST
GROUNDWATER VOLATILES

Geographical Location			B3		B3		B4		B4		B5		B5	
Sample			B3-MW03B-E01		B3-MW03B-E02		B4-MW04B-A01		B4-MW04B-A02		B5-MW05B-A01		B5-MW05B-A02	
Sample Type			Field Rinsate Blank		Field Rinsate Blank									
Batch#			9502G169		9503G616		9502G169		9503G616		9502G169		9503G616	
Prep#			95GVC028		95GVC053		95GVC028		95GVC053		95GVC028		95GVC053	
RFW#			008		006		010		012		012		001	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/13/95		3/7/95		2/13/95		3/7/95		2/13/95		3/7/95	
Analysis Date			2/19/95		3/9/95		2/19/95		3/10/95		2/19/95		3/9/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	17	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,1-Trichloroethane	30	1.7	10 U	10	8 J	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Total Est. Conc. of TIC.														
Method:TCL Volatiles														

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M2		M2		M2		M2		M2	
Sample			MP02-MW01-A01		MP02-MW01-A02		MP02-MW02-A01		MP02-MW02-A02		MP02-MW03-A01	
Sample Type												
Batch#			9502G197		9503G642		9502G197		9503G642		9502G197	
Prep#			95GB0108		95GB0172		95GB0108		95GB0172		95GB0108	
RFW#			001		001		003		003		005	
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/15/95		3/8/95		2/15/95		3/8/95		2/15/95	
Analysis Date			3/4/95		3/24/95		3/4/95		3/24/95		3/10/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
bis(2-Chloroethyl) ether	10	9.7	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
2-Chlorophenol	40	7.3	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
1,3-Dichlorobenzene	600	5.3	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
1,4-Dichlorobenzene	75	4.8	10 U	10	10 U	10	4 J	10	2 J	10	12 U	12
1,2-Dichlorobenzene	600	5.7	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
2-Methylphenol		6.7	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
2,2'-oxybis(1-Chloropropane)		7.0	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
4-Methylphenol		12.9	10 U	10	10 U	10	3 J	10	10 U	10	12 U	12
N-Nitroso-di-n-propylamine	20	8.0	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Hexachloroethane	10	5.3	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Nitrobenzene	10	7.4	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Isophorone	100	3.9	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
2-Nitrophenol		7.0	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
2,4-Dimethylphenol	100	4.8	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
bis(2-Chloroethoxy) methane		6.1	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
2,4-Dichlorophenol	20	4.4	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
1,2,4-Trichlorobenzene	9	9.6	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Naphthalene		8.4	10 U	10	10 U	10	1 J	10	10 U	10	12 U	12
4-Chloroaniline		2.9	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Hexachlorobutadiene	1	4.6	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
4-Chloro-3-methylphenol	20	3.1	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
2-Methylnaphthalene		8.7	10 U	10	10 U	10	2 J	10	2 J	10	12 U	12
Hexachlorocyclopentadiene	50	3.6	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
2,4,6-Trichlorophenol		5.6	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
2,4,5-Trichlorophenol	700	4.7	25 U	25	25 U	25	24 U	24	24 U	24	30 U	30
2-Chloronaphthalene		8.2	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
2-Nitroaniline		6.1	25 U	25	25 U	25	24 U	24	24 U	24	30 U	30
Dimethylphthalate	7000	4.4	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Acenaphthylene	10	6.0	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
2,6-Dinitrotoluene	10	5.2	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
3-Nitroaniline		5.2	25 U	25	25 U	25	24 U	24	24 U	24	30 U	30
Acenaphthene	400	6.7	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
2,4-Dinitrophenol	40	4.6	25 U	25	25 U	25	24 U	24	24 U	24	30 U	30

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M2		M2		M2		M2		M2	
Sample			MP02-MW01-A01		MP02-MW01-A02		MP02-MW02-A01		MP02-MW02-A02		MP02-MW03-A01	
Sample Type												
Batch#			9502G197		9503G642		9502G197		9503G642		9502G197	
Prep#			95GB0108		95GB0172		95GB0108		95GB0172		95GB0108	
RFW#			001		001		003		003		005	
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/15/95		3/8/95		2/15/95		3/8/95		2/15/95	
Analysis Date			3/4/95		3/24/95		3/4/95		3/24/95		3/10/95	
Analysis	Standard	MDL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL
			Result		Result		Result		Result		Result	
4-Nitrophenol		7.5	25 U	25	25 U	25	24 U	24	24 U	24	30 U	30
Dibenzofuran		6.5	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
2,4-Dinitrotoluene	10	5.8	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Diethylphthalate	5000	5.4	1 J	10	1 JB	10	1 J	10	1 JB	10	12 U	12
4-Chlorophenyl-phenylether		7.0	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Fluorene	300	6.3	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
4-Nitroaniline		6.4	25 U	25	25 U	25	24 U	24	24 U	24	30 U	30
4,6-Dinitro-2-methylphenol		5.3	25 U	25	25 U	25	24 U	24	24 U	24	30 U	30
N-Nitrosodiphenylamine (1)	20	4.2	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
4-Bromophenyl-phenylether		5.3	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Hexachlorobenzene	10	5.5	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Pentachlorophenol	1	4.0	25 U	25	25 U	25	24 U	24	24 U	24	30 U	30
Phenanthrene	10	5.0	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Anthracene	2000	4.6	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Carbazole		4.4	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Di-n-butylphthalate	900	6.5	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Fluoranthene	300	6.0	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Pyrene	200	5.4	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Butylbenzylphthalate	100	5.3	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
3,3'-Dichlorobenzidine	60	2.8	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Benzo(a)anthracene	10	4.9	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Chrysene	20	4.4	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
bis(2-Ethylhexy)phthalate	30	9.7	2 J	10	1 J	10	10 U	10	10 U	10	12 U	12
Di-n-octyl phthalate	100	5.6	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Benzo(b)fluoranthene	2	5.7	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Benzo(k)fluoranthene	2	6.2	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Benzo(a)pyrene	20	4.9	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Indeno(1,2,3-cd)pyrene	20	7.1	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Dibenzo(a,h)anthracene	20	6.0	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Benzo(g,h,i)perylene	20	6.8	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12
Petroleum hydrocarbons												
Total Est. Conc. of TIC			47				63				9	
Dilution Factor												
Method:TCL Semivolatiles												

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M2		M3		M3		M3		M3		M3	
Sample			MP02-MW03-A02		MP03-MW04-A01		MP03-MW04-A02		MP03-MW05-A01		MP03-MW05-A02		MP03-MW06-A01	
Sample Type														
Batch#			9503G642		9502G219		9503G642		9502G219		9503G660		9502G219	
Prep#			95GB0172		95GB0111		95GB0172		95GB0111		95GB0174		95GB0111	
RFW#			005		001		009		003		003		005	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/8/95		2/16/95		3/8/95		2/16/95		3/9/95		2/16/95	
Analysis Date			3/24/95		3/7/95		3/24/95		3/8/95		3/25/95		3/8/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
bis(2-Chloroethyl) ether	10	9.7	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
2-Chlorophenol	40	7.3	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
1,3-Dichlorobenzene	600	5.3	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
1,4-Dichlorobenzene	75	4.8	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
1,2-Dichlorobenzene	600	5.7	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
2-Methylphenol		6.7	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
2,2'-oxybis(1-Chloropropane)		7.0	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
4-Methylphenol		12.9	10 U	10	11 U	11	11 U	11	3 J	10	10 U	10	10 U	10
N-Nitroso-di-n-propylamine	20	8.0	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Hexachloroethane	10	5.3	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Nitrobenzene	10	7.4	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Isophorone	100	3.9	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
2-Nitrophenol		7.0	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
2,4-Dimethylphenol	100	4.8	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
bis(2-Chloroethoxy) methane		6.1	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
2,4-Dichlorophenol	20	4.4	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
1,2,4-Trichlorobenzene	9	9.6	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Naphthalene		8.4	10 U	10	11 U	11	11 U	11	1 J	10	10 U	10	10 U	10
4-Chloroaniline		2.9	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Hexachlorobutadiene	1	4.6	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
4-Chloro-3-methylphenol	20	3.1	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
2-Methylnaphthalene		8.7	10 U	10	11 U	11	11 U	11	2 J	10	1 J	10	10 U	10
Hexachlorocyclopentadiene	50	3.6	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
2,4,6-Trichlorophenol		5.6	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
2,4,5-Trichlorophenol	700	4.7	24 U	24	28 U	28	26 U	26	24 U	24	25 U	25	24 U	24
2-Chloronaphthalene		8.2	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
2-Nitroaniline		6.1	24 U	24	28 U	28	26 U	26	24 U	24	25 U	25	24 U	24
Dimethylphthalate	7000	4.4	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Acenaphthylene	10	6.0	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
2,6-Dinitrotoluene	10	5.2	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
3-Nitroaniline		5.2	24 U	24	28 U	28	26 U	26	24 U	24	25 U	25	24 U	24
Acenaphthene	400	6.7	10 U	10	11 U	11	11 U	11	2 J	10	2 J	10	10 U	10
2,4-Dinitrophenol	40	4.6	24 U	24	28 U	28	26 U	26	24 U	24	25 U	25	24 U	24

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M2		M3		M3		M3		M3		M3	
Sample			MP02-MW03-A02		MP03-MW04-A01		MP03-MW04-A02		MP03-MW05-A01		MP03-MW05-A02		MP03-MW06-A01	
Sample Type														
Batch#			9503G642		9502G219		9503G642		9502G219		9503G660		9502G219	
Prep#			95GB0172		95GB0111		95GB0172		95GB0111		95GB0174		95GB0111	
RFW#			005		001		009		003		003		005	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/8/95		2/16/95		3/8/95		2/16/95		3/9/95		2/16/95	
Analysis Date			3/24/95		3/7/95		3/24/95		3/8/95		3/25/95		3/8/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	24 U	24	28 U	28	26 U	26	24 U	24	25 U	25	24 U	24
Dibenzofuran		6.5	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
2,4-Dinitrotoluene	10	5.8	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Diethylphthalate	5000	5.4	10 U	10	11 U	11	1 JB	11	10 U	10	10 U	10	10 U	10
4-Chlorophenyl-phenylether		7.0	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Fluorene	300	6.3	10 U	10	11 U	11	11 U	11	2 J	10	1 J	10	10 U	10
4-Nitroaniline		6.4	24 U	24	28 U	28	26 U	26	24 U	24	25 U	25	24 U	24
4,6-Dinitro-2-methylphenol		5.3	24 U	24	28 U	28	26 U	26	24 U	24	25 U	25	24 U	24
N-Nitrosodiphenylamine (1)	20	4.2	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
4-Bromophenyl-phenylether		5.3	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Hexachlorobenzene	10	5.5	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Pentachlorophenol	1	4.0	24 U	24	28 U	28	26 U	26	24 U	24	25 U	25	24 U	24
Phenanthrene	10	5.0	10 U	10	11 U	11	11 U	11	3 J	10	3 J	10	10 U	10
Anthracene	2000	4.6	10 U	10	11 U	11	11 U	11	10 U	10	1 J	10	10 U	10
Carbazole		4.4	10 U	10	11 U	11	11 U	11	1 J	10	10 U	10	10 U	10
Di-n-butylphthalate	900	6.5	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Fluoranthene	300	6.0	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Pyrene	200	5.4	10 U	10	11 U	11	11 U	11	10 U	10	1 J	10	10 U	10
Butylbenzylphthalate	100	5.3	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
3,3'-Dichlorobenzidine	60	2.8	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Benzo(a)anthracene	10	4.9	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Chrysene	20	4.4	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
bis(2-Ethylhexy)phthalate	30	9.7	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	3 J	10
Di-n-octyl phthalate	100	5.6	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Benzo(b)fluoranthene	2	5.7	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Benzo(k)fluoranthene	2	6.2	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Benzo(a)pyrene	20	4.9	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Indeno(1,2,3-cd)pyrene	20	7.1	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Dibenzo(a,h)anthracene	20	6.0	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Benzo(g,h,i)perylene	20	6.8	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	10 U	10
Petroleum hydrocarbons														
Total Est. Conc. of TIC					4 J				38 J		43 J		18 J	
Dilution Factor														
Method:TCL Semivolatiles														

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M3		M4		M4		M4		M4		M4	
Sample			MP03-MW06-A02		MP04-MW07-A01		MP04-MW07-A02		MP04-MW07-C01		MP04-MW07-C02		MP04-MW07-E01	
Sample Type									Duplicate		Duplicate		Field Rinsate Blank	
Batch#			9503G660		9502G219		9503G660		9502G219		9503G660		9502G219	
Prep#			95GB0174		95GB0111		95GB0174		95GB0111		95GB0174		95GB0111	
RFW#			001		007		005		009		007		012	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/9/95		2/16/95		3/9/95		2/16/95		3/9/95		2/16/95	
Analysis Date			3/25/95		3/9/95		3/25/95		3/8/95		3/26/95		3/8/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
bis(2-Chloroethyl) ether	10	9.7	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
2-Chlorophenol	40	7.3	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
1,3-Dichlorobenzene	600	5.3	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
1,4-Dichlorobenzene	75	4.8	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
1,2-Dichlorobenzene	600	5.7	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
2-Methylphenol		6.7	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
2,2'-oxybis(1-Chloropropane)		7.0	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
4-Methylphenol		12.9	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
N-Nitroso-di-n-propylamine	20	8.0	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Hexachloroethane	10	5.3	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Nitrobenzene	10	7.4	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Isophorone	100	3.9	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
2-Nitrophenol		7.0	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
2,4-Dimethylphenol	100	4.8	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
bis(2-Chloroethoxy) methane		6.1	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
2,4-Dichlorophenol	20	4.4	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
1,2,4-Trichlorobenzene	9	9.6	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Naphthalene		8.4	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
4-Chloroaniline		2.9	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Hexachlorobutadiene	1	4.6	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
4-Chloro-3-methylphenol	20	3.1	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
2-Methylnaphthalene		8.7	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Hexachlorocyclopentadiene	50	3.6	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
2,4,6-Trichlorophenol		5.6	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
2,4,5-Trichlorophenol	700	4.7	24 U	24	26 U	26	26 U	26	26 U	26	26 U	26	30 U	30
2-Chloronaphthalene		8.2	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
2-Nitroaniline		6.1	24 U	24	26 U	26	26 U	26	26 U	26	26 U	26	30 U	30
Dimethylphthalate	7000	4.4	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Acenaphthylene	10	6.0	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
2,6-Dinitrotoluene	10	5.2	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
3-Nitroaniline		5.2	24 U	24	26 U	26	26 U	26	26 U	26	26 U	26	30 U	30
Acenaphthene	400	6.7	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
2,4-Dinitrophenol	40	4.6	24 U	24	26 U	26	26 U	26	26 U	26	26 U	26	30 U	30

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M3		M4		M4		M4		M4		M4	
Sample			MP03-MW06-A02		MP04-MW07-A01		MP04-MW07-A02		MP04-MW07-C01		MP04-MW07-C02		MP04-MW07-E01	
Sample Type									Duplicate		Duplicate		Field Rinsate Blank	
Batch#			9503G660		9502G219		9503G660		9502G219		9503G660		9502G219	
Prep#			95GB0174		95GB0111		95GB0174		95GB0111		95GB0174		95GB0111	
RFW#			001		007		005		009		007		012	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/9/95		2/16/95		3/9/95		2/16/95		3/9/95		2/16/95	
Analysis Date			3/25/95		3/9/95		3/25/95		3/8/95		3/26/95		3/8/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	24 U	24	26 U	26	26 U	26	26 U	26	26 U	26	30 U	30
Dibenzofuran		6.5	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
2,4-Dinitrotoluene	10	5.8	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Diethylphthalate	5000	5.4	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
4-Chlorophenyl-phenylether		7.0	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Fluorene	300	6.3	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
4-Nitroaniline		6.4	24 U	24	26 U	26	26 U	26	26 U	26	26 U	26	30 U	30
4,6-Dinitro-2-methylphenol		5.3	24 U	24	26 U	26	26 U	26	26 U	26	26 U	26	30 U	30
N-Nitrosodiphenylamine (1)	20	4.2	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
4-Bromophenyl-phenylether		5.3	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Hexachlorobenzene	10	5.5	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Pentachlorophenol	1	4.0	24 U	24	26 U	26	26 U	26	26 U	26	26 U	26	30 U	30
Phenanthrene	10	5.0	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Anthracene	2000	4.6	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Carbazole		4.4	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Di-n-butylphthalate	900	6.5	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Fluoranthene	300	6.0	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Pyrene	200	5.4	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Butylbenzylphthalate	100	5.3	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
3,3'-Dichlorobenzidine	60	2.8	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Benzo(a)anthracene	10	4.9	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Chrysene	20	4.4	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
bis(2-Ethylhexy)phthalate	30	9.7	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Di-n-octyl phthalate	100	5.6	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Benzo(b)fluoranthene	2	5.7	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Benzo(k)fluoranthene	2	6.2	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Benzo(a)pyrene	20	4.9	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Indeno(1,2,3-cd)pyrene	20	7.1	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Dibenzo(a,h)anthracene	20	6.0	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Benzo(g,h,i)perylene	20	6.8	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11	12 U	12
Petroleum hydrocarbons														
Total Est. Conc. of TIC			17 J						2 JA				11 JA	
Dilution Factor														
Method:TCL Semivolatiles														

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M4		M4		M4		M4		M5		M5	
Sample			MP04-MW08-A01		MP04-MW08-A02		MP04-MW09-A01		MP04-MW09-A02		MP05-MW10-A01		MP05-MW10-A02	
Sample Type														
Batch#			9502G219		9503G642		9502G219		9503G660		9502G238		9503G660	
Prep#			95GB0111		95GB0172		95GB0111		95GB0174		95GB0112		95GB0174	
RFW#			014		007		016		009		010		011	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/16/95		3/8/95		2/16/95		3/9/95		2/17/95		3/9/95	
Analysis Date			3/9/95		3/24/95		3/9/95		3/26/95		2/27/95		3/26/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
bis(2-Chloroethyl) ether	10	9.7	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
2-Chlorophenol	40	7.3	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
1,3-Dichlorobenzene	600	5.3	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
1,4-Dichlorobenzene	75	4.8	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
1,2-Dichlorobenzene	600	5.7	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
2-Methylphenol		6.7	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
2,2'-oxybis(1-Chloropropane)		7.0	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
4-Methylphenol		12.9	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
N-Nitroso-di-n-propylamine	20	8.0	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Hexachloroethane	10	5.3	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Nitrobenzene	10	7.4	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Isophorone	100	3.9	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
2-Nitrophenol		7.0	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
2,4-Dimethylphenol	100	4.8	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
bis(2-Chloroethoxy) methane		6.1	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
2,4-Dichlorophenol	20	4.4	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
1,2,4-Trichlorobenzene	9	9.6	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Naphthalene		8.4	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
4-Chloroaniline		2.9	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Hexachlorobutadiene	1	4.6	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
4-Chloro-3-methylphenol	20	3.1	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
2-Methylnaphthalene		8.7	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Hexachlorocyclopentadiene	50	3.6	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
2,4,6-Trichlorophenol		5.6	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
2,4,5-Trichlorophenol	700	4.7	26 U	26	26 U	26	28 U	28	26 U	26	27 U	27	27 U	27
2-Chloronaphthalene		8.2	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
2-Nitroaniline		6.1	26 U	26	26 U	26	28 U	28	26 U	26	27 U	27	27 U	27
Dimethylphthalate	7000	4.4	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Acenaphthylene	10	6.0	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
2,6-Dinitrotoluene	10	5.2	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
3-Nitroaniline		5.2	26 U	26	26 U	26	28 U	28	26 U	26	27 U	27	27 U	27
Acenaphthene	400	6.7	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
2,4-Dinitrophenol	40	4.6	26 U	26	26 U	26	28 U	28	26 U	26	27 U	27	27 U	27

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M4		M4		M4		M4		M5		M5	
Sample			MP04-MW08-A01		MP04-MW08-A02		MP04-MW09-A01		MP04-MW09-A02		MP05-MW10-A01		MP05-MW10-A02	
Sample Type														
Batch#			9502G219		9503G642		9502G219		9503G660		9502G238		9503G660	
Prep#			95GB0111		95GB0172		95GB0111		95GB0174		95GB0112		95GB0174	
RFW#			014		007		016		009		010		011	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/16/95		3/8/95		2/16/95		3/9/95		2/17/95		3/9/95	
Analysis Date			3/9/95		3/24/95		3/9/95		3/26/95		2/27/95		3/26/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	26 U	26	26 U	26	28 U	28	26 U	26	27 U	27	27 U	27
Dibenzofuran		6.5	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
2,4-Dinitrotoluene	10	5.8	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Diethylphthalate	5000	5.4	10 U	10	2 JB	11	11 U	11	11 U	11	11 U	11	11 U	11
4-Chlorophenyl-phenylether		7.0	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Fluorene	300	6.3	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
4-Nitroaniline		6.4	26 U	26	26 U	26	28 U	28	26 U	26	27 U	27	27 U	27
4,6-Dinitro-2-methylphenol		5.3	26 U	26	26 U	26	28 U	28	26 U	26	27 U	27	27 U	27
N-Nitrosodiphenylamine (1)	20	4.2	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
4-Bromophenyl-phenylether		5.3	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Hexachlorobenzene	10	5.5	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Pentachlorophenol	1	4.0	26 U	26	26 U	26	28 U	28	26 U	26	27 U	27	27 U	27
Phenanthrene	10	5.0	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Anthracene	2000	4.6	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Carbazole		4.4	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Di-n-butylphthalate	900	6.5	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Fluoranthene	300	6.0	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Pyrene	200	5.4	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Butylbenzylphthalate	100	5.3	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
3,3'-Dichlorobenzidine	60	2.8	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Benzo(a)anthracene	10	4.9	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Chrysene	20	4.4	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
bis(2-Ethylhexy)phthalate	30	9.7	10 U	10	3 J	11	11 U	11	11 U	11	11 U	11	11 U	11
Di-n-octyl phthalate	100	5.6	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Benzo(b)fluoranthene	2	5.7	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Benzo(k)fluoranthene	2	6.2	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Benzo(a)pyrene	20	4.9	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Indeno(1,2,3-cd)pyrene	20	7.1	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Dibenzo(a,h)anthracene	20	6.0	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Benzo(g,h,i)perylene	20	6.8	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11	11 U	11
Petroleum hydrocarbons														
Total Est. Conc. of TIC			5 J				4 J				4 J		8 J	
Dilution Factor														
Method:TCL Semivolatiles														

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M5		M5		M5		M8		M8	
Sample			MP05-MW11-A01		MP05-MW11-A02		MP05-MW11-E02		MP08-MW12-A01		MP08-MW12-A02	
Sample Type							Field Rinsate Blank					
Batch#			9502G238		9503G660		9503G660		9502G238		9503G767	
Prep#			95GB0112		95GB0174		95GB0174		95GB0112		95GP0263	
RFW#			012		013		016		014		001	
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/17/95		3/9/95		3/9/95		2/17/95		3/15/95	
Analysis Date			2/27/95		3/26/95		3/27/95		2/28/95		4/15/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
bis(2-Chloroethyl) ether	10	9.7	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
2-Chlorophenol	40	7.3	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
1,3-Dichlorobenzene	600	5.3	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
1,4-Dichlorobenzene	75	4.8	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
1,2-Dichlorobenzene	600	5.7	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
2-Methylphenol		6.7	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
2,2'-oxybis(1-Chloropropane)		7.0	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
4-Methylphenol		12.9	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
N-Nitroso-di-n-propylamine	20	8.0	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Hexachloroethane	10	5.3	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Nitrobenzene	10	7.4	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Isophorone	100	3.9	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
2-Nitrophenol		7.0	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
2,4-Dimethylphenol	100	4.8	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
bis(2-Chloroethoxy) methane		6.1	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
2,4-Dichlorophenol	20	4.4	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
1,2,4-Trichlorobenzene	9	9.6	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Naphthalene		8.4	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
4-Chloroaniline		2.9	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Hexachlorobutadiene	1	4.6	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
4-Chloro-3-methylphenol	20	3.1	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
2-Methylnaphthalene		8.7	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Hexachlorocyclopentadiene	50	3.6	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
2,4,6-Trichlorophenol		5.6	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
2,4,5-Trichlorophenol	700	4.7	26 U	26	31 U	31	26 U	26	26 U	26	26 U	26
2-Chloronaphthalene		8.2	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
2-Nitroaniline		6.1	26 U	26	31 U	31	26 U	26	26 U	26	26 U	26
Dimethylphthalate	7000	4.4	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Acenaphthylene	10	6.0	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
2,6-Dinitrotoluene	10	5.2	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
3-Nitroaniline		5.2	26 U	26	31 U	31	26 U	26	26 U	26	26 U	26
Acenaphthene	400	6.7	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
2,4-Dinitrophenol	40	4.6	26 U	26	31 U	31	26 U	26	26 U	26	26 U	26

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M5		M5		M5		M8		M8	
Sample			MP05-MW11-A01		MP05-MW11-A02		MP05-MW11-E02		MP08-MW12-A01		MP08-MW12-A02	
Sample Type							Field Rinsate Blank					
Batch#			9502G238		9503G660		9503G660		9502G238		9503G767	
Prep#			95GB0112		95GB0174		95GB0174		95GB0112		95GP0263	
RFW#			012		013		016		014		001	
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/17/95		3/9/95		3/9/95		2/17/95		3/15/95	
Analysis Date			2/27/95		3/26/95		3/27/95		2/28/95		4/15/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	26 U	26	31 U	31	26 U	26	26 U	26	26 U	26
Dibenzofuran		6.5	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
2,4-Dinitrotoluene	10	5.8	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Diethylphthalate	5000	5.4	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
4-Chlorophenyl-phenylether		7.0	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Fluorene	300	6.3	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
4-Nitroaniline		6.4	26 U	26	31 U	31	26 U	26	26 U	26	26 U	26
4,6-Dinitro-2-methylphenol		5.3	26 U	26	31 U	31	26 U	26	26 U	26	26 U	26
N-Nitrosodiphenylamine (1)	20	4.2	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
4-Bromophenyl-phenylether		5.3	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Hexachlorobenzene	10	5.5	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Pentachlorophenol	1	4.0	26 U	26	31 U	31	26 U	26	26 U	26	26 U	26
Phenanthrene	10	5.0	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Anthracene	2000	4.6	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Carbazole		4.4	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Di-n-butylphthalate	900	6.5	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Fluoranthene	300	6.0	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Pyrene	200	5.4	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Butylbenzylphthalate	100	5.3	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
3,3'-Dichlorobenzidine	60	2.8	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Benzo(a)anthracene	10	4.9	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Chrysene	20	4.4	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
bis(2-Ethylhexy)phthalate	30	9.7	2 J	10	12 U	12	10 U	10	11 U	11	11 U	11
Di-n-octyl phthalate	100	5.6	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Benzo(b)fluoranthene	2	5.7	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Benzo(k)fluoranthene	2	6.2	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Benzo(a)pyrene	20	4.9	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Indeno(1,2,3-cd)pyrene	20	7.1	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Dibenzo(a,h)anthracene	20	6.0	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Benzo(g,h,i)perylene	20	6.8	10 U	10	12 U	12	10 U	10	11 U	11	11 U	11
Petroleum hydrocarbons												
Total Est. Conc. of TIC			35 J		37 J		9 J		18 J		20 J	
Dilution Factor												
Method:TCL Semivolatiles												

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M8		M8		M8		M8		M8	
Sample			MP08-MW12-C02		MP08-MW12-E02		MP08-MW13-A01		MP08-MW13-A01RE		MP08-MW13-A02	
Sample Type			Duplicate		Field Rinsate Blank							
Batch#			9503G767		9503G767		9502G403		9502G403		9503G767	
Prep#			95GP0263		95GP0263		95GB0129		95GB0129		95GP0263	
RFW#			003		006		001		001 RE		008	
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/15/95		3/15/95		2/22/95		2/22/95		3/15/95	
Analysis Date			4/15/95		4/15/95		3/15/95		3/16/95		4/15/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
bis(2-Chloroethyl) ether	10	9.7	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
2-Chlorophenol	40	7.3	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
1,3-Dichlorobenzene	600	5.3	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
1,4-Dichlorobenzene	75	4.8	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
1,2-Dichlorobenzene	600	5.7	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
2-Methylphenol		6.7	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
2,2'-oxybis(1-Chloropropane)		7.0	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
4-Methylphenol		12.9	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
N-Nitroso-di-n-propylamine	20	8.0	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Hexachloroethane	10	5.3	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Nitrobenzene	10	7.4	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Isophorone	100	3.9	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
2-Nitrophenol		7.0	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
2,4-Dimethylphenol	100	4.8	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
bis(2-Chloroethoxy) methane		6.1	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
2,4-Dichlorophenol	20	4.4	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
1,2,4-Trichlorobenzene	9	9.6	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Naphthalene		8.4	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
4-Chloroaniline		2.9	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Hexachlorobutadiene	1	4.6	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
4-Chloro-3-methylphenol	20	3.1	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
2-Methylnaphthalene		8.7	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Hexachlorocyclopentadiene	50	3.6	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
2,4,6-Trichlorophenol		5.6	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
2,4,5-Trichlorophenol	700	4.7	26 U	26	26 U	26	26 U	26	26 U	26	26 U	26
2-Chloronaphthalene		8.2	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
2-Nitroaniline		6.1	26 U	26	26 U	26	26 U	26	26 U	26	26 U	26
Dimethylphthalate	7000	4.4	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Acenaphthylene	10	6.0	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
2,6-Dinitrotoluene	10	5.2	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
3-Nitroaniline		5.2	26 U	26	26 U	26	26 U	26	26 U	26	26 U	26
Acenaphthene	400	6.7	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
2,4-Dinitrophenol	40	4.6	26 U	26	26 U	26	26 U	26	26 U	26	26 U	26

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M8		M8		M8		M8		M8	
Sample			MP08-MW12-C02		MP08-MW12-E02		MP08-MW13-A01		MP08-MW13-A01RE		MP08-MW13-A02	
Sample Type			Duplicate		Field Rinsate Blank							
Batch#			9503G767		9503G767		9502G403		9502G403		9503G767	
Prep#			95GP0263		95GP0263		95GB0129		95GB0129		95GP0263	
RFW#			003		006		001		001 RE		008	
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/15/95		3/15/95		2/22/95		2/22/95		3/15/95	
Analysis Date			4/15/95		4/15/95		3/15/95		3/16/95		4/15/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	26 U	26	26 U	26	26 U	26	26 U	26	26 U	26
Dibenzofuran		6.5	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
2,4-Dinitrotoluene	10	5.8	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Diethylphthalate	5000	5.4	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
4-Chlorophenyl-phenylether		7.0	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Fluorene	300	6.3	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
4-Nitroaniline		6.4	26 U	26	26 U	26	26 U	26	26 U	26	26 U	26
4,6-Dinitro-2-methylphenol		5.3	26 U	26	26 U	26	26 U	26	26 U	26	26 U	26
N-Nitrosodiphenylamine (1)	20	4.2	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
4-Bromophenyl-phenylether		5.3	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Hexachlorobenzene	10	5.5	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Pentachlorophenol	1	4.0	26 U	26	26 U	26	26 U	26	26 U	26	26 U	26
Phenanthrene	10	5.0	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Anthracene	2000	4.6	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Carbazole		4.4	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Di-n-butylphthalate	900	6.5	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Fluoranthene	300	6.0	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Pyrene	200	5.4	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Butylbenzylphthalate	100	5.3	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
3,3'-Dichlorobenzidine	60	2.8	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Benzo(a)anthracene	10	4.9	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Chrysene	20	4.4	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
bis(2-Ethylhexy)phthalate	30	9.7	10 U	10	2 J	10	2 JB	11	1 JB	11	11 U	11
Di-n-octyl phthalate	100	5.6	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Benzo(b)fluoranthene	2	5.7	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Benzo(k)fluoranthene	2	6.2	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Benzo(a)pyrene	20	4.9	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Indeno(1,2,3-cd)pyrene	20	7.1	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Dibenzo(a,h)anthracene	20	6.0	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Benzo(g,h,i)perylene	20	6.8	10 U	10	10 U	10	11 U	11	11 U	11	11 U	11
Petroleum hydrocarbons												
Total Est. Conc. of TIC			22 J		10 J		17 JA		20 JA			
Dilution Factor												
Method:TCL Semivolatiles												

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M8		M8		M8		M8		M8	
Sample			MP08-MW14-A01		MP08-MW14-A02		MP08-MW14-A02RE		MP08-MW15-A01		MP08-MW15-A02	
Sample Type												
Batch#			9502G219		9503G767		9503G767		9502G403		9503G767	
Prep#			95GB0111		95GP0263		95GP0263		95GB0129		95GP0263	
RFW#			018		010		010		003		012	
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/16/95		3/15/95		3/15/95		2/22/95		3/15/95	
Analysis Date			3/13/95		4/15/95		4/15/95		3/16/95		4/15/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
bis(2-Chloroethyl) ether	10	9.7	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2-Chlorophenol	40	7.3	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
1,3-Dichlorobenzene	600	5.3	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
1,4-Dichlorobenzene	75	4.8	3 J	10	3 J	10	3 J	10	2 J	11	12 U	12
1,2-Dichlorobenzene	600	5.7	10 U	10	10 U	10	10 U	10	5 J	11	4 J	12
2-Methylphenol		6.7	10 U	10	10 U	10	10 U	10	1 J	11	12 U	12
2,2'-oxybis(1-Chloropropane)		7.0	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
4-Methylphenol		12.9	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
N-Nitroso-di-n-propylamine	20	8.0	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Hexachloroethane	10	5.3	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Nitrobenzene	10	7.4	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Isophorone	100	3.9	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2-Nitrophenol		7.0	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2,4-Dimethylphenol	100	4.8	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
bis(2-Chloroethoxy) methane		6.1	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2,4-Dichlorophenol	20	4.4	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
1,2,4-Trichlorobenzene	9	9.6	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Naphthalene		8.4	10 U	10	10 U	10	1 J	10	1 J	11	12 U	12
4-Chloroaniline		2.9	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Hexachlorobutadiene	1	4.6	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
4-Chloro-3-methylphenol	20	3.1	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2-Methylnaphthalene		8.7	1 J	10	1 J	10	10 U	10	2 J	11	1 J	12
Hexachlorocyclopentadiene	50	3.6	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2,4,6-Trichlorophenol		5.6	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2,4,5-Trichlorophenol	700	4.7	24 U	24	25 U	25	24 U	24	26 U	26	30 U	30
2-Chloronaphthalene		8.2	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2-Nitroaniline		6.1	24 U	24	25 U	25	24 U	24	26 U	26	30 U	30
Dimethylphthalate	7000	4.4	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Acenaphthylene	10	6.0	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2,6-Dinitrotoluene	10	5.2	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
3-Nitroaniline		5.2	24 U	24	25 U	25	24 U	24	26 U	26	30 U	30
Acenaphthene	400	6.7	2 J	10	2 J	10	2 J	10	17	11	14	12
2,4-Dinitrophenol	40	4.6	24 U	24	25 U	25	24 U	24	26 U	26	30 U	30

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M8		M8		M8		M8		M8	
Sample			MP08-MW14-A01		MP08-MW14-A02		MP08-MW14-A02RE		MP08-MW15-A01		MP08-MW15-A02	
Sample Type												
Batch#			9502G219		9503G767		9503G767		9502G403		9503G767	
Prep#			95GB0111		95GP0263		95GP0263		95GB0129		95GP0263	
RFW#			018		010		010		003		012	
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/16/95		3/15/95		3/15/95		2/22/95		3/15/95	
Analysis Date			3/13/95		4/15/95		4/15/95		3/16/95		4/15/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	24 U	24	25 U	25	24 U	24	26 U	26	30 U	30
Dibenzofuran		6.5	10 U	10	10 U	10	10 U	10	7 J	11	5 J	12
2,4-Dinitrotoluene	10	5.8	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Diethylphthalate	5000	5.4	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
4-Chlorophenyl-phenylether		7.0	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Fluorene	300	6.3	10 U	10	10 U	10	10 U	10	9 J	11	7 J	12
4-Nitroaniline		6.4	24 U	24	25 U	25	24 U	24	26 U	26	30 U	30
4,6-Dinitro-2-methylphenol		5.3	24 U	24	25 U	25	24 U	24	26 U	26	30 U	30
N-Nitrosodiphenylamine (1)	20	4.2	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
4-Bromophenyl-phenylether		5.3	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Hexachlorobenzene	10	5.5	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Pentachlorophenol	1	4.0	24 U	24	25 U	25	24 U	24	26 U	26	30 U	30
Phenanthrene	10	5.0	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Anthracene	2000	4.6	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Carbazole		4.4	10 U	10	10 U	10	10 U	10	1 J	11	12 U	12
Di-n-butylphthalate	900	6.5	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Fluoranthene	300	6.0	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Pyrene	200	5.4	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Butylbenzylphthalate	100	5.3	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
3,3'-Dichlorobenzidine	60	2.8	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Benzo(a)anthracene	10	4.9	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Chrysene	20	4.4	10 U	10	10 U	10	10 U	10	1 JB	11	12 U	12
bis(2-Ethylhexy)phthalate	30	9.7	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Di-n-octyl phthalate	100	5.6	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Benzo(b)fluoranthene	2	5.7	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Benzo(k)fluoranthene	2	6.2	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Benzo(a)pyrene	20	4.9	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Indeno(1,2,3-cd)pyrene	20	7.1	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Dibenzo(a,h)anthracene	20	6.0	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Benzo(g,h,i)perylene	20	6.8	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Petroleum hydrocarbons												
Total Est. Conc. of TIC			143 J		142 J		170 J		205 JA		89 J	
Dilution Factor												
Method:TCL Semivolatiles												

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M8		M8		M8		M8		M12	
Sample			MP08-MW15-C01		MP08-MW15-C01RE		MP08-MW15-E01		MP08-MW15-E01RE		MP12-MW16-A01	
Sample Type			Duplicate		Duplicate		Field Rinsate Blank		Field Rinsate Blank			
Batch#			9502G403		9502G403		9502G403		9502G403		9502G299	
Prep#			95GB0129		95GB0129		95GB0129		95GB0129		95GB0118	
RFW#			005		005 RE		008		008 RE		001	
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/22/95		2/22/95		2/22/95		2/22/95		2/20/95	
Analysis Date			3/16/95		3/16/95		3/16/95		3/16/95		3/11/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
bis(2-Chloroethyl) ether	10	9.7	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
2-Chlorophenol	40	7.3	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
1,3-Dichlorobenzene	600	5.3	2 J	10	2 J	10	12 U	12	12 U	12	11 U	11
1,4-Dichlorobenzene	75	4.8	4 J	10	5 J	10	12 U	12	12 U	12	11 U	11
1,2-Dichlorobenzene	600	5.7	10 U	10	1 J	10	12 U	12	12 U	12	11 U	11
2-Methylphenol		6.7	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
2,2'-oxybis(1-Chloropropane)		7.0	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
4-Methylphenol		12.9	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
N-Nitroso-di-n-propylamine	20	8.0	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Hexachloroethane	10	5.3	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Nitrobenzene	10	7.4	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Isophorone	100	3.9	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
2-Nitrophenol		7.0	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
2,4-Dimethylphenol	100	4.8	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
bis(2-Chloroethoxy) methane		6.1	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
2,4-Dichlorophenol	20	4.4	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
1,2,4-Trichlorobenzene	9	9.6	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Naphthalene		8.4	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
4-Chloroaniline		2.9	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Hexachlorobutadiene	1	4.6	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
4-Chloro-3-methylphenol	20	3.1	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
2-Methylnaphthalene		8.7	10 U	10	2 J	10	12 U	12	12 U	12	11 U	11
Hexachlorocyclopentadiene	50	3.6	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
2,4,6-Trichlorophenol		5.6	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
2,4,5-Trichlorophenol	700	4.7	26 U	26	26 U	26	30 U	30	30 U	30	26 U	26
2-Chloronaphthalene		8.2	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
2-Nitroaniline		6.1	26 U	26	26 U	26	30 U	30	30 U	30	26 U	26
Dimethylphthalate	7000	4.4	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Acenaphthylene	10	6.0	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
2,6-Dinitrotoluene	10	5.2	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
3-Nitroaniline		5.2	26 U	26	26 U	26	30 U	30	30 U	30	26 U	26
Acenaphthene	400	6.7	16	10	14	10	12 U	12	12 U	12	11 U	11
2,4-Dinitrophenol	40	4.6	26 U	26	26 U	26	30 U	30	30 U	30	26 U	26

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M8		M8		M8		M8		M12	
Sample			MP08-MW15-C01		MP08-MW15-C01RE		MP08-MW15-E01		MP08-MW15-E01RE		MP12-MW16-A01	
Sample Type			Duplicate		Duplicate		Field Rinsate Blank		Field Rinsate Blank			
Batch#			9502G403		9502G403		9502G403		9502G403		9502G299	
Prep#			95GB0129		95GB0129		95GB0129		95GB0129		95GB0118	
RFW#			005		005 RE		008		008 RE		001	
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/22/95		2/22/95		2/22/95		2/22/95		2/20/95	
Analysis Date			3/16/95		3/16/95		3/16/95		3/16/95		3/11/95	
Analysis	Standard	MDL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL
			Result		Result		Result		Result		Result	
4-Nitrophenol		7.5	26 U	26	26 U	26	30 U	30	30 U	30	26 U	26
Dibenzofuran		6.5	6 J	10	6 J	10	12 U	12	12 U	12	11 U	11
2,4-Dinitrotoluene	10	5.8	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Diethylphthalate	5000	5.4	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
4-Chlorophenyl-phenylether		7.0	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Fluorene	300	6.3	8 J	10	8 J	10	12 U	12	12 U	12	11 U	11
4-Nitroaniline		6.4	26 U	26	26 U	26	30 U	30	30 U	30	26 U	26
4,6-Dinitro-2-methylphenol		5.3	26 U	26	26 U	26	30 U	30	30 U	30	26 U	26
N-Nitrosodiphenylamine (1)	20	4.2	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
4-Bromophenyl-phenylether		5.3	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Hexachlorobenzene	10	5.5	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Pentachlorophenol	1	4.0	26 U	26	26 U	26	30 U	30	30 U	30	26 U	26
Phenanthrene	10	5.0	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Anthracene	2000	4.6	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Carbazole		4.4	1 J	10	1 J	10	12 U	12	12 U	12	11 U	11
Di-n-butylphthalate	900	6.5	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Fluoranthene	300	6.0	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Pyrene	200	5.4	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Butylbenzylphthalate	100	5.3	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
3,3'-Dichlorobenzidine	60	2.8	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Benzo(a)anthracene	10	4.9	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Chrysene	20	4.4	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
bis(2-Ethylhexy)phthalate	30	9.7	1 JB	10	10 U	10	3 JB	12	3 JB	12	4 J	11
Di-n-octyl phthalate	100	5.6	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Benzo(b)fluoranthene	2	5.7	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Benzo(k)fluoranthene	2	6.2	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Benzo(a)pyrene	20	4.9	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Indeno(1,2,3-cd)pyrene	20	7.1	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Dibenzo(a,h)anthracene	20	6.0	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Benzo(g,h,i)perylene	20	6.8	10 U	10	10 U	10	12 U	12	12 U	12	11 U	11
Petroleum hydrocarbons												
Total Est. Conc. of TIC			189 J		143 J		17 JA		15 JA		8 J	
Dilution Factor												
Method:TCL Semivolatiles												

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M12		M12		M12		M12		M12	
Sample			MP12-MW16-A02		MP12-MW17-A01		MP12-MW17-A01RE		MP12-MW17-A02		MP12-MW18-A01	
Sample Type												
Batch#			9502G681		9502G299		9502G299		9502G681		9502G299	
Prep#			95GB0175		95GB0118		95GB0175		95GB0175		95GB0118	
RFW#			001		003		003		003		005	
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/10/95		2/20/95		2/20/95		3/10/95		2/20/95	
Analysis Date			3/28/95		3/11/95		3/16/95		3/26/95		3/11/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
bis(2-Chloroethyl) ether	10	9.7	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
2-Chlorophenol	40	7.3	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
1,3-Dichlorobenzene	600	5.3	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
1,4-Dichlorobenzene	75	4.8	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
1,2-Dichlorobenzene	600	5.7	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
2-Methylphenol		6.7	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
2,2'-oxybis(1-Chloropropane)		7.0	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
4-Methylphenol		12.9	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
N-Nitroso-di-n-propylamine	20	8.0	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Hexachloroethane	10	5.3	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Nitrobenzene	10	7.4	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Isophorone	100	3.9	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
2-Nitrophenol		7.0	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
2,4-Dimethylphenol	100	4.8	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
bis(2-Chloroethoxy) methane		6.1	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
2,4-Dichlorophenol	20	4.4	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
1,2,4-Trichlorobenzene	9	9.6	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Naphthalene		8.4	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
4-Chloroaniline		2.9	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Hexachlorobutadiene	1	4.6	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
4-Chloro-3-methylphenol	20	3.1	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
2-Methylnaphthalene		8.7	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Hexachlorocyclopentadiene	50	3.6	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
2,4,6-Trichlorophenol		5.6	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
2,4,5-Trichlorophenol	700	4.7	26 U	26	31 U	31	26 U	26	31 U	31	28 U	28
2-Chloronaphthalene		8.2	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
2-Nitroaniline		6.1	26 U	26	31 U	31	26 U	26	31 U	31	28 U	28
Dimethylphthalate	7000	4.4	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Acenaphthylene	10	6.0	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
2,6-Dinitrotoluene	10	5.2	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
3-Nitroaniline		5.2	26 U	26	31 U	31	26 U	26	31 U	31	28 U	28
Acenaphthene	400	6.7	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
2,4-Dinitrophenol	40	4.6	26 U	26	31 U	31	26 U	26	31 U	31	28 U	28

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M12		M12		M12		M12		M12	
Sample			MP12-MW16-A02		MP12-MW17-A01		MP12-MW17-A01RE		MP12-MW17-A02		MP12-MW18-A01	
Sample Type												
Batch#			9502G681		9502G299		9502G299		9502G681		9502G299	
Prep#			95GB0175		95GB0118		95GB0175		95GB0175		95GB0118	
RFW#			001		003		003		003		005	
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/10/95		2/20/95		2/20/95		3/10/95		2/20/95	
Analysis Date			3/28/95		3/11/95		3/16/95		3/26/95		3/11/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	26 U	26	31 U	31	26 U	26	31 U	31	28 U	28
Dibenzofuran		6.5	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
2,4-Dinitrotoluene	10	5.8	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Diethylphthalate	5000	5.4	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
4-Chlorophenyl-phenylether		7.0	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Fluorene	300	6.3	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
4-Nitroaniline		6.4	26 U	26	31 U	31	26 U	26	31 U	31	28 U	28
4,6-Dinitro-2-methylphenol		5.3	26 U	26	31 U	31	26 U	26	31 U	31	28 U	28
N-Nitrosodiphenylamine (1)	20	4.2	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
4-Bromophenyl-phenylether		5.3	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Hexachlorobenzene	10	5.5	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Pentachlorophenol	1	4.0	26 U	26	31 U	31	26 U	26	31 U	31	28 U	28
Phenanthrene	10	5.0	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Anthracene	2000	4.6	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Carbazole		4.4	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Di-n-butylphthalate	900	6.5	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Fluoranthene	300	6.0	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Pyrene	200	5.4	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Butylbenzylphthalate	100	5.3	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
3,3'-Dichlorobenzidine	60	2.8	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Benzo(a)anthracene	10	4.9	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Chrysene	20	4.4	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
bis(2-Ethylhexy)phthalate	30	9.7	2 J	11	12 U	12	3 J	11	1 J	12	3 J	11
Di-n-octyl phthalate	100	5.6	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Benzo(b)fluoranthene	2	5.7	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Benzo(k)fluoranthene	2	6.2	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Benzo(a)pyrene	20	4.9	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Indeno(1,2,3-cd)pyrene	20	7.1	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Dibenzo(a,h)anthracene	20	6.0	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Benzo(g,h,i)perylene	20	6.8	11 U	11	12 U	12	11 U	11	12 U	12	11 U	11
Petroleum hydrocarbons												
Total Est. Conc. of TIC			5 J		52 J		22 J		10 J		3 J	
Dilution Factor												
Method:TCL Semivolatiles												

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M12		M14		M14		M14		M14	
Sample			MP12-MW18-A02		MP14-MW19-A01		MP14-MW19-A02		MP14-MW20-A01		MP14-MW20-A02	
Sample Type												
Batch#			9502G681		9502G299		9502G681		9502G403		9503G722	
Prep#			95GB0175		95GB0118		95GB0175		95GB0129		95GB0181	
RFW#			005		007		007		010		001	
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/10/95		2/20/95		3/10/95		2/22/95		3/13/95	
Analysis Date			3/26/95		3/12/95		3/27/95		3/16/95		3/29/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
bis(2-Chloroethyl) ether	10	9.7	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
2-Chlorophenol	40	7.3	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
1,3-Dichlorobenzene	600	5.3	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
1,4-Dichlorobenzene	75	4.8	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
1,2-Dichlorobenzene	600	5.7	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
2-Methylphenol		6.7	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
2,2'-oxybis(1-Chloropropane)		7.0	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
4-Methylphenol		12.9	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
N-Nitroso-di-n-propylamine	20	8.0	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Hexachloroethane	10	5.3	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Nitrobenzene	10	7.4	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Isophorone	100	3.9	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
2-Nitrophenol		7.0	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
2,4-Dimethylphenol	100	4.8	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
bis(2-Chloroethoxy) methane		6.1	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
2,4-Dichlorophenol	20	4.4	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
1,2,4-Trichlorobenzene	9	9.6	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Naphthalene		8.4	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
4-Chloroaniline		2.9	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Hexachlorobutadiene	1	4.6	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
4-Chloro-3-methylphenol	20	3.1	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
2-Methylnaphthalene		8.7	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Hexachlorocyclopentadiene	50	3.6	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
2,4,6-Trichlorophenol		5.6	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
2,4,5-Trichlorophenol	700	4.7	31 U	31	26 U	26	31 U	31	24 U	24	26 U	26
2-Chloronaphthalene		8.2	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
2-Nitroaniline		6.1	31 U	31	26 U	26	31 U	31	24 U	24	26 U	26
Dimethylphthalate	7000	4.4	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Acenaphthylene	10	6.0	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
2,6-Dinitrotoluene	10	5.2	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
3-Nitroaniline		5.2	31 U	31	26 U	26	31 U	31	24 U	24	26 U	26
Acenaphthene	400	6.7	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
2,4-Dinitrophenol	40	4.6	31 U	31	26 U	26	31 U	31	24 U	24	26 U	26

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M12		M14		M14		M14		M14	
Sample			MP12-MW18-A02		MP14-MW19-A01		MP14-MW19-A02		MP14-MW20-A01		MP14-MW20-A02	
Sample Type												
Batch#			9502G681		9502G299		9502G681		9502G403		9503G722	
Prep#			95GB0175		95GB0118		95GB0175		95GB0129		95GB0181	
RFW#			005		007		007		010		001	
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/10/95		2/20/95		3/10/95		2/22/95		3/13/95	
Analysis Date			3/26/95		3/12/95		3/27/95		3/16/95		3/29/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	31 U	31	26 U	26	31 U	31	24 U	24	26 U	26
Dibenzofuran		6.5	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
2,4-Dinitrotoluene	10	5.8	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Diethylphthalate	5000	5.4	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
4-Chlorophenyl-phenylether		7.0	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Fluorene	300	6.3	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
4-Nitroaniline		6.4	31 U	31	26 U	26	31 U	31	24 U	24	26 U	26
4,6-Dinitro-2-methylphenol		5.3	31 U	31	26 U	26	31 U	31	24 U	24	26 U	26
N-Nitrosodiphenylamine (1)	20	4.2	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
4-Bromophenyl-phenylether		5.3	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Hexachlorobenzene	10	5.5	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Pentachlorophenol	1	4.0	31 U	31	26 U	26	31 U	31	24 U	24	26 U	26
Phenanthrene	10	5.0	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Anthracene	2000	4.6	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Carbazole		4.4	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Di-n-butylphthalate	900	6.5	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Fluoranthene	300	6.0	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Pyrene	200	5.4	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Butylbenzylphthalate	100	5.3	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
3,3'-Dichlorobenzidine	60	2.8	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Benzo(a)anthracene	10	4.9	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Chrysene	20	4.4	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
bis(2-Ethylhexy)phthalate	30	9.7	12 U	12	3 J	11	12 U	12	1 JB	10	10 U	10
Di-n-octyl phthalate	100	5.6	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Benzo(b)fluoranthene	2	5.7	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Benzo(k)fluoranthene	2	6.2	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Benzo(a)pyrene	20	4.9	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Indeno(1,2,3-cd)pyrene	20	7.1	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Dibenzo(a,h)anthracene	20	6.0	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Benzo(g,h,i)perylene	20	6.8	12 U	12	11 U	11	12 U	12	10 U	10	10 U	10
Petroleum hydrocarbons												
Total Est. Conc. of TIC					22 J		5 J		12 J		28 J	
Dilution Factor												
Method:TCL Semivolatiles												

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M14		M14		M14		M14		M16	
Sample			MP14-MW20-E02		MP14-MW21-A01		MP14-MW21-A02		MP14-MW21-A01RE		MP16-MW22-A01	
Sample Type			Field Rinsate Blank									
Batch#			9503G722		9502G403		9503G660		9502G403		9502G238	
Prep#			95GB0181		95GB0129		95GB0174		95GB0129		95GB0112	
RFW#			003		012		019		012 RE		016	
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/13/95		2/22/95		3/9/95		2/22/95		2/17/95	
Analysis Date			3/18/95		3/16/95		3/27/95		3/5/95		2/28/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
bis(2-Chloroethyl) ether	10	9.7	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
2-Chlorophenol	40	7.3	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
1,3-Dichlorobenzene	600	5.3	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
1,4-Dichlorobenzene	75	4.8	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichlorobenzene	600	5.7	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
2-Methylphenol		6.7	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
2,2'-oxybis(1-Chloropropane)		7.0	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
4-Methylphenol		12.9	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
N-Nitroso-di-n-propylamine	20	8.0	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Hexachloroethane	10	5.3	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Nitrobenzene	10	7.4	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Isophorone	100	3.9	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
2-Nitrophenol		7.0	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
2,4-Dimethylphenol	100	4.8	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
bis(2-Chloroethoxy) methane		6.1	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
2,4-Dichlorophenol	20	4.4	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
1,2,4-Trichlorobenzene	9	9.6	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Naphthalene		8.4	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
4-Chloroaniline		2.9	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Hexachlorobutadiene	1	4.6	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
4-Chloro-3-methylphenol	20	3.1	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
2-Methylnaphthalene		8.7	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Hexachlorocyclopentadiene	50	3.6	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
2,4,6-Trichlorophenol		5.6	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
2,4,5-Trichlorophenol	700	4.7	27 U	27	24 U	24	24 U	24	24 U	24	25 U	25
2-Chloronaphthalene		8.2	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
2-Nitroaniline		6.1	27 U	27	24 U	24	24 U	24	24 U	24	25 U	25
Dimethylphthalate	7000	4.4	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Acenaphthylene	10	6.0	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
2,6-Dinitrotoluene	10	5.2	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
3-Nitroaniline		5.2	27 U	27	24 U	24	24 U	24	24 U	24	25 U	25
Acenaphthene	400	6.7	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
2,4-Dinitrophenol	40	4.6	27 U	27	24 U	24	24 U	24	24 U	24	25 U	25

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M14		M14		M14		M14		M16	
Sample			MP14-MW20-E02		MP14-MW21-A01		MP14-MW21-A02		MP14-MW21-A01RE		MP16-MW22-A01	
Sample Type			Field Rinsate Blank									
Batch#			9503G722		9502G403		9503G660		9502G403		9502G238	
Prep#			95GB0181		95GB0129		95GB0174		95GB0129		95GB0112	
RFW#			003		012		019		012 RE		016	
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/13/95		2/22/95		3/9/95		2/22/95		2/17/95	
Analysis Date			3/18/95		3/16/95		3/27/95		3/5/95		2/28/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	27 U	27	24 U	24	24 U	24	24 U	24	25 U	25
Dibenzofuran		6.5	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
2,4-Dinitrotoluene	10	5.8	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Diethylphthalate	5000	5.4	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
4-Chlorophenyl-phenylether		7.0	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Fluorene	300	6.3	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
4-Nitroaniline		6.4	27 U	27	24 U	24	24 U	24	24 U	24	25 U	25
4,6-Dinitro-2-methylphenol		5.3	27 U	27	24 U	24	24 U	24	24 U	24	25 U	25
N-Nitrosodiphenylamine (1)	20	4.2	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
4-Bromophenyl-phenylether		5.3	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Hexachlorobenzene	10	5.5	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Pentachlorophenol	1	4.0	27 U	27	24 U	24	24 U	24	24 U	24	25 U	25
Phenanthrene	10	5.0	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Anthracene	2000	4.6	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Carbazole		4.4	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Di-n-butylphthalate	900	6.5	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Fluoranthene	300	6.0	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Pyrene	200	5.4	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Butylbenzylphthalate	100	5.3	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
3,3'-Dichlorobenzidine	60	2.8	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Benzo(a)anthracene	10	4.9	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Chrysene	20	4.4	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
bis(2-Ethylhexy)phthalate	30	9.7	11 U	11	1 JB	10	10 U	10	10 U	10	10 U	10
Di-n-octyl phthalate	100	5.6	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Benzo(b)fluoranthene	2	5.7	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Benzo(k)fluoranthene	2	6.2	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Benzo(a)pyrene	20	4.9	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Indeno(1,2,3-cd)pyrene	20	7.1	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Dibenzo(a,h)anthracene	20	6.0	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Benzo(g,h,i)perylene	20	6.8	11 U	11	10 U	10	10 U	10	10 U	10	10 U	10
Petroleum hydrocarbons												
Total Est. Conc. of TIC					7 J				6 J		83 J	
Dilution Factor												
Method:TCL Semivolatiles												

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M16		M18		M18		M18		M18		M18	
Sample			MP16-MW22-A02		MP18-MW03-A01		MP18-MW03-E01		MP18-MW03-A02		MP18-MW24-A01		MP18-MW24-A02	
Sample Type							Field Rinsate Blank							
Batch#			9503G660		9505G825		9505G825		9505G139		9502G238		9502G681	
Prep#			95GB0174		95GIR081		95GIR081		95GB0112		95GB0112		95GB0175	
RFW#			018		001		004		001		001		009	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/9/95		5/10/95		5/10/95		2/17/95		2/17/95		3/10/95	
Analysis Date			3/27/95		5/30/95		5/29/95		3/1/95		3/1/95		3/28/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
bis(2-Chloroethyl) ether	10	9.7	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
2-Chlorophenol	40	7.3	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
1,3-Dichlorobenzene	600	5.3	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
1,4-Dichlorobenzene	75	4.8	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
1,2-Dichlorobenzene	600	5.7	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
2-Methylphenol		6.7	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
2,2'-oxybis(1-Chloropropane)		7.0	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
4-Methylphenol		12.9	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	2 J	11
N-Nitroso-di-n-propylamine	20	8.0	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Hexachloroethane	10	5.3	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Nitrobenzene	10	7.4	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Isophorone	100	3.9	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
2-Nitrophenol		7.0	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
2,4-Dimethylphenol	100	4.8	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
bis(2-Chloroethoxy) methane		6.1	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
2,4-Dichlorophenol	20	4.4	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
1,2,4-Trichlorobenzene	9	9.6	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Naphthalene		8.4	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
4-Chloroaniline		2.9	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Hexachlorobutadiene	1	4.6	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
4-Chloro-3-methylphenol	20	3.1	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
2-Methylnaphthalene		8.7	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Hexachlorocyclopentadiene	50	3.6	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
2,4,6-Trichlorophenol		5.6	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
2,4,5-Trichlorophenol	700	4.7	24 U	24	27 U	27	28 U	28	24 U	24	24 U	24	26 U	26
2-Chloronaphthalene		8.2	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
2-Nitroaniline		6.1	24 U	24	27 U	27	28 U	28	24 U	24	24 U	24	26 U	26
Dimethylphthalate	7000	4.4	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Acenaphthylene	10	6.0	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
2,6-Dinitrotoluene	10	5.2	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
3-Nitroaniline		5.2	24 U	24	27 U	27	28 U	28	24 U	24	24 U	24	26 U	26
Acenaphthene	400	6.7	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
2,4-Dinitrophenol	40	4.6	24 U	24	27 U	27	28 U	28	24 U	24	24 U	24	26 U	26

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M16		M18		M18		M18		M18		M18	
Sample			MP16-MW22-A02		MP18-MW03-A01		MP18-MW03-E01		MP18-MW03-A02		MP18-MW24-A01		MP18-MW24-A02	
Sample Type							Field Rinsate Blank							
Batch#			9503G660		9505G825		9505G825		9505G139		9502G238		9502G681	
Prep#			95GB0174		95GIR081		95GIR081		95GB0112		95GB0112		95GB0175	
RFW#			018		001		004		001		001		009	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/9/95		5/10/95		5/10/95		2/17/95		2/17/95		3/10/95	
Analysis Date			3/27/95		5/30/95		5/29/95		3/1/95		3/1/95		3/28/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	24 U	24	27 U	27	28 U	28	24 U	24	24 U	24	26 U	26
Dibenzofuran		6.5	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
2,4-Dinitrotoluene	10	5.8	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Diethylphthalate	5000	5.4	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
4-Chlorophenyl-phenylether		7.0	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Fluorene	300	6.3	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
4-Nitroaniline		6.4	24 U	24	27 U	27	28 U	28	24 U	24	24 U	24	26 U	26
4,6-Dinitro-2-methylphenol		5.3	24 U	24	27 U	27	28 U	28	24 U	24	24 U	24	26 U	26
N-Nitrosodiphenylamine (1)	20	4.2	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
4-Bromophenyl-phenylether		5.3	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Hexachlorobenzene	10	5.5	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Pentachlorophenol	1	4.0	24 U	24	27 U	27	28 U	28	24 U	24	24 U	24	26 U	26
Phenanthrene	10	5.0	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Anthracene	2000	4.6	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Carbazole		4.4	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Di-n-butylphthalate	900	6.5	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Fluoranthene	300	6.0	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Pyrene	200	5.4	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Butylbenzylphthalate	100	5.3	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
3,3'-Dichlorobenzidine	60	2.8	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Benzo(a)anthracene	10	4.9	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Chrysene	20	4.4	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
bis(2-Ethylhexy)phthalate	30	9.7	1 J	10	90 B	43	2 JB	43	2 JB	10	4	10	1 J	11
Di-n-octyl phthalate	100	5.6	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Benzo(b)fluoranthene	2	5.7	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Benzo(k)fluoranthene	2	6.2	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Benzo(a)pyrene	20	4.9	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Indeno(1,2,3-cd)pyrene	20	7.1	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Dibenzo(a,h)anthracene	20	6.0	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Benzo(g,h,i)perylene	20	6.8	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10	11 U	11
Petroleum hydrocarbons					0.26 U	0.26	0.27 U	0.27	0.26 U	0.26	1.3	0.27	0.62	0.26
Total Est. Conc. of TIC			88 J		5 JB		10 J		29 J		12 J		29 J	
Dilution Factor														
Method:TCL Semivolatiles														

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M18		M18		M18		M18		M18		M18	
Sample			MP18-MW24-C02		MP18-MW24-C02RE		MP18-MW24-E01		MP18-MW24-E02		MP18-MW25-A01		MP18-MW25-A02	
Sample Type			Duplicate		Duplicate		Field Rinsate Blank		Field Rinsate Blank					
Batch#			9502G681		9502G681		9502G238		9502G681		9502G238		9502G681	
Prep#			95GB0175		95GB0175		95GB0112		95GB0175		95GB0112		95GB0175	
RFW#			011		011 RE		004		014		006		016	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/10/95		3/10/95		2/17/95		3/10/95		2/17/95		3/10/95	
Analysis Date			3/27/95		3/28/95		2/27/95		3/27/95		2/28/95		3/28/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
bis(2-Chloroethyl) ether	10	9.7	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
2-Chlorophenol	40	7.3	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
1,3-Dichlorobenzene	600	5.3	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
1,4-Dichlorobenzene	75	4.8	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
1,2-Dichlorobenzene	600	5.7	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
2-Methylphenol		6.7	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
2,2'-oxybis(1-Chloropropane)		7.0	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
4-Methylphenol		12.9	2 J	11	2 J	11	10 U	10	11 U	11	10 U	10	12 U	12
N-Nitroso-di-n-propylamine	20	8.0	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Hexachloroethane	10	5.3	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Nitrobenzene	10	7.4	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Isophorone	100	3.9	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
2-Nitrophenol		7.0	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
2,4-Dimethylphenol	100	4.8	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
bis(2-Chloroethoxy) methane		6.1	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
2,4-Dichlorophenol	20	4.4	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
1,2,4-Trichlorobenzene	9	9.6	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Naphthalene		8.4	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
4-Chloroaniline		2.9	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Hexachlorobutadiene	1	4.6	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
4-Chloro-3-methylphenol	20	3.1	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
2-Methylnaphthalene		8.7	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Hexachlorocyclopentadiene	50	3.6	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
2,4,6-Trichlorophenol		5.6	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
2,4,5-Trichlorophenol	700	4.7	26 U	26	26 U	26	26 U	26	28 U	28	26 U	26	31 U	31
2-Chloronaphthalene		8.2	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
2-Nitroaniline		6.1	26 U	26	26 U	26	26 U	26	28 U	28	26 U	26	31 U	31
Dimethylphthalate	7000	4.4	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Acenaphthylene	10	6.0	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
2,6-Dinitrotoluene	10	5.2	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
3-Nitroaniline		5.2	26 U	26	26 U	26	26 U	26	28 U	28	26 U	26	31 U	31
Acenaphthene	400	6.7	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
2,4-Dinitrophenol	40	4.6	26 U	26	26 U	26	26 U	26	28 U	28	26 U	26	31 U	31

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M18		M18		M18		M18		M18		M18	
Sample			MP18-MW24-C02		MP18-MW24-C02RE		MP18-MW24-E01		MP18-MW24-E02		MP18-MW25-A01		MP18-MW25-A02	
Sample Type			Duplicate		Duplicate		Field Rinsate Blank		Field Rinsate Blank					
Batch#			9502G681		9502G681		9502G238		9502G681		9502G238		9502G681	
Prep#			95GB0175		95GB0175		95GB0112		95GB0175		95GB0112		95GB0175	
RFW#			011		011 RE		004		014		006		016	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/10/95		3/10/95		2/17/95		3/10/95		2/17/95		3/10/95	
Analysis Date			3/27/95		3/28/95		2/27/95		3/27/95		2/28/95		3/28/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	26 U	26	26 U	26	26 U	26	28 U	28	26 U	26	31 U	31
Dibenzofuran		6.5	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
2,4-Dinitrotoluene	10	5.8	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Diethylphthalate	5000	5.4	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
4-Chlorophenyl-phenylether		7.0	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Fluorene	300	6.3	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
4-Nitroaniline		6.4	26 U	26	26 U	26	26 U	26	28 U	28	26 U	26	31 U	31
4,6-Dinitro-2-methylphenol		5.3	26 U	26	26 U	26	26 U	26	28 U	28	26 U	26	31 U	31
N-Nitrosodiphenylamine (1)	20	4.2	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
4-Bromophenyl-phenylether		5.3	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Hexachlorobenzene	10	5.5	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Pentachlorophenol	1	4.0	26 U	26	26 U	26	26 U	26	28 U	28	26 U	26	31 U	31
Phenanthrene	10	5.0	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Anthracene	2000	4.6	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Carbazole		4.4	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Di-n-butylphthalate	900	6.5	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Fluoranthene	300	6.0	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Pyrene	200	5.4	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Butylbenzylphthalate	100	5.3	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
3,3'-Dichlorobenzidine	60	2.8	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Benzo(a)anthracene	10	4.9	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Chrysene	20	4.4	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
bis(2-Ethylhexy)phthalate	30	9.7	11 U	11	11 U	11	10 U	10	140	22 *	10 U	10	12 U	12
Di-n-octyl phthalate	100	5.6	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Benzo(b)fluoranthene	2	5.7	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Benzo(k)fluoranthene	2	6.2	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Benzo(a)pyrene	20	4.9	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Indeno(1,2,3-cd)pyrene	20	7.1	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Dibenzo(a,h)anthracene	20	6.0	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Benzo(g,h,i)perylene	20	6.8	11 U	11	11 U	11	10 U	10	11 U	11	10 U	10	12 U	12
Petroleum hydrocarbons			0.94	0.27	0.94	0.27	0.28	0.26	0.29 U	0.29	0.28	0.27	0.58	0.27
Total Est. Conc. of TIC			38 J		24 J		4 J		7 J		72 J		59 J	
Dilution Factor									* = 2.00					
Method:TCL Semivolatiles														

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M18		B1		B1		B2		B2		B3	
Sample			MP18-MW25-C01		B1-MW01B-A01		B1-MW01B-A02		B2-MW02B-A01		B2-MW02B-A02		B3-MW03B-A01	
Sample Type			Duplicate											
Batch#			9502G238		9502G169		9503G616		9502G169		9503G616		9502G169	
Prep#			95GB0112		95GB0103		95GB0166		95GB0103		95GB0166		95GB0103	
RFW#			008		001		008		003		010		005	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/17/95		2/14/95		3/7/95		2/14/95		3/7/95		2/14/95	
Analysis Date			2/28/95		3/7/95		3/26/95		3/7/95		3/30/95		3/7/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
bis(2-Chloroethyl) ether	10	9.7	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
2-Chlorophenol	40	7.3	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
1,3-Dichlorobenzene	600	5.3	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
1,4-Dichlorobenzene	75	4.8	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
1,2-Dichlorobenzene	600	5.7	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
2-Methylphenol		6.7	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
2,2'-oxybis(1-Chloropropane)		7.0	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
4-Methylphenol		12.9	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
N-Nitroso-di-n-propylamine	20	8.0	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Hexachloroethane	10	5.3	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Nitrobenzene	10	7.4	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Isophorone	100	3.9	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
2-Nitrophenol		7.0	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
2,4-Dimethylphenol	100	4.8	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
bis(2-Chloroethoxy) methane		6.1	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
2,4-Dichlorophenol	20	4.4	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
1,2,4-Trichlorobenzene	9	9.6	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Naphthalene		8.4	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
4-Chloroaniline		2.9	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Hexachlorobutadiene	1	4.6	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
4-Chloro-3-methylphenol	20	3.1	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
2-Methylnaphthalene		8.7	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Hexachlorocyclopentadiene	50	3.6	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
2,4,6-Trichlorophenol		5.6	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
2,4,5-Trichlorophenol	700	4.7	26 U	26	30 U	30	30 U	30	24 U	24	31 U	31	25 U	25
2-Chloronaphthalene		8.2	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
2-Nitroaniline		6.1	26 U	26	30 U	30	30 U	30	24 U	24	31 U	31	25 U	25
Dimethylphthalate	7000	4.4	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Acenaphthylene	10	6.0	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
2,6-Dinitrotoluene	10	5.2	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
3-Nitroaniline		5.2	26 U	26	30 U	30	30 U	30	24 U	24	31 U	31	25 U	25
Acenaphthene	400	6.7	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
2,4-Dinitrophenol	40	4.6	26 U	26	30 U	30	30 U	30	24 U	24	31 U	31	25 U	25

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			M18		B1		B1		B2		B2		B3	
Sample			MP18-MW25-C01		B1-MW01B-A01		B1-MW01B-A02		B2-MW02B-A01		B2-MW02B-A02		B3-MW03B-A01	
Sample Type			Duplicate											
Batch#			9502G238		9502G169		9503G616		9502G169		9503G616		9502G169	
Prep#			95GB0112		95GB0103		95GB0166		95GB0103		95GB0166		95GB0103	
RFW#			008		001		008		003		010		005	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/17/95		2/14/95		3/7/95		2/14/95		3/7/95		2/14/95	
Analysis Date			2/28/95		3/7/95		3/26/95		3/7/95		3/30/95		3/7/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	26 U	26	30 U	30	30 U	30	24 U	24	31 U	31	25 U	25
Dibenzofuran		6.5	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
2,4-Dinitrotoluene	10	5.8	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Diethylphthalate	5000	5.4	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
4-Chlorophenyl-phenylether		7.0	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Fluorene	300	6.3	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
4-Nitroaniline		6.4	26 U	26	30 U	30	30 U	30	24 U	24	31 U	31	25 U	25
4,6-Dinitro-2-methylphenol		5.3	26 U	26	30 U	30	30 U	30	24 U	24	31 U	31	25 U	25
N-Nitrosodiphenylamine (1)	20	4.2	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
4-Bromophenyl-phenylether		5.3	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Hexachlorobenzene	10	5.5	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Pentachlorophenol	1	4.0	26 U	26	30 U	30	30 U	30	24 U	24	31 U	31	25 U	25
Phenanthrene	10	5.0	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Anthracene	2000	4.6	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Carbazole		4.4	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Di-n-butylphthalate	900	6.5	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Fluoranthene	300	6.0	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Pyrene	200	5.4	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Butylbenzylphthalate	100	5.3	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
3,3'-Dichlorobenzidine	60	2.8	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Benzo(a)anthracene	10	4.9	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Chrysene	20	4.4	3 J	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
bis(2-Ethylhexy)phthalate	30	9.7	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	100 B	20 *
Di-n-octyl phthalate	100	5.6	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Benzo(b)fluoranthene	2	5.7	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Benzo(k)fluoranthene	2	6.2	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Benzo(a)pyrene	20	4.9	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Indeno(1,2,3-cd)pyrene	20	7.1	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Dibenzo(a,h)anthracene	20	6.0	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Benzo(g,h,i)perylene	20	6.8	11 U	11	12 U	12	12 U	12	10 U	10	12 U	12	10 U	10
Petroleum hydrocarbons			0.30	0.27										
Total Est. Conc. of TIC			114 J		4		5 J		6		7 J		10	
Dilution Factor														
Method:TCL Semivolatiles														

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			B3		B3		B3		B4		B4	
Sample			B3-MW03B-A02		B3-MW03B-E01		B3-MW03B-E02		B4-MW04B-A01		B4-MW04B-A02	
Sample Type					Field Rinsate Blank		Field Rinsate Blank					
Batch#			9503G740		9502G169		9503G616		9502G169		9503G616	
Prep#			95GB0181		95GB0103		95GB0166		95GB0103		95GB0166	
RFW#			001		008		006		010		012	
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/14/95		2/13/95		3/7/95		2/13/95		3/7/95	
Analysis Date			3/29/95		3/7/95		3/25/95		3/7/95		3/26/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
bis(2-Chloroethyl) ether	10	9.7	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2-Chlorophenol	40	7.3	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
1,3-Dichlorobenzene	600	5.3	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
1,4-Dichlorobenzene	75	4.8	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
1,2-Dichlorobenzene	600	5.7	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2-Methylphenol		6.7	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2,2'-oxybis(1-Chloropropane)		7.0	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
4-Methylphenol		12.9	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
N-Nitroso-di-n-propylamine	20	8.0	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Hexachloroethane	10	5.3	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Nitrobenzene	10	7.4	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Isophorone	100	3.9	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2-Nitrophenol		7.0	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2,4-Dimethylphenol	100	4.8	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
bis(2-Chloroethoxy) methane		6.1	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2,4-Dichlorophenol	20	4.4	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
1,2,4-Trichlorobenzene	9	9.6	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Naphthalene		8.4	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
4-Chloroaniline		2.9	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Hexachlorobutadiene	1	4.6	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
4-Chloro-3-methylphenol	20	3.1	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2-Methylnaphthalene		8.7	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Hexachlorocyclopentadiene	50	3.6	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2,4,6-Trichlorophenol		5.6	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2,4,5-Trichlorophenol	700	4.7	25 U	25	26 U	26	24 U	24	27 U	27	31 U	31
2-Chloronaphthalene		8.2	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2-Nitroaniline		6.1	25 U	25	26 U	26	24 U	24	27 U	27	31 U	31
Dimethylphthalate	7000	4.4	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Acenaphthylene	10	6.0	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2,6-Dinitrotoluene	10	5.2	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
3-Nitroaniline		5.2	25 U	25	26 U	26	24 U	24	27 U	27	31 U	31
Acenaphthene	400	6.7	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2,4-Dinitrophenol	40	4.6	25 U	25	26 U	26	24 U	24	27 U	27	31 U	31

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			B3		B3		B3		B4		B4	
Sample			B3-MW03B-A02		B3-MW03B-E01		B3-MW03B-E02		B4-MW04B-A01		B4-MW04B-A02	
Sample Type					Field Rinsate Blank		Field Rinsate Blank					
Batch#			9503G740		9502G169		9503G616		9502G169		9503G616	
Prep#			95GB0181		95GB0103		95GB0166		95GB0103		95GB0166	
RFW#			001		008		006		010		012	
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/14/95		2/13/95		3/7/95		2/13/95		3/7/95	
Analysis Date			3/29/95		3/7/95		3/25/95		3/7/95		3/26/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	25 U	25	26 U	26	24 U	24	27 U	27	31 U	31
Dibenzofuran		6.5	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
2,4-Dinitrotoluene	10	5.8	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Diethylphthalate	5000	5.4	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
4-Chlorophenyl-phenylether		7.0	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Fluorene	300	6.3	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
4-Nitroaniline		6.4	25 U	25	26 U	26	24 U	24	27 U	27	31 U	31
4,6-Dinitro-2-methylphenol		5.3	25 U	25	26 U	26	24 U	24	27 U	27	31 U	31
N-Nitrosodiphenylamine (1)	20	4.2	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
4-Bromophenyl-phenylether		5.3	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Hexachlorobenzene	10	5.5	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Pentachlorophenol	1	4.0	25 U	25	26 U	26	24 U	24	27 U	27	31 U	31
Phenanthrene	10	5.0	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Anthracene	2000	4.6	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Carbazole		4.4	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Di-n-butylphthalate	900	6.5	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Fluoranthene	300	6.0	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Pyrene	200	5.4	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Butylbenzylphthalate	100	5.3	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
3,3'-Dichlorobenzidine	60	2.8	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Benzo(a)anthracene	10	4.9	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Chrysene	20	4.4	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
bis(2-Ethylhexy)phthalate	30	9.7	5 J	10	10 U	10	10 U	10	11 U	11	12 U	12
Di-n-octyl phthalate	100	5.6	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Benzo(b)fluoranthene	2	5.7	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Benzo(k)fluoranthene	2	6.2	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Benzo(a)pyrene	20	4.9	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Indeno(1,2,3-cd)pyrene	20	7.1	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Dibenzo(a,h)anthracene	20	6.0	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Benzo(g,h,i)perylene	20	6.8	10 U	10	10 U	10	10 U	10	11 U	11	12 U	12
Petroleum hydrocarbons												
Total Est. Conc. of TIC			52 J		8		10 J		6		6 J	
Dilution Factor			* = 2.00									
Method:TCL Semivolatiles												

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			B5		B5	
Sample			B5-MW05B-A01		B5-MW05B-A02	
Sample Type						
Batch#			9502G169		9503G616	
Prep#			95GB0103		95GB0166	
RFW#			012		001	
Dilution Factor			1.00		1.00	
Matrix			water		water	
Units	ug/l	ug/l	ug/l		ug/l	
Sampling Date			2/13/95		3/7/95	
Analysis Date			3/7/95		3/25/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	11 U	11	10 U	10
bis(2-Chloroethyl) ether	10	9.7	11 U	11	10 U	10
2-Chlorophenol	40	7.3	11 U	11	10 U	10
1,3-Dichlorobenzene	600	5.3	11 U	11	10 U	10
1,4-Dichlorobenzene	75	4.8	11 U	11	10 U	10
1,2-Dichlorobenzene	600	5.7	11 U	11	10 U	10
2-Methylphenol		6.7	11 U	11	10 U	10
2,2'-oxybis(1-Chloropropane)		7.0	11 U	11	10 U	10
4-Methylphenol		12.9	11 U	11	10 U	10
N-Nitroso-di-n-propylamine	20	8.0	11 U	11	10 U	10
Hexachloroethane	10	5.3	11 U	11	10 U	10
Nitrobenzene	10	7.4	11 U	11	10 U	10
Isophorone	100	3.9	11 U	11	10 U	10
2-Nitrophenol		7.0	11 U	11	10 U	10
2,4-Dimethylphenol	100	4.8	11 U	11	10 U	10
bis(2-Chloroethoxy) methane		6.1	11 U	11	10 U	10
2,4-Dichlorophenol	20	4.4	11 U	11	10 U	10
1,2,4-Trichlorobenzene	9	9.6	11 U	11	10 U	10
Naphthalene		8.4	11 U	11	10 U	10
4-Chloroaniline		2.9	11 U	11	10 U	10
Hexachlorobutadiene	1	4.6	11 U	11	10 U	10
4-Chloro-3-methylphenol	20	3.1	11 U	11	10 U	10
2-Methylnaphthalene		8.7	11 U	11	10 U	10
Hexachlorocyclopentadiene	50	3.6	11 U	11	10 U	10
2,4,6-Trichlorophenol		5.6	11 U	11	10 U	10
2,4,5-Trichlorophenol	700	4.7	26 U	26	25 U	25
2-Chloronaphthalene		8.2	11 U	11	10 U	10
2-Nitroaniline		6.1	26 U	26	25 U	25
Dimethylphthalate	7000	4.4	11 U	11	10 U	10
Acenaphthylene	10	6.0	11 U	11	10 U	10
2,6-Dinitrotoluene	10	5.2	11 U	11	10 U	10
3-Nitroaniline		5.2	26 U	26	25 U	25
Acenaphthene	400	6.7	11 U	11	10 U	10
2,4-Dinitrophenol	40	4.6	26 U	26	25 U	25

MAIN POST
GROUNDWATER SEMIVOLATILES

Geographical Location			B5		B5	
Sample			B5-MW05B-A01		B5-MW05B-A02	
Sample Type						
Batch#			9502G169		9503G616	
Prep#			95GB0103		95GB0166	
RFW#			012		001	
Dilution Factor			1.00		1.00	
Matrix			water		water	
Units	ug/l	ug/l	ug/l		ug/l	
Sampling Date			2/13/95		3/7/95	
Analysis Date			3/7/95		3/25/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	26 U	26	25 U	25
Dibenzofuran		6.5	11 U	11	10 U	10
2,4-Dinitrotoluene	10	5.8	11 U	11	10 U	10
Diethylphthalate	5000	5.4	11 U	11	10 U	10
4-Chlorophenyl-phenylether		7.0	11 U	11	10 U	10
Fluorene	300	6.3	11 U	11	10 U	10
4-Nitroaniline		6.4	26 U	26	25 U	25
4,6-Dinitro-2-methylphenol		5.3	26 U	26	25 U	25
N-Nitrosodiphenylamine (1)	20	4.2	11 U	11	10 U	10
4-Bromophenyl-phenylether		5.3	11 U	11	10 U	10
Hexachlorobenzene	10	5.5	11 U	11	10 U	10
Pentachlorophenol	1	4.0	26 U	26	25 U	25
Phenanthrene	10	5.0	11 U	11	10 U	10
Anthracene	2000	4.6	11 U	11	10 U	10
Carbazole		4.4	11 U	11	10 U	10
Di-n-butylphthalate	900	6.5	11 U	11	10 U	10
Fluoranthene	300	6.0	11 U	11	10 U	10
Pyrene	200	5.4	11 U	11	10 U	10
Butylbenzylphthalate	100	5.3	11 U	11	10 U	10
3,3'-Dichlorobenzidine	60	2.8	11 U	11	10 U	10
Benzo(a)anthracene	10	4.9	11 U	11	10 U	10
Chrysene	20	4.4	11 U	11	10 U	10
bis(2-Ethylhexy)phthalate	30	9.7	11 U	11	10 U	10
Di-n-octyl phthalate	100	5.6	11 U	11	10 U	10
Benzo(b)fluoranthene	2	5.7	11 U	11	10 U	10
Benzo(k)fluoranthene	2	6.2	11 U	11	10 U	10
Benzo(a)pyrene	20	4.9	11 U	11	10 U	10
Indeno(1,2,3-cd)pyrene	20	7.1	11 U	11	10 U	10
Dibenzo(a,h)anthracene	20	6.0	11 U	11	10 U	10
Benzo(g,h,i)perylene	20	6.8	11 U	11	10 U	10
Petroleum hydrocarbons						
Total Est. Conc. of TIC			5		4 J	
Dilution Factor						
Method:TCL Semivolatiles						

N OST
GROUNDWATER INORGANICS

Geographical Location		M2		M2		M2		M2		M2		M2		M2	
Sample		MP02-MW01-A01		MP02-MW01-A01 SOL		MP02-MW01-A02		MP02-MW01-A02 SOL		MP02-MW02-A01		MP02-MW02-A01 SOL		MP02-MW02-A02	
Sample Type		Total		Soluble		Total		Soluble		Total		Soluble		Total	
Batch#		9502G197		9502G197		9503G642		9503G642		9502G197		9502G197		9503G642	
Prep#		95GI426		95GI426		95GI479		95GI479		95GI426		95GI426		95GI479	
RFW#		001		002		001		002		003		004		003	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water, filtered		water		water, filtered		water		water, filtered		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/15/95		2/15/95		3/8/95		3/8/95		2/15/95		2/15/95		3/8/95	
Analysis Date		2/23/95		2/28/95		3/10/95		3/10/95		2/23/95		2/28/95		3/10/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0
Aluminum	200	5400	24.0	310	24.0	5310	24.0	379	24.0	633	24.0	40.2	24.0	3490	24.0
Arsenic	8	9.3	1.9	1.9 U	1.9	8.6	1.6	1.6 U	1.6	1.9 U	1.9	1.9 U	1.9	7.7	1.6
Barium	2000	141	1.7	104	1.7	129	1.7	88.5	1.7	484	1.7	436	1.7	397	1.7
Beryllium	20	1.1	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90
Calcium		14000	10.4	13800	10.4	14300	10.4	14100	10.4	98600	10.4	94800	10.4	80100	10.4
Cadmium	4	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	4.0	2.8
Cobalt		7.9	3.0	5.8	3.0	5.6	3.0	6.9	3.0	3.0 U	3.0	3.0 U	3.0	6.2	3.0
Chromium	100	68.4	2.9	2.9 U	2.9	63.6	2.9	2.9 U	2.9	7.5	2.9	2.9 U	2.9	37.5	2.9
Copper	1000	4.3	1.9	2.8	1.9	6.3	1.9	1.9	1.9	1.9 U	1.9	1.9 U	1.9	12.2	1.9
Iron	300	16600	6.4	39.8	6.4	15200	6.4	33.7	6.4	64700	6.4	58900	6.4	57800	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.29	0.20	0.20 U	0.20	0.21	0.20
Potassium		6710	685	3680	685	7680	685	4050	685	12000	685	11400	685	12000	685
Magnesium		8370	18.3	6290	18.3	8260	18.3	6250	18.3	12100	18.3	11400	18.3	10700	18.3
Manganese	50	79.5	1.8	67.0	1.8	77.6	1.8	66.4	1.8	314	1.8	301	1.8	259	1.8
Sodium	50000	12600	30.5	13500	30.5	13600	30.5	13900	30.5	11200	30.5	10900	30.5	9580	30.5
Nickel	100	19.1	10.8	16.6	10.8	20.5	10.8	14.0	10.8	10.8 U	10.8	20.0	10.8	10.8 U	10.8
Lead	10	4.9	1.1	1.1 U	1.1	3.9	1.2	1.2 U	1.2	4.4	1.1	1.1 U	1.1	18.7	1.2
Antimony	20	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	22.6	20.7	20.7 U	20.7
Selenium	50	1.8	1.5	1.5 U	1.5	2.0	1.8	1.8 U	1.8	1.5 U	1.5	1.5 U	1.5	1.8 U	1.8
Thallium	10	0.70 U	0.70	0.70 U	0.70	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70	0.70 U	0.70	1.1 U	1.1
Vanadium		21.6	2.3	2.3 U	2.3	20.9	2.3	2.4	2.3	6.2	2.3	2.3 U	2.3	21.1	2.3
Zinc	5000	455	3.8	402	3.8	489	3.8	463	3.8	15.7	3.8	5.1	3.8	79.0	3.8
Cyanide	200	10 U	10			10 U	10			10 U	10			10 U	10
Ammonia as Nitrogen															
Sulfate															
Dilution Factor															
Method:TAL Metals, Cyanide															

MAIN POST
GROUNDWATER INORGANICS

Geographical Location		M2		M2		M2		M2		M2		M3		M3	
Sample		MP02-MW02-A02 SOL		MP02-MW03-A01		MP02-MW03-A01 SOL		MP02-MW03-A02		MP02-MW03-A02 SOL		MP03-MW04-A01		MP03-MW04-A01 SOL	
Sample Type		Soluble		Total		Soluble		Total		Soluble		Total		Soluble	
Batch#		9503G642		9502G197		9502G197		9503G642		9503G642		9502G219		9502G219	
Prep#		95GI479		95GI426		95GI426		95GI479		95GI479		95GI439		95GI439	
RFW#		004		005		006		005		006		001		002	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water, filtered		water		water, filtered		water		water, filtered		water		water, filtered	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/8/95		2/15/95		2/15/95		3/8/95		3/8/95		2/16/95		2/16/95	
Analysis Date		3/10/95		2/23/95		2/28/95		3/10/95		3/10/95		3/1/95		3/3/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5
Aluminum	200	30.9	24.0	693	24.0	28.3	24.0	2540	24.0	24.0 U	24.0	611	16.8	29.3	16.8
Arsenic	8	1.8	1.6	1.9 U	1.9	1.9 U	1.9	3.4	1.6	1.6 U	1.6	1.9 U	1.9	1.9 U	1.9
Barium	2000	298	1.7	79.1	1.7	64.8	1.7	132	1.7	55.9	1.7	43.6	0.80	39.7	0.80
Beryllium	20	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.30 U	0.30	0.30 U	0.30
Calcium		80000	10.4	63300	10.4	63800	10.4	65800	10.4	60600	10.4	32300	8.4	32300	8.4
Cadmium	4	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.9 U	2.9	2.9 U	2.9
Cobalt		3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.5	3.0	3.0 U	3.0	2.3 U	2.3	2.3 U	2.3
Chromium	100	2.9 U	2.9	5.6	2.9	2.9 U	2.9	24.9	2.9	2.9 U	2.9	8.1	4.7	4.7 U	4.7
Copper	1000	4.2	1.9	2.1	1.9	1.9 U	1.9	9.6	1.9	2.8	1.9	4.0 U	4.0	4.0 U	4.0
Iron	300	42500	6.4	15500	6.4	12000	6.4	25400	6.4	11800	6.4	2610	2.5	1030	2.5
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.29	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		10000	685	10400	685	10200	685	11900	685	9540	685	7540	67.9	6730	67.9
Magnesium		9600	18.3	5180	18.3	5090	18.3	5960	18.3	4940	18.3	4210	34.3	3920	34.3
Manganese	50	248	1.8	455	1.8	453	1.8	512	1.8	455	1.8	32.7	0.90	34.1	0.90
Sodium	50000	9710	30.5	8940	30.5	8990	30.5	9400	30.5	8770	30.5	12600	19.1	12600	19.1
Nickel	100	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8	5.9	4.2	4.2 U	4.2
Lead	10	1.2 U	1.2	8.0	1.1	1.1 U	1.1	21.6	1.2	3.9	1.2	1.6 U	1.6	1.6 U	1.6
Antimony	20	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	10.9 U	10.9	10.9 U	10.9
Selenium	50	1.8 U	1.8	1.5 U	1.5	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8	1.5 U	1.5	1.5 U	1.5
Thallium	10	5.5 U	5.5 *	0.70 U	0.70	0.70 U	0.70	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70	0.70 U	0.70
Vanadium		2.3 U	2.3	5.1	2.3	2.3 U	2.3	14.3	2.3	2.3 U	2.3	4.0	2.1	2.6	2.1
Zinc	5000	6.6	3.8	36.6	3.8	4.1	3.8	122	3.8	9.3	3.8	17.9	1.9	8.5	1.9
Cyanide	200			10 U	10			10 U	10			10 U	10		
Ammonia as Nitrogen															
Sulfate															
Dilution Factor		* = 5.0													
Method:TAL Metals, Cyanide															

[illegible]'OST
GROUNDWATER INORGANICS

Geographical Location		M3		M3		M3		M3		M3		M3		M3	
Sample		MP03-MW04-A02		MP03-MW04-A02 SOL		MP03-MW05-A01		MP03-MW05-A01 SOL		MP03-MW05-A02		MP03-MW05-A02 SOL		MP03-MW06-A01	
Sample Type		Total		Soluble		Total		Soluble		Total		Soluble		Total	
Batch#		9503G642		9503G642		9502G219		9502G219		9503G660		9503G660		9502G219	
Prep#		95GI479		95GI479		95GI439		95GI439		95GI488		95GI488		95GI439	
RFW#		009		010		003		004		003		004		005	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water, filtered		water		water, filtered		water		water, filtered		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/8/95		3/8/95		2/16/95		2/16/95		3/9/95		3/9/95		2/16/95	
Analysis Date		3/10/95		3/10/95		3/1/95		3/3/95		3/13/95		3/13/95		3/1/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5	3.0 U	3.0	3.0 U	3.0	2.5 U	2.5
Aluminum	200	799	24.0	24.0 U	24.0	768	16.8	16.8 U	16.8	4220	24.0	24.0 U	24.0	132	16.8
Arsenic	8	1.9	1.6	2.0	1.6	1.9 U	1.9	1.9 U	1.9	4.3	1.3	1.3 U	1.3	1.9 U	1.9
Barium	2000	51.2	1.7	42.8	1.7	520.0	0.80	466	0.80	648	1.7	536	1.7	119	0.80
Beryllium	20	0.90 U	0.90	0.90 U	0.90	0.30 U	0.30	0.30 U	0.30	0.90 U	0.90	0.90 U	0.90	0.30 U	0.30
Calcium		35200	10.4	32400	10.4	93200	8.4	90000	8.4	98000	10.4	97900	10.4	119000	8.4
Cadmium	4	2.8 U	2.8	2.8 U	2.8	2.9 U	2.9	2.9 U	2.9	4.2	2.8	2.8 U	2.8	2.9 U	2.9
Cobalt		3.0 U	3.0	3.0 U	3.0	3.0	2.3	3.6	2.3	3.0 U	3.0	3.0 U	3.0	2.3 U	2.3
Chromium	100	10	2.9	2.9 U	2.9	7.3	4.7	4.7 U	4.7	32.9	2.9	2.9 U	2.9	7.3	4.7
Copper	1000	2.0	1.9	3.0	1.9	8.5	4.0	4.0 U	4.0	36.9	1.9	1.9 U	1.9	4.0 U	4.0
Iron	300	3320	6.4	48.7	6.4	79700	2.5	71300	2.5	100000	6.4	78700	6.4	17800	2.5
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.63	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		8110	685	6450	685	12900	67.9	12300	67.9	13700	685	11700	685	10100	67.9
Magnesium		4970	18.3	4170	18.3	17800	34.3	17200	34.3	18100	18.3	17100	18.3	28100	34.3
Manganese	50	35.9	1.8	32.1	1.8	1150	0.90	1100	0.90	1080	1.8	1030	1.8	659	0.90
Sodium	50000	13700	30.5	12500	30.5	16300	19.1	16200	19.1	15300	30.5	15800	30.5	35000	19.1
Nickel	100	10.8 U	10.8	10.8 U	10.8	4.2 U	4.2	4.2 U	4.2	10.8 U	10.8	10.8 U	10.8	4.2 U	4.2
Lead	10	1.2 U	1.2	1.2 U	1.2	26.6	3.2	1.6 U	1.6	130	16.0 *	1.6 U	1.6	1.6 U	1.6
Antimony	20	20.7 U	20.7	20.7 U	20.7	10.9 U	10.9	10.9 U	10.9	20.7 U	20.7	20.7 U	20.7	10.9 U	10.9
Selenium	50	1.8 U	1.8	1.8 U	1.8	1.5 U	1.5	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8	1.5 U	1.5
Thallium	10	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70	0.70 U	0.70	1.7 U	1.7	1.7 U	1.7	0.70 U	0.70
Vanadium		2.6	2.3	2.3 U	2.3	4.9	2.1	2.1 U	2.1	19.1	2.3	2.3 U	2.3	2.1 U	2.1
Zinc	5000	17.8	3.8	10.2	3.8	86.1	1.9	12.5	1.9	382	3.8	11.4	3.8	64.2	1.9
Cyanide	200	10 U	10			10 U	10			10 U	10			10 U	10
Ammonia as Nitrogen															
Sulfate															
Dilution Factor										* = 10					
Method:TAL Metals, Cyanide															

MAIN POST
GROUNDWATER INORGANICS

Geographical Location		M3		M3		M3		M4		M4		M4		M4	
Sample		MP03-MW06-A01 SOL		MP03-MW06-A02		MP03-MW06-A02 SOL		MP04-MW07-A01		MP04-MW07-A01 SOL		MP04-MW07-A02		MP04-MW07-A02 SOL	
Sample Type		Soluble		Total		Soluble		Total		Soluble		Total		Soluble	
Batch#		9502G219		9503G660		9503G660		9502G219		9502G219		9503G660		9503G660	
Prep#		95GI439		95GI488		95GI488		95GI439		95GI439		95GI488		95GI488	
RFW#		006		001		002		007		008		005		006	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water, filtered		water		water, filtered		water		water, filtered		water		water, filtered	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/16/95		3/9/95		3/9/95		2/16/95		2/16/95		3/9/95		3/9/95	
Analysis Date		3/3/95		3/13/95		3/13/95		3/1/95		3/3/95		3/13/95		3/13/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	2.5 U	2.5	3.0 U	3.0	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5	3.0 U	3.0	3.0 U	3.0
Aluminum	200	16.8 U	16.8	816	24.0	24.0 U	24.0	9440	16.8	823	16.8	3150	24.0	851	24.0
Arsenic	8	1.9 U	1.9	1.3 U	1.3	1.3 U	1.3	8.0	1.9	1.9 U	1.9	2.2	1.3	1.3 U	1.3
Barium	2000	112	0.80	129	1.7	113	1.7	91.6	0.80	60.5	0.80	68.5	1.7	62.3	1.7
Beryllium	20	0.30 U	0.30	0.90 U	0.90	0.90 U	0.90	0.69	0.30	0.40	0.30	0.90 U	0.90	0.90 U	0.90
Calcium		117000	8.4	126000	10.4	126000	10.4	18600	8.4	18100	8.4	18100	10.4	18600	10.4
Cadmium	4	2.9 U	2.9	2.8 U	2.8	2.8 U	2.8	2.9 U	2.9	2.9 U	2.9	2.8 U	2.8	2.8 U	2.8
Cobalt		2.3 U	2.3	3.0 U	3.0	3.0 U	3.0	6.0	2.3	3.5	2.3	3.0 U	3.0	3.0 U	3.0
Chromium	100	4.7 U	4.7	8.2	2.9	2.9 U	2.9	94.9	4.7	4.7 U	4.7	22.1	2.9	2.9 U	2.9
Copper	1000	4.0 U	4.0	1.9 U	1.9	1.9 U	1.9	9.5	4.0	4.0 U	4.0	1.9 U	1.9	1.9 U	1.9
Iron	300	15900	2.5	23200	6.4	17200	6.4	29000	2.5	57.2	2.5	6870	6.4	169	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		9750	67.9	10500	685	10200	685	6810	67.9	1970	67.9	3150	685	2420	685
Magnesium		27400	34.3	29500	18.3	29100	18.3	9020	34.3	7090	34.3	7550	18.3	7290	18.3
Manganese	50	643	0.90	713	1.8	703	1.8	65.6	0.90	51.5	0.90	57.0	1.8	55.3	1.8
Sodium	50000	34400	19.1	33600	30.5	33400	30.5	54300	19.1	53000	19.1	46100	30.5	47400	30.5
Nickel	100	4.2 U	4.2	10.8 U	10.8	10.8 U	10.8	13.7	4.2	10.0	4.2	10.8 U	10.8	10.8 U	10.8
Lead	10	1.6 U	1.6	4.1	1.6	1.6 U	1.6	15.8	1.6	1.6 U	1.6	1.8	1.6	1.6 U	1.6
Antimony	20	10.9 U	10.9	20.7 U	20.7	20.7 U	20.7	10.9 U	10.9	10.9 U	10.9	20.7 U	20.7	20.7 U	20.7
Selenium	50	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8	1.5 U	1.5	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8
Thallium	10	0.70 U	0.70	1.7 U	1.7	1.7 U	1.7	0.70 U	0.70	0.70 U	0.70	1.7 U	1.7	1.7 U	1.7
Vanadium		2.1 U	2.1	6.2	2.3	2.3 U	2.3	54.1	2.1	2.8	2.1	13.8	2.3	2.3 U	2.3
Zinc	5000	53.3	1.9	59.9	3.8	34.4	3.8	60.1	1.9	34.2	1.9	38.4	3.8	34.6	3.8
Cyanide	200			10 U	10			10 U	10			10 U	10		
Ammonia as Nitrogen															
Sulfate															
Dilution Factor															
Method:TAL Metals, Cyanide															

I POST
GROUNDWATER INORGANICS

Geographical Location		M4		M4		M4		M4		M4		M4		M4	
Sample		MP04-MW07-C01		MP04-MW07-C01 SOL		MP04-MW07-C02		MP04-MW07-C02 SOL		MP04-MW07-E01		MP04-MW07-E01 SOL		MP04-MW08-A01	
Sample Type		Duplicate - Total		Duplicate - Soluble		Duplicate - Total		Duplicate - Soluble		Field Rinsate - Total		Field Rinsate - Soluble		Total	
Batch#		9502G219		9502G219		9503G660		9503G660		9502G219		9502G219		9502G219	
Prep#		95GI439		95GI439		95GI488		95GI488		95GI439		95GI439		95GI439	
RFW#		009		010		007		008		012		013		014	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water, filtered		water		water, filtered		water		water, filtered		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/16/95		2/16/95		3/9/95		3/9/95		2/16/95		2/16/95		2/16/95	
Analysis Date		3/1/95		3/3/95		3/13/95		3/13/95		3/1/95		3/1/95		3/1/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	2.5 U	2.5	2.5 U	2.5	3.0 U	3.0	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5
Aluminum	200	9950	16.8	807	16.8	2890	24.0	856	24.0	18.1	16.8	16.8 U	16.8	1570	16.8
Arsenic	8	7.2	1.9	1.9 U	1.9	2.2	1.3	1.3 U	1.3	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9
Barium	2000	89.7	0.80	60.1	0.80	70.3	1.7	61.6	1.7	0.81	0.80	0.80 U	0.80	38.8	0.80
Beryllium	20	0.69	0.30	0.51	0.30	0.99	0.90	0.90 U	0.90	0.30 U	0.30	0.31	0.30	0.30 U	0.30
Calcium		18200	8.4	17900	8.4	19000	10.4	18900	10.4	57.4	8.4	82.6	8.4	32700	8.4
Cadmium	4	2.9 U	2.9	2.9 U	2.9	2.8 U	2.8	2.8 U	2.8	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9
Cobalt		5.8	2.3	5.3	2.3	3.4	3.0	3.0 U	3.0	2.3 U	2.3	2.3 U	2.3	2.8	2.3
Chromium	100	103	4.7	4.7 U	4.7	18.2	2.9	2.9 U	2.9	4.7 U	4.7	4.7 U	4.7	17.9	4.7
Copper	1000	6.3	4.0	4.0 U	4.0	1.9 U	1.9	1.9 U	1.9	4.0 U	4.0	4.0 U	4.0	4.0 U	4.0
Iron	300	30000	2.5	62.3	2.5	6420	6.4	131	6.4	62.7	2.5	4.3	2.5	17700	2.5
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		6690	67.9	1990	67.9	3230	685	2240	685	67.9 U	67.9	68.8	67.9	7500	67.9
Magnesium		9110	34.3	6990	34.3	7690	18.3	7430	18.3	34.3 U	34.3	34.3 U	34.3	5970	34.3
Manganese	50	64.6	0.90	51.0	0.90	58.2	1.8	55.2	1.8	0.90 U	0.90	0.90 U	0.90	110	0.90
Sodium	50000	52700	19.1	52100	19.1	47600	30.5	48600	30.5	116	19.1	81.4	19.1	9450	19.1
Nickel	100	12.0	4.2	9.2	4.2	10.8 U	10.8	10.8 U	10.8	4.2 U	4.2	4.2 U	4.2	4.2 U	4.2
Lead	10	15.8	1.6	1.6 U	1.6	2.2	1.6	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6	7.4	1.6
Antimony	20	10.9 U	10.9	10.9 U	10.9	20.7 U	20.7	20.7 U	20.7	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9
Selenium	50	1.5 U	1.5	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5
Thallium	10	0.70 U	0.70	0.70 U	0.70	1.7 U	1.7	1.7 U	1.7	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70
Vanadium		56.1	2.1	2.1 U	2.1	12.2	2.3	2.3 U	2.3	2.1 U	2.1	2.1 U	2.1	6.0	2.1
Zinc	5000	59.6	1.9	34.0	1.9	39.2	3.8	33.2	3.8	3.8	1.9	2.4	1.9	30.0	1.9
Cyanide	200	10 U	10			10 U	10			10 U	10			10 U	10
Ammonia as Nitrogen															
Sulfate															
Dilution Factor															
Method:TAL Metals, Cyanide															

MAIN POST
GROUNDWATER INORGANICS

Geographical Location		M4		M4		M4		M4		M4		M4		M4	
Sample		MP04-MW08-A01 SOL		MP04-MW08-A02		MP04-MW08-A02 SOL		MP04-MW09-A01		MP04-MW09-A01 SOL		MP04-MW09-A02		MP04-MW09-A02 SOL	
Sample Type		Soluble		Total		Soluble		Total		Soluble		Total		Soluble	
Batch#		9502G219		9503G642		9503G642		9502G219		9502G219		9503G660		9503G660	
Prep#		95GI439		95GI479		95GI479		95GCN045		95GI439		95GI488		95GI488	
RFW#		015		007		008		016		017		009		010	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water, filtered		water		water, filtered		water		water, filtered		water		water, filtered	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/16/95		3/8/95		3/8/95		2/16/95		2/16/95		3/9/95		3/9/95	
Analysis Date		3/3/95		3/10/95		3/10/95		3/1/95		3/3/95		3/13/95		3/13/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	2.5 U	2.5	3.0 U	3.0	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5	3.0 U	3.0	3.0 U	3.0
Aluminum	200	16.8 U	16.8	1640	24.0	24.0 U	24.0	182	16.8	16.8 U	16.8	76.2	24.0	24.0 U	24.0
Arsenic	8	1.9 U	1.9	2.1	1.6	1.6 U	1.6	1.9 U	1.9	1.9 U	1.9	1.3 U	1.3	1.3 U	1.3
Barium	2000	27.7	0.80	41.0	1.7	28.0	1.7	60.0	0.80	39.3	0.80	55.8	1.7	38.8	1.7
Beryllium	20	0.30 U	0.30	0.90 U	0.90	0.90 U	0.90	0.30 U	0.30	0.30 U	0.30	0.90 U	0.90	0.90 U	0.90
Calcium		31900	8.4	33500	10.4	33100	10.4	45300	8.4	44000	8.4	47700	10.4	46300	10.4
Cadmium	4	2.9 U	2.9	2.8 U	2.8	2.8 U	2.8	2.9 U	2.9	2.9 U	2.9	2.8 U	2.8	2.8 U	2.8
Cobalt		2.3 U	2.3	3.8	3.0	3.0 U	3.0	2.3 U	2.3	2.3 U	2.3	3.0 U	3.0	3.0 U	3.0
Chromium	100	4.7 U	4.7	16.6	2.9	2.9 U	2.9	6.0	4.7	4.7 U	4.7	2.9 U	2.9	2.9 U	2.9
Copper	1000	4.0 U	4.0	3.0	1.9	2.6	1.9	4.0 U	4.0	4.0 U	4.0	1.9 U	1.9	1.9 U	1.9
Iron	300	10900	2.5	18100	6.4	10600	6.4	21500	2.5	12500	2.5	21900	6.4	13500	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		6150	67.9	7670	685	6570	685	8640	67.9	8350	67.9	9210	685	8010	685
Magnesium		5290	34.3	6320	18.3	5760	18.3	6070	34.3	5870	34.3	6420	18.3	6170	18.3
Manganese	50	101	0.90	111	1.8	104	1.8	81.3	0.90	77.2	0.90	88.7	1.8	85.5	1.8
Sodium	50000	9230	19.1	9550	30.5	9580	30.5	9760	19.1	9580	19.1	10800	30.5	10500	30.5
Nickel	100	4.2 U	4.2	10.8 U	10.8	10.8 U	10.8	4.2 U	4.2	4.2 U	4.2	10.8 U	10.8	10.8 U	10.8
Lead	10	1.6 U	1.6	6.7	1.2	1.2 U	1.2	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6
Antimony	20	10.9 U	10.9	20.7 U	20.7	20.7 U	20.7	10.9 U	10.9	10.9 U	10.9	20.7 U	20.7	20.7 U	20.7
Selenium	50	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8	1.5 U	1.5	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8
Thallium	10	0.70 U	0.70	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70	0.70 U	0.70	1.7 U	1.7	1.7 U	1.7
Vanadium		2.1 U	2.1	7.9	2.3	2.3 U	2.3	2.1 U	2.1	2.1 U	2.1	2.3 U	2.3	2.3 U	2.3
Zinc	5000	3.0	1.9	33.5	3.8	5.7	3.8	3.9	1.9	1.9 U	1.9	3.8 U	3.8	4.5	3.8
Cyanide	200			10 U	10			10 U	10			10 U	10		
Ammonia as Nitrogen															
Sulfate															
Dilution Factor															
Method:TAL Metals, Cyanide															

POST
GROUNDWATER INORGANICS

Geographical Location		M5		M5		M5		M5		M5		M5		M5	
Sample		MP05-MW10-A01		MP05-MW10-A01 SOL		MP05-MW10-A02		MP05-MW10-A02 SOL		MP05-MW11-A01		MP05-MW11-A01 SOL		MP05-MW11-A02	
Sample Type		Total		Soluble		Total		Soluble		Total		Soluble		Total	
Batch#		9502G238		9502G238		9503G660		9503G660		9502G238		9502G238		9503G660	
Prep#		95GCN045		95GI397		95GI488		95GI488		95GCN045		95GI397		95GI488	
RFW#		010		011		011		012		012		013		013	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water, filtered		water		water, filtered		water		water, filtered		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/17/95		2/17/95		3/9/95		3/9/95		2/17/95		2/17/95		3/9/95	
Analysis Date		3/1/95		2/22/95		3/13/95		3/13/95		3/1/95		2/22/95		3/13/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0
Aluminum	200	212	24.0	30.7	24.0	99.6	24.0	24.0 U	24.0	1160	24.0	57.4	24.0	945	24.0
Arsenic	8	1.9 U	1.9	1.9 U	1.9	1.3 U	1.3	1.3 U	1.3	1.9 U	1.9	1.9 U	1.9	1.3 U	1.3
Barium	2000	101	1.7	36.7	1.7	131	1.7	44.9	1.7	16.8	1.7	13.2	1.7	15.3	1.7
Beryllium	20	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90
Calcium		16000	10.4	15400	10.4	17000	10.4	15900	10.4	11100	10.4	11100	10.4	11100	10.4
Cadmium	4	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8
Cobalt		3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0
Chromium	100	5.5	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	15.4	2.9	2.9 U	2.9	10.4	2.9
Copper	1000	10.9	1.9	2.5	1.9	3.2	1.9	1.9 U	1.9	2.9	1.9	2.0	1.9	1.9 U	1.9
Iron	300	8310	6.4	4200	6.4	10100	6.4	4490	6.4	5150	6.4	19.3	6.4	4220	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		10100	685	10000	685	7600	685	7430	685	3590	685	2230	685	3020	685
Magnesium		14100	18.3	14100	18.3	13000	18.3	12400	18.3	4260	18.3	3760	18.3	4180	18.3
Manganese	50	127	1.8	117	1.8	166	1.8	148	1.8	14.8	1.8	12.0	1.8	14.2	1.8
Sodium	50000	85400	30.5	85100	30.5	80200	30.5	77000	30.5	18400	30.5	18500	30.5	17500	30.5
Nickel	100	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8	12.4	10.8	10.8 U	10.8
Lead	10	5.4	1.6	1.6 U	1.6	5.9	1.6	1.6 U	1.6	2.2	1.6	1.6 U	1.6	1.6 U	1.6
Antimony	20	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.8	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7
Selenium	50	1.5 U	1.5	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8	1.5 U	1.5	1.5 U	1.5	1.8 U	1.8
Thallium	10	0.70 U	0.70	0.70 U	0.70	1.7 U	1.7	1.7 U	1.7	0.70 U	0.70	0.70 U	0.70	1.7 U	1.7
Vanadium		2.3 U	2.3	2.3 U	2.3	2.6	2.3	2.3 U	2.3	5.5	2.3	2.3 U	2.3	6.2	2.3
Zinc	5000	10.5	3.8	5.9	3.8	5.0	3.8	4.3	3.8	168	3.8	160	3.8	178.0	3.8
Cyanide	200	10 U	10			10 U	10			10 U	10			10 U	10
Ammonia as Nitrogen															
Sulfate		18.8	5.0			10.8	5.0			49.2	10.0 *			38.3	10.0
Dilution Factor										*=2					
Method:TAL Metals, Cyanide															

MAIN POST
GROUNDWATER INORGANICS

Geographical Location		M5		M5		M5		M8		M8		M8	
Sample		MP05-MW11-A02 SOL		MP05-MW11-E02		MP05-MW11-E02 SOL		MP08-MW12-A01		MP08-MW12-A01 SOL		MP08-MW12-A02	
Sample Type		Soluble		Field Rinsate - Total		Field Rinsate - Soluble		Total		Soluble		Total	
Batch#		9503G660		9503G660		9503G660		9502G238		9502G238		9503G767	
Prep#		95GI488		95GI488		95GI488		95GCN045		95GI397		95GI509	
RFW#		014		016		017		014		015		001	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water, filtered		water		water, filtered		water		water, filtered		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/9/95		3/9/95		3/9/95		2/17/95		2/17/95		3/15/95	
Analysis Date		3/13/95		3/13/95		3/13/95		3/1/95		2/22/95		3/21/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0
Aluminum	200	45.8	24.0	24.0 U	24.0	24.0 U	24.0	186	24.0	25.8	24.0	1290	24.0
Arsenic	8	1.3 U	1.3	1.3 U	1.3	1.3 U	1.3	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9
Barium	2000	11.7	1.7	1.7 U	1.7	1.7 U	1.7	6.8	1.7	4.6	1.7	10.8	1.7
Beryllium	20	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90
Calcium		10900	10.4	289	10.4	55.4	10.4	9210	10.4	8940	10.4	8580	10.4
Cadmium	4	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8
Cobalt		3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0
Chromium	100	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	14.5	2.9
Copper	1000	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	3.2	1.9	2.4	1.9	1.9 U	1.9
Iron	300	17.3	6.4	6.4 U	6.4	6.4 U	6.4	529	6.4	23.6	6.4	5430	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		2320	685	737	685	685 U	685	2540	685	2460	685	3090	685
Magnesium		3670	18.3	18.3 U	18.3	18.3 U	18.3	2400	18.3	2290	18.3	2570	18.3
Manganese	50	9.5	1.8	1.8 U	1.8	1.8 U	1.8	9.9	1.8	8.0	1.8	10.6	1.8
Sodium	50000	17200	30.5	165	30.5	147	30.5	22000	30.5	21200	30.5	20500	30.5
Nickel	100	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8
Lead	10	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6	1.0	1.0
Antimony	20	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7
Selenium	50	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5
Thallium	10	1.7 U	1.7	1.7 U	1.7	1.7 U	1.7	0.70 U	0.70	0.70 U	0.70	1.1 U	1.1
Vanadium		2.3 U	2.3	2.3 U	2.3	2.3 U	2.3	2.3 U	2.3	2.3 U	2.3	11.4	2.3
Zinc	5000	165	3.8	3.8 U	3.8	3.8 U	3.8	4.4	3.8	3.8 U	3.8	7.7	3.8
Cyanide	200			10 U	10			10 U	10			10 U	10
Ammonia as Nitrogen								0.20 U	0.20			0.20 U	0.20
Sulfate				5.0 U	5.0			40.4	10.0			35.9	5.0
Dilution Factor								*=2					
Method:TAL Metals, Cyanide													

I POST
GROUNDWATER INORGANICS

Geographical Location		M8		M8		M8		M8		M8		M8		M8	
Sample		MP08-MW12-A02 SOL		MP08-MW12-C02		MP08-MW12-C02 SOL		MP08-MW12-E02		MP08-MW12-E02 SOL		MP08-MW13-A01		MP08-MW13-A01 SOL	
Sample Type		Soluble		Duplicate - Total		Duplicate - Soluble		Field Rinsate - Total		Field Rinsate - Soluble		Total		Soluble	
Batch#		9503G767		9503G767		9503G767		9503G767		9503G767		9502G403		9502G403	
Prep#		95GI510		95GI511		95GI512		95GI513		95GI514		95GCN053		95GI460	
RFW#		002		003		004		006		007		001		002	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water, filtered		water		water, filtered		water		water, filtered		water		water, filtered	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/15/95		3/15/95		3/15/95		3/15/95		3/15/95		2/22/95		2/22/95	
Analysis Date		3/21/95		3/21/95		3/21/95		3/21/95		3/21/95		3/7/95		3/8/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0
Aluminum	200	24.0 U	24.0	1090	24.0	36.1	24.0	27.0	24.0	24.0 U	24.0	363	24.0	24.0 U	24.0
Arsenic	8	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9
Barium	2000	4.0	1.7	10.8	1.7	3.9	1.7	1.7 U	1.7	1.7 U	1.7	204	1.7	174	1.7
Beryllium	20	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90
Calcium		7980	10.4	8750	10.4	8550	10.4	109	10.4	95.7	10.4	144000	10.4	139000	10.4
Cadmium	4	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8
Cobalt		3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0
Chromium	100	2.9 U	2.9	11.1	2.9	3.3	2.9	2.9 U	2.9	2.9 U	2.9	4.1	2.9	2.9 U	2.9
Copper	1000	2.5	1.9	1.9 U	1.9	2.3	1.9	2.1	1.9	1.9 U	1.9	7.9	1.9	1.9 U	1.9
Iron	300	26.6	6.4	4780	6.4	21.3	6.4	13.2	6.4	7.4	6.4	31900	6.4	25600	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.62	0.20	0.20 U	0.20
Potassium		1980	685	2920	685	2660	685	685 U	685	685 U	685	22100	685	21300	685
Magnesium		1960	18.3	2450	18.3	2160	18.3	18.3 U	18.3	18.3 U	18.3	69600	18.3	67900	18.3
Manganese	50	7.9	1.8	10.6	1.8	7.0	1.8	1.8 U	1.8	1.8 U	1.8	573	1.8	550	1.8
Sodium	50000	19500	30.5	21100	30.5	20900	30.5	87.3	30.5	120	30.5	295000	30.5	288000	30.5
Nickel	100	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8
Lead	10	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	2.8	1.6	1.6 U	1.6
Antimony	20	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7
Selenium	50	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5
Thallium	10	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70	0.70 U	0.70
Vanadium		3.2	2.3	8.6	2.3	3.8	2.3	3.0	2.3	2.3 U	2.3	5.6	2.3	3.4	2.3
Zinc	5000	8.6	3.8	8.7	3.8	4.2	3.8	3.8 U	3.8	4.1	3.8	11.9	3.8	3.8 U	3.8
Cyanide	200			10 U	10			10 U	10			10 U	10		
Ammonia as Nitrogen				0.20 U	0.20			0.20 U	0.20			2.6	0.20		
Sulfate				41.4	10.0 *			5.0 U	5.0			14.0	5.0		
Dilution Factor				*=2											
Method:TAL Metals, Cyanide															

MAIN POST
GROUNDWATER INORGANICS

Geographical Location		M8		M8		M8		M8		M8		M8	
Sample		MP08-MW13-A02		MP08-MW13-A02 SOL		MP08-MW14-A01		MP08-MW14-A01 SOL		MP08-MW14-A02		MP08-MW14-A02 SOL	
Sample Type		Total		Soluble		Total		Soluble		Total		Soluble	
Batch#		9503G767		9503G767		9502G219		9502G219		9503G767		9503G767	
Prep#		95GI515		95GI516		95GCN045		95GI439		95GI517		95GI518	
RFW#		008		009		018		019		010		011	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water, filtered		water		water, filtered		water		water, filtered	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/15/95		3/15/95		2/16/95		2/16/95		3/15/95		3/15/95	
Analysis Date		3/21/95		3/21/95		3/1/95		3/3/95		3/21/95		3/21/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5	3.0 U	3.0	3.0 U	3.0
Aluminum	200	661	24.0	44.4	24.0	2220	16.8	30.4	16.8	2480	24.0	46.9	24.0
Arsenic	8	1.9 U	1.9	1.9 U	1.9	4.3	1.9	1.9 U	1.9	3.2	1.9	1.9 U	1.9
Barium	2000	260	1.7	180	1.7	372	0.80	304	0.80	448	1.7	356	1.7
Beryllium	20	0.90 U	0.90	0.90 U	0.90	0.70	0.30	0.39	0.30	0.90 U	0.90	0.90 U	0.90
Calcium		171000	10.4	165000	10.4	162000	8.4	165000	8.4	157000	10.4	164000	10.4
Cadmium	4	2.8 U	2.8	2.8 U	2.8	3.0	2.9	2.9 U	2.9	2.9	2.8	2.8 U	2.8
Cobalt		3.0 U	3.0	3.0 U	3.0	4.8	2.3	2.5	2.3	3.8	3.0	3.0 U	3.0
Chromium	100	4.3	2.9	2.9 U	2.9	23.1	4.7	4.7 U	4.7	24.9	2.9	3.1	2.9
Copper	1000	5.1	1.9	1.9 U	1.9	4.0 U	4.0	4.0 U	4.0	5.2	1.9	4.4	1.9
Iron	300	48100	6.4	27900	6.4	57700	2.5	41400	2.5	57000	6.4	35100	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		17800	685	17200	685	65100	67.9	64300	67.9	65200	685	67500	685
Magnesium		58300	18.3	57500	18.3	79000	34.3	78700	34.3	75100	18.3	78200	18.3
Manganese	50	737	1.8	703	1.8	277	0.90	263	0.90	275	1.8	271	1.8
Sodium	50000	171000	30.5	172000	30.5	421000	19.1	424000	19.1	346000	762 *	365000	762 *
Nickel	100	10.8 U	10.8	10.8 U	10.8	4.9	4.2	4.2 U	4.2	10.8 U	10.8	10.8 U	10.8
Lead	10	3.7	1.0	1.0 U	1.0	9.3	1.6	1.6 U	1.6	10.2	1.0	1.0 U	1.0
Antimony	20	20.7 U	20.7	20.7 U	20.7	10.9 U	10.9	10.9 U	10.9	20.7 U	20.7	20.7 U	20.7
Selenium	50	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5
Thallium	10	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70	0.70 U	0.70	1.1 U	1.1	1.1 U	1.1
Vanadium		3.8	2.3	2.3 U	2.3	12.9	2.1	2.1 U	2.1	15.4	2.3	4.6	2.3
Zinc	5000	27.3	3.8	3.9	3.8	49.6	1.9	3.8	1.9	57.2	3.8	4.8	3.8
Cyanide	200	10 U	10			10 U	10			10 U	10		
Ammonia as Nitrogen		2.9	0.20			75.2	20.0 *			72.6	4.0 **		
Sulfate		34.3	10.0 *			6.8	5.0			22.8	5.0		
Dilution Factor		*=2				*=100				*=25,**=20		*=25	
Method:TAL Metals, Cyanide													

POST
GROUNDWATER INORGANICS

Geographical Location		M8		M8		M8		M8		M8		M8	
Sample		MP08-MW15-A01		MP08-MW15-A01 SOL		MP08-MW15-C01		MP08-MW15-C01 SOL		MP08-MW15-E01		MP08-MW15-E01 SOL	
Sample Type		Total		Soluble		Duplicate - Total		Duplicate - Soluble		Field Rinsate - Total		Field Rinsate - Soluble	
Batch#		9502G403		9502G403		9502G403		9502G403		9502G403		9502G403	
Prep#		95GCN053		95GI460		95GCN053		95GI460		95GCN053		95GI460	
RFW#		003		004		005		006		008		009	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water, filtered		water		water, filtered		water		water, filtered	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/22/95		2/22/95		2/22/95		2/22/95		2/22/95		2/22/95	
Analysis Date		3/7/95		3/8/95		3/7/95		3/8/95		3/7/95		3/8/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0
Aluminum	200	540	24.0	24.0 U	24.0	515	24.0	24.0 U	24.0	24.0 U	24.0	24.0 U	24.0
Arsenic	8	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9
Barium	2000	260	1.7	173	1.7	261	1.7	174	1.7	1.7 U	1.7	1.7 U	1.7
Beryllium	20	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90
Calcium		310000	10.4	305000	10.4	315000	10.4	315000	10.4	107	10.4	57.1	10.4
Cadmium	4	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8
Cobalt		3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0
Chromium	100	3.9	2.9	2.9 U	2.9	4.3	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9
Copper	1000	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9
Iron	300	27200	6.4	18100	6.4	27300	6.4	18200	6.4	6.4 U	6.4	6.4 U	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		34700	685	33500	685	34900	685	34000	685	685 U	685	685 U	685
Magnesium		71500	18.3	71000	18.3	73000	18.3	73000	18.3	18.3 U	18.3	18.3 U	18.3
Manganese	50	375	1.8	363	1.8	380	1.8	375	1.8	1.8 U	1.8	1.8 U	1.8
Sodium	50000	226000	30.5	225000	30.5	230000	30.5	231000	30.5	140	30.5	156	30.5
Nickel	100	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8	11.4	10.8	10.8 U	10.8
Lead	10	2.9	1.6	1.6 U	1.6	2.6	1.6	11.1	1.6	1.6 U	1.6	1.6 U	1.6
Antimony	20	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7
Selenium	50	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5
Thallium	10	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70
Vanadium		7.4	2.3	3.4	2.3	6.0	2.3	3.1	2.3	2.3 U	2.3	2.3 U	2.3
Zinc	5000	13.5	3.8	3.8 U	3.8	13.9	3.8	3.8 U	3.8	3.8 U	3.8	3.8 U	3.8
Cyanide	200	10 U	10			10 U	10			10 U	10		
Ammonia as Nitrogen		31.8	0.20			31.9	0.20			0.20 U	0.20		
Sulfate		71.5	5.0			72.7	5.0			5.0 U	5.0		
Dilution Factor													
Method:TAL Metals, Cyanide													

MAIN POST
GROUNDWATER INORGANICS

Geographical Location		M8		M8		M12		M12		M12		M12	
Sample		MP08-MW15-A02		MP08-MW15-A02 SOL		MP12-MW16-A01		MP12-MW16-A01 SOL		MP12-MW16-A02		MP12-MW16-A02 SOL	
Sample Type		Total		Soluble		Total		Soluble		Total		Soluble	
Batch#		9503G767		9503G767		9502G299		9502G299		9503G681		9503G681	
Prep#		95GI519		95GI519		95GI450		95GI450		95GI494		95GI494	
RFW#		012		013		001		002		001		002	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water, filtered		water		water, filtered		water		water, filtered	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/15/95		3/15/95		2/20/95		2/20/95		3/10/95		3/10/95	
Analysis Date		3/21/95		3/21/95		3/6/95		3/6/95		3/15/95		3/15/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5
Aluminum	200	596	24.0	28.9	24.0	1460	16.8	73.3	16.8	462	16.8	32.9	16.8
Arsenic	8	1.9 U	1.9	1.9 U	1.9	4.8	1.3	2.7	1.3	3.3	1.7	1.9	1.7
Barium	2000	277	1.7	190	1.7	50.3	0.80	40.7	0.80	43.9	0.80	38.6	0.80
Beryllium	20	0.90 U	0.90	0.90 U	0.90	0.30 U	0.30	0.30 U	0.30	0.30 U	0.30	0.30 U	0.30
Calcium		357000	10.4	328000	10.4	7840	8.4	7720	8.4	7880	8.4	8040	8.4
Cadmium	4	2.8 U	2.8	2.8 U	2.8	2.9 U	2.9	2.9 U	2.9	3.5	2.9	3.3	2.9
Cobalt		3.0 U	3.0	3.0 U	3.0	2.9	2.3	2.9	2.3	2.3 U	2.3	2.3 U	2.3
Chromium	100	4.2	2.9	2.9 U	2.9	21.7	4.7	4.7 U	4.7	4.7 U	4.7	4.7 U	4.7
Copper	1000	1.9 U	1.9	1.9 U	1.9	4.0 U	4.0	4.0 U	4.0	4.0 U	4.0	4.0 U	4.0
Iron	300	24300	6.4	15100	6.4	21000	2.5	15700	2.5	18300	2.5	15500	2.5
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.31	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		36000	685	32700	685	3360	67.9	2660	67.9	2720	67.9	2600	67.9
Magnesium		75000	18.3	69100	18.3	6320	34.3	5900	34.3	5920	34.3	5780	34.3
Manganese	50	382	1.8	345	1.8	47.0	0.90	44.3	0.90	45.1	0.90	43.7	0.90
Sodium	50000	228000	30.5	210000	30.5	17300	19.1	17500	19.1	17000	19.1	17000	19.1
Nickel	100	10.8 U	10.8	10.8 U	10.8	5.4	4.2	6.0	4.2	4.2 U	4.2	4.2 U	4.2
Lead	10	1.3	1.0	1.0 U	1.0	1.6 U	1.6	1.6 U	1.6	1.4	1.2	1.2 U	1.2
Antimony	20	20.7 U	20.7	20.7 U	20.7	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9
Selenium	50	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8
Thallium	10	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70
Vanadium		8.0	2.3	3.3	2.3	8.8	2.1	2.1 U	2.1	3.9	2.1	2.1 U	2.1
Zinc	5000	28.3	3.8	3.8 U	3.8	22.4	1.9	18.2	1.9	19.1	1.9	19.2	1.9
Cyanide	200	10 U	10			10 U	10			10 U	10		
Ammonia as Nitrogen		28.6	2.0 *										
Sulfate		90.0	25.0 **										
Dilution Factor		*=10,**=5											
Method:TAL Metals, Cyanide													

N POST
GROUNDWATER INORGANICS

Geographical Location		M12		M12		M12		M12		M12		M12	
Sample		MP12-MW17-A01		MP12-MW17-A01 SOL		MP12-MW17-A02		MP12-MW17-A02 SOL		MP12-MW18-A01		MP12-MW18-A01 SOL	
Sample Type		Total		Soluble		Total		Soluble		Total		Soluble	
Batch#		9502G299		9502G299		9503G681		9503G681		9502G299		9502G299	
Prep#		95GI450		95GI450		95GI494		95GI494		95GI450		95GI450	
RFW#		003		004		003		004		005		006	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water, filtered		water		water, filtered		water		water, filtered	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/20/95		2/20/95		3/10/95		3/10/95		2/20/95		2/20/95	
Analysis Date		3/6/95		3/6/95		3/15/95		3/15/95		3/6/95		3/6/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5
Aluminum	200	161	16.8	16.8 U	16.8	186	16.8	16.8 U	16.8	903	16.8	206	16.8
Arsenic	8	1.3 U	1.3	1.3 U	1.3	1.7 U	1.7	1.7 U	1.7	2.0	1.3	1.3 U	1.3
Barium	2000	111	0.80	108	0.80	257	0.80	258	0.80	136	0.80	113	0.80
Beryllium	20	0.30 U	0.30	0.30 U	0.30	0.30 U	0.30	0.30 U	0.30	0.30 U	0.30	0.30 U	0.30
Calcium		48500	8.4	48600	8.4	51900	8.4	51300	8.4	6360	8.4	6250	8.4
Cadmium	4	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9
Cobalt		2.3 U	2.3	2.3 U	2.3	2.3 U	2.3	2.3 U	2.3	4.2	2.3	2.3 U	2.3
Chromium	100	6.5	4.7	4.7 U	4.7	4.7 U	4.7	4.7 U	4.7	13.0	4.7	4.7 U	4.7
Copper	1000	21.6	4.0	4.0 U	4.0	6.6	4.0	4.0 U	4.0	5.9	4.0	4.0 U	4.0
Iron	300	21700	2.5	21200	2.5	40800	2.5	40200	2.5	2370	2.5	140	2.5
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		4580	67.9	4440	67.9	4180	67.9	4100	67.9	5400	67.9	4950	67.9
Magnesium		3770	34.3	3760	34.3	5040	34.3	5040	34.3	3990	34.3	3770	34.3
Manganese	50	173	0.90	174	0.90	339	0.90	341	0.90	17.7	0.90	16.2	0.90
Sodium	50000	8670	19.1	8690	19.1	11900	19.1	12100	19.1	21200	19.1	21200	19.1
Nickel	100	4.2 U	4.2	4.2 U	4.2	4.2 U	4.2	4.2 U	4.2	9.2	4.2	8.4	4.2
Lead	10	1.6 U	1.6	1.6 U	1.6	1.8	1.2	1.2 U	1.2	1.6 U	1.6	1.6 U	1.6
Antimony	20	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9
Selenium	50	1.5 U	1.5	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8	1.5 U	1.5	1.5 U	1.5
Thallium	10	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70
Vanadium		2.1 U	2.1	2.1 U	2.1	2.1 U	2.1	2.1 U	2.1	4.5	2.1	2.1 U	2.1
Zinc	5000	6.8	1.9	1.9 U	1.9	12.4	1.9	3.5	1.9	46.6	1.9	44.7	1.9
Cyanide	200	10 U	10			10.0 U	10.0			10 U	10		
Ammonia as Nitrogen													
Sulfate													
Dilution Factor													
Method:TAL Metals, Cyanide													

MAIN POST
GROUNDWATER INORGANICS

Geographical Location		M12		M12		M14		M14		M14		M14	
Sample		MP12-MW18-A02		MP12-MW18-A02 SOL		MP14-MW19-A01		MP14-MW19-A01 SOL		MP14-MW19-A02		MP14-MW19-A02 SOL	
Sample Type		Total		Soluble		Total		Soluble		Total		Soluble	
Batch#		9503G681		9503G681		9502G299		9502G299		9503G681		9503G681	
Prep#		95GI494		95GI494		95GI450		95GI450		95GI494		95GI494	
RFW#		005		006		007		008		007		008	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water, filtered		water		water, filtered		water		water, filtered	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/10/95		3/10/95		2/20/95		2/20/95		3/10/95		3/10/95	
Analysis Date		3/15/95		3/15/95		3/6/95		3/6/95		3/15/95		3/15/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5
Aluminum	200	563	16.8	195	16.8	266	16.8	27.2	16.8	520	16.8	16.8 U	16.8
Arsenic	8	1.7 U	1.7	1.7 U	1.7	1.3 U	1.3	1.3 U	1.3	1.7 U	1.7	1.7 U	1.7
Barium	2000	131	0.80	114	0.80	223	0.80	215	0.80	206	0.80	182	0.80
Beryllium	20	0.30 U	0.30	0.34	0.30	0.30 U	0.30	0.30 U	0.30	0.30 U	0.30	0.30 U	0.30
Calcium		6110	8.4	6250	8.4	37900	8.4	37700	8.4	39500	8.4	39000	8.4
Cadmium	4	3.4	2.9	3.5	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9
Cobalt		2.3 U	2.3	2.3 U	2.3	2.9	2.3	2.3 U	2.3	2.3 U	2.3	2.3 U	2.3
Chromium	100	4.7 U	4.7	4.7 U	4.7	7.5	4.7	4.7 U	4.7	4.7 U	4.7	4.7 U	4.7
Copper	1000	4.3	4.0	4.8	4.0	8.6	4.0	4.0 U	4.0	7.7	4.0	4.0 U	4.0
Iron	300	1220	2.5	55.9	2.5	40900	2.5	38800	2.5	41900	2.5	37600	2.5
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		4830	67.9	4700	67.9	4640	67.9	4460	67.9	4680	67.9	4480	67.9
Magnesium		3880	34.3	3810	34.3	5240	34.3	5160	34.3	5130	34.3	4980	34.3
Manganese	50	15.9	0.90	15.0	0.90	547	0.90	543	0.90	554	0.90	538	0.90
Sodium	50000	20900	19.1	20900	19.1	8900	19.1	8940	19.1	8730	19.1	8440	19.1
Nickel	100	6.4	4.2	4.7	4.2	4.6	4.2	4.2 U	4.2	4.2 U	4.2	4.2 U	4.2
Lead	10	5.4	1.2	1.2 U	1.2	13.8	1.6	1.6 U	1.6	23.7	1.2	1.2 U	1.2
Antimony	20	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9
Selenium	50	1.8 U	1.8	1.8 U	1.8	1.5 U	1.5	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8
Thallium	10	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70
Vanadium		2.1 U	2.1	2.1 U	2.1	2.1 U	2.1	2.1 U	2.1	2.1 U	2.1	2.1 U	2.1
Zinc	5000	44.0	1.9	42.5	1.9	66.9	1.9	1.9 U	1.9	112	1.9	3.3	1.9
Cyanide	200	10.0 U	10.0			10 U	10			10.0 U	10.0		
Ammonia as Nitrogen													
Sulfate													
Dilution Factor													
Method:TAL Metals, Cyanide													

N 'OST
GROUNDWATER INORGANICS

Geographical Location		M14		M14		M14		M14		M14		M14		M14	
Sample		MP14-MW20-A01		MP14-MW20-A01 SOL		MP14-MW20-A02		MP14-MW20-A02 SOL		MP14-MW20-E02		MP14-MW20-E02 SOL		MP14-MW21-A01	
Sample Type		Total		Soluble		Total		Soluble		Field Rinsate - Total		Field Rinsate - Soluble		Total	
Batch#		9502G403		9502G403		9503G722		9503G722		9503G722		9503G722		9502G403	
Prep#		95GCN053		95GI460		95GI503		95GI503		95GI503		95GI503		95GCN053	
RFW#		010		011		001		002		003		004		012	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water, filtered		water		water, filtered		water		water, filtered		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/22/95		2/22/95		3/13/95		3/13/95		3/13/95		3/13/95		2/22/95	
Analysis Date		3/7/95		3/8/95		3/15/95		3/15/95		3/15/95		3/15/95		3/7/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	3.0 U	3.0
Aluminum	200	1290	24.0	63.0	24.0	517	16.8	85	16.8	16.8 U	16.8	16.8 U	16.8	1130	24.0
Arsenic	8	2.4	1.9	1.9 U	1.9	10.2	1.3	8.8	1.3	1.3 U	1.3	1.3 U	1.3	1.9 U	1.9
Barium	2000	53.4	1.7	25.6	1.7	44.0	0.80	31.1	0.80	0.80 U	0.80	1.2	0.80	27.0	1.7
Beryllium	20	0.90 U	0.90	0.90 U	0.90	0.34	0.30	0.30 U	0.30	0.30 U	0.30	0.30 U	0.30	0.90 U	0.90
Calcium		30400	10.4	28300	10.4	33300	8.4	32500	8.4	103	8.4	102	8.4	32400	10.4
Cadmium	4	2.8 U	2.8	2.8 U	2.8	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.8 U	2.8
Cobalt		3.0 U	3.0	3.0 U	3.0	2.3 U	2.3	2.3 U	2.3	2.3 U	2.3	2.3 U	2.3	3.0 U	3.0
Chromium	100	16.9	2.9	2.9 U	2.9	4.7 U	4.7	4.7 U	4.7	4.7 U	4.7	4.7 U	4.7	10.8	2.9
Copper	1000	4.7	1.9	1.9 U	1.9	11.9	4.0	4.0 U	4.0	4.0 U	4.0	4.0 U	4.0	1.9 U	1.9
Iron	300	8890	6.4	4480	6.4	7030	2.5	5350	2.5	9.6	2.5	9.2	2.5	4880	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		5340	685	4230	685	5292	67.9	3800	67.9	67.9 U	67.9	67.9 U	67.9	6920	685
Magnesium		4330	18.3	3720	18.3	4210	34.3	4010	34.3	34.3 U	34.3	34.3 U	34.3	3930	18.3
Manganese	50	186	1.8	171	1.8	213	0.90	209	0.90	0.90 U	0.90	0.90 U	0.90	62.5	1.8
Sodium	50000	23300	30.5	22100	30.5	21900	19.1	20600	19.1	56.3	19.1	142	19.1	6360	30.5
Nickel	100	10.8 U	10.8	10.8 U	10.8	9.2	4.2	4.2 U	4.2	4.2 U	4.2	4.2 U	4.2	10.8 U	10.8
Lead	10	3.8	1.6	1.6 U	1.6	5.5	1.1	1.1 U	1.1	1.5	1.1	1.1 U	1.1	3.1	1.6
Antimony	20	20.7 U	20.7	20.7 U	20.7	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9	20.7 U	20.7
Selenium	50	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5
Thallium	10	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70
Vanadium		8.5	2.3	4.0	2.3	4.0	2.1	3.1	2.1	2.1 U	2.1	2.1 U	2.1	7.1	2.3
Zinc	5000	7.2	3.8	3.8 U	3.8	21.8	1.9	10.1	1.9	3.9	1.9	4.2	1.9	11.1	3.8
Cyanide	200	10 U	10			10 U	10			10 U	10			10 U	10
Ammonia as Nitrogen															
Sulfate															
Dilution Factor															
Method:TAL Metals, Cyanide															

MAIN POST
GROUNDWATER INORGANICS

Geographical Location		M14		M14		M14		M18		M18		M18		M18	
Sample		MP14-MW21-A01 SOL		MP14-MW21-A02		MP14-MW21-A02 SOL		MP18-MW03-A01		MP18-MW03-A01 SOL		MP18-MW03-A02		MP18-MW03-A02 SOL	
Sample Type		Soluble		Total		Soluble		Total		Soluble		Total		Soluble	
Batch#		9502G403		9503G660		9503G660		9505G825		9505G825		9505G139		9505G139	
Prep#		95GI460		95GI488		95GI488		95GI713		95GI713		95GI761		95GI761	
RFW#		013		019		020		001		002		001		001	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water, filtered		water		water, filtered		water		water, filtered		water		water, filtered	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/22/95		3/9/95		3/9/95		5/10/95		5/10/95		5/25/95		5/25/95	
Analysis Date		3/8/95		3/13/95		3/13/95		5/24/95		5/24/95		6/7/95		6/7/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9
Aluminum	200	24.0 U	24.0	1630	24.0	24.0 U	24.0	6410	15.7	368	15.7	8980	15.7	251	15.7
Arsenic	8	1.9 U	1.9	3.7	1.3	1.8	1.3	4.5	1.4	1.4 U	1.4	5.1	1.7	1.7 U	1.7
Barium	2000	23.3	1.7	43.4	1.7	22.4	1.7	12.1	0.80	2.3	0.80	15.2	0.80	1.5	0.80
Beryllium	20	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.77 U	0.30	0.30 U	0.30	1.2	0.30	0.30 U	0.30
Calcium		32600	10.4	33200	10.4	33900	10.4	5650	13.4	5270	13.4	5290	13.4	4320	13.4
Cadmium	4	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	3.9 U	3.9	3.9 U	3.9	3.9 U	3.9	4.7	3.9
Cobalt		3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.3	1.4	2.5	1.4	5.0	1.4	3.1	1.4
Chromium	100	36.6	2.9	14.5	2.9	2.9 U	2.9	75.7 U	3.8	7.9	3.8	107.0	3.8	12.5	3.8
Copper	1000	1.9 U	1.9	2.7	1.9	1.9 U	1.9	2.7	1.8	3.1	1.8	3	1.8	1.8 U	1.8
Iron	300	625	6.4	6490	6.4	407	6.4	33000	3.6	2110	3.6	46900	3.6	1500	3.6
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		6610	685	8060	685	7110	685	9770	81.2	3340	81.2	11700	81.2	3280	81.2
Magnesium		3600	18.3	4190	18.3	3780	18.3	5850	37.2	3170	37.2	6440	37.2	2600	37.2
Manganese	50	56.4	1.8	66.4	1.8	56.7	1.8	32.6	0.70	18.6	0.70	44.0	0.70	16.7	0.70
Sodium	50000	6460	30.5	7040	30.5	7850	30.5	58700	11.8	58600	11.8	53200	11.8	53500	11.8
Nickel	100	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8	6.4	5.4	5.4	5.4	8.2	5.4	6.0	5.4
Lead	10	1.6 U	1.6	3.8	1.6	1.6	1.6	6.1	0.80	0.80 U	0.80	10.3	0.90	0.90 U	0.90
Antimony	20	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	12.0 U	12.0	12.0 U	12.0	12.0 U	12.0	14.6	12.0
Selenium	50	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8
Thallium	10	0.70 U	0.70	1.7 U	1.7	1.7 U	1.7	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70
Vanadium		2.3 U	2.3	10.4	2.3	4.6	2.3	35.9	1.5	2.2	1.5	53.6	1.5	5.3	1.5
Zinc	5000	3.8 U	3.8	15.9	3.8	3.8 U	3.8	78.2	2.2	33.9	2.2	99.6	2.2	28.4	2.2
Cyanide	200			10 U	10										
Ammonia as Nitrogen															
Sulfate															
Dilution Factor															
Method:TAL Metals, Cyanide															

I POST
GROUNDWATER INORGANICS

Geographical Location		M18		M18		M18		M18		M18		M18	
Sample		MP18-MW03-E01		MP18-MW03-E01 SOL		MP18-MW24-A01		MP18-MW24-A01 SOL		MP18-MW24-A02		MP18-MW24-A02 SOL	
Sample Type		Field Rinsate - Total		Field Rinsate - Soluble		Total		Soluble		Total		Soluble	
Batch#		9505G825		9505G825		9502G238		9502G238		9503G681		9503G681	
Prep#		95GI713		95GI713		95GI397		95GI397		95GI494		95GI494	
RFW#		004		005		001		002		009		010	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water, filtered		water		water, filtered		water		water, filtered	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		5/10/95		5/10/95		2/17/95		2/17/95		3/10/95		3/10/95	
Analysis Date		5/24/95		5/24/95		2/22/95		2/22/95		3/15/95		3/15/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	1.9 U	1.9	1.9 U	1.9	3.0 U	3.0	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5
Aluminum	200	33.2	15.7	20.5	15.7	3790	24.0	46.2	24.0	7440	16.8	50.2	16.8
Arsenic	8	1.4 U	1.4	1.4 U	1.4	13.0	1.9	3.7	1.9	20.3	1.7	4.9	1.7
Barium	2000	0.92	0.80	0.80 U	0.80	272	1.7	183	1.7	262	0.80	169	0.80
Beryllium	20	0.30 U	0.30	0.30 U	0.30	1.6	0.90	1.2	0.90	1.4	0.30	0.56	0.30
Calcium		65.6	13.4	45.4	13.4	714000	10.4	680000	10.4	787000	42.0 *	748000	42.0 *
Cadmium	4	3.9 U	3.9	3.9 U	3.9	2.8 U	2.8	2.8 U	2.8	2.9 U	2.9	2.9 U	2.9
Cobalt		2.2	1.4	2.2	1.4	3.0 U	3.0	3.0 U	3.0	2.3 U	2.3	2.3 U	2.3
Chromium	100	3.8 U	3.8	4.1	3.8	33.8	2.9	3.6	2.9	62.5	4.7	4.7 U	4.7
Copper	1000	2.9	1.8	1.8 U	1.8	9.4	1.9	4.6	1.9	7.5	4.0	4.0 U	4.0
Iron	300	19.3	3.6	13.1	3.6	37900	6.4	15300	6.4	42100	2.5	16300	2.5
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		81.2 U	81.2	81.2 U	81.2	18900	685	16800	685	19500	67.9	16200	67.9
Magnesium		37.2 U	37.2	37.2 U	37.2	54300	18.3	51400	18.3	45200	34.3	47900	34.3
Manganese	50	1.1	0.70	0.72	0.70	756	1.8	697	1.8	668	0.90	666	0.90
Sodium	50000	101	11.8	94.1	11.8	47100	30.5	45700	30.5	36900	19.1	38400	19.1
Nickel	100	5.4 U	5.4	5.4 U	5.4	10.8 U	10.8	10.8 U	10.8	11.4	4.2	4.2 U	4.2
Lead	10	0.80 U	0.80	0.80 U	0.80	28.6	1.6	1.6 U	1.6	40.8	2.4 **	1.2 U	1.2
Antimony	20	12.0 U	12.0	12.0 U	12.0	20.7 U	20.7	20.7 U	20.7	10.9 U	10.9	10.9 U	10.9
Selenium	50	1.8 U	1.8	1.8 U	1.8	1.5 U	1.5	1.5 U	1.5	2.4	1.8	1.8 U	1.8
Thallium	10	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70
Vanadium		1.5 U	1.5	1.5 U	1.5	22.3	2.3	2.3 U	2.3	36.0	2.1	2.4	2.1
Zinc	5000	2.2 U	2.2	2.2 U	2.2	80.5	3.8	4.2	3.8	101	1.9	12.6	1.9
Cyanide	200												
Ammonia as Nitrogen													
Sulfate													
Dilution Factor										* = 5, ** = 2		* = 5	
Method:TAL Metals, Cyanide													

MAIN POST
GROUNDWATER INORGANICS

Geographical Location		M18		M18		M18		M18		M18		M18		M18	
Sample		MP18-MW24-C02		MP18-MW24-C02 SOL		MP18-MW24-E01		MP18-MW24-E01 SOL		MP18-MW24-E02		MP18-MW24-E02 SOL		MP18-MW25-A01	
Sample Type		Duplicate - Total		Duplicate - Soluble		Field Rinsate - Total		Field Rinsate - Soluble		Field Rinsate - Total		Field Rinsate - Soluble		Total	
Batch#		9503G681		9503G681		9502G238		9502G238		9503G681		9503G681		9502G238	
Prep#		95GI494		95GI494		95GI397		95GI397		95GI494		95GI494		95GI397	
RFW#		011		012		004		005		014		015		006	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water, filtered		water		water, filtered		water		water, filtered		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/10/95		3/10/95		2/17/95		2/17/95		3/10/95		3/10/95		2/17/95	
Analysis Date		3/15/95		3/15/95		2/22/95		2/22/95		3/15/95		3/15/95		2/22/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	2.5 U	2.5	2.5 U	2.5	3.0 U	3.0	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5	3.0 U	3.0
Aluminum	200	7330	16.8	36.2	16.8	25.0	24.0	28.4	24.0	20.0	16.8	16.8 U	16.8	293	24.0
Arsenic	8	20.6	3.4 **	6.4	1.7	1.9 U	1.9	1.9 U	1.9	1.7 U	1.7	1.7 U	1.7	6.3	1.9
Barium	2000	262	0.80	158	0.80	1.7 U	1.7	1.7 U	1.7	0.80 U	0.80	0.80 U	0.80	64.4	1.7
Beryllium	20	1.7	0.30	0.57	0.30	0.90 U	0.90	0.90 U	0.90	0.30 U	0.30	0.30 U	0.30	0.90 U	0.90
Calcium		780000	42.0 *	727000	42.0 *	282	10.4	161	10.4	460	8.4	106	8.4	167000	10.4
Cadmium	4	4.1	2.9	2.9	2.9	2.8 U	2.8	2.8 U	2.8	2.9 U	2.9	2.9 U	2.9	2.8 U	2.8
Cobalt		2.8	2.3	2.3 U	2.3	3.0 U	3.0	3.0 U	3.0	2.3 U	2.3	2.3 U	2.3	3.0 U	3.0
Chromium	100	64.7	4.7	4.7 U	4.7	2.9 U	2.9	2.9 U	2.9	4.7 U	4.7	4.7 U	4.7	3.9	2.9
Copper	1000	9.2	4.0	4.0 U	4.0	1.9 U	1.9	2.7	1.9	5.4	4.0	4.0	4.0	2.1	1.9
Iron	300	43800	2.5	15200	2.5	13.4	6.4	13.5	6.4	24.5	2.5	15.7	2.5	7540	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		19100	67.9	15100	67.9	685 U	685	685 U	685	67.9 U	67.9	67.9 U	67.9	26500	685
Magnesium		45100	34.3	44300	34.3	20.0	18.3	23.9	18.3	34.3 U	34.3	34.3 U	34.3	63100	18.3
Manganese	50	680	0.90	634	0.90	1.8 U	1.8	1.8 U	1.8	0.90 U	0.90	0.90 U	0.90	1050	1.8
Sodium	50000	35800	19.1	35600	19.1	160	30.5	118	30.5	75.8	19.1	97.2	19.1	293000	30.5
Nickel	100	11.3	4.2	4.2 U	4.2	10.8 U	10.8	10.8 U	10.8	4.2 U	4.2	4.2 U	4.2	10.8 U	10.8
Lead	10	44.6	2.4 **	1.2 U	1.2	1.6 U	1.6	1.6 U	1.6	1.2 U	1.2	1.2 U	1.2	1.6 U	1.6
Antimony	20	10.9 U	10.9	10.9 U	10.9	21	20.7	20.7 U	20.7	10.9 U	10.9	10.9 U	10.9	20.7 U	20.7
Selenium	50	1.8	1.8	1.8 U	1.8	1.5 U	1.5	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8	1.5 U	1.5
Thallium	10	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70
Vanadium		37.1	2.1	2.1 U	2.1	2.3 U	2.3	2.3 U	2.3	2.1 U	2.1	2.1 U	2.1	6.7	2.3
Zinc	5000	103	1.9	13.7	1.9	3.8 U	3.8	3.8 U	3.8	1.9 U	1.9	1.9 U	1.9	4.0	3.8
Cyanide	200														
Ammonia as Nitrogen															
Sulfate															
Dilution Factor		* = 5, ** = 2		* = 5											
Method:TAL Metals, Cyanide															

POST
GROUNDWATER INORGANICS

Geographical Location		M18		M18		M18		M18		M18	
Sample		MP18-MW25-A01 SOL		MP18-MW25-A02		MP18-MW25-A02 SOL		MP18-MW25-C01		MP18-MW25-C01 SOL	
Sample Type		Soluble		Total		Soluble		Duplicate - Total		Duplicate - Soluble	
Batch#		9502G238		9503G681		9503G681		9502G238		9502G238	
Prep#		95GI397		95GI494		95GI494		95GI397		95GI397	
RFW#		007		016		015		008		009	
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		water, filtered		water		water, filtered		water		water, filtered	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/17/95		3/10/95		3/10/95		2/17/95		2/17/95	
Analysis Date		2/22/95		3/15/95		3/15/95		2/22/95		2/22/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5	3.0 U	3.0	3.0 U	3.0
Aluminum	200	30.8	24.0	7640	16.8	16.8 U	16.8	566	24.0	28.3	24.0
Arsenic	8	6.0	1.9	16.5	1.7	4.8	1.7	5.8	1.9	5.3	1.9
Barium	2000	57.3	1.7	117	0.80	60.2	0.80	68.8	1.7	66.1	1.7
Beryllium	20	0.90 U	0.90	0.91	0.30	0.35	0.30	0.90 U	0.90	0.90 U	0.90
Calcium		163000	10.4	162000	8.4	161000	8.4	176000	10.4	159000	10.4
Cadmium	4	2.8 U	2.8	5.8	2.9	2.9 U	2.9	2.8 U	2.8	2.8 U	2.8
Cobalt		3.0 U	3.0	2.5	2.3	2.3 U	2.3	3.0 U	3.0	3.0 U	3.0
Chromium	100	2.9 U	2.9	40.7	4.7	4.7 U	4.7	5.7	2.9	2.9 U	2.9
Copper	1000	2.1	1.9	4.0 U	4.0	4.0 U	4.0	3.2	1.9	2.7	1.9
Iron	300	5100	6.4	49700	2.5	11700	2.5	6650	6.4	11000	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		25000	685	33300	67.9	29400	67.9	26300	685	34700	685
Magnesium		60600	18.3	75000	34.3	70100	34.3	63100	18.3	81000	18.3
Manganese	50	1030	1.8	830	0.90	730	0.90	1030	1.8	874	1.8
Sodium	50000	277000	30.5	434000	19.1	412000	19.1	284000	30.5	488000	30.5
Nickel	100	10.8 U	10.8	14.6	4.2	4.2 U	4.2	10.8 U	10.8	10.8 U	10.8
Lead	10	1.6 U	1.6	21.6	6.0 *	1.2 U	1.2	1.7	1.6	1.6 U	1.6
Antimony	20	20.7 U	20.7	10.9 U	10.9	10.9 U	10.9	20.7 U	20.7	20.7 U	20.7
Selenium	50	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8	1.5 U	1.5	1.5 U	1.5
Thallium	10	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70
Vanadium		2.4	2.3	41.6	2.1	5.3	2.1	8.1	2.3	4.4	2.3
Zinc	5000	3.8 U	3.8	62.4	1.9	3.4	1.9	4.7	3.8	3.8 U	3.8
Cyanide	200										
Ammonia as Nitrogen											
Sulfate											
Dilution Factor				*=5							
Method:TAL Metals, Cyanide											

MAIN POST
GROUND WATER INORGANICS

Geographical Location		B1		B1		B1		B1		B2		B2	
Sample		B1-MW01B-A01		B1-MW01B-A01 SOL		B1-MW01B-A02		B1-MW01B-A02 SOL		B2-MW02B-A01		B2-MW02B-A01 SOL	
Sample Type		Total		Soluble		Total		Soluble		Total		Soluble	
Batch#		9502G169		9502G169		9503G616		9503G616		9502G169		9502G169	
Prep#		95GI422		95GI422		95GI475		95GI475		95GI422		95GI422	
RFW#		001		002		008		009		003		004	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water, filtered		water		water, filtered		water		water, filtered	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/14/95		2/14/95		3/7/95		3/7/95		2/15/95		2/15/95	
Analysis Date		2/23/95		2/27/95		3/13/95		3/13/95		2/23/95		2/27/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5
Aluminum	200	2430	16.8	146	16.8	634	16.8	116	16.8	1070	16.8	40.9	16.8
Arsenic	8	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	4.8	1.9	1.9 U	1.9
Barium	2000	68.5	0.80	62.5	0.80	62.9	0.80	60.2	0.80	73.9	0.80	67.3	0.80
Beryllium	20	0.43	0.30	0.30 U	0.30	0.30 U	0.30	0.30 U	0.30	0.30 U	0.30	0.30 U	0.30
Calcium		5130	8.4	5090	8.4	4910	8.4	5040	8.4	40300	8.4	40200	8.4
Cadmium	4	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9
Cobalt		6.4	2.3	4.6	2.3	4.5	2.3	4.9	2.3	4.0	2.3	2.3 U	2.3
Chromium	100	43.8	4.7	4.7 U	4.7	12.9	4.7	4.7 U	4.7	7.4	4.7	4.7 U	4.7
Copper	1000	4.0 U	4.0	4.0 U	4.0	4.0 U	4.0	4.0 U	4.0	4.0 U	4.0	4.0 U	4.0
Iron	300	12300	2.5	18.0	2.5	2430	2.5	20.9	2.5	40100	2.5	26600	2.5
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		3640	67.9	2880	67.9	3110	67.9	2910	67.9	9100	67.9	8790	67.9
Magnesium		9050	34.3	8640	34.3	8880	34.3	8850	34.3	7250	34.3	6730	34.3
Manganese	50	56.7	0.90	46.6	0.90	47.2	0.90	45.4	0.90	148	0.90	118	0.90
Sodium	50000	7070	19.1	7120	19.1	7020	19.1	7110	19.1	6170	19.1	6270	19.1
Nickel	100	40.1	4.2	35.4	4.2	32.0	4.2	33.2	4.2	5.8	4.2	6.4	4.2
Lead	10	2.8	1.6	1.6 U	1.6	1.2 U	1.2	1.2 U	1.2	2.7	1.6	1.6 U	1.6
Antimony	20	16.7	10.9	10.9 U	10.9	10.9 U	10.9	11.0	10.9	12	10.9	15.1	10.9
Selenium	50	1.5 U	1.5	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8	1.5 U	1.5	1.5 U	1.5
Thallium	10	0.70 U	0.70	0.70 U	0.70	1.1 U	1.1	1.1 U	1.1	3.5 U	3.5	0.70 U	0.70
Vanadium		50.4	2.1	2.1 U	2.1	10.6	2.1	2.1 U	2.1	13.6	2.1	2.1 U	2.1
Zinc	5000	35.8	1.9	24.4	1.9	24.5	1.9	23.4	1.9	13.6	1.9	8.4	1.9
Cyanide	200	10 U	10			10 U	10			10 U	10		
Dilution Factor													
Method:TAL Metals, Cyanide													

MAIN POST
GROUND WATER INORGANICS

Geographical Location		B2		B2		B3		B3		B3	
Sample		B2-MW02B-A02		B2-MW02B-A02 SOL		B3-MW03B-A01		B3-MW03B-A01 SOL		B3-MW03B-A02	
Sample Type		Total		Soluble		Total		Soluble		Total	
Batch#		9503G616		9503G616		9502G169		9502G169		9503G740	
Prep#		95GI475		95GI475		95GI422		95GI422		95GI519	
RFW#		010		011		005		009		001	
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water, filtered		water		water, filtered		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/7/95		3/7/95		2/15/95		2/13/95		3/14/95	
Analysis Date		3/13/95		3/13/95		2/23/95		2/27/95		3/21/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	3.0 U	3.0
Aluminum	200	454	16.8	16.8 U	16.8	5010	16.8	16.8 U	16.8	121000	24.0
Arsenic	8	3.9	1.9	1.9 U	1.9	7.1	1.9	1.9 U	1.9	89.3	9.5 *
Barium	2000	75.2	0.80	72.3	0.80	144	0.80	0.80 U	0.80	556	1.7
Beryllium	20	0.30 U	0.30	0.30 U	0.30	0.78	0.30	0.30 U	0.30	15.1	0.90
Calcium		41000	8.4	41100	8.4	27600	8.4	83.8	8.4	45400	10.4
Cadmium	4	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	9.5	2.8
Cobalt		2.3 U	2.3	2.3 U	2.3	9.4	2.3	2.3 U	2.3	50.0	3.0
Chromium	100	4.7 U	4.7	4.7 U	4.7	61.6	4.7	4.7 U	4.7	1600	2.9
Copper	1000	4.0 U	4.0	4.0 U	4.0	5.2	4.0	4.0 U	4.0	65.6	1.9
Iron	300	35000	2.5	28000	2.5	18800	2.5	9.4	2.5	431000	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		9180	67.9	9300	67.9	18400	67.9	67.9 U	67.9	137000	685
Magnesium		7300	34.3	7200	34.3	8230	34.3	34.3 U	34.3	62700	18.3
Manganese	50	129	0.90	119	0.90	106	0.90	0.90 U	0.90	331	1.8
Sodium	50000	6660	19.1	6820	19.1	21500	19.1	93.3	19.1	19600	30.5
Nickel	100	4.2 U	4.2	4.2 U	4.2	66.3	4.2	4.2 U	4.2	187	10.8
Lead	10	1.2 U	1.2	2.1	1.2	2.9	1.6	1.6 U	1.6	76.6	5.0 *
Antimony	20	10.9	10.9	10.9 U	10.9	14.1	10.9	16.8	10.9	20.7 U	20.7
Selenium	50	1.8 U	1.8	1.8 U	1.8	4.2	1.5	1.5 U	1.5	22	3.0 **
Thallium	10	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70	0.70 U	0.70	5.5	5.5 *
Vanadium		4.7	2.1	2.1 U	2.1	23.1	2.1	2.1 U	2.1	452	2.3
Zinc	5000	9.7	1.9	5.8	1.9	63.0	1.9	4.0	1.9	801	3.8
Cyanide	200	10 U	10			10 U	10			10 U	10.0
Dilution Factor										* = 5, ** = 2	
Method:TAL Metals, Cyanide											

MAIN POST
GROUND WATER INORGANICS

Geographical Location		B3		B3		B3		B3		B3		B4	
Sample		B3-MW03B-A02 SOL		B3-MW03B-E01		B3-MW03B-E01 SOL		B3-MW03B-E02		B3-MW03B-E02 SOL		B4-MW04B-A01	
Sample Type		Soluble		Field Rinsate - Total		Field Rinsate - Soluble		Field Rinsate - Total		Field Rinsate - Soluble		Total	
Batch#		9503G740		9502G169		9502G169		9503G616		9503G616		9502G169	
Prep#		95GI519		95GI422		95GI422		95GI475		95GI475		95GI422	
RFW#		002		008		006		006		007		010	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water, filtered		water		water, filtered		water		water, filtered		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/14/95		2/14/95		2/14/95		3/7/95		3/7/95		2/13/95	
Analysis Date		3/21/95		2/23/95		2/27/95		3/13/95		3/13/95		2/23/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5
Aluminum	200	84.1	24.0	26.2	16.8	173	16.8	27.1	16.8	17.2	16.8	1890	16.8
Arsenic	8	2.1	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9
Barium	2000	93.1	1.7	1.0	0.80	113	0.80	0.80 U	0.80	0.80 U	0.80	56.8	0.80
Beryllium	20	0.90 U	0.90	0.30 U	0.30	0.30 U	0.30	0.30 U	0.30	0.30 U	0.30	0.36	0.30
Calcium		24900	10.4	123	8.4	25400	8.4	368	8.4	163	8.4	4460	8.4
Cadmium	4	2.8 U	2.8	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9
Cobalt		4.4	3.0	2.3 U	2.3	7.3	2.3	2.3 U	2.3	2.3 U	2.3	2.7	2.3
Chromium	100	2.9 U	2.9	4.7 U	4.7	4.7 U	4.7	4.7 U	4.7	4.7 U	4.7	18.4	4.7
Copper	1000	2.9	1.9	4.0 U	4.0	4.0 U	4.0	4.0 U	4.0	4.0 U	4.0	4.0 U	4.0
Iron	300	10000	6.4	16.5	2.5	109	2.5	10.1	2.5	9.3	2.5	4510	2.5
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.26	0.20
Potassium		8400	685	67.9 U	67.9	13200	67.9	67.9 U	67.9	67.9 U	67.9	4690	67.9
Magnesium		6390	18.3	34.3 U	34.3	5790	34.3	46.0	34.3	61.3	34.3	7430	34.3
Manganese	50	104	1.8	0.90 U	0.90	90.1	0.90	0.90 U	0.90	0.90 U	0.90	11.8	0.90
Sodium	50000	20100	30.5	820	19.1	20800	19.1	296	19.1	179	19.1	12600	19.1
Nickel	100	33.3	10.8	4.2 U	4.2	61.5	4.2	4.2 U	4.2	4.2 U	4.2	8.5	4.2
Lead	10	1.0 U	1.0	1.6 U	1.6	1.6 U	1.6	1.2 U	1.2	1.2 U	1.2	1.6 U	1.6
Antimony	20	20.7 U	20.7	10.9 U	10.9	16.7	10.9	10.9 U	10.9	10.9 U	10.9	12.1	10.9
Selenium	50	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8	1.5 U	1.5
Thallium	10	1.1 U	1.1	0.70 U	0.70	0.70 U	0.70	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70
Vanadium		2.3 U	2.3	2.1 U	2.1	2.1 U	2.1	2.1 U	2.1	2.1 U	2.1	6.6	2.1
Zinc	5000	39.4	3.8	2.0	1.9	27.0	1.9	1.9 U	1.9	1.9 U	1.9	51.4	1.9
Cyanide	200			10 U	10			10 U	10			10 U	10
Dilution Factor													
Method:TAL Metals, Cyanide													

MAIN POST
GROUND WATER INORGANICS

Geographical Location		B4		B4		B4		B5		B5		B5	
Sample		B4-MW04B-A01 SOL		B4-MW04B-A02		B4-MW04B-A02 SOL		B5-MW05B-A01		B5-MW05B-A01 SOL		B5-MW05B-A02	
Sample Type		Soluble		Total		Soluble		Total		Soluble		Total	
Batch#		9502G169		9503G616		9503G616		9502G169		9502G169		9503G616	
Prep#		95GI422		95GI475		95GI475		95GI422		95GI422		95GI475	
RFW#		011		012		013		012		013		001	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water, filtered		water		water, filtered		water		water, filtered		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/13/95		3/7/95		3/7/95		2/13/95		2/13/95		3/7/95	
Analysis Date		2/27/95		3/13/95		3/13/95		2/23/95		2/27/95		3/13/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5
Aluminum	200	605	16.8	3700	16.8	673	16.8	5630	16.8	113	16.8	26000	16.8
Arsenic	8	1.9 U	1.9	2.1	1.9	1.9 U	1.9	15.8	1.9	1.9 U	1.9	56	9.5 *
Barium	2000	43.9	0.80	71.5	0.80	48.2	0.80	299	0.80	147	0.80	699	0.80
Beryllium	20	0.30 U	0.30	0.35	0.30	0.30 U	0.30	0.67	0.30	0.30 U	0.30	2.1	0.30
Calcium		4540	8.4	5160	8.4	5040	8.4	13800	8.4	13600	8.4	16400	8.4
Cadmium	4	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	3.8	2.9	2.9 U	2.9	4.6	2.9
Cobalt		2.3 U	2.3	3.5	2.3	2.3 U	2.3	15.6	2.3	13.3	2.3	18.3	2.3
Chromium	100	4.7 U	4.7	42.2	4.7	4.7 U	4.7	33.9	4.7	4.7 U	4.7	191	4.7
Copper	1000	4.0 U	4.0	4.0 U	4.0	4.0 U	4.0	10.0	4.0	4.0 U	4.0	43.0	4.0
Iron	300	18.5	2.5	10500	2.5	19.3	2.5	15500	2.5	277	2.5	72100	2.5
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		3580	67.9	6830	67.9	3810	67.9	8730	67.9	6910	67.9	16800	67.9
Magnesium		7030	34.3	9460	34.3	8120	34.3	7050	34.3	5900	34.3	12400	34.3
Manganese	50	10.8	0.90	14.5	0.90	11.0	0.90	166	0.90	145	0.90	233	0.90
Sodium	50000	12900	19.1	13900	19.1	14300	19.1	15900	19.1	16200	19.1	17900	19.1
Nickel	100	9.2	4.2	5.4	4.2	6.2	4.2	96.7	4.2	89.8	4.2	120	4.2
Lead	10	1.6 U	1.6	2.4	1.2	1.2 U	1.2	5.8	1.6	1.6 U	1.6	22.7	1.2
Antimony	20	12.9	10.9	10.9 U	10.9	12.3	10.9	14.5	10.9	15.8	10.9	12.1	10.9
Selenium	50	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8	8.0	1.5	4.1	1.5	29.6	3.6 **
Thallium	10	0.70 U	0.70	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70	0.70 U	0.70	5.5 U	5.5 *
Vanadium		2.1 U	2.1	14.8	2.1	2.1 U	2.1	22.8	2.1	2.1 U	2.1	108	2.1
Zinc	5000	44.8	1.9	63.7	1.9	55.5	1.9	115	1.9	74.3	1.9	233	1.9
Cyanide	200			10 U	10			10 U	10			10 U	10
Dilution Factor												* = 5.0, ** = 2.0	
Method:TAL Metals, Cyanide													

MAIN POST
GROUND WATER INORGANICS

Geographical Location		B5	
Sample		B5-MW05B-A02 SOL	
Sample Type		Soluble	
Batch#		9503G616	
Prep#		95GI475	
RFW#		002	
Dilution Factor		1.00	
Matrix		water, filtered	
Units	ug/l	ug/l	
Sampling Date		3/7/95	
Analysis Date		3/13/95	
Analysis	Standard	Analytical Result	MDL
Silver	20	2.5 U	2.5
Aluminum	200	108	16.8
Arsenic	8	1.9 U	1.9
Barium	2000	99.6	0.80
Beryllium	20	0.30 U	0.30
Calcium		14100	8.4
Cadmium	4	3.7	2.9
Cobalt		11.6	2.3
Chromium	100	4.7 U	4.7
Copper	1000	4.0 U	4.0
Iron	300	300	2.5
Mercury	2	0.20 U	0.20
Potassium		6280	67.9
Magnesium		6420	34.3
Manganese	50	146	0.90
Sodium	50000	17200	19.1
Nickel	100	76.9	4.2
Lead	10	1.2 U	1.2
Antimony	20	10.9 U	10.9
Selenium	50	4.4	1.8
Thallium	10	1.1 U	1.1
Vanadium		2.1 U	2.1
Zinc	5000	82.4	1.9
Cyanide	200		
Dilution Factor			
Method:TAL Metals, Cyanide			

MAIN POST
GROUNDWATER PESTICIDES/PCBS

Geographical Location		M2		M2		M2		M2		M2		M2	
Sample		MP02-MW01-A01		MP02-MW01-A02		MP02-MW02-A01		MP02-MW02-A02		MP02-MW03-A01		MP02-MW03-A02	
Sample Type													
Batch#		9502G197		9503G642		9502G197		9503G642		9502G197		9503G642	
Prep#		95GP0119		95GP0229		95GP0119		95GP0229		95GP0119		95GP0229	
RFW#		001		001		002		003		003		005	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/15/95		3/8/95		2/15/95		3/8/95		2/15/95		3/8/95	
Analysis Date		3/4/95		3/19/95		3/4/95		3/19/95		3/4/95		3/19/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.050 U	0.050	0.048 U	0.048	0.047 U	0.047	0.048 U	0.048	0.052 U	0.052	0.056 U	0.056
beta-BHC	0.2	0.050 U	0.050	0.048 U	0.048	0.047 U	0.047	0.048 U	0.048	0.052 U	0.052	0.056 U	0.056
delta-BHC		0.050 U	0.050	0.048 U	0.048	0.047 U	0.047	0.048 U	0.048	0.052 U	0.052	0.056 U	0.056
gamma-BHC (Lindane)	0.2	0.050 U	0.050	0.048 U	0.048	0.047 U	0.047	0.048 U	0.048	0.052 U	0.052	0.056 U	0.056
Heptachlor	0.4	0.050 U	0.050	0.048 U	0.048	0.047 U	0.047	0.048 U	0.048	0.052 U	0.052	0.056 U	0.056
Aldrin	0.04	0.050 U	0.050	0.048 U	0.048	0.047 U	0.047	0.048 U	0.048	0.052 U	0.052	0.056 U	0.056
Heptachlor epoxide	0.2	0.050 U	0.050	0.048 U	0.048	0.047 U	0.047	0.048 U	0.048	0.052 U	0.052	0.056 U	0.056
Endosulfan I	0.4	0.050 U	0.050	0.048 U	0.048	0.047 U	0.047	0.048 U	0.048	0.052 U	0.052	0.056 U	0.056
Dieldrin	0.03	0.10 U	0.10	0.095 U	0.095	0.094 U	0.094	0.095 U	0.095	0.10 U	0.10	0.11 U	0.11
4,4'-DDE	0.1	0.10 U	0.10	0.095 U	0.095	0.094 U	0.094	0.095 U	0.095	0.10 U	0.10	0.11 U	0.11
Endrin	2	0.10 U	0.10	0.095 U	0.095	0.094 U	0.094	0.095 U	0.095	0.10 U	0.10	0.11 U	0.11
Endosulfan II	0.4	0.10 U	0.10	0.095 U	0.095	0.094 U	0.094	0.095 U	0.095	0.10 U	0.10	0.11 U	0.11
4,4'-DDD	0.1	0.10 U	0.10	0.095 U	0.095	0.094 U	0.094	0.095 U	0.095	0.10 U	0.10	0.11 U	0.11
Endosulfan sulfate	0.4	0.10 U	0.10	0.095 U	0.095	0.094 U	0.094	0.095 U	0.095	0.10 U	0.10	0.11 U	0.11
4,4'-DDT	0.1	0.10 U	0.10	0.095 U	0.095	0.094 U	0.094	0.095 U	0.095	0.10 U	0.10	0.11 U	0.11
Methoxychlor	40	0.50 U	0.50	0.48 U	0.48	0.47 U	0.47	0.48 U	0.48	0.52 U	0.52	0.56 U	0.56
Endrin ketone		0.10 U	0.10	0.095 U	0.095	0.094 U	0.094	0.095 U	0.095	0.10 U	0.10	0.11 U	0.11
Endrin aldehyde		0.10 U	0.10	0.095 U	0.095	0.094 U	0.094	0.095 U	0.095	0.10 U	0.10	0.11 U	0.11
alpha-Chlordane		0.050 U	0.050	0.048 U	0.048	0.047 U	0.047	0.048 U	0.048	0.052 U	0.052	0.056 U	0.056
gamma-Chlordane	0.5	0.050 U	0.050	0.048 U	0.048	0.047 U	0.047	0.048 U	0.048	0.052 U	0.052	0.056 U	0.056
Toxaphene	3	5.0 U	5.0	4.8 U	4.8	4.7 U	4.7	4.8 U	4.8	5.2 U	5.2	5.6 U	5.6
Aroclor-1016	2	1.0 U	1.0	0.95 U	0.95	0.94 U	0.94	0.95 U	0.95	1.0 U	1.0	1.1 U	1.1
Aroclor-1221	2	2.0 U	2.0	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	2.1 U	2.1	2.2 U	2.2
Aroclor-1232	2	1.0 U	1.0	0.95 U	0.95	0.94 U	0.94	0.95 U	0.95	1.0 U	1.0	1.1 U	1.1
Aroclor-1242	2	1.0 U	1.0	0.95 U	0.95	0.94 U	0.94	0.95 U	0.95	1.8 P	1.0	1.1 U	1.1
Aroclor-1248	2	1.0 U	1.0	0.95 U	0.95	0.94 U	0.94	0.95 U	0.95	1.0 U	1.0	1.1 U	1.1
Aroclor-1254	2	1.0 U	1.0	0.95 U	0.95	0.94 U	0.94	0.95 U	0.95	1.0 U	1.0	1.1 U	1.1
Aroclor-1260	2	1.0 U	1.0	0.95 U	0.95	0.94 U	0.94	0.95 U	0.95	1.0 U	1.0	1.1 U	1.1
Method:TCL Pesticides/PCBs													

MAIN POST
GROUNDWATER PESTICIDES/PCBS

Geographical Location		M3		M3		M3		M3		M3		M3	
Sample		MP03-MW04-A01		MP03-MW04-A02		MP03-MW05-A01		MP03-MW05-A02		MP03-MW06-A01		MP03-MW06-A02	
Sample Type													
Batch#		9502G219		9503G642		9502G219		9503G660		9502G219		9503G660	
Prep#		95GP0127		95GP0229		95GP0127		95GP0233		95GP0127		95GP0233	
RFW#		001		009		003		003		005		001	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/16/95		3/8/95		2/16/95		3/9/95		2/16/95		3/9/95	
Analysis Date		3/14/95		3/20/95		3/14/95		3/20/95		3/14/95		3/20/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.054 U	0.054	0.052 U	0.052	0.047 U	0.047	0.056 U	0.056	0.049 U	0.049	0.048 U	0.048
beta-BHC	0.2	0.054 U	0.054	0.052 U	0.052	0.047 U	0.047	0.056 U	0.056	0.049 U	0.049	0.048 U	0.048
delta-BHC		0.054 U	0.054	0.052 U	0.052	0.047 U	0.047	0.056 U	0.056	0.049 U	0.049	0.048 U	0.048
gamma-BHC (Lindane)	0.2	0.054 U	0.054	0.052 U	0.052	0.047 U	0.047	0.056 U	0.056	0.049 U	0.049	0.048 U	0.048
Heptachlor	0.4	0.054 U	0.054	0.052 U	0.052	0.047 U	0.047	0.056 U	0.056	0.049 U	0.049	0.048 U	0.048
Aldrin	0.04	0.054 U	0.054	0.052 U	0.052	0.047 U	0.047	0.056 U	0.056	0.049 U	0.049	0.048 U	0.048
Heptachlor epoxide	0.2	0.054 U	0.054	0.052 U	0.052	0.047 U	0.047	0.056 U	0.056	0.049 U	0.049	0.048 U	0.048
Endosulfan I	0.4	0.054 U	0.054	0.052 U	0.052	0.047 U	0.047	0.056 U	0.056	0.049 U	0.049	0.048 U	0.048
Dieldrin	0.03	0.11 U	0.11	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.098 U	0.098	0.096 U	0.096
4,4'-DDE	0.1	0.11 U	0.11	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.098 U	0.098	0.096 U	0.096
Endrin	2	0.11 U	0.11	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.098 U	0.098	0.096 U	0.096
Endosulfan II	0.4	0.11 U	0.11	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.098 U	0.098	0.096 U	0.096
4,4'-DDD	0.1	0.11 U	0.11	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.098 U	0.098	0.096 U	0.096
Endosulfan sulfate	0.4	0.11 U	0.11	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.098 U	0.098	0.096 U	0.096
4,4'-DDT	0.1	0.11 U	0.11	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.098 U	0.098	0.096 U	0.096
Methoxychlor	40	0.54 U	0.54	0.52 U	0.52	0.47 U	0.47	0.56 U	0.56	0.49 U	0.49	0.48 U	0.48
Endrin ketone		0.11 U	0.11	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.098 U	0.098	0.096 U	0.096
Endrin aldehyde		0.11 U	0.11	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.098 U	0.098	0.096 U	0.096
alpha-Chlordane		0.054 U	0.054	0.052 U	0.052	0.047 U	0.047	0.056 U	0.056	0.049 U	0.049	0.048 U	0.048
gamma-Chlordane	0.5	0.054 U	0.054	0.052 U	0.052	0.047 U	0.047	0.056 U	0.056	0.049 U	0.049	0.048 U	0.048
Toxaphene	3	5.4 U	5.4	5.2 U	5.2	4.7 U	4.7	5.6 U	5.6	4.9 U	4.9	4.8 U	4.8
Aroclor-1016	2	1.1 U	1.1	1.0 U	1.0	0.94 U	0.94	1.1 U	1.1	0.98 U	0.98	0.96 U	0.96
Aroclor-1221	2	2.2 U	2.2	2.1 U	2.1	1.9 U	1.9	2.2 U	2.2	2.0 U	2.0 U	1.9 U	1.9
Aroclor-1232	2	1.1 U	1.1	1.0 U	1.0	0.94 U	0.94	1.1 U	1.1	0.98 U	0.98	0.96 U	0.96
Aroclor-1242	2	1.1 U	1.1	1.0 U	1.0	0.94 U	0.94	1.1 U	1.1	0.98 U	0.98	0.96 U	0.96
Aroclor-1248	2	1.1 U	1.1	1.0 U	1.0	0.94 U	0.94	1.1 U	1.1	0.98 U	0.98	0.96 U	0.96
Aroclor-1254	2	1.1 U	1.1	1.0 U	1.0	0.94 U	0.94	1.1 U	1.1	0.98 U	0.98	0.96 U	0.96
Aroclor-1260	2	1.1 U	1.1	1.0 U	1.0	0.94 U	0.94	1.1 U	1.1	0.98 U	0.98	0.96 U	0.96
Method:TCL Pesticides/PCBs													

MAIN POST
GROUNDWATER PESTICIDES/PCBS

Geographical Location		M4		M4		M4		M4		M4		M4	
Sample		MP04-MW07-A01		MP04-MW07-A02		MP04-MW07-C01		MP04-MW07-C02		MP04-MW07-E01		MP04-MW08-A01	
Sample Type						Duplicate		Duplicate		Field Rinsate Blank			
Batch#		9502G219		9503G660		9502G219		9503G660		9502G219		9502G219	
Prep#		95GP0127		95GP0233		95GP0127		95GP0233		95GP0127		95GP0127	
RFW#		007		005		009		007		012		014	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/16/95		3/9/95		2/16/95		3/9/95		2/16/95		2/16/95	
Analysis Date		3/14/95		3/20/95		3/14/95		3/20/95		3/14/95		3/14/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.062 U	0.062
beta-BHC	0.2	0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.062 U	0.062
delta-BHC		0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.062 U	0.062
gamma-BHC (Lindane)	0.2	0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.062 U	0.062
Heptachlor	0.4	0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.062 U	0.062
Aldrin	0.04	0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.062 U	0.062
Heptachlor epoxide	0.2	0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.062 U	0.062
Endosulfan I	0.4	0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.062 U	0.062
Dieldrin	0.03	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12
4,4'-DDE	0.1	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12
Endrin	2	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12
Endosulfan II	0.4	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12
4,4'-DDD	0.1	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12
Endosulfan sulfate	0.4	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12
4,4'-DDT	0.1	0.19	0.10	0.11 U	0.11	0.32	0.10	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12
Methoxychlor	40	0.52 U	0.52	0.53 U	0.53	0.52 U	0.52	0.53 U	0.53	0.52 U	0.52	0.62 U	0.62
Endrin ketone		0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12
Endrin aldehyde		0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12
alpha-Chlordane		0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.062 U	0.062
gamma-Chlordane	0.5	0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.053 U	0.053	0.052 U	0.052	0.062 U	0.062
Toxaphene	3	5.2 U	5.2	5.3 U	5.3	5.2 U	5.2	5.3 U	5.3	5.2 U	5.2	6.2 U	6.2
Aroclor-1016	2	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	1.2 U	1.2
Aroclor-1221	2	2.1 U	2.1	2.1 U	2.1	2.1 U	2.1	2.1 U	2.1	2.1 U	2.1	2.5 U	2.5
Aroclor-1232	2	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	1.2 U	1.2
Aroclor-1242	2	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	1.2 U	1.2
Aroclor-1248	2	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	1.2 U	1.2
Aroclor-1254	2	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	1.2 U	1.2
Aroclor-1260	2	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	1.2 U	1.2
Method:TCL Pesticides/PCBs													

MAIN POST
GROUNDWATER PESTICIDES/PCBS

Geographical Location		M4		M4		M4		M5		M5		M5	
Sample		MP04-MW08-A02		MP04-MW09-A01		MP04-MW09-A02		MP05-MW10-A01		MP05-MW10-A02		MP05-MW11-A01	
Sample Type													
Batch#		9503G642		9502G219		9503G660		9502G238		9503G660		9502G238	
Prep#		95GP0229		95GP0127		95GP0233		95GP0135		95GP0233		95GP0135	
RFW#		007		016		009		010		011		012	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/8/95		2/16/95		3/9/95		2/17/95		3/9/95		2/17/95	
Analysis Date		3/20/95		3/14/95		3/26/95		3/11/95		3/26/95		3/11/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.053 U	0.053	0.062 U	0.062	0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
beta-BHC	0.2	0.053 U	0.053	0.062 U	0.062	0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
delta-BHC		0.053 U	0.053	0.062 U	0.062	0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
gamma-BHC (Lindane)	0.2	0.053 U	0.053	0.062 U	0.062	0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
Heptachlor	0.4	0.053 U	0.053	0.062 U	0.062	0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
Aldrin	0.04	0.053 U	0.053	0.062 U	0.062	0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
Heptachlor epoxide	0.2	0.053 U	0.053	0.062 U	0.062	0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
Endosulfan I	0.4	0.053 U	0.053	0.062 U	0.062	0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
Dieldrin	0.03	0.11 U	0.11	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
4,4'-DDE	0.1	0.11 U	0.11	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
Endrin	2	0.11 U	0.11	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
Endosulfan II	0.4	0.11 U	0.11	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
4,4'-DDD	0.1	0.11 U	0.11	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
Endosulfan sulfate	0.4	0.11 U	0.11	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
4,4'-DDT	0.1	0.11 U	0.11	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
Methoxychlor	40	0.53 U	0.53	0.62 U	0.62	0.52 U	0.52	0.51 U	0.51	0.52 U	0.52	0.52 U	0.52
Endrin ketone		0.11 U	0.11	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
Endrin aldehyde		0.11 U	0.11	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
alpha-Chlordane		0.053 U	0.053	0.062 U	0.062	0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
gamma-Chlordane	0.5	0.053 U	0.053	0.062 U	0.062	0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
Toxaphene	3	5.3 U	5.3	6.2 U	6.2	5.2 U	5.2	5.1 U	5.1	5.2 U	5.2	5.2 U	5.2
Aroclor-1016	2	1.1 U	1.1	1.2 U	1.2	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0
Aroclor-1221	2	2.1 U	2.1	2.5 U	2.5	2.1 U	2.1	2.0 U	2.0	2.1 U	2.1	2.1 U	2.1
Aroclor-1232	2	1.1 U	1.1	1.2 U	1.2	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0
Aroclor-1242	2	1.1 U	1.1	1.2 U	1.2	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0
Aroclor-1248	2	1.1 U	1.1	1.2 U	1.2	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0
Aroclor-1254	2	1.1 U	1.1	1.2 U	1.2	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0
Aroclor-1260	2	1.1 U	1.1	1.2 U	1.2	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0
Method:TCL Pesticides/PCBs													

MAIN POST
GROUNDWATER PESTICIDES/PCBS

Geographical Location		M5		M5		M8		M8		M8		M8	
Sample		MP05-MW11-A02		MP05-MW11-E02		MP08-MW12-A01		MP08-MW12-A02		MP08-MW12-C02		MP08-MW12-E02	
Sample Type				Field Rinsate Blank						Duplicate		Field Rinsate Blank	
Batch#		9503G660		9503G660		9502G238		9503G767		9503G767		9503G767	
Prep#		95GP0233		95GP0233		95GP0135		94GP0262		94GP0262		94GP0262	
RFW#		013		016		014		001		003		006	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/9/95		3/9/95		2/17/95		3/15/95		3/15/95		3/15/95	
Analysis Date		3/26/95		3/28/95		3/11/95		4/15/95		4/15/95		4/15/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052
beta-BHC	0.2	0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052
delta-BHC		0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052
gamma-BHC (Lindane)	0.2	0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052
Heptachlor	0.4	0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052
Aldrin	0.04	0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052
Heptachlor epoxide	0.2	0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052
Endosulfan I	0.4	0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052
Dieldrin	0.03	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
4,4'-DDE	0.1	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
Endrin	2	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
Endosulfan II	0.4	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
4,4'-DDD	0.1	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
Endosulfan sulfate	0.4	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
4,4'-DDT	0.1	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
Methoxychlor	40	0.52 U	0.52	0.51 U	0.51	0.52 U	0.52	0.52 U	0.52	0.52 U	0.52	0.52 U	0.52
Endrin ketone		0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
Endrin aldehyde		0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
alpha-Chlordane		0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052
gamma-Chlordane	0.5	0.052 U	0.052	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052
Toxaphene	3	5.2 U	5.2	5.1 U	5.1	5.2 U	5.2	5.2 U	5.2	5.2 U	5.2	5.2 U	5.2
Aroclor-1016	2	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0
Aroclor-1221	2	2.1 U	2.1	2.0 U	2.0	2.1 U	2.1	2.1 U	2.1	2.1 U	2.1	2.1 U	2.1
Aroclor-1232	2	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0
Aroclor-1242	2	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0
Aroclor-1248	2	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0
Aroclor-1254	2	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0
Aroclor-1260	2	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0
Method:TCL Pesticides/PCBs													

MAIN POST
GROUNDWATER PESTICIDES/PCBS

Geographical Location		M8		M8		M8		M8		M8		M8	
Sample		MP08-MW13-A01		MP08-MW13-A02		MP08-MW14-A01		MP08-MW14-A02		MP08-MW15-A01		MP08-MW15-A02	
Sample Type													
Batch#		9502G403		9503G767		9502G219		9503G767		9502G403		9503G767	
Prep#		95GP0164		94GP0262		95GP0127		94GP0262		95GP0164		94GP0262	
RFW#		001		008		018		010		003		012	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/22/95		3/15/95		2/16/95		3/15/95		2/22/95		3/15/95	
Analysis Date		3/14/95		4/15/95		3/14/95		4/15/95		3/14/95		4/15/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.052 U	0.052	0.052 U	0.052	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.053 U	0.053
beta-BHC	0.2	0.052 U	0.052	0.052 U	0.052	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.053 U	0.053
delta-BHC		0.052 U	0.052	0.052 U	0.052	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.053 U	0.053
gamma-BHC (Lindane)	0.2	0.052 U	0.052	0.052 U	0.052	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.053 U	0.053
Heptachlor	0.4	0.052 U	0.052	0.052 U	0.052	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.053 U	0.053
Aldrin	0.04	0.052 U	0.052	0.052 U	0.052	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.053 U	0.053
Heptachlor epoxide	0.2	0.052 U	0.052	0.052 U	0.052	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.053 U	0.053
Endosulfan I	0.4	0.052 U	0.052	0.052 U	0.052	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.053 U	0.053
Dieldrin	0.03	0.10 U	0.10	0.10 U	0.10	0.097 U	0.097	0.092 U	0.092	0.10 U	0.10	0.11 U	0.11
4,4'-DDE	0.1	0.10 U	0.10	0.10 U	0.10	0.097 U	0.097	0.092 U	0.092	0.10 U	0.10	0.11 U	0.11
Endrin	2	0.10 U	0.10	0.10 U	0.10	0.097 U	0.097	0.092 U	0.092	0.10 U	0.10	0.11 U	0.11
Endosulfan II	0.4	0.10 U	0.10	0.10 U	0.10	0.097 U	0.097	0.092 U	0.092	0.10 U	0.10	0.11 U	0.11
4,4'-DDD	0.1	0.10 U	0.10	0.10 U	0.10	0.097 U	0.097	0.092 U	0.092	0.10 U	0.10	0.11 U	0.11
Endosulfan sulfate	0.4	0.10 U	0.10	0.10 U	0.10	0.097 U	0.097	0.092 U	0.092	0.10 U	0.10	0.11 U	0.11
4,4'-DDT	0.1	0.10 U	0.10	0.10 U	0.10	0.097 U	0.097	0.092 U	0.092	0.10 U	0.10	0.11 U	0.11
Methoxychlor	40	0.52 U	0.52	0.52 U	0.52	0.48 U	0.48	0.46 U	0.46	0.52 U	0.52	0.53 U	0.53
Endrin ketone		0.10 U	0.10	0.10 U	0.10	0.097 U	0.097	0.092 U	0.092	0.10 U	0.10	0.11 U	0.11
Endrin aldehyde		0.10 U	0.10	0.10 U	0.10	0.097 U	0.097	0.092 U	0.092	0.10 U	0.10	0.11 U	0.11
alpha-Chlordane		0.052 U	0.052	0.052 U	0.052	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.053 U	0.053
gamma-Chlordane	0.5	0.052 U	0.052	0.052 U	0.052	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.053 U	0.053
Toxaphene	3	5.2 U	5.2	5.2 U	5.2	4.8 U	4.8	4.6 U	4.6	5.2 U	5.2	5.3 U	5.3
Aroclor-1016	2	1.0 U	1.0	1.0 U	1.0	0.97 U	0.97	0.92 U	0.92	1.0 U	1.0	1.1 U	1.1
Aroclor-1221	2	2.1 U	2.1	2.1 U	2.1	1.9 U	1.9	1.8 U	1.8	2.1 U	2.1	2.1 U	2.1
Aroclor-1232	2	1.0 U	1.0	1.0 U	1.0	0.97 U	0.97	0.92 U	0.92	1.0 U	1.0	1.1 U	1.1
Aroclor-1242	2	1.0 U	1.0	1.0 U	1.0	0.97 U	0.97	0.92 U	0.92	1.0 U	1.0	1.1 U	1.1
Aroclor-1248	2	1.0 U	1.0	1.0 U	1.0	0.97 U	0.97	0.92 U	0.92	1.0 U	1.0	1.1 U	1.1
Aroclor-1254	2	1.0 U	1.0	1.0 U	1.0	0.97 U	0.97	0.92 U	0.92	1.0 U	1.0	1.1 U	1.1
Aroclor-1260	2	1.0 U	1.0	1.0 U	1.0	0.97 U	0.97	0.92 U	0.92	1.0 U	1.0	1.1 U	1.1
Method:TCL Pesticides/PCBs													

MAIN POST
GROUNDWATER PESTICIDES/PCBS

Geographical Location		M8		M8		M12		M12		M12		M12	
Sample		MP08-MW15-C01		MP08-MW15-E01		MP12-MW16-A01		MP12-MW16-A02		MP12-MW17-A01		MP12-MW17-A02	
Sample Type		Duplicate		Field Rinsate Blank									
Batch#		9502G403		9502G403		9503G299		9503G681		9503G299		9503G681	
Prep#		95GP0164		95GP0164		95GP0154		95GP0247		95GP0154		95GP0247	
RFW#		005		008		001		001		003		003	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/22/95		2/22/95		2/20/95		3/10/95		2/20/95		3/10/95	
Analysis Date		3/14/95		3/15/95		3/15/95		3/29/95		3/15/95		3/29/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.052 U	0.052	0.054 U	0.054	0.053 U	0.053	0.053 U	0.053	0.052 U	0.052	0.052 U	0.052
beta-BHC	0.2	0.052 U	0.052	0.054 U	0.054	0.053 U	0.053	0.053 U	0.053	0.052 U	0.052	0.052 U	0.052
delta-BHC		0.052 U	0.052	0.054 U	0.054	0.053 U	0.053	0.053 U	0.053	0.052 U	0.052	0.052 U	0.052
gamma-BHC (Lindane)	0.2	0.052 U	0.052	0.054 U	0.054	0.053 U	0.053	0.053 U	0.053	0.052 U	0.052	0.052 U	0.052
Heptachlor	0.4	0.052 U	0.052	0.054 U	0.054	0.053 U	0.053	0.053 U	0.053	0.052 U	0.052	0.052 U	0.052
Aldrin	0.04	0.052 U	0.052	0.054 U	0.054	0.053 U	0.053	0.053 U	0.053	0.052 U	0.052	0.052 U	0.052
Heptachlor epoxide	0.2	0.052 U	0.052	0.054 U	0.054	0.053 U	0.053	0.053 U	0.053	0.052 U	0.052	0.052 U	0.052
Endosulfan I	0.4	0.052 U	0.052	0.054 U	0.054	0.053 U	0.053	0.053 U	0.053	0.052 U	0.052	0.052 U	0.052
Dieldrin	0.03	0.10 U	0.10	0.11 U	0.11	0.11 U	0.11	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10
4,4'-DDE	0.1	0.10 U	0.10	0.11 U	0.11	0.11 U	0.11	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10
Endrin	2	0.10 U	0.10	0.11 U	0.11	0.11 U	0.11	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10
Endosulfan II	0.4	0.10 U	0.10	0.11 U	0.11	0.11 U	0.11	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10
4,4'-DDD	0.1	0.10 U	0.10	0.11 U	0.11	0.11 U	0.11	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10
Endosulfan sulfate	0.4	0.10 U	0.10	0.11 U	0.11	0.11 U	0.11	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10
4,4'-DDT	0.1	0.10 U	0.10	0.11 U	0.11	0.11 U	0.11	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10
Methoxychlor	40	0.52 U	0.52	0.54 U	0.54	0.53 U	0.53	0.53 U	0.53	0.52 U	0.52	0.52 U	0.52
Endrin ketone		0.10 U	0.10	0.11 U	0.11	0.11 U	0.11	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10
Endrin aldehyde		0.10 U	0.10	0.11 U	0.11	0.11 U	0.11	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10
alpha-Chlordane		0.052 U	0.052	0.054 U	0.054	0.053 U	0.053	0.053 U	0.053	0.052 U	0.052	0.052 U	0.052
gamma-Chlordane	0.5	0.052 U	0.052	0.054 U	0.054	0.053 U	0.053	0.053 U	0.053	0.052 U	0.052	0.052 U	0.052
Toxaphene	3	5.2 U	5.2	5.4 U	5.4	5.3 U	5.3	5.3 U	5.3	5.2 U	5.2	5.2 U	5.2
Aroclor-1016	2	1.0 U	1.0	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0
Aroclor-1221	2	2.1 U	2.1	2.2 U	2.2	2.1 U	2.1	2.1 U	2.1	2.1 U	2.1	2.1 U	2.1
Aroclor-1232	2	1.0 U	1.0	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0
Aroclor-1242	2	1.0 U	1.0	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0
Aroclor-1248	2	1.0 U	1.0	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0
Aroclor-1254	2	1.0 U	1.0	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0
Aroclor-1260	2	1.0 U	1.0	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0
Method:TCL Pesticides/PCBs													

MAIN POST
GROUNDWATER PESTICIDES/PCBS

Geographical Location		M12		M12		M14		M14		M14		M14	
Sample		MP12-MW18-A01		MP12-MW18-A02		MP14-MW19-A01		MP14-MW19-A02		MP14-MW20-A01		MP14-MW20-A02	
Sample Type													
Batch#		9503G299		9503G681		9503G299		9503G681		9502G403		9503G722	
Prep#		95GP0154		95GP0247		95GP0154		95GP0247		95GP0164		95GP0247	
RFW#		005		005		007		007		010		001	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/20/95		3/10/95		2/20/95		3/10/95		2/22/95		3/13/95	
Analysis Date		3/15/95		3/29/95		3/15/95		3/29/95		3/15/95		3/29/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.056 U	0.056	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.046 U	0.046	0.060 U	0.060
beta-BHC	0.2	0.056 U	0.056	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.046 U	0.046	0.060 U	0.060
delta-BHC		0.056 U	0.056	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.046 U	0.046	0.060 U	0.060
gamma-BHC (Lindane)	0.2	0.056 U	0.056	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.046 U	0.046	0.060 U	0.060
Heptachlor	0.4	0.056 U	0.056	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.046 U	0.046	0.060 U	0.060
Aldrin	0.04	0.056 U	0.056	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.046 U	0.046	0.060 U	0.060
Heptachlor epoxide	0.2	0.056 U	0.056	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.046 U	0.046	0.060 U	0.060
Endosulfan I	0.4	0.056 U	0.056	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.046 U	0.046	0.060 U	0.060
Dieldrin	0.03	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.093 U	0.093	0.12 U	0.12
4,4'-DDE	0.1	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.093 U	0.093	0.12 U	0.12
Endrin	2	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.093 U	0.093	0.12 U	0.12
Endosulfan II	0.4	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.093 U	0.093	0.12 U	0.12
4,4'-DDD	0.1	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.093 U	0.093	0.12 U	0.12
Endosulfan sulfate	0.4	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.093 U	0.093	0.12 U	0.12
4,4'-DDT	0.1	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.093 U	0.093	0.12 U	0.12
Methoxychlor	40	0.56 U	0.56	0.52 U	0.52	0.52 U	0.52	0.52 U	0.52	0.46 U	0.46	0.60 U	0.60
Endrin ketone		0.11 U	0.11	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.093 U	0.093	0.12 U	0.12
Endrin aldehyde		0.11 U	0.11	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.093 U	0.093	0.12 U	0.12
alpha-Chlordane		0.056 U	0.056	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.046 U	0.046	0.060 U	0.060
gamma-Chlordane	0.5	0.056 U	0.056	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.046 U	0.046	0.060 U	0.060
Toxaphene	3	5.6 U	5.6	5.2 U	5.2	5.2 U	5.2	5.2 U	5.2	4.6 U	4.6	6.0 U	6.0
Aroclor-1016	2	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	0.93 U	0.93	1.2 U	1.2
Aroclor-1221	2	2.2 U	2.2	2.1 U	2.1	2.1 U	2.1	2.1 U	2.1	1.9 U	1.9	2.4 U	2.4
Aroclor-1232	2	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	0.93 U	0.93	1.2 U	1.2
Aroclor-1242	2	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	0.93 U	0.93	1.2 U	1.2
Aroclor-1248	2	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	0.93 U	0.93	1.2 U	1.2
Aroclor-1254	2	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	0.93 U	0.93	1.2 U	1.2
Aroclor-1260	2	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	0.93 U	0.93	1.2 U	1.2
Method:TCL Pesticides/PCBs													

MAIN POST
GROUNDWATER PESTICIDES/PCBS

Geographical Location		M14		M14		M14		M16		M16		M18	
Sample		MP14-MW20-E02		MP14-MW21-A01		MP14-MW21-A02		MP16-MW22-A01		MP16-MW22-A02		MP18-MW03-A01	
Sample Type		Field Rinsate Blank											
Batch#		9503G722		9502G403		9503G660		9502G238		9503G660		9505G825	
Prep#		95GP0247		95GP0164		95GP0233		95GP0135		95GP0233		95GP0510	
RFW#		003		012		019		016		018		001	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/13/95		2/22/95		3/9/95		2/17/95		3/9/95		5/10/95	
Analysis Date		3/29/95		3/15/95		3/28/95		3/11/95		3/28/95		5/19/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.052 U	0.052	0.047 U	0.047	0.054 U	0.054	0.048 U	0.048	0.052 U	0.052	0.054 U	0.054
beta-BHC	0.2	0.052 U	0.052	0.047 U	0.047	0.054 U	0.054	0.048 U	0.048	0.052 U	0.052	0.054 U	0.054
delta-BHC		0.052 U	0.052	0.047 U	0.047	0.054 U	0.054	0.048 U	0.048	0.052 U	0.052	0.054 U	0.054
gamma-BHC (Lindane)	0.2	0.052 U	0.052	0.047 U	0.047	0.054 U	0.054	0.048 U	0.048	0.052 U	0.052	0.054 U	0.054
Heptachlor	0.4	0.052 U	0.052	0.047 U	0.047	0.054 U	0.054	0.048 U	0.048	0.052 U	0.052	0.054 U	0.054
Aldrin	0.04	0.052 U	0.052	0.047 U	0.047	0.054 U	0.054	0.048 U	0.048	0.052 U	0.052	0.054 U	0.054
Heptachlor epoxide	0.2	0.052 U	0.052	0.047 U	0.047	0.054 U	0.054	0.048 U	0.048	0.052 U	0.052	0.054 U	0.054
Endosulfan I	0.4	0.052 U	0.052	0.047 U	0.047	0.054 U	0.054	0.048 U	0.048	0.052 U	0.052	0.054 U	0.054
Dieldrin	0.03	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.095 U	0.095	0.10 U	0.10	0.11 U	0.11 U
4,4'-DDE	0.1	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.095 U	0.095	0.10 U	0.10	0.11 U	0.11 U
Endrin	2	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.095 U	0.095	0.10 U	0.10	0.11 U	0.11 U
Endosulfan II	0.4	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.095 U	0.095	0.10 U	0.10	0.11 U	0.11 U
4,4'-DDD	0.1	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.095 U	0.095	0.10 U	0.10	0.11 U	0.11 U
Endosulfan sulfate	0.4	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.095 U	0.095	0.10 U	0.10	0.11 U	0.11 U
4,4'-DDT	0.1	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.095 U	0.095	0.10 U	0.10	0.11 U	0.11 U
Methoxychlor	40	0.52 U	0.52	0.47 U	0.47	0.54 U	0.54	0.48 U	0.48	0.52 U	0.52	0.54 U	0.54
Endrin ketone		0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.095 U	0.095	0.10 U	0.10	0.11 U	0.11 U
Endrin aldehyde		0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.095 U	0.095	0.10 U	0.10	0.11 U	0.11 U
alpha-Chlordane		0.052 U	0.052	0.047 U	0.047	0.054 U	0.054	0.048 U	0.048	0.052 U	0.052	0.054 U	0.054
gamma-Chlordane	0.5	0.052 U	0.052	0.047 U	0.047	0.054 U	0.054	0.048 U	0.048	0.052 U	0.052	0.054 U	0.054
Toxaphene	3	5.2 U	5.2	4.7 U	4.7	5.4 U	5.4	4.8 U	4.8	5.2 U	5.2	5.4 U	5.4
Aroclor-1016	2	1.0 U	1.0	0.94 U	0.94	1.1 U	1.1	0.95 U	0.95	1.0 U	1.0	1.1 U	1.1 U
Aroclor-1221	2	2.1 U	2.1	1.9 U	1.9	2.2 U	2.2	1.9 U	1.9	2.1 U	2.1	2.2 U	2.2
Aroclor-1232	2	1.0 U	1.0	0.94 U	0.94	1.1 U	1.1	0.95 U	0.95	1.0 U	1.0	1.1 U	1.1 U
Aroclor-1242	2	1.0 U	1.0	0.94 U	0.94	1.1 U	1.1	0.95 U	0.95	1.0 U	1.0	1.1 U	1.1 U
Aroclor-1248	2	1.0 U	1.0	0.94 U	0.94	1.1 U	1.1	0.95 U	0.95	1.0 U	1.0	1.1 U	1.1 U
Aroclor-1254	2	1.0 U	1.0	0.94 U	0.94	1.1 U	1.1	0.95 U	0.95	1.0 U	1.0	1.1 U	1.1 U
Aroclor-1260	2	1.0 U	1.0	0.94 U	0.94	1.1 U	1.1	0.95 U	0.95	1.0 U	1.0	1.1 U	1.1 U
Method:TCL Pesticides/PCBs													

MAIN POST
GROUNDWATER PESTICIDES/PCBS

Geographical Location		M18		M18		M18		M18		M18		M18	
Sample		MP18-MW03-E01		MP18-MW03-A02		MP18-MW24-A01		MP18-MW24-A02		MP18-MW24-C02		MP18-MW24-E01	
Sample Type		Field Rinsate Blank								Duplicate		Field Rinsate Blank	
Batch#		9505G825		9505G139		9502G238		9503G681		9503G681		9502G238	
Prep#		95GP0510		95GP0580		95GP0135		95GP0247		95GP0248		95GP0135	
RFW#		001		001		001		009		011		004	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		5/10/95		5/25/95		2/17/95		3/10/95		3/10/95		2/17/95	
Analysis Date		5/19/95		6/1/95		3/10/95		3/29/95		3/29/95		3/10/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.054 U	0.054	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.052 U	0.052	0.047 U	0.047
beta-BHC	0.2	0.054 U	0.054	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.052 U	0.052	0.047 U	0.047
delta-BHC		0.054 U	0.054	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.052 U	0.052	0.047 U	0.047
gamma-BHC (Lindane)	0.2	0.054 U	0.054	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.052 U	0.052	0.047 U	0.047
Heptachlor	0.4	0.054 U	0.054	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.052 U	0.052	0.047 U	0.047
Aldrin	0.04	0.054 U	0.054	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.052 U	0.052	0.047 U	0.047
Heptachlor epoxide	0.2	0.054 U	0.054	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.052 U	0.052	0.047 U	0.047
Endosulfan I	0.4	0.054 U	0.054	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.052 U	0.052	0.047 U	0.047
Dieldrin	0.03	0.11 U	0.11 U	0.095 U	0.095	0.093 U	0.093	0.10 U	0.10	0.10 U	0.10	0.094 U	0.094
4,4'-DDE	0.1	0.11 U	0.11 U	0.095 U	0.095	0.093 U	0.093	0.10 U	0.10	0.10 U	0.10	0.094 U	0.094
Endrin	2	0.11 U	0.11 U	0.095 U	0.095	0.093 U	0.093	0.10 U	0.10	0.10 U	0.10	0.094 U	0.094
Endosulfan II	0.4	0.11 U	0.11 U	0.095 U	0.095	0.093 U	0.093	0.10 U	0.10	0.10 U	0.10	0.094 U	0.094
4,4'-DDD	0.1	0.11 U	0.11 U	0.095 U	0.095	0.18	0.093	0.10 U	0.10	0.11 P	0.10	0.094 U	0.094
Endosulfan sulfate	0.4	0.11 U	0.11 U	0.095 U	0.095	0.093 U	0.093	0.10 U	0.10	0.10 U	0.10	0.094 U	0.094
4,4'-DDT	0.1	0.11 U	0.11 U	0.095 U	0.095	0.093 U	0.093	0.10 U	0.10	0.10 U	0.10	0.094 U	0.094
Methoxychlor	40	0.54 U	0.54	0.48 U	0.48	0.46 U	0.46	0.52 U	0.52	0.52 U	0.52	0.47 U	0.47
Endrin ketone		0.11 U	0.11 U	0.095 U	0.095	0.093 U	0.093	0.10 U	0.10	0.10 U	0.10	0.094 U	0.094
Endrin aldehyde		0.11 U	0.11 U	0.095 U	0.095	0.093 U	0.093	0.10 U	0.10	0.10 U	0.10	0.094 U	0.094
alpha-Chlordane		0.054 U	0.054	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.052 U	0.052	0.047 U	0.047
gamma-Chlordane	0.5	0.054 U	0.054	0.048 U	0.048	0.046 U	0.046	0.052 U	0.052	0.052 U	0.052	0.047 U	0.047
Toxaphene	3	5.4 U	5.4	4.8 U	4.8	4.6 U	4.6	5.2 U	5.2	5.2 U	5.2	4.7 U	4.7
Aroclor-1016	2	1.1 U	1.1 U	0.95 U	0.95	0.93 U	0.93	1.0 U	1.0	1.0 U	1.0	0.94 U	0.94
Aroclor-1221	2	2.2 U	2.2	1.9 U	1.9	1.9 U	1.9	2.1 U	2.1	2.1 U	2.1	1.9 U	1.9
Aroclor-1232	2	1.1 U	1.1 U	0.95 U	0.95	0.93 U	0.93	1.0 U	1.0	1.0 U	1.0	0.94 U	0.94
Aroclor-1242	2	1.1 U	1.1 U	0.95 U	0.95	0.93 U	0.93	1.0 U	1.0	1.0 U	1.0	0.94 U	0.94
Aroclor-1248	2	1.1 U	1.1 U	0.95 U	0.95	0.93 U	0.93	1.0 U	1.0	1.0 U	1.0	0.94 U	0.94
Aroclor-1254	2	1.1 U	1.1 U	0.95 U	0.95	0.93 U	0.93	1.0 U	1.0	1.0 U	1.0	0.94 U	0.94
Aroclor-1260	2	1.1 U	1.1 U	0.95 U	0.95	0.93 U	0.93	1.0 U	1.0	1.0 U	1.0	0.94 U	0.94
Method:TCL Pesticides/PCBs													

MAIN POST
GROUNDWATER PESTICIDES/PCBS

Geographical Location		M18		M18		M18		M18		B1	
Sample		MP18-MW24-E02		MP18-MW25-A01		MP18-MW25-A02		MP18-MW25-C01		B1-MW01B-A01	
Sample Type		Field Rinsate Blank						Duplicate			
Batch#		9503G681		9502G238		9503G681		9502G238		9502G169	
Prep#		95GP0247		95GP0135		95GP0247		95GP0135		95GP0119	
RFW#		014		006		016		008		001	
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/10/95		2/17/95		3/10/95		2/17/95		2/14/95	
Analysis Date		3/29/95		3/10/95		3/29/95		3/11/95		3/4/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.056 U	0.056	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052
beta-BHC	0.2	0.056 U	0.056	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052
delta-BHC		0.056 U	0.056	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052
gamma-BHC (Lindane)	0.2	0.056 U	0.056	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052
Heptachlor	0.4	0.056 U	0.056	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052
Aldrin	0.04	0.056 U	0.056	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052
Heptachlor epoxide	0.2	0.056 U	0.056	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052
Endosulfan I	0.4	0.056 U	0.056	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.041 J	0.052
Dieldrin	0.03	0.11 U	0.11	0.094 U	0.094	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10
4,4'-DDE	0.1	0.11 U	0.11	0.094 U	0.094	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10
Endrin	2	0.11 U	0.11	0.094 U	0.094	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10
Endosulfan II	0.4	0.11 U	0.11	0.094 U	0.094	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10
4,4'-DDD	0.1	0.11 U	0.11	0.094 U	0.094	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10
Endosulfan sulfate	0.4	0.11 U	0.11	0.094 U	0.094	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10
4,4'-DDT	0.1	0.11 U	0.11	0.094 U	0.094	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10
Methoxychlor	40	0.56 U	0.56	0.47 U	0.47	0.53 U	0.53	0.51 U	0.51	0.52 U	0.52
Endrin ketone		0.11 U	0.11	0.094 U	0.094	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10
Endrin aldehyde		0.11 U	0.11	0.094 U	0.094	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10
alpha-Chlordane		0.056 U	0.056	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052
gamma-Chlordane	0.5	0.056 U	0.056	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052
Toxaphene	3	5.6 U	5.6	4.7 U	4.7	5.3 U	5.3	5.1 U	5.1	5.2 U	5.2
Aroclor-1016	2	1.1 U	1.1	0.94 U	0.94	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0
Aroclor-1221	2	2.2 U	2.2	1.9 U	1.9	2.1 U	2.1	2.0 U	2.0	2.1 U	2.1
Aroclor-1232	2	1.1 U	1.1	0.94 U	0.94	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0
Aroclor-1242	2	1.1 U	1.1	0.94 U	0.94	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0
Aroclor-1248	2	1.1 U	1.1	0.94 U	0.94	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0
Aroclor-1254	2	1.1 U	1.1	0.94 U	0.94	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0
Aroclor-1260	2	1.1 U	1.1	0.94 U	0.94	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0
Method:TCL Pesticides/PCBs											

MAIN POST
GROUNDWATER PESTICIDES/PCBS

Geographical Location		B1		B2		B2		B3		B3	
Sample		B1-MW01B-A02		B2-MW02B-A01		B2-MW02B-A02		B3-MW03B-A01		B3-MW03B-A02	
Sample Type											
Batch#		9503G616		9502G169		9503G616		9502G169		9503G740	
Prep#		95GP0219		95GP0119		95GP0219		95GP0119		95GP0251	
RFW#		008		003		010		005		001	
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/7/95		2/14/95		3/7/95		2/14/95		3/14/95	
Analysis Date		3/17/95		3/4/95		3/17/95		3/4/95		4/12/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.051 U	0.051	0.056 U	0.056	0.052 U	0.052	0.047 U	0.047	0.050 U	0.05
beta-BHC	0.2	0.051 U	0.051	0.056 U	0.056	0.052 U	0.052	0.047 U	0.047	0.050 U	0.05
delta-BHC		0.051 U	0.051	0.056 U	0.056	0.052 U	0.052	0.047 U	0.047	0.050 U	0.05
gamma-BHC (Lindane)	0.2	0.051 U	0.051	0.056 U	0.056	0.052 U	0.052	0.047 U	0.047	0.050 U	0.05
Heptachlor	0.4	0.051 U	0.051	0.056 U	0.056	0.052 U	0.052	0.047 U	0.047	0.050 U	0.05
Aldrin	0.04	0.051 U	0.051	0.056 U	0.056	0.052 U	0.052	0.047 U	0.047	0.050 U	0.05
Heptachlor epoxide	0.2	0.041 J	0.051	0.056 U	0.056	0.052 U	0.052	0.047 U	0.047	0.050 U	0.05
Endosulfan I	0.4	0.051 U	0.051	0.056 U	0.056	0.052 U	0.052	0.047 U	0.047	0.050 U	0.05
Dieldrin	0.03	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.094 U	0.094	0.10 U	0.10
4,4'-DDE	0.1	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.094 U	0.094	0.050 JP	0.10
Endrin	2	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.094 U	0.094	0.10 U	0.10
Endosulfan II	0.4	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.094 U	0.094	0.10 U	0.10
4,4'-DDD	0.1	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.094 U	0.094	0.10 U	0.10
Endosulfan sulfate	0.4	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.094 U	0.094	0.10 U	0.10
4,4'-DDT	0.1	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.094 U	0.094	0.10 U	0.10
Methoxychlor	40	0.51 U	0.51	0.56 U	0.56	0.52 U	0.52	0.47 U	0.47	0.50 U	0.5
Endrin ketone		0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.094 U	0.094	0.10 U	0.10
Endrin aldehyde		0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.094 U	0.094	0.10 U	0.10
alpha-Chlordane		0.051 U	0.051	0.056 U	0.056	0.052 U	0.052	0.047 U	0.047	0.050 U	0.05
gamma-Chlordane	0.5	0.051 U	0.051	0.056 U	0.056	0.052 U	0.052	0.047 U	0.047	0.050 U	0.05
Toxaphene	3	5.1 U	5.1	5.6 U	5.6	5.2 U	5.2	4.7 U	4.7	5.0 U	5.0
Aroclor-1016	2	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	0.94 U	0.94	1.0 U	1.0
Aroclor-1221	2	2.0 U	2.0	2.2 U	2.2	2.1 U	2.1	1.9 U	1.9	2.0 U	2.0
Aroclor-1232	2	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	0.94 U	0.94	1.0 U	1.0
Aroclor-1242	2	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	0.94 U	0.94	1.0 U	1.0
Aroclor-1248	2	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	0.94 U	0.94	1.0 U	1.0
Aroclor-1254	2	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	0.94 U	0.94	1.0 U	1.0
Aroclor-1260	2	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	0.94 U	0.94	1.0 U	1.0
Method:TCL Pesticides/PCBs											

MAIN POST
GROUNDWATER PESTICIDES/PCBS

Geographical Location		B3		B3		B4		B4		B5		B5	
Sample		B3-MW03B-E01		B3-MW03B-E02		B4-MW04B-A01		B4-MW04B-A02		B5-MW05B-A01		B5-MW05B-A02	
Sample Type		Field Rinsate Blank		Field Rinsate Blank									
Batch#		9502G169		9503G616		9502G169		9503G616		9502G169		9503G616	
Prep#		95GP0119		95GP0219		95GP0119		95GP0219		95GP0119		95GP0219	
RFW#		008		006		010		012		012		001	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/13/95		3/7/95		2/13/95		3/7/95		2/13/95		3/7/95	
Analysis Date		3/4/95		3/17/95		3/4/95		3/17/95		3/4/95		3/17/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.048 U	0.048	0.048 U	0.048	0.062 U	0.062	0.052 U	0.052	0.052 U	0.052	0.058 U	0.058
beta-BHC	0.2	0.048 U	0.048	0.048 U	0.048	0.062 U	0.062	0.052 U	0.052	0.052 U	0.052	0.058 U	0.058
delta-BHC		0.048 U	0.048	0.048 U	0.048	0.062 U	0.062	0.052 U	0.052	0.052 U	0.052	0.058 U	0.058
gamma-BHC (Lindane)	0.2	0.048 U	0.048	0.048 U	0.048	0.062 U	0.062	0.052 U	0.052	0.052 U	0.052	0.058 U	0.058
Heptachlor	0.4	0.048 U	0.048	0.048 U	0.048	0.062 U	0.062	0.052 U	0.052	0.052 U	0.052	0.058 U	0.058
Aldrin	0.04	0.048 U	0.048	0.048 U	0.048	0.062 U	0.062	0.052 U	0.052	0.052 U	0.052	0.058 U	0.058
Heptachlor epoxide	0.2	0.048 U	0.048	0.048 U	0.048	0.062 U	0.062	0.052 U	0.052	0.052 U	0.052	0.058 U	0.058
Endosulfan I	0.4	0.048 U	0.048	0.048 U	0.048	0.062 U	0.062	0.052 U	0.052	0.052 U	0.052	0.058 U	0.058
Dieldrin	0.03	0.095 U	0.095	0.096 U	0.096	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10	0.12 U	0.12
4,4'-DDE	0.1	0.095 U	0.095	0.096 U	0.096	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10	0.12 U	0.12
Endrin	2	0.095 U	0.095	0.096 U	0.096	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10	0.12 U	0.12
Endosulfan II	0.4	0.095 U	0.095	0.096 U	0.096	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10	0.12 U	0.12
4,4'-DDD	0.1	0.095 U	0.095	0.096 U	0.096	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10	0.12 U	0.12
Endosulfan sulfate	0.4	0.095 U	0.095	0.096 U	0.096	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10	0.12 U	0.12
4,4'-DDT	0.1	0.095 U	0.095	0.096 U	0.096	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10	0.12 U	0.12
Methoxychlor	40	0.48 U	0.48	0.48 U	0.48	0.62 U	0.62	0.52 U	0.52	0.52 U	0.52	0.58 U	0.58
Endrin ketone		0.095 U	0.095	0.096 U	0.096	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10	0.12 U	0.12
Endrin aldehyde		0.095 U	0.095	0.096 U	0.096	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10	0.12 U	0.12
alpha-Chlordane		0.048 U	0.048	0.048 U	0.048	0.062 U	0.062	0.052 U	0.052	0.052 U	0.052	0.058 U	0.058
gamma-Chlordane	0.5	0.048 U	0.048	0.048 U	0.048	0.062 U	0.062	0.052 U	0.052	0.052 U	0.052	0.058 U	0.058
Toxaphene	3	4.8 U	4.8	4.8 U	4.8	6.2 U	6.2	5.2 U	5.2	5.2 U	5.2	5.8 U	5.8
Aroclor-1016	2	0.95 U	0.95	0.96 U	0.96	1.2 U	1.2	1.0 U	1.0	1.0 U	1.0	1.2 U	1.2
Aroclor-1221	2	1.9 U	1.9	1.9 U	1.9	2.5 U	2.5	2.1 U	2.1	2.1 U	2.1	2.3 U	2.3
Aroclor-1232	2	0.95 U	0.95	0.96 U	0.96	1.2 U	1.2	1.0 U	1.0	1.0 U	1.0	1.2 U	1.2
Aroclor-1242	2	0.95 U	0.95	0.96 U	0.96	1.2 U	1.2	1.0 U	1.0	1.0 U	1.0	1.2 U	1.2
Aroclor-1248	2	0.95 U	0.95	0.96 U	0.96	1.2 U	1.2	1.0 U	1.0	1.0 U	1.0	1.2 U	1.2
Aroclor-1254	2	0.95 U	0.95	0.96 U	0.96	1.2 U	1.2	1.0 U	1.0	1.0 U	1.0	1.2 U	1.2
Aroclor-1260	2	0.95 U	0.95	0.96 U	0.96	1.2 U	1.2	1.0 U	1.0	1.0 U	1.0	1.2 U	1.2
Method:TCL Pesticides/PCBs													

MAIN POST
TRANSFORMERS AND CONCRETE - PCBs

Geographical Location		Building 292		Building 686		Building 718		Building 1002		Building 1002		Building 1004	
Sample		MPT5-TR01-A01		MPT6-TR01-A01		MPT4-TR01-A01		MPT7-CC01-A01		MPT7-CC01-C01		MPT8-TR01-A01	
Sample Type		Transformer		Transformer		Transformer		Concrete		Duplicate		Transformer	
Batch#		9411G832		9411G832		9411G832		9412G922		9412G922		9411G832	
Prep#		94GP1024		94GP1024		94GP1024						94GP1024	
RFW#		007		008		006		010		011		009	
Sample Depth													
Dilution Factor		2.5		0.5		0.5		25000		25000		5.0	
Matrix		soil		soil		soil		Concrete		Concrete		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		11/29/94		11/29/94		11/29/94						11/29/94	
Analysis Date		12/21/94		12/21/94		12/22/94		12/31/94		12/31/94		12/21/94	
Analysis	Standard	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting
		Result	Limit	Result	Limit	Result	Limit	Result	Limit	Result	Limit	Result	Limit
% Solids		81.3	0.10	89.4	0.10	77.7	0.10					88.2	0.10
Aroclor-1016	0.055	0.24 U	0.24	0.045 U	0.045	0.051 U	0.051	2000 U	2000	1900 U	1900	0.45 U	0.45
Aroclor-1221	0.055	0.24 U	0.24	0.045 U	0.045	0.051 U	0.051	2000 U	2000	1900 U	1900	0.45 U	0.45
Aroclor-1232	0.055	0.24 U	0.24	0.045 U	0.045	0.051 U	0.051	2000 U	2000	1900 U	1900	0.45 U	0.45
Aroclor-1242	0.055	0.24 U	0.24	0.045 U	0.045	0.051 U	0.051	2000 U	2000	1900 U	1900	0.45 U	0.45
Aroclor-1248	0.055	0.24 U	0.24	0.045 U	0.045	0.051 U	0.051	8400	2000	6300	1900	0.45 U	0.45
Aroclor-1254	0.055	0.48 U	0.48	0.089 U	0.089	0.1 U	0.1	3900 U	3900	3900 U	3900	0.89 U	0.89
Aroclor-1260	0.055	0.68		0.18		0.059 J	0.1	3900 U	3900	3900 U	3900	0.89 U	0.89
Method:TCL PCBs													

MAIN POST
TRANSFORMERS AND CONCRETE - PCBs

Geographical Location		Building 1208		Building 1208		Building 1209		Bulding 1220		Bulding 1220		Bulding 1220	
Sample		MPT2-CC01-A01		MPT2-CC01-A01DL		MPT1-CC01-A01		MPT3-TR01-A01		MPT3-TR02-A01		MPT3-TR03-A01	
Sample Type		Concrete		Concrete		Concrete		Transformer		Transformer		Transformer	
Batch#		9412G922		9412G922		9412G922		9411G832		9411G832		9411G832	
Prep#								94GP1024		94GP1024		94GP1024	
RFW#		009DL		009		008		001		002		003	
Sample Depth													
Dilution Factor		25000		50000		5000		0.5		0.5		0.5	
Matrix		Concrete		Concrete		Concrete		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date						NA		11/29/94		11/29/94		11/29/94	
Analysis Date		12/31/94		12/31/94		12/31/94		12/21/94		12/21/94		12/21/94	
Analysis	Standard	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting
		Result	Limit	Result	Limit	Result	Limit	Result	Limit	Result	Limit	Result	Limit
% Solids								88.3	0.10	96.4	0.10	84.9	0.10
Aroclor-1016	0.055	2000 U	2000	NA	NA	400 U	400	0.045 U	0.045	0.041 U	0.041	0.047 U	0.047
Aroclor-1221	0.055	2000 U	2000	NA	NA	400 U	400	0.045 U	0.045	0.041 U	0.041	0.047 U	0.047
Aroclor-1232	0.055	2000 U	2000	NA	NA	400 U	400	0.045 U	0.045	0.041 U	0.041	0.047 U	0.047
Aroclor-1242	0.055	2000 U	2000	NA	NA	400 U	400	0.045 U	0.045	0.041 U	0.041	0.047 U	0.047
Aroclor-1248	0.055	2000 U	2000	NA	NA	400 U	400	0.045 U	0.045	0.041 U	0.041	0.047 U	0.047
Aroclor-1254	0.055	4000 U	4000	NA	NA	790 U	790	0.089 U	0.089	0.082 U	0.082	0.094 U	0.094
Aroclor-1260	0.055	E		19000	8000	1500	790	0.015 J	0.089	0.082 U	0.082	0.063 J	0.094
Method:TCL PCBs													

MAIN POST
TRANSFORMERS AND CONCRETE - PCBs

Geographical Location		Bulding 1220		Bulding 1220		Building 1220	
Sample		MPT3-TR04-A01		MPT3-TR04-C01		MPT3-CC01-A01	
Sample Type		Transformer		Duplicate		Concrete	
Batch#		9411G832		9411G832		9412G922	
Prep#		94GP1024		94GP1024			
RFW#		004		005		007	
Sample Depth							
Dilution Factor		0.5		0.5		0.50	
Matrix		soil		soil		Concrete	
Units	mg/kg	mg/kg		mg/kg		mg/kg	
Sampling Date		11/29/94		11/29/94		NA	
Analysis Date		12/21/94		12/22/94		12/31/94	
Analysis	Standard	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting
		Result	Limit	Result	Limit	Result	Limit
% Solids		87.9	0.10	88.0	0.10		
Aroclor-1016	0.055	0.045 U	0.045	0.045 U	0.045	0.04 U	0.04
Aroclor-1221	0.055	0.045 U	0.045	0.045 U	0.045	0.04 U	0.04
Aroclor-1232	0.055	0.045 U	0.045	0.045 U	0.045	0.04 U	0.04
Aroclor-1242	0.055	0.045 U	0.045	0.045 U	0.045	0.04 U	0.04
Aroclor-1248	0.055	0.045 U	0.045	0.045 U	0.045	0.04 U	0.04
Aroclor-1254	0.055	0.090 U	0.09	0.089 U	0.089	0.08 U	0.079
Aroclor-1260	0.055	0.087 J	0.09	0.07 J	0.089	0.026	0.079
Method:TCL PCBs							

CHARLES WOOD

CHARLES WOOD
SEDIMENT VOLATILES

Geographical Location			Background		Background		CW5	
Sample			CW02-SD01-A01		CW05-SD01-A01		CW06-SD01-A01	
Batch#			9412G923		9412G923		9412G923	
Prep#			94GVT028		94GVT028		94GVT028	
RFW#			005		006		006	
Sample Depth			0-6"		0-6"		0-6"	
Dilution Factor			1.00		1.00		1.00	
Matrix			soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg	
Sampling Date			12/1/94		12/1/94		12/1/94	
Analysis Date			12/9/94		12/9/94		12/9/94	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane		0.0073	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Bromomethane		0.0067	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Vinyl Chloride		0.0079	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Chloroethane		0.0091	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Methylene Chloride		0.0027	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Acetone		0.0069	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Carbon Disulfide		0.0044	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
1,1-Dichloroethene		0.0049	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
1,1-Dichloroethane		0.003	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
1,2-Dichloroethene (total)		0.0044	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Chloroform		0.0029	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
1,2-Dichloroethane		0.0024	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
2-Butanone		0.0041	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
1,1,1-Trichloroethane		0.0017	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Carbon Tetrachloride		0.0015	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Bromodichloromethane		0.002	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
1,2-Dichloropropane		0.0017	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
cis-1,3-Dichloropropene		0.003	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Trichloroethene		0.002	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Dibromochloromethane		0.0024	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
1,1,2-Trichloroethane		0.0043	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Benzene		0.0033	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
trans-1,3-Dichloropropene		0.0024	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Bromoform		0.0031	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
4-Methyl-2-pentanone		0.0055	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
2-Hexanone		0.0039	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Tetrachloroethene		0.004	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
1,1,2,2-Tetrachloroethane		0.0042	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Toluene		0.0027	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Chlorobenzene		0.0027	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Ethylbenzene		0.0031	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Styrene		0.0038	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Xylene (total)		0.0038	0.014 U	0.014	0.018 U	0.018	0.013 U	0.013
Total Est. Conc. of TIC.					0.02			
Method:TCL Volatiles								

CHARLES WOOD
SEDIMENT SEMIVOLATILES

Geographical Location			Background		Background		Background		CW5	
Sample			CW02-SD01-A01		CW05-SD01-A01		CW05-SD01-A01R		CW06-SD01-A01	
Batch#			9412G923		9412G923		9412G923		9412G923	
Prep#			94GBO800		94GBO800		94GBO800		94GBO800	
RFW#			005		006		006		007	
Sample Depth			0-6"		0-6"		0-6"		0-6"	
Dilution Factor			1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			12/1/94		12/1/94		12/1/94		12/1/94	
Analysis Date			12/22/94		12/22/94		12/22/94		12/22/94	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol		0.234	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
bis(2-Chloroethyl) ether		0.32	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
2-Chlorophenol		0.241	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
1,3-Dichlorobenzene		0.175	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
1,4-Dichlorobenzene		0.158	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
1,2-Dichlorobenzene		0.188	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
2-Methylphenol		0.221	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
2,2'-oxybis(1-Chloropropane)		0.231	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
4-Methylphenol		0.426	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
N-Nitroso-di-n-propylamine		0.264	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
Hexachloroethane		0.175	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
Nitrobenzene		0.244	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
Isophorone		0.129	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
2-Nitrophenol		0.231	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
2,4-Dimethylphenol		0.158	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
bis(2-Chloroethoxy) methane		0.201	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
2,4-Dichlorophenol		0.145	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
1,2,4-Trichlorobenzene		0.317	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
Naphthalene		0.277	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
4-Chloroaniline		0.096	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
Hexachlorobutadiene		0.152	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
4-Chloro-3-methylphenol		0.102	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
2-Methylnaphthalene		0.287	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
Hexachlorocyclopentadiene		0.119	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
2,4,6-Trichlorophenol		0.185	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
2,4,5-Trichlorophenol		0.155	1.2 U	1.2	1.5 U	1.5	1.5 U	1.5	1 U	1
2-Chloronaphthalene		0.271	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
2-Nitroaniline		0.201	1.2 U	1.2	1.5 U	1.5	1.5 U	1.5	1 U	1
Dimethylphthalate		0.145	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.4 J	0.42
Acenaphthylene		0.198	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
2,6-Dinitrotoluene		0.172	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
3-Nitroaniline		0.172	1.2 U	1.2	1.5 U	1.5	1.5 U	1.5	1 U	1
Acenaphthene		0.221	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
2,4-Dinitrophenol		0.152	1.2 U	1.2	1.5 U	1.5	1.5 U	1.5	1 U	1

CHARLES WOOD
SEDIMENT SEMIVOLATILES

Geographical Location			Background		Background		Background		CW5	
Sample			CW02-SD01-A01		CW05-SD01-A01		CW05-SD01-A01R		CW06-SD01-A01	
Batch#			9412G923		9412G923		9412G923		9412G923	
Prep#			94GBO800		94GBO800		94GBO800		94GBO800	
RFW#			005		006		006		007	
Sample Depth			0-6"		0-6"		0-6"		0-6"	
Dilution Factor			1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			12/1/94		12/1/94		12/1/94		12/1/94	
Analysis Date			12/22/94		12/22/94		12/22/94		12/22/94	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		0.248	1.2 U	1.2	1.5 U	1.5	1.5 U	1.5	1 U	1
Dibenzofuran		0.215	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
2,4-Dinitrotoluene		0.191	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
Diethylphthalate		0.178	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
4-Chlorophenyl-phenylether		0.231	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
Fluorene		0.208	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
4-Nitroaniline		0.211	1.2 U	1.2	1.5 U	1.5	1.5 U	1.5	1 U	1
4,6-Dinitro-2-methylphenol		0.175	1.2 U	1.2	1.5 U	1.5	1.5 U	1.5	1 U	1
N-Nitrosodiphenylamine (1)		0.139	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
4-Bromophenyl-phenylether		0.175	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
Hexachlorobenzene		0.182	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
Pentachlorophenol		0.132	1.2 U	1.2	1.5 U	1.5	1.5 U	1.5	1 U	1
Phenanthrene	0.225	0.165	0.47 U	0.47	0.079 J	0.61	0.074 J	0.61	0.098 J	0.42
Anthracene		0.152	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
Carbazole		0.145	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
Di-n-butylphthalate		0.215	0.47 U	0.47	0.12 J	0.61	0.12 JB	0.61	0.081 J	0.42
Fluoranthene	0.6	0.198	0.47 U	0.47	0.12 J	0.61	0.12 J	0.61	0.16 J	0.42
Pyrene	0.35	0.178	0.47 U	0.47	0.24 J	0.61	0.41 J	0.61	0.19 J	0.42
Butylbenzylphthalate		0.175	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
3,3'-Dichlorobenzidine		0.092	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
Benzo(a)anthracene	0.23	0.162	0.47 U	0.47	0.09 J	0.61	0.083 J	0.61	0.079 J	0.42
Chrysene	0.4	0.145	0.47 U	0.47	0.11 J	0.61	0.14 J	0.61	0.087 J	0.42
bis(2-Ethylhexy)phthalate		0.32	0.47 U	0.47	0.21 J	0.61	0.23 J	0.61	0.45	0.42
Di-n-octyl phthalate		0.185	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.11 J	0.42
Benzo(b)fluoranthene		0.188	0.47 U	0.47	0.16 J	0.61	0.16 J	0.61	0.1 J	0.42
Benzo(k)fluoranthene		0.205	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
Benzo(a)pyrene	0.4	0.162	0.47 U	0.47	0.61 U	0.61	0.1 J	0.61	0.42 U	0.42
Indeno(1,2,3-cd)pyrene		0.234	0.47 U	0.47	0.17 J	0.61	0.19 J	0.61	0.42 U	0.42
Dibenzo(a,h)anthracene		0.198	0.47 U	0.47	0.61 U	0.61	0.61 U	0.61	0.42 U	0.42
Benzo(g,h,i)perylene		0.224	0.47 U	0.47	0.15 J	0.61	0.21 J	0.61	0.42 U	0.42
Organic Carbon %					1.3	0.06				
% solids					76.3	0.10				
Total Est. Conc. of TIC			10.1 J		28.2 J		39.7 J		9.39 J	
Method:TCL Semivolatiles										

CHARLES WOOD
SEDIMENT INORGANICS

Geographical Location		Background		Background		Background		CW5	
Sample		CW02-SD01-A01		CW05-SD01-A01		CW05-SD01-A01		CW06-SD01-A01	
Batch#		9412G923		9505G138		9412G923		9412G923	
Prep#		94GTS473		95GTS327		94GTS473		94GTS473	
RFW#		005		001		006		007	
Sample Depth		0-6"		0-6"		0-6"		0-6"	
Dilution Factor		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		12/1/94		5/25/95		12/1/94		12/1/94	
Analysis Date		12/9/94		6/1/95		12/9/94		12/9/94	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
% Solids		71.3	0.10	76.3	0.10	54.5	0.10	79.3	0.10
Silver	1	0.63 U	0.63			1.1 U	1.1	0.70 U	0.7
Aluminum		1910	5.5			6660	9.1	866	6.1
Arsenic	33	1.1	0.38			5.8	0.54	0.74	0.35
Barium		8.4	0.43			45.7	0.71	9.6	0.48
Beryllium		0.31 U	0.31			0.51 U	0.51	0.34 U	0.34
Calcium		343	2.5			2960	4.1	509	2.7
Cadmium	5	0.70 U	0.70			1.2 U	1.2	0.77 U	0.77
Cobalt		0.88	0.57			4.2	0.95	1.3	0.64
Chromium	80	24.4	1.3			36.9	2.2	7.8	1.5
Copper	70	2.2	0.49			24.5	0.82	7.4	0.55
Iron		5860	0.96			19600	1.6	6910	1.1
Mercury	0.15	0.10 U	0.10			0.15 U	0.15	0.084 U	0.084
Potassium		1700	168			1410	279	256	186
Magnesium		640	7.8			2560	13.0	320	8.7
Manganese		5.4	0.41			65.1	0.68	25.8	0.45
Sodium		37.4	3.2			271	5.2	54.0	3.5
Nickel	30	2.6 U	2.6			11.3	4.3	2.9 U	2.9
Lead	35	6.4	1.5 *			142	10.8 *	9.3	1.8 *
Antimony		4.4 U	4.4			7.3 U	7.3	4.9 U	4.9
Selenium		0.21 U	0.21			0.68	0.30	0.20 U	0.2
Thallium		0.26 U	0.26			0.37 U	0.37	0.24 U	0.24
Vanadium		11.3	0.59			39.5	0.99	5.4	0.66
Zinc	120	14.3	0.57			126	0.95	22.5	0.64
Cyanide		1.1	0.63			0.87 U	0.87	0.47 U	0.47
Dilution Factor		* = 4.00				* = 20.0		* = 5.00	
Method:TAL Metals, Cyanide									

CHARLES WOOD
SEDIMENT PESTICIDES/PCBS

Geographical Location		Background		Background		Background		CW5	
Sample		CW02-SD01-A01		CW05-SD01-A01		CW05-SD01-A01DL		CW06-SD01-A01	
Batch#		9412G923		9412G923		9412G923		9412G923	
Prep#		94GP1049		94GP1049		94GP1049		94GP1049	
RFW#		005		006		006DL		007	
Sample Depth		0-6"		0-6"		0-6"		0-6"	
Dilution Factor		1.00		1.00		2.00		1.00	
Matrix		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		12/1/94		12/1/94		12/1/94		12/1/94	
Analysis Date		1/12/95		1/12/95		1/12/95		1/12/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
alpha-BHC		0.0023 U	0.0023	0.003 U	0.003	0.006 U	0.006	0.0021 U	0.0021
beta-BHC		0.0023 U	0.0023	0.003 U	0.003	0.006 U	0.006	0.0021 U	0.0021
delta-BHC		0.0023 U	0.0023	0.003 U	0.003	0.006 U	0.006	0.0021 U	0.0021
gamma-BHC (Lindane)		0.0023 U	0.0023	0.003 U	0.003	0.006 U	0.006	0.0021 U	0.0021
Heptachlor		0.0023 U	0.0023	0.003 U	0.003	0.006 U	0.006	0.0021 U	0.0021
Aldrin		0.0023 U	0.0023	0.003 U	0.003	0.006 U	0.006	0.0021 U	0.0021
Heptachlor epoxide		0.0023 U	0.0023	0.003 U	0.003	0.006 U	0.006	0.0042 P	0.0021
Endosulfan I		0.0023 U	0.0023	0.003 U	0.003	0.006 U	0.006	0.0021 U	0.0021
Dieldrin		0.0047 U	0.0047	0.006 U	0.006	0.012 U	0.012	0.0042 U	0.0042
4,4'-DDE	0.002	0.0028 J	0.0047	0.096	0.006	.085 D	0.012	0.0067	0.0042
Endrin		0.0047 U	0.0047	0.006 U	0.006	0.012 U	0.012	0.0042 U	0.0042
Endosulfan II		0.0047 U	0.0047	0.006 U	0.006	0.012 U	0.012	0.0042 U	0.0042
4,4'-DDD	0.002	0.0065	0.0047	0.013 P	0.006	.015 PD	0.012	0.005 P	0.0042
Endosulfan sulfate		0.0047 U	0.0047	0.006 U	0.006	0.012 U	0.012	0.0042 U	0.0042
4,4'-DDT	0.00183	0.007	0.0047	0.11	0.006	.11 D	0.012	0.0029 JP	0.0042
Methoxychlor		0.023 U	0.023	0.03 U	0.03	0.06 U	0.06	0.021 U	0.021
Endrin ketone		0.0047 U	0.0047	0.006 U	0.006	0.012 U	0.012	0.0042 U	0.0042
Endrin aldehyde		0.0047 U	0.0047	0.006 U	0.006	0.012 U	0.012	0.0042 U	0.0042
alpha-Chlordane		0.0023 U	0.0023	0.003 U	0.003	0.006 U	0.006	0.0021 U	0.0021
gamma-Chlordane		0.0023 U	0.0023	0.003 U	0.003	0.006 U	0.006	0.0021 U	0.0021
Toxaphene		0.23 U	0.23	0.3 U	0.3	0.6 U	0.6	0.21 U	0.21
Aroclor-1016		0.047 U	0.047	0.06 U	0.06	0.12 U	0.12	0.042 U	0.042
Aroclor-1221		0.093 U	0.093	0.12 U	0.12	0.24 U	0.24	0.084 U	0.084
Aroclor-1232		0.047 U	0.047	0.06 U	0.06	0.12 U	0.12	0.042 U	0.042
Aroclor-1242		0.047 U	0.047	0.06 U	0.06	0.12 U	0.12	0.042 U	0.042
Aroclor-1248		0.047 U	0.047	0.06 U	0.06	0.12 U	0.12	0.042 U	0.042
Aroclor-1254		0.047 U	0.047	0.06 U	0.06	0.12 U	0.12	0.042 U	0.042
Aroclor-1260		0.047 U	0.047	0.06 U	0.06	0.12 U	0.12	0.042 U	0.042
Method:TCL Pesticides/PCBs									

CHARLES WOOD
SURFACE WATER VOLATILES

Geographical Location			Background		Background	
Sample			CW02-SW01-A01		CW05-SW01-A01	
Batch#			9412G923		9412G923	
Prep#			94GVE348		94GVE348	
RFW#			001		003	
Dilution Factor			1.00		1.00	
Matrix			water		water	
Units	ug/l		ug/l		ug/l	
Sampling Date			12/1/94		12/1/94	
Analysis Date			12/9/94		12/9/94	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane	5.7	7.3	10 U	10	10 U	10
Bromomethane	48.4	6.7	10 U	10	10 U	10
Vinyl Chloride	0.083	7.9	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10
Methylene Chloride	2.49	2.7	10 U	10	10 U	10
Acetone		6.9	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10
1,1-Dichloroethene	4.81	4.9	10 U	10	10 U	10
1,1-Dichloroethane		3.0	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10
Chloroform	5.67	2.9	10 U	10	10 U	10
1,2-Dichloroethane	0.291	2.4	10 U	10	10 U	10
2-Butanone		4.1	10 U	10	10 U	10
1,1,1-Trichloroethane	127	1.7	10 U	10	10 U	10
Carbon Tetrachloride	0.363	1.5	10 U	10	10 U	10
Bromodichloromethane	0.266	2.0	10 U	10	10 U	10
1,2-Dichloropropane		1.7	10 U	10	10 U	10
cis-1,3-Dichloropropene		3.0	10 U	10	10 U	10
Trichloroethene	1.09	2.0	10 U	10	10 U	10
Dibromochloromethane	72.6	2.4	10 U	10	10 U	10
1,1,2-Trichloroethane	13.5	4.3	10 U	10	10 U	10
Benzene	0.15	3.3	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.193	2.4	10 U	10	10 U	10
Bromoform	4.38	3.1	10 U	10	10 U	10
4-Methyl-2-pentanone		5.5	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10
Tetrachloroethene	0.388	4.0	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	1.72	4.2	10 U	10	10 U	10
Toluene	7440	2.7	10 U	10	10 U	10
Chlorobenzene	22	2.7	10 U	10	10 U	10
Ethylbenzene	3030	3.1	10 U	10	10 U	10
Styrene		3.8	10 U	10	10 U	10
Xylene (total)		3.8	10 U	10	10 U	10
Method:TCL Volatiles						

CHARLES WOOD
SURFACE WATER SEMIVOLATILES

Geographical Location			Background		Background	
Sample			CW02-SW01-A01		CW05-SW01-A01	
Batch#			9412G923		9412G923	
Prep#			94GBO800		94GBO800	
RFW#			001		003	
Dilution Factor			1.00		1.00	
Matrix			water		water	
Units	ug/l	ug/l	ug/l		ug/l	
Sampling Date			12/1/94		12/1/94	
Analysis Date			12/22/94		12/22/94	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	20900	7.1	10 U	10	10 U	10
bis(2-Chloroethyl) ether	0.0311	9.7	10 U	10	10 U	10
2-Chlorophenol	122	7.3	10 U	10	10 U	10
1,3-Dichlorobenzene	2620	5.3	10 U	10	10 U	10
1,4-Dichlorobenzene	343	4.8	10 U	10	10 U	10
1,2-Dichlorobenzene	2520	5.7	10 U	10	10 U	10
2-Methylphenol		6.7	10 U	10	10 U	10
2,2'-oxybis(1-Chloropropane)		7.0	10 U	10	10 U	10
4-Methylphenol		12.9	10 U	10	10 U	10
N-Nitroso-di-n-propylamine		8.0	10 U	10	10 U	10
Hexachloroethane	2.73	5.3	10 U	10	10 U	10
Nitrobenzene	16	7.4	10 U	10	10 U	10
Isophorone	552	3.9	10 U	10	10 U	10
2-Nitrophenol		7.0	10 U	10	10 U	10
2,4-Dimethylphenol		4.8	10 U	10	10 U	10
bis(2-Chloroethoxy) methane		6.1	10 U	10	10 U	10
2,4-Dichlorophenol	92.7	4.4	10 U	10	10 U	10
1,2,4-Trichlorobenzene	30.6	9.6	10 U	10	10 U	10
Naphthalene		8.4	10 U	10	10 U	10
4-Chloroaniline		2.9	10 U	10	10 U	10
Hexachlorobutadiene	6.94	4.6	10 U	10	10 U	10
4-Chloro-3-methylphenol		3.1	10 U	10	10 U	10
2-Methylnaphthalene		8.7	10 U	10	10 U	10
Hexachlorocyclopentadiene	245	3.6	10 U	10	10 U	10
2,4,6-Trichlorophenol	2.14	5.6	10 U	10	10 U	10
2,4,5-Trichlorophenol	2580	4.7	25 U	25	25 U	25
2-Chloronaphthalene		8.2	10 U	10	10 U	10
2-Nitroaniline		6.1	25 U	25	25 U	25
Dimethylphthalate	313000	4.4	10 U	10	10 U	10
Acenaphthylene		6.0	10 U	10	10 U	10
2,6-Dinitrotoluene		5.2	10 U	10	10 U	10
3-Nitroaniline		5.2	25 U	25	25 U	25
Acenaphthene		6.7	10 U	10	10 U	10
2,4-Dinitrophenol	69.7	4.6	25 U	25	25 U	25
4-Nitrophenol		7.5	25 U	25	25 U	25

CHARLES WOOD
SURFACE WATER SEMIVOLATILES

Geographical Location			Background		Background	
Sample			CW02-SW01-A01		CW05-SW01-A01	
Batch#			9412G923		9412G923	
Prep#			94GBO800		94GBO800	
RFW#			001		003	
Dilution Factor			1.00		1.00	
Matrix			water		water	
Units	ug/l	ug/l	ug/l		ug/l	
Sampling Date			12/1/94		12/1/94	
Analysis Date			12/22/94		12/22/94	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL
Dibenzofuran		6.5	10 U	10	10 U	10
2,4-Dinitrotoluene	0.11	5.8	10 U	10	10 U	10
Diethylphthalate	21200	5.4	10 U	10	10 U	10
4-Chlorophenyl-phenylether		7.0	10 U	10	10 U	10
Fluorene	1340	6.3	25 U	25	25 U	25
4-Nitroaniline		6.4	25 U	25	25 U	25
4,6-Dinitro-2-methylphenol		5.3	10 U	10	10 U	10
N-Nitrosodiphenylamine (1)		4.2	10 U	10	10 U	10
4-Bromophenyl-phenylether		5.3	10 U	10	10 U	10
Hexachlorobenzene	0.000748	5.5	25 U	25	25 U	25
Pentachlorophenol	0.282	4.0	10 U	10	10 U	10
Phenanthrene		5.0	10 U	10	10 U	10
Anthracene	9570	4.6	10 U	10	10 U	10
Carbazole		4.4	10 U	10	10 U	10
Di-n-butylphthalate	3530	6.5	10 U	10	10 U	10
Fluoranthene	310	6.0	10 U	10	10 U	10
Pyrene	797	5.4	10 U	10	10 U	10
Butylbenzylphthalate	239	5.3	10 U	10	10 U	10
3,3'-Dichlorobenzidine	0.0386	2.8	10 U	10	10 U	10
Benzo(a)anthracene	0.0028	4.9	10 U	10	10 U	10
Chrysene	0.0028	4.4	10 U	10	10 U	10
bis(2-Ethylhexy)phthalate	1.76	9.7	1 J	10	1 J	10 JB
Di-n-octyl phthalate		5.6	10 U	10	10 U	10
Benzo(b)fluoranthene	0.0028	5.7	10 U	10	10 U	10
Benzo(k)fluoranthene	0.0028	6.2	10 U	10	10 U	10
Benzo(a)pyrene	0.0028	4.9	10 U	10	10 U	10
Indeno(1,2,3-cd)pyrene	0.0028	7.1	10 U	10	10 U	10
Dibenzo(a,h)anthracene	0.0028	6.0	10 U	10	10 U	10
Benzo(g,h,i)perylene		6.8	10 U	10	10 U	10
Total Est. Conc. of TIC			70			
Method:TCL Semivolatiles						

CHARLES WOOD
SURFACE WATER INORGANICS

Geographical Location		Background		Background		Background		Background	
Sample		CW02-SW01-A01		CW02-SW01-A01 SOL		CW05-SW01-A01		CW05-SW01-A01 SOL	
Sample Type		Total		Soluble		Total		Soluble	
Batch#		9412G923		9412G923		9412G923		9412G923	
Prep#		94GCN264		94GI186		94GCN264		94GI186	
RFW#		001		002		003		004	
Dilution Factor		1.00		1.00		1.00		1.00	
Matrix		water		water, filtered		water		water, filtered	
Units	ug/l	ug/l		ug/l		ug/l		ug/l	
Sampling Date		12/1/94		12/1/94		12/1/94		12/1/94	
Analysis Date		12/14/94		12/21/94		12/14/94		12/21/94	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	164	3.1 U	3.1	3.1 U	3.1	3.1 U	3.1	3.1 U	3.1
Aluminum		134	26.7	86.6	26.7	265	26.7	160	26.7
Arsenic	0.017	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6
Barium	2000	77.1	2.1	78.2	2.1	60.6	2.1	60.3	2.1
Beryllium		1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5
Calcium		15100	12.0	15700	12.0	22900	12.0	24000	12
Cadmium	10	3.4 U	3.4	3.4 U	3.4	3.4 U	3.4	3.4 U	3.4
Cobalt		2.8	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8
Chromium	160	6.4 U	6.4	6.4 U	6.4	6.4 U	6.4	6.4 U	6.4
Copper		2.4 U	2.4	4.8	2.4	8.0	2.4	10.2	2.4
Iron		608	4.7	352	4.7	715	4.7	435	4.7
Mercury	0.144	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		3590	821	4040	821	1110	821	1030	821
Magnesium		7050	38.2	7390	38.2	4150	38.2	4280	38.2
Manganese	100	97.4	2.0	100	2.0	43.0	2.0	44.4	2.0
Sodium		156000	15.4	164000	15.4	10700	15.4	11200	15.4
Nickel	516	12.8 U	12.8	12.8 U	12.8	12.8 U	12.8	12.8 U	12.8
Lead	5	2.2	1.6	1.8	1.6	4.7	0.8	3.9	0.8
Antimony	12.2	26.8	21.5	21.5 U	21.5	21.5 U	21.5	21.5 U	21.5
Selenium	10	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90
Thallium	1.7	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1
Vanadium		2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9
Zinc		55.1	2.8	58.8	2.8	204	2.8	215	2.8
Cyanide	5.2	10.0 U	10.0			10.0 U	10.0		
Method:TAL Metals, Cyanide									

CHARLES WOOD
SURFACE WATER PESTICIDES/PCBS

Geographical Location		Background		Background	
Sample		CW02-SW01-A01		CW05-SW01-A01	
Batch#		9412G923		9412G923	
Prep#		94GP1038		94GP1038	
RFW#		001		003	
Dilution Factor		1.00		1.00	
Matrix		water		water	
Units	ug/l	ug/l		ug/l	
Sampling Date		12/1/94		12/1/94	
Analysis Date		12/17/94		12/17/94	
Analysis	Standard	Analytical	Reporting	Analytical	Reporting
		Result	Limit	Result	Limit
alpha-BHC	0.00391	0.050 U	0.050	0.040 U	0.040
beta-BHC	0.137	0.050 U	0.050	0.040 U	0.040
delta-BHC		0.050 U	0.050	0.040 U	0.040
gamma-BHC (Lindane)	0.08	0.050 U	0.050	0.040 U	0.040
Heptachlor	0.000208	0.050 U	0.050	0.040 U	0.040
Aldrin	0.000135	0.050 U	0.050	0.040 U	0.040
Heptachlor epoxide	0.000103	0.050 U	0.050	0.040 U	0.040
Endosulfan I		0.050 U	0.050	0.040 U	0.040
Dieldrin	0.000135	0.1 U	0.10	0.080 U	0.080
4,4'-DDE	0.000588	0.1 U	0.10	0.080 U	0.080
Endrin	0.0023	0.1 U	0.10	0.080 U	0.080
Endosulfan II		0.1 U	0.10	0.080 U	0.080
4,4'-DDD	0.000832	0.1 U	0.10	0.080 U	0.080
Endosulfan sulfate	0.93	0.1 U	0.10	0.080 U	0.080
4,4'-DDT	0.000588	0.1 U	0.10	0.080 U	0.080
Methoxychlor	0.03	0.5 U	0.50	0.40 U	0.4
Endrin ketone		0.1 U	0.10	0.080 U	0.080
Endrin aldehyde	0.76	0.1 U	0.10	0.080 U	0.080
alpha-Chlordane	0.000277	0.050 U	0.050	0.040 U	0.040
gamma-Chlordane		0.050 U	0.050	0.040 U	0.040
Toxaphene	0.00073	5 U	5	4 U	4
Aroclor-1016	0.000244	1 U	1	0.80 U	0.8
Aroclor-1221	0.000244	2 U	2	1.6 U	1.6
Aroclor-1232	0.000244	1 U	1	0.80 U	0.80
Aroclor-1242	0.000244	1 U	1	0.80 U	0.80
Aroclor-1248	0.000244	1 U	1	0.80 U	0.80
Aroclor-1254	0.000244	1 U	1	0.80 U	0.80
Aroclor-1260	0.000244	1 U	1	0.80 U	0.80
Method:TCL Pesticides/PCBs					

CHARLES WOOD
SURFACE SOIL VOLATILES

Geographical Location			CW6		CW9		CW9	
Sample			CW06-SS01-A01		CW09-SS01-D01		CW09-SS01-E01	
Sample Type					Duplicate		Field Rinsate Blank	
Batch#			9412G854		9412G854		9412G854	
Prep#			94GVT027		94GVE343		94GVE343	
RFW#			014		001		002	
Sample Depth			0-6"		0-6"		0-6"	
Dilution Factor			1.00		1.00		1.00	
Matrix			soil		water		water	
Units	mg/kg	mg/kg	mg/kg		mg/l		mg/l	
Sampling Date			11/30/94		11/30/94		11/30/94	
Analysis Date			12/5/94		12/7/94		12/7/94	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane	520	0.0073	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Bromomethane	79	0.0067	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Vinyl Chloride	2	0.0079	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Chloroethane		0.0091	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Methylene Chloride	49	0.0027	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Acetone	1000	0.0069	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Carbon Disulfide		0.0044	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
1,1-Dichloroethene	8	0.0049	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
1,1-Dichloroethane	570	0.003	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
1,2-Dichloroethene (total)	79	0.0044	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Chloroform	19	0.0029	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
1,2-Dichloroethane	6	0.0024	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
2-Butanone	1000	0.0041	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
1,1,1-Trichloroethane	210	0.0017	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Carbon Tetrachloride	2	0.0015	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Bromodichloromethane	11	0.002	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
1,2-Dichloropropane	10	0.0017	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
cis-1,3-Dichloropropene	4	0.003	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Trichloroethene	23	0.002	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Dibromochloromethane	110	0.0024	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
1,1,2-Trichloroethane	22	0.0043	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Benzene	3	0.0033	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
trans-1,3-Dichloropropene	4	0.0024	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Bromoform	86	0.0031	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
4-Methyl-2-pentanone	1000	0.0055	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
2-Hexanone		0.0039	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Tetrachloroethene	4	0.004	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
1,1,2,2-Tetrachloroethane	34	0.0042	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Toluene	1000	0.0027	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Chlorobenzene	37	0.0027	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Ethylbenzene	1000	0.0031	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Styrene	23	0.0038	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Xylene (total)	410	0.0038	0.022 U	0.022	0.01 U	0.01	0.01 U	0.01
Method:TCL Volatiles								

CHARLES WOOD
SURFACE SOIL SEMIVOLATILES

Geographical Location			CW6	
Sample			CW06-SS01-A01	
Batch#			9412G854	
Prep#			94GB0796	
RFW#			014	
Sample Depth			0-6"	
Dilution Factor			10.00	
Matrix			soil	
Units	mg/kg	mg/kg	mg/kg	
Sampling Date			11/30/94	
Analysis Date			12/21/94	
Analysis	Standard	MDL	Analytical Result	CRQL
Phenol	10000	0.234	7.2 U	7.2
bis(2-Chloroethyl) ether	0.66	0.32	7.2 U	7.2
2-Chlorophenol	280	0.241	7.2 U	7.2
1,3-Dichlorobenzene	5100	0.175	7.2 U	7.2
1,4-Dichlorobenzene	570	0.158	7.2 U	7.2
1,2-Dichlorobenzene	5100	0.188	7.2 U	7.2
2-Methylphenol	2800	0.221	7.2 U	7.2
2,2'-oxybis(1-Chloropropane)		0.231	7.2 U	7.2
4-Methylphenol	2800	0.426	7.2 U	7.2
N-Nitroso-di-n-propylamine	0.66	0.264	7.2 U	7.2
Hexachloroethane	6	0.175	7.2 U	7.2
Nitrobenzene	28	0.244	7.2 U	7.2
Isophorone	1100	0.129	7.2 U	7.2
2-Nitrophenol		0.231	7.2 U	7.2
2,4-Dimethylphenol	1100	0.158	7.2 U	7.2
bis(2-Chloroethoxy) methane		0.201	7.2 U	7.2
2,4-Dichlorophenol	170	0.145	7.2 U	7.2
1,2,4-Trichlorobenzene	68	0.317	7.2 U	7.2
Naphthalene	230	0.277	7.2 U	7.2
4-Chloroaniline	230	0.096	7.2 U	7.2
Hexachlorobutadiene	1	0.152	7.2 U	7.2
4-Chloro-3-methylphenol	10000	0.102	7.2 U	7.2
2-Methylnaphthalene		0.287	7.2 U	7.2
Hexachlorocyclopentadiene	400	0.119	7.2 U	7.2
2,4,6-Trichlorophenol	62	0.185	7.2 U	7.2
2,4,5-Trichlorophenol	5600	0.155	18 U	18
2-Chloronaphthalene		0.271	7.2 U	7
2-Nitroaniline		0.201	18 U	18
Dimethylphthalate	10000	0.145	7.2 U	7
Acenaphthylene		0.198	7.2 U	7
2,6-Dinitrotoluene	1	0.172	7.2 U	7
3-Nitroaniline		0.172	18 U	18
Acenaphthene	3400	0.221	7.2 U	7
2,4-Dinitrophenol	110	0.152	18 U	18

CHARLES WOOD
SURFACE SOIL SEMIVOLATILES

Geographical Location			CW6	
Sample			CW06-SS01-A01	
Batch#			9412G854	
Prep#			94GB0796	
RFW#			014	
Sample Depth			0-6"	
Dilution Factor			10.00	
Matrix			soil	
Units	mg/kg	mg/kg	mg/kg	
Sampling Date			11/30/94	
Analysis Date			12/21/94	
Analysis	Standard	MDL	Analytical Result	CRQL
4-Nitrophenol		0.248	18 U	18
Dibenzofuran		0.215	7.2 U	7.2
2,4-Dinitrotoluene	1	0.191	7.2 U	7.2
Diethylphthalate	10000	0.178	7.2 U	7.2
4-Chlorophenyl-phenylether		0.231	7.2 U	7.2
Fluorene	2300	0.208	7.2 U	7.2
4-Nitroaniline		0.211	18 U	18
4,6-Dinitro-2-methylphenol		0.175	18 U	18
N-Nitrosodiphenylamine (1)	140	0.139	7.2 U	7.2
4-Bromophenyl-phenylether		0.175	7.2 U	7.2
Hexachlorobenzene	0.66	0.182	7.2 U	7.2
Pentachlorophenol	6	0.132	18 U	18
Phenanthrene		0.165	7.2 U	7.2
Anthracene	10000	0.152	7.2 U	7.2
Carbazole		0.145	7.2 U	7.2
Di-n-butylphthalate	5700	0.215	7.2 U	7.2
Fluoranthene	2300	0.198	7.2 U	7.2
Pyrene	1700	0.178	7.2 U	7.2
Butylbenzylphthalate	1100	0.175	7.2 U	7.2
3,3'-Dichlorobenzidine	2	0.092	7.2 U	7.2
Benzo(a)anthracene	0.9	0.162	7.2 U	7.2
Chrysene	9	0.145	7.2 U	7.2
bis(2-Ethylhexy)phthalate	49	0.32	0.76 J	
Di-n-octyl phthalate	1100	0.185	7.2 U	7.2
Benzo(b)fluoranthene	0.9	0.188	7.2 U	7.2
Benzo(k)fluoranthene	0.9	0.205	7.2 U	7.2
Benzo(a)pyrene	0.66	0.162	7.2 U	7.2
Indeno(1,2,3-cd)pyrene	0.9	0.234	7.2 U	7.2
Dibenzo(a,h)anthracene	0.66	0.198	7.2 U	7.2
Benzo(g,h,i)perylene		0.224	7.2 U	7.2
Method:TCL Semivolatiles				

CHARLES WOOD
SURFACE SOIL INORGANICS

Geographical Location		CW4		CW6		CW9		CW9		CW9		CW9	
Sample		CW04-SS01-A01		CW06-SS01-A01		CW09-SS01-A01		CW09-SS01-C01		CW09-SS02-A01		CW09-SS03-A01	
Sample Type								Duplicate					
Batch#		9412G854		9412G854		9412G854		9412G854		9412G854		9412G854	
Prep#		94GTS467		94GTS467		94GTS467		94GTS467		94GTS467		94GTS467	
RFW#		013		014		003		004		005		006	
Sample Depth		0-6"		0-6"		0-6"		0-6"		0-6"		0-6"	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		11/30/94		11/30/94		11/30/94		11/30/94		11/30/94		11/30/94	
Analysis Date		12/6/94		12/6/94		12/6/94		12/6/94		12/6/94		12/6/94	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
% Solids		90.1	0.10	46.0	0.10	77.4	0.10	78.8	0.10	80.5	0.10	78.6	0.10
Silver	110	0.76	0.5	1.5	1.3	2.5	0.72	2.4	0.64	2.8	0.53	0.65 U	0.65
Aluminum		6870	4.3	5130	11	7350	6.2	7470	5.6	5730	4.6	3600	5.6
Arsenic	20	7.8	0.58 *	11.6	0.61	13.6	1.9 *	14.1	0.76 *	12.1	0.69 *	6.9	0.33
Barium	700	17.7	0.34	72.2	0.86	23.4	0.49	24.1	0.44	28.9	0.36	65.4	0.44
Beryllium	1	0.76	0.24	0.62 U	0.62	0.73	0.35	0.91	0.31	0.68	0.26	0.57	0.32
Calcium		699	1.9	4430	5	2680	2.8	2620	2.5	2650	2.1	1960	2.5
Cadmium	1	0.45 U	0.45	4.4	1.1	0.65 U	0.65	0.58 U	0.58	0.48 U	0.48	0.59 U	0.59
Cobalt		0.62	0.43	1.1 U	1.1	0.63 U	0.63	1.2	0.56	0.46 U	0.46	0.57 U	0.57
Chromium		58.3	0.48	65.8	1.2	56.7	0.7	60.6	0.62	57.2	0.51	24.9	0.63
Copper	600	3.2	0.37	69.8	0.94	9.6	0.54	9.7	0.48	10.3	0.39	5	0.48
Iron		19700	0.76	10900	1.9	20600	1.1	22100	0.98	18200	0.81	10800	0.99
Mercury	14	0.10 U	0.1	6	0.35 *	0.2	0.12	0.19	0.091	0.23	0.099	0.094 U	0.094
Potassium		2720	132	1420	337	1600	191	1630	171	2620	141	1460	173
Magnesium		1450	3.9	1260	10	1910	5.7	1920	5.1	2010	4.2	815	5.1
Manganese		26.2	0.32	78.8	0.82	85.1	0.47	91	0.42	46.8	0.34	22.3	0.42
Sodium		16	2.5	103	6.3	35.6	3.6	33.1	3.2	33.9	2.6	77.4	3.2
Nickel	250	2.3	2.1	5.30 U	5.3	6	3	4.6	2.7	3.3	2.2	2.7 U	2.7
Lead	400	8.9	0.58 *	203	10.3	19.9	3.8 **	20.1	3.8 **	30.1	4.3	13.5	1.6 *
Antimony	14	3.50 U	3.5	8.8 U	8.8	5.0 U	5	4.5 U	4.5	3.7 U	3.7	4.5 U	4.5
Selenium	63	0.33	0.16	0.7	0.34	0.56	0.21	0.97	0.21	0.62	0.19	0.75	0.18
Thallium	2	0.20 U	0.2	0.42 U	0.42	0.26 U	0.26	0.26 U	0.26	0.24 U	0.24	0.22 U	0.22
Vanadium	370	37.3	0.47	21.8	1.2	45.7	0.68	48.5	0.6	34	0.5	15.7	0.61
Zinc	1500	24.6	0.45	463	1.1	53.7	0.65	45.9	0.58	61.2	0.48	25.8	0.59
Dilution Factor		* = 2.00		* = 2.00		* = 5.0, ** = 10.0		* = 2.00, ** = 10.0		* = 2.00		* = 5.00	
Method:TAL Metals													

CHARLES WOOD
SURFACE SOIL INORGANICS

Geographical Location		CW9		CW9		CW9		CW9		CW9		CW9	
Sample		CW09-SS04-A01		CW09-SS05-A01		CW09-SS06-A01		CW09-SS07-A01		CW09-SS08-A01		CW09-SS09-A01	
Sample Type													
Batch#		9412G854		9412G854		9412G854		9412G854		9412G854		9412G854	
Prep#		94GTS467		94GTS467		94GTS467		94GTS467		94GTS467		94GTS467	
RFW#		007		008		009		010		011		012	
Sample Depth		0-6"		0-6"		0-6"		0-6"		0-6"		0-6"	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		11/30/94		11/30/94		11/30/94		11/30/94		11/30/94		11/30/94	
Analysis Date		12/6/94		12/6/94		12/6/94		12/6/94		12/6/94		12/6/94	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
% Solids		71.9	0.10	79.7	0.10	82.3	0.10	68.5	0.10	83.2	0.10	86.4	0.10
Silver	110	0.58 U	0.58	0.77	0.57	0.71	0.59	1.2	0.85	3.3	0.56	1.3	0.51
Aluminum		4380	5	6930	4.9	5450	5.1	3910	7.4	4070	4.9	7700	4.4
Arsenic	20	6.3	0.52 *	15.6	1.4	9.3	0.62 *	10.5	0.46	7.2	0.67 *	7.7	0.36
Barium	700	51.2	0.39	32.5	0.38	33	0.4	40.7	0.58	19.2	0.38	40.8	0.34
Beryllium	1	0.55	0.28	0.9	0.27	0.72	0.29	0.58	0.41	0.56	0.27	1	0.24
Calcium		19600	2.3	3570	2.2	3610	2.3	4370	3.3	1630	2.2	3440	2
Cadmium	1	0.53 U	0.53	0.51 U	0.51	0.54 U	0.54	2.6	0.77	0.51 U	0.51	0.46 U	0.46
Cobalt		1.3	0.51	1.9	0.49	1.7	0.52	0.74 U	0.74	0.49 U	0.49	1.8	0.44
Chromium		28.3	0.56	60.5	0.55	46.9	0.57	164	0.83	56.2	0.55	70	0.49
Copper	600	17.7	0.43	8.8	0.42	11.1	0.44	17.4	0.63	9	0.42	9.6	0.37
Iron		12200	0.88	22200	0.86	17900	0.9	9880	1.3	11300	0.86	25600	0.77
Mercury	14	0.11 U	0.11	0.14	0.1	0.09 U	0.09	7.9	1.2 *	0.69	0.12	0.093 U	0.093
Potassium		2060	154	3950	150	3180	157	1720	226	1250	149	5130	134
Magnesium		2260	4.6	2280	4.5	1720	4.7	1620	6.7	893	4.4	2590	4
Manganese		106	0.38	59.2	0.37	56	0.38	140	0.55	37	0.36	69.5	0.33
Sodium		118	2.9	49.7	2.8	49.7	2.9	40.6	4.2	34.5	2.8	60.9	2.5
Nickel	250	5.7	2.4	6.9	2.3	4.9	2.4	4.3	3.5	2.4	2.3	5.8	2.1
Lead	400	56.8	4.7	27.4	2.7 *	17	3.1 **	82.3	6.9	35.5	4.6	20.1	3.6 *
Antimony	14	4.0 U	4	3.90 U	3.9	4.10 U	4.1	5.90 U	5.9	3.90 U	3.9	3.5 U	3.5
Selenium	63	0.28	0.15	0.63	0.15	0.41	0.17	0.57	0.26	0.6	0.19	0.48	0.2
Thallium	2	0.18 U	0.18	0.19 U	0.19	0.21 U	0.21	0.32 U	0.32	0.23 U	0.23	0.24 U	0.24
Vanadium	370	22.9	0.54	33.1	0.53	30.3	0.55	15.6	0.8	29.3	0.53	32	0.47
Zinc	1500	92.5	0.53	47.8	0.51	62.3	0.54	77	0.77	36	0.51	48.1	0.46
Dilution Factor		* = 2.00		* = 10.0		* = 2.00, ** = 10.0		* = 10.0		* = 2.00		* = 10.0	
Method:TAL Metals													

CHARLES WOOD
SURFACE SOIL PESTICIDES/PCBS

Geographical Location		CW6		CW6	
Sample		CW06-SS01-A01		CW06-SS01-A01DL	
Batch#		9412G854		9412G854	
Prep#		94GP1033		94GP1033	
RFW#		014		014 DL	
Sample Depth		0-6"		0-6"	
Dilution Factor		5.00		50.00	
Matrix		soil		soil	
Units	mg/kg	mg/kg		mg/kg	
Sampling Date		11/30/94		11/30/94	
Analysis Date		12/18/94		12/14/94	
Analysis	Standard	Analytical	Reporting	Analytical	Reporting
		Result	Limit	Result	Limit
alpha-BHC		0.018 U	0.018	0.18 U	0.18
beta-BHC		0.018 U	0.018	0.18 U	0.18
delta-BHC		0.018 U	0.018	0.18 U	0.18
gamma-BHC (Lindane)	0.52	0.018 U	0.018	0.18 U	0.18
Heptachlor	0.15	0.018 U	0.018	0.18 U	0.18
Aldrin	0.04	0.018 U	0.018	0.18 U	0.18
Heptachlor epoxide		0.032		0.18 U	0.18
Endosulfan I	340	0.018 U	0.018	0.18 U	0.18
Dieldrin	0.042	0.036 U	0.036	0.36 U	0.36
4,4'-DDE	2	0.13		0.36 U	0.36
Endrin	17	0.036 U	0.036	0.36 U	0.36
Endosulfan II	340	0.036 U	0.036	0.36 U	0.36
4,4'-DDD	3	0.86 C		.66 CD	
Endosulfan sulfate		0.036 U	0.036	0.36 U	0.36
4,4'-DDT	2	0.81 C		.79 CD	
Methoxychlor	280	0.180 U	0.18	1.8 U	1.8
Endrin ketone		0.036 U	0.036	0.36 U	0.36
Endrin aldehyde		0.036 U	0.036	0.36 U	0.36
alpha-Chlordane		0.85 C		.87 CD	
gamma-Chlordane		0.81 C		.8 CD	
Toxaphene	0.1	1.8 U	1.8	18 U	18
Aroclor-1016	0.49	0.36 U	0.36	3.6 U	3.6
Aroclor-1221	0.49	0.72 U	0.72	7.2 U	7.2
Aroclor-1232	0.49	0.36 U	0.36	3.6 U	3.6
Aroclor-1242	0.49	0.36 U	0.36	3.6 U	3.6
Aroclor-1248	0.49	0.36 U	0.36	3.6 U	3.6
Aroclor-1254	0.49	0.36 U	0.36	3.6 U	3.6
Aroclor-1260	0.49	0.36 U	0.36	3.6 U	3.6
Method:Pesticides/PCBs					

CHARLES WOOD
SOIL BORING VOLATILES

Geographical Location			AOC7		AOC7		AOC7		AOC7		AOC7		AOC7		AOC7	
Sample			CWA7-SB01-A02		CWA7-SB02-A02		CWA7-SB03-A02		CWA7-SB04-A02		CWA7-SB04-D02		CWA7-SB05-A02		CWA7-SB06-A03	
Sample Type											Trip Blank					
Batch#			9412G264		9412G264		9412G264		9412G264		9412G264		9412G264		9412G264	
Prep#			94GVT034 & 35		94GVT034		94GVT034 & 35		94GVT034		94GVB441		94GVT034		94GVT034	
RFW#			001		003		002		006		007		004		005	
Sample Depth (bgs)			10 - 12'		10 - 12'		6 - 8'		8 -10'				8 -10'		12 - 14'	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		soil		water		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/l		mg/kg		mg/kg	
Sampling Date			12/21/94		12/21/94		12/21/94		12/21/94		12/21/94		12/21/94		12/21/94	
Analysis Date			12/27/94		12/27/94		12/27/94		12/27/94		12/28/94		12/27/94		12/27/94	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane	520	0.0073	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Bromomethane	79	0.0067	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Vinyl Chloride	2	0.0079	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Chloroethane		0.0091	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Methylene Chloride	49	0.0027	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Acetone	1000	0.0069	0.68 B	0.11 *	0.063 B	0.011	0.11 B	0.022	0.019 B	0.011	0.01 U	0.01	0.060 B	0.011	0.043 B	0.011
Carbon Disulfide		0.0044	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
1,1-Dichloroethene	8	0.0049	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
1,1-Dichloroethane	570	0.003	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
1,2-Dichloroethene (total)	79	0.0044	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Chloroform	19	0.0029	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
1,2-Dichloroethane	6	0.0024	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
2-Butanone	1000	0.0041	0.011 U	0.011	0.002 J	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
1,1,1-Trichloroethane	210	0.0017	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Carbon Tetrachloride	2	0.0015	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Bromodichloromethane	11	0.002	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
1,2-Dichloropropane	10	0.0017	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
cis-1,3-Dichloropropene	4	0.003	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Trichloroethene	23	0.002	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Dibromochloromethane	110	0.0024	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
1,1,2-Trichloroethane	22	0.0043	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Benzene	3	0.0033	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
trans-1,3-Dichloropropene	4	0.0024	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Bromoform	86	0.0031	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
4-Methyl-2-pentanone	1000	0.0055	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
2-Hexanone		0.0039	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Tetrachloroethene	4	0.004	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
1,1,2,2-Tetrachloroethane	34	0.0042	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Toluene	1000	0.0027	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Chlorobenzene	37	0.0027	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Ethylbenzene	1000	0.0031	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Styrene	23	0.0038	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Xylene (total)	410	0.0038	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.011 U	0.011	0.01 U	0.01	0.011 U	0.011	0.011 U	0.011
Total Est. Conc. of TIC.			0.006		0.007		.006, .01 *						0.006			
Dilution Factor			* = 10.0				* = 2.00									
Method:TCL Volatiles																

CHARLES WOOD
SOIL BORING VOLATILES

Geographical Location			CW1		CW1		CW1		CW1		CW1		CW2		CW2	
Sample			CW01-SB26-A02		CW01-SB26-D02		CW01-SB27-A02		CW01-SB28-A02		CW01-SB29-A02		CW02-SB30-A02		CW02-SB31-A02	
Sample Type					Trip Blank											
Batch#			9412G922		9412G922		9412G216		9412G216		9412G216		9412G182		9412G182	
Prep#			94GVT033		94GVE365		94GVT033		94GVT033		94GVT033		94GVT031		94GVT031	
RFW#			004		005		002		003		001		002		003	
Sample Depth (bgs)			7 - 9'				7 - 9'		7 - 9'		7 - 9'		7 - 9'		7 - 9'	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			soil		water		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/l		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date			12/19/94		12/19/94		12/19/94		12/19/94		12/19/94		12/16/94		12/16/94	
Analysis Date			12/22/94		12/21/94		12/22/94		12/22/94		12/22/94		12/20/94		12/20/94	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane	520	0.0073	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
Bromomethane	79	0.0067	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
Vinyl Chloride	2	0.0079	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
Chloroethane		0.0091	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
Methylene Chloride	49	0.0027	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.088	0.012	0.086	0.014
Acetone	1000	0.0069	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.057 B	0.012	0.120 B	0.013	98 B	12 *	0.74 B	0.68 *
Carbon Disulfide		0.0044	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
1,1-Dichloroethene	8	0.0049	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
1,1-Dichloroethane	570	0.003	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
1,2-Dichloroethene (total)	79	0.0044	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
Chloroform	19	0.0029	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
1,2-Dichloroethane	6	0.0024	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
2-Butanone	1000	0.0041	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.012 J	0.014
1,1,1-Trichloroethane	210	0.0017	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
Carbon Tetrachloride	2	0.0015	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
Bromodichloromethane	11	0.002	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
1,2-Dichloropropane	10	0.0017	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
cis-1,3-Dichloropropene	4	0.003	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
Trichloroethene	23	0.002	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
Dibromochloromethane	110	0.0024	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
1,1,2-Trichloroethane	22	0.0043	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
Benzene	3	0.0033	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
trans-1,3-Dichloropropene	4	0.0024	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
Bromoform	86	0.0031	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
4-Methyl-2-pentanone	1000	0.0055	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
2-Hexanone		0.0039	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
Tetrachloroethene	4	0.004	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
1,1,2,2-Tetrachloroethane	34	0.0042	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
Toluene	1000	0.0027	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
Chlorobenzene	37	0.0027	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
Ethylbenzene	1000	0.0031	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
Styrene	23	0.0038	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
Xylene (total)	410	0.0038	0.013 U	0.013	0.01 U	0.01	0.013 U	0.013	0.012 U	0.012	0.013 U	0.013	0.012 U	0.012	0.014 U	0.014
Total Est. Conc. of TIC.							0.007						.008, 6 *		.9 *	
Dilution Factor													* = 1000		* = 50.0	
Method:TCL Volatiles																

CHARLES WOOD
SOIL BORING VOLATILES

Geographical Location			CW2		CW2		CW2		CW2		CW2		CW2		CW4	
Sample			CW02-SB31-D02		CW02-SB31-E02		CW02-SB32-A02		CW02-SB33-A02		CW02-SB33-A02		CW02-SB33-D02		CW04-SB01-A02	
Sample Type			Trip Blank		Field Rinsate Blank								Trip Blank			
Batch#			9412G182		9412G182		9412G182		9412G154		9412G154		9412G154		9412G264	
Prep#			94GVT365		94GVT365		94GVT031		94GVT030 & 31		94GVT030 & 35		94GVB439		94GVT034 & 35	
RFW#			004		005		001		001		002		003		008	
Sample Depth (bgs)							7 - 9'		7 - 9'		7 - 9'				4 -6'	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		soil		soil		soil		water		soil	
Units	mg/kg	mg/kg	mg/l		mg/l		mg/kg		mg/kg		mg/kg		mg/l		mg/kg	
Sampling Date			12/16/94		12/16/94		12/16/94		12/15/94		12/15/94		12/16/94		12/21/94	
Analysis Date			12/21/94		12/12/94		12/20/94		12/19/94		12/19/94		12/20/94		12/27/94	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane	520	0.0073	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Bromomethane	79	0.0067	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Vinyl Chloride	2	0.0079	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Chloroethane		0.0091	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Methylene Chloride	49	0.0027	0.01 U	0.01	0.01 U	0.01	0.017	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Acetone	1000	0.0069	0.01 U	0.01	0.11	0.01	5.9 B	1.2	0.98 B	.24 *	2.1 B	0.12	0.01 U	0.01	1.4 B	.12 *
Carbon Disulfide		0.0044	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
1,1-Dichloroethene	8	0.0049	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
1,1-Dichloroethane	570	0.003	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
1,2-Dichloroethene (total)	79	0.0044	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Chloroform	19	0.0029	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
1,2-Dichloroethane	6	0.0024	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
2-Butanone	1000	0.0041	0.01 U	0.01	0.01 U	0.01	0.008 J	0.012	0.012 U	0.012	0.031	0.012	0.01 U	0.01	0.012 U	0.012
1,1,1-Trichloroethane	210	0.0017	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Carbon Tetrachloride	2	0.0015	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Bromodichloromethane	11	0.002	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
1,2-Dichloropropane	10	0.0017	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
cis-1,3-Dichloropropene	4	0.003	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Trichloroethene	23	0.002	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Dibromochloromethane	110	0.0024	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
1,1,2-Trichloroethane	22	0.0043	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Benzene	3	0.0033	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
trans-1,3-Dichloropropene	4	0.0024	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Bromoform	86	0.0031	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
4-Methyl-2-pentanone	1000	0.0055	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
2-Hexanone		0.0039	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Tetrachloroethene	4	0.004	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
1,1,2,2-Tetrachloroethane	34	0.0042	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Toluene	1000	0.0027	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Chlorobenzene	37	0.0027	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Ethylbenzene	1000	0.0031	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Styrene	23	0.0038	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Xylene (total)	410	0.0038	0.01 U	0.01	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012
Total Est. Conc. of TIC.																
Dilution Factor							* = 100.0		* = 20.0		* = 10.0				.06 *	
Method:TCL Volatiles															* = 10.0	

CHARLES WOOD
SOIL BORING VOLATILES

Geographical Location			CW5		CW5		CW5		CW6		CW6		CW6		CW6	
Sample			CW05-SB01-A02		CW05-SB01-D02		CW05-SB02-A02		CW06-SB02-A01		CW06-SB34-A01		CW06-SB34-A02		CW06-SB34-D02	
Sample Type					Trip Blank										Trip Blank	
Batch#			9412G245		9412G923		9412G245		9505G840		9501G423		9501G423		9501G423	
Prep#			94GVT035 & 99		94GVB441		94GVT035 & 99		95GVB138		95GVT002		95GVT002		95GVT006	
RFW#			001		003		001		001		001		002		003	
Sample Depth (bgs)			6 - 8'				6 - 8'		0.5 - 1'		0-2'		2-4'			
Dilution Factor			1.00		5.00		1.00		1.00		1.00		1.00		1.00	
Matrix			soil		water		soil		soil		soil		soil		water	
Units	mg/kg	mg/kg	mg/kg		mg/l		mg/kg		mg/kg		mg/kg		mg/kg		mg/l	
Sampling Date			12/20/94		12/20/94		12/20/94		5/10/95		1/3/95		1/3/95		1/3/95	
Analysis Date			12/28/94		12/28/94		12/28/94		5/24/95		1/5/95		1/5/95		1/6/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane	520	0.0073	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Bromomethane	79	0.0067	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Vinyl Chloride	2	0.0079	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Chloroethane		0.0091	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Methylene Chloride	49	0.0027	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Acetone	1000	0.0069	2.7 B	0.23	0.01 U	0.01	0.57 B	0.06	0.016 B	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Carbon Disulfide		0.0044	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,1-Dichloroethene	8	0.0049	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,1-Dichloroethane	570	0.003	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,2-Dichloroethene (total)	79	0.0044	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Chloroform	19	0.0029	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,2-Dichloroethane	6	0.0024	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
2-Butanone	1000	0.0041	0.013	0.012	0.01 U	0.01	0.01 J	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,1,1-Trichloroethane	210	0.0017	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Carbon Tetrachloride	2	0.0015	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Bromodichloromethane	11	0.002	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,2-Dichloropropane	10	0.0017	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
cis-1,3-Dichloropropene	4	0.003	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Trichloroethene	23	0.002	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Dibromochloromethane	110	0.0024	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,1,2-Trichloroethane	22	0.0043	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Benzene	3	0.0033	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
trans-1,3-Dichloropropene	4	0.0024	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Bromoform	86	0.0031	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
4-Methyl-2-pentanone	1000	0.0055	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
2-Hexanone		0.0039	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Tetrachloroethene	4	0.004	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,1,2,2-Tetrachloroethane	34	0.0042	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Toluene	1000	0.0027	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Chlorobenzene	37	0.0027	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Ethylbenzene	1000	0.0031	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Styrene	23	0.0038	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Xylene (total)	410	0.0038	0.012 U	0.012	0.01 U	0.01	0.012 U	0.012	0.014 U	0.014	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Total Est. Conc. of TIC.			0.016				0.007									
Dilution Factor			* = 20.0				* = 5.00									
Method:TCL Volatiles																

CHARLES WOOD
SOIL BORING VOLATILES

Geographical Location			CW9		CW9		CW9		CW9		B6		B6		B7	
Sample			CW09-SB01-A02		CW09-SB01-D02		CW09-SB01-E02		CW09-SB01-E02DL		B6-SB01-A01		B6-SB01-A02		B7-SB01-A01	
Sample Type					Trip Blank		Field Rinsate Blank		Field Rinsate Blank							
Batch#			9501G450		9501G450		9501G450		9501G450		9501G553		9501G553		9501G553	
Prep#			95GVF011		95GVE009		95GVE009		95GVF009		95GVF013		95GVF013		95GVF012	
RFW#			001		003		002DL		002		008		019		006	
Sample Depth (bgs)			2 - 4'								1 - 2'		2 - 4'		1 - 2'	
Dilution Factor			1.00		1.00		50.0		1.00		1.00		1.00		1.00	
Matrix			soil		water		water		water		soil		soil		soil	
Units	mg/kg	mg/kg	mg/kg		mg/l		mg/l		mg/l		mg/kg		mg/kg		mg/kg	
Sampling Date			1/4/95		1/4/95		1/4/95		1/4/95		1/10/95		1/10/95		1/10/95	
Analysis Date			1/13/95		1/10/95		1/10/95		1/10/95		1/16/95		1/16/95		1/15/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane	520	0.0073	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Bromomethane	79	0.0067	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Vinyl Chloride	2	0.0079	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Chloroethane		0.0091	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Methylene Chloride	49	0.0027	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Acetone	1000	0.0069	1.2	*	0.01 U	0.01	E	0.01	5.2		0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Carbon Disulfide		0.0044	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
1,1-Dichloroethene	8	0.0049	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
1,1-Dichloroethane	570	0.003	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
1,2-Dichloroethene (total)	79	0.0044	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Chloroform	19	0.0029	0.012 U	0.012	0.01 U	0.01	0.003 J	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
1,2-Dichloroethane	6	0.0024	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
2-Butanone	1000	0.0041	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
1,1,1-Trichloroethane	210	0.0017	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Carbon Tetrachloride	2	0.0015	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Bromodichloromethane	11	0.002	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
1,2-Dichloropropane	10	0.0017	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
cis-1,3-Dichloropropene	4	0.003	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Trichloroethene	23	0.002	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Dibromochloromethane	110	0.0024	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
1,1,2-Trichloroethane	22	0.0043	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Benzene	3	0.0033	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
trans-1,3-Dichloropropene	4	0.0024	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Bromoform	86	0.0031	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
4-Methyl-2-pentanone	1000	0.0055	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
2-Hexanone		0.0039	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Tetrachloroethene	4	0.004	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
1,1,2,2-Tetrachloroethane	34	0.0042	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Toluene	1000	0.0027	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Chlorobenzene	37	0.0027	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Ethylbenzene	1000	0.0031	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Styrene	23	0.0038	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Xylene (total)	410	0.0038	0.012 U	0.012	0.01 U	0.01	0.01 U	0.01	NA	NA	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012
Total Est. Conc. of TIC.											0.006					
Dilution Factor			* = 10.0													
Method:TCL Volatiles																

CHARLES WOOD
SOIL BORING VOLATILES

Geographical Location			B7		B8		B8		B9		B9		B9		B9	
Sample			B7-SB01-A02		B8-SB01-A01		B8-SB01-A02		B9-SB01-A01		B9-SB01-A02		B9-SB01-C02		B9-SB01-D02	
Sample Type													Duplicate		Trip Blank	
Batch#			9501G553		9501G553		9501G553		9501G831		9501G831		9501G831		9501G831	
Prep#			95GVF013		95GVF012		95GVF012		95GVT020		95GVT020		95GVT020		95GVC014	
RFW#			007		004		005		001		002		003		005	
Sample Depth (bgs)			4 - 6'		1 - 2'		4 - 6'		1 - 2'		6 - 8'					
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			soil		soil		soil		soil		soil		soil		water	
Units	mg/kg	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/l	
Sampling Date			1/10/95		1/10/95		1/10/95		1/23/95		1/23/95		1/23/95		1/23/95	
Analysis Date			1/16/95		1/15/95		1/15/95		2/1/95		2/1/95		2/1/95		2/1/95	
Analysis	Standard	MDL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL
			Result		Result		Result		Result		Result		Result		Result	
Chloromethane	520	0.0073	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Bromomethane	79	0.0067	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Vinyl Chloride	2	0.0079	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Chloroethane		0.0091	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Methylene Chloride	49	0.0027	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.014 B	0.012	0.012 U	0.012	0.01 U	0.01
Acetone	1000	0.0069	0.015 B	0.012	0.011 U	0.011	0.13	0.012	0.9 B	.3 *	0.012 U	0.012	0.012 U	0.012	8300	1000 *
Carbon Disulfide		0.0044	0.012 U	0.012	0.011 U	0.011	0.002 J	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,1-Dichloroethene	8	0.0049	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,1-Dichloroethane	570	0.003	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,2-Dichloroethene (total)	79	0.0044	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Chloroform	19	0.0029	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,2-Dichloroethane	6	0.0024	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
2-Butanone	1000	0.0041	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,1,1-Trichloroethane	210	0.0017	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Carbon Tetrachloride	2	0.0015	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Bromodichloromethane	11	0.002	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,2-Dichloropropane	10	0.0017	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
cis-1,3-Dichloropropene	4	0.003	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Trichloroethene	23	0.002	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Dibromochloromethane	110	0.0024	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,1,2-Trichloroethane	22	0.0043	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Benzene	3	0.0033	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.006 J	0.01
trans-1,3-Dichloropropene	4	0.0024	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Bromoform	86	0.0031	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
4-Methyl-2-pentanone	1000	0.0055	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
2-Hexanone		0.0039	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Tetrachloroethene	4	0.004	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,1,2,2-Tetrachloroethane	34	0.0042	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Toluene	1000	0.0027	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Chlorobenzene	37	0.0027	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Ethylbenzene	1000	0.0031	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Styrene	23	0.0038	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Xylene (total)	410	0.0038	0.012 U	0.012	0.011 U	0.011	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Total Est. Conc. of TIC.									.008, .8 *							
Dilution Factor									* = 25.0						* = 100000	
Method:TCL Volatiles																

CHARLES WOOD
SOIL BORING VOLATILES

Geographical Location			B9		B10		B10		B10		B10	
Sample			B9-SB01-E02		B10-SB01-A01		B10-SB01-A01RE		B10-SB01-A02		B10-SB01-D02	
Sample Type			Field Rinsate Blank								Trip Blank	
Batch#			9501G831		9501G553		9501G553		9501G553		9501G553	
Prep#			95GVC014		95GVF012		95GVF013		95GVF012		95GVF012	
RFW#			004		001		001RE		002		003	
Sample Depth (bgs)					1 - 2'				2 - 4'			
Dilution Factor			1.00		1.00		1.00		1.00		1.00	
Matrix			water		soil		soil		soil		water	
Units	mg/kg	mg/kg	mg/l		mg/kg		mg/kg		mg/kg		mg/l	
Sampling Date			1/23/95		1/10/95		1/10/95		1/10/95		1/10/95	
Analysis Date			2/1/95		1/15/95		1/16/95		1/15/95		1/12/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Chloromethane	520	0.0073	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Bromomethane	79	0.0067	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Vinyl Chloride	2	0.0079	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Chloroethane		0.0091	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Methylene Chloride	49	0.0027	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Acetone	1000	0.0069	0.13	.02 *	0.012 U	0.012	0.016 B	0.012	0.24	0.012	0.022	0.01
Carbon Disulfide		0.0044	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,1-Dichloroethene	8	0.0049	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,1-Dichloroethane	570	0.003	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,2-Dichloroethene (total)	79	0.0044	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Chloroform	19	0.0029	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,2-Dichloroethane	6	0.0024	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
2-Butanone	1000	0.0041	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,1,1-Trichloroethane	210	0.0017	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Carbon Tetrachloride	2	0.0015	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Bromodichloromethane	11	0.002	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,2-Dichloropropane	10	0.0017	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
cis-1,3-Dichloropropene	4	0.003	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Trichloroethene	23	0.002	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Dibromochloromethane	110	0.0024	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,1,2-Trichloroethane	22	0.0043	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Benzene	3	0.0033	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
trans-1,3-Dichloropropene	4	0.0024	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Bromoform	86	0.0031	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
4-Methyl-2-pentanone	1000	0.0055	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
2-Hexanone		0.0039	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Tetrachloroethene	4	0.004	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
1,1,2,2-Tetrachloroethane	34	0.0042	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Toluene	1000	0.0027	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Chlorobenzene	37	0.0027	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Ethylbenzene	1000	0.0031	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Styrene	23	0.0038	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Xylene (total)	410	0.0038	0.01 U	0.01	0.012 U	0.012	0.012 U	0.012	0.012 U	0.012	0.01 U	0.01
Total Est. Conc. of TIC.												
Dilution Factor			* = 2.00									
Method:TCL Volatiles												

CHARLES WOOD
SOIL BORING SEMIVOLATILES

Geographical Location		AOC7		AOC7		AOC7		AOC7		AOC7		AOC7		CW1	
Sample		CWA7-SB01-A02		CWA7-SB02-A02		CWA7-SB03-A02		CWA7-SB04-A02		CWA7-SB05-A02		CWA7-SB06-A03		CW01-SB26-A02	
Sample Type															
Batch#		9412G264		9412G264		9412G264		9412G264		9412G264		9412G264		9412G216	
Prep#		94GBO847		94GBO847		94GBO847		94GBO852		94GBO847		94GBO847		94GB0835	
RFW#		001		003		002		006		004		005		004	
Sample Depth (bgs)															
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		12/21/94		12/21/94		12/21/94		12/21/94		12/21/94		12/21/94		12/19/94	
Analysis Date		1/3/95		1/3/95		1/3/95		1/3/95		1/3/95		1/3/95		1/5/95	
Analysis	Standard	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	10000	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
bis(2-Chloroethyl) ether	0.66	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
2-Chlorophenol	280	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
1,3-Dichlorobenzene	5100	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
1,4-Dichlorobenzene	570	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
1,2-Dichlorobenzene	5100	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
2-Methylphenol	2800	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
2,2'-oxybis(1-Chloropropane)		0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
4-Methylphenol	2800	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
N-Nitroso-di-n-propylamine	0.66	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Hexachloroethane	6	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Nitrobenzene	28	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Isophorone	1100	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
2-Nitrophenol		0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
2,4-Dimethylphenol	1100	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
bis(2-Chloroethoxy) methane		0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
2,4-Dichlorophenol	170	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
1,2,4-Trichlorobenzene	68	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Naphthalene	230	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
4-Chloroaniline	230	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Hexachlorobutadiene	1	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
4-Chloro-3-methylphenol	10000	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
2-Methylnaphthalene		0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Hexachlorocyclopentadiene	400	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
2,4,6-Trichlorophenol	62	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
2,4,5-Trichlorophenol	5600	0.92 U	0.92	0.92 U	0.92	0.91 U	0.91	0.92 U	0.92	0.9 U	0.9	0.9 U	0.9	1.1 U	1.1
2-Chloronaphthalene		0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
2-Nitroaniline		0.92 U	0.92	0.92 U	0.92	0.91 U	0.91	0.92 U	0.92	0.9 U	0.9	0.9 U	0.9	1.1 U	1.1
Dimethylphthalate	10000	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.40 U	0.42
Acenaphthylene		0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
2,6-Dinitrotoluene	1	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
3-Nitroaniline		0.92 U	0.92	0.92 U	0.92	0.91 U	0.91	0.92 U	0.92	0.9 U	0.9	0.9 U	0.9	1.1 U	1.1
Acenaphthene	3400	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
2,4-Dinitrophenol	110	0.92 U	0.92	0.92 U	0.92	0.91 U	0.91	0.92 U	0.92	0.9 U	0.9	0.9 U	0.9	1.1 U	1.1
4-Nitrophenol		0.92 U	0.92	0.92 U	0.92	0.91 U	0.91	0.92 U	0.92	0.9 U	0.9	0.9 U	0.9	1.1 U	1.1

CHARLES WOOD
SOIL BORING SEMIVOLATILES

Geographical Location		AOC7		AOC7		AOC7		AOC7		AOC7		AOC7		CW1	
Sample		CWA7-SB01-A02		CWA7-SB02-A02		CWA7-SB03-A02		CWA7-SB04-A02		CWA7-SB05-A02		CWA7-SB06-A03		CW01-SB26-A02	
Sample Type															
Batch#		9412G264		9412G264		9412G264		9412G264		9412G264		9412G264		9412G216	
Prep#		94GBO847		94GBO847		94GBO847		94GBO852		94GBO847		94GBO847		94GB0835	
RFW#		001		003		002		006		004		005		004	
Sample Depth (bgs)															
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		12/21/94		12/21/94		12/21/94		12/21/94		12/21/94		12/21/94		12/19/94	
Analysis Date		1/3/95		1/3/95		1/3/95		1/3/95		1/3/95		1/3/95		1/5/95	
Analysis	Standard	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Dibenzofuran		0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
2,4-Dinitrotoluene	1	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Diethylphthalate	10000	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
4-Chlorophenyl-phenylether		0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Fluorene	2300	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
4-Nitroaniline		0.92 U	0.92	0.92 U	0.92	0.91 U	0.91	0.92 U	0.92	0.9 U	0.9	0.9 U	0.9	1.1 U	1.1
4,6-Dinitro-2-methylphenol		0.92 U	0.92	0.92 U	0.92	0.91 U	0.91	0.92 U	0.92	0.9 U	0.9	0.9 U	0.9	1.1 U	1.1
N-Nitrosodiphenylamine (1)	140	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
4-Bromophenyl-phenylether		0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Hexachlorobenzene	0.66	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Pentachlorophenol	6	0.92 U	0.92	0.92 U	0.92	0.91 U	0.91	0.92 U	0.92	0.9 U	0.9	0.9 U	0.9	1.1 U	1.1
Phenanthrene		0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Anthracene	10000	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Carbazole		0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Di-n-butylphthalate	5700	0.23 JB	0.37	1.5 B	0.37	0.48 B	0.36	0.09 J	0.37	2 B	0.36	1.8 B	0.36	0.081	0.42
Fluoranthene	2300	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Pyrene	1700	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Butylbenzylphthalate	1100	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
3,3'-Dichlorobenzidine	2	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Benzo(a)anthracene	0.9	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Chrysene	9	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
bis(2-Ethylhexy)phthalate	49	0.075 J	0.37	0.37 U	0.37	0.34 J	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.075 J	0.42
Di-n-octyl phthalate	1100	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Benzo(b)fluoranthene	0.9	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Benzo(k)fluoranthene	0.9	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Benzo(a)pyrene	0.66	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Indeno(1,2,3-cd)pyrene	0.9	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Dibenzo(a,h)anthracene	0.66	0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Benzo(g,h,i)perylene		0.37 U	0.37	0.37 U	0.37	0.36 U	0.36	0.37 U	0.37	0.36 U	0.36	0.36 U	0.36	0.42 U	0.42
Petroleum hydrocarbons															
Total Est. Conc. of TIC		6.62		5.44		6.44		5.63		3.68		4.87		6.39	
Method:TCL Semivolatiles															

CHARLES WOOD
SOIL BORING SEMIVOLATILES

Geographical Location		CW1		CW1		CW1		CW2		CW2		CW2	
Sample		CW01-SB27-A02		CW01-SB28-A02		CW01-SB29-A02		CW02-SB30-A02		CW02-SB31-A02		CW02-SB32-A02	
Sample Type													
Batch#		9412G216		9412G216		9412G216		9412G182		9412G182		9412G182	
Prep#		94GB0835		94GB0835		94GBO835		94GBO835		94GBO835		94GBO835	
RFW#		002		003		001		002		003		001	
Sample Depth (bgs)													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		12/19/94		12/19/94		12/19/94		12/16/94		12/16/94		12/16/94	
Analysis Date		1/5/95		1/5/95		1/5/95		12/28/94		12/28/94		12/28/94	
Analysis	Standard	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	10000	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
bis(2-Chloroethyl) ether	0.66	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
2-Chlorophenol	280	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
1,3-Dichlorobenzene	5100	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
1,4-Dichlorobenzene	570	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
1,2-Dichlorobenzene	5100	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
2-Methylphenol	2800	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
2,2'-oxybis(1-Chloropropane)		0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
4-Methylphenol	2800	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
N-Nitroso-di-n-propylamine	0.66	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
Hexachloroethane	6	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
Nitrobenzene	28	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
Isophorone	1100	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
2-Nitrophenol		0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
2,4-Dimethylphenol	1100	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
bis(2-Chloroethoxy) methane		0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
2,4-Dichlorophenol	170	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
1,2,4-Trichlorobenzene	68	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
Naphthalene	230	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.15 J	0.39	0.44 U	0.44	0.4 U	0.4
4-Chloroaniline	230	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
Hexachlorobutadiene	1	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
4-Chloro-3-methylphenol	10000	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
2-Methylnaphthalene		0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.1 J	0.39	0.44 U	0.44	0.4 U	0.4
Hexachlorocyclopentadiene	400	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
2,4,6-Trichlorophenol	62	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
2,4,5-Trichlorophenol	5600	1.1 U	1.1	1 U	1	1.1 U	1.1	0.98 U	0.98	1.1 U	1.1	1 U	1
2-Chloronaphthalene		0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
2-Nitroaniline		1.1 U	1.1	1 U	1	1.1 U	1.1	0.98 U	0.98	1.1 U	1.1	1 U	1
Dimethylphthalate	10000	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
Acenaphthylene		0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
2,6-Dinitrotoluene	1	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.98 U	0.39	0.44 U	0.44	0.4 U	0.4
3-Nitroaniline		1.1 U	1.1	1 U	1	1.1 U	1.1	0.98 U	0.98	1.1 U	1.1	1 U	1
Acenaphthene	3400	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.17 J	0.39	0.44 U	0.44	0.4 U	0.4
2,4-Dinitrophenol	110	1.1 U	1.1	1 U	1	1.1 U	1.1	0.98 U	0.98	1.1 U	1.1	1 U	1
4-Nitrophenol		1.1 U	1.1	1 U	1	1.1 U	1.1	0.98 U	0.98	1.1 U	1.1	1 U	1

CHARLES WOOD
SOIL BORING SEMIVOLATILES

Geographical Location		CW1		CW1		CW1		CW2		CW2		CW2	
Sample		CW01-SB27-A02		CW01-SB28-A02		CW01-SB29-A02		CW02-SB30-A02		CW02-SB31-A02		CW02-SB32-A02	
Sample Type													
Batch#		9412G216		9412G216		9412G216		9412G182		9412G182		9412G182	
Prep#		94GB0835		94GB0835		94GBO835		94GBO835		94GBO835		94GBO835	
RFW#		002		003		001		002		003		001	
Sample Depth (bgs)													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		12/19/94		12/19/94		12/19/94		12/16/94		12/16/94		12/16/94	
Analysis Date		1/5/95		1/5/95		1/5/95		12/28/94		12/28/94		12/28/94	
Analysis	Standard	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Dibenzofuran		0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.093 J	0.39	0.44 U	0.44	0.4 U	0.4
2,4-Dinitrotoluene	1	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
Diethylphthalate	10000	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
4-Chlorophenyl-phenylether		0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
Fluorene	2300	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
4-Nitroaniline		1.1 U	1.1	1 U	1	1.1 U	1.1	0.21 J	0.39	0.44 U	0.44	0.4 U	0.4
4,6-Dinitro-2-methylphenol		1.1 U	1.1	1 U	1	1.1 U	1.1	0.98 U	0.98	1.1 U	1.1	1 U	1
N-Nitrosodiphenylamine (1)	140	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
4-Bromophenyl-phenylether		0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
Hexachlorobenzene	0.66	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
Pentachlorophenol	6	1.1 U	1.1	1 U	1	1.1 U	1.1	0.98 U	0.98	1.1 U	1.1	1 U	1
Phenanthrene		0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	1.3	0.39	0.44 U	0.44	0.4 U	0.4
Anthracene	10000	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.33 J	0.39	0.44 U	0.44	0.4 U	0.4
Carbazole		0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.18 J	0.39	0.44 U	0.44	0.4 U	0.4
Di-n-butylphthalate	5700	0.086	0.44	0.077	0.41	0.13 JB	0.43	0.081	0.39	0.12 JB	0.44	0.079	0.4
Fluoranthene	2300	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	1.5	0.39	0.44 U	0.44	0.4 U	0.4
Pyrene	1700	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	1.1	0.39	0.44 U	0.44	0.4 U	0.4
Butylbenzylphthalate	1100	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
3,3'-Dichlorobenzidine	2	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
Benzo(a)anthracene	0.9	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.69	0.39	0.44 U	0.44	0.4 U	0.4
Chrysene	9	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.71	0.39	0.44 U	0.44	0.4 U	0.4
bis(2-Ethylhexy)phthalate	49	0.09 J	0.44	0.41 U	0.41	0.43 U	0.43	0.16 J	0.39	0.1 J	0.44	0.059 J	0.4
Di-n-octyl phthalate	1100	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.39 U	0.39	0.44 U	0.44	0.4 U	0.4
Benzo(b)fluoranthene	0.9	0.44 U	0.44	0.41 U	0.41	0.07 J	0.43	0.79	0.39	0.44 U	0.44	0.4 U	0.4
Benzo(k)fluoranthene	0.9	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.28 J	0.39	0.44 U	0.44	0.4 U	0.4
Benzo(a)pyrene	0.66	0.44 U	0.44	0.41 U	0.41	0.073 J	0.43	0.62	0.39	0.13 J	0.44	0.053 J	0.4
Indeno(1,2,3-cd)pyrene	0.9	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.37 J	0.39	0.44 U	0.44	0.4 U	0.4
Dibenzo(a,h)anthracene	0.66	0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.089 J	0.39	0.44 U	0.44	0.4 U	0.4
Benzo(g,h,i)perylene		0.44 U	0.44	0.41 U	0.41	0.43 U	0.43	0.35 J	0.39	0.44 U	0.44	0.4 U	0.4
Petroleum hydrocarbons													
Total Est. Conc. of TIC		6.7		6.19		9.19		11.4		22.8		18.1	
Method:TCL Semivolatiles													

CHARLES WOOD
SOIL BORING SEMIVOLATILES

Geographical Location		CW2		CW4		CW4		CW5		CW5		CW5	
Sample		CW02-SB33-A02		CW04-SB01-A02		CW04-SB04-A02		CW05-SB01-A02		CW05-SB01-A02RE		CW05-SB02-A02	
Sample Type													
Batch#		9412G154		9412G264		9412G264		9412G245		9412G245		9412G245	
Prep#		94GBS0835		94GBO847		95GIR002		94GBO847		94GBO847		94GBO847	
RFW#		002		008				001		001		001	
Sample Depth (bgs)		7-9'											
Dilution Factor		1.00		1.00				1.00		1.00		1.00	
Matrix		soil		soil		water		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/l		mg/kg		mg/kg		mg/kg	
Sampling Date		12/15/94		12/21/94		NA		12/20/94		12/20/94		12/20/94	
Analysis Date		12/27/94		1/3/95		1/5/95		1/3/95		1/3/95		1/3/95	
Analysis	Standard	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	10000	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
bis(2-Chloroethyl) ether	0.66	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
2-Chlorophenol	280	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
1,3-Dichlorobenzene	5100	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
1,4-Dichlorobenzene	570	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
1,2-Dichlorobenzene	5100	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
2-Methylphenol	2800	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
2,2'-oxybis(1-Chloropropane)		0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
4-Methylphenol	2800	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
N-Nitroso-di-n-propylamine	0.66	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
Hexachloroethane	6	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
Nitrobenzene	28	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
Isophorone	1100	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
2-Nitrophenol		0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
2,4-Dimethylphenol	1100	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
bis(2-Chloroethoxy) methane		0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
2,4-Dichlorophenol	170	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
1,2,4-Trichlorobenzene	68	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
Naphthalene	230	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
4-Chloroaniline	230	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
Hexachlorobutadiene	1	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
4-Chloro-3-methylphenol	10000	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
2-Methylnaphthalene		0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
Hexachlorocyclopentadiene	400	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
2,4,6-Trichlorophenol	62	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
2,4,5-Trichlorophenol	5600	1 U	1	0.98 U	0.98			0.95 U	0.95	0.95 U	0.95	0.98 U	0.98
2-Chloronaphthalene		0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
2-Nitroaniline		1 U	1	0.98 U	0.98			0.95 U	0.95	0.95 U	0.95	0.98 U	0.98
Dimethylphthalate	10000	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
Acenaphthylene		0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
2,6-Dinitrotoluene	1	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
3-Nitroaniline		1 U	1	0.98 U	0.98			0.95 U	0.95	0.95 U	0.95	0.98 U	0.98
Acenaphthene	3400	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
2,4-Dinitrophenol	110	1 U	1	0.98 U	0.98			0.95 U	0.95	0.95 U	0.95	0.98 U	0.98
4-Nitrophenol		1 U	1	0.98 U	0.98			0.95 U	0.95	0.95 U	0.95	0.98 U	0.98

CHARLES WOOD
SOIL BORING SEMIVOLATILES

Geographical Location		CW2		CW4		CW4		CW5		CW5		CW5	
Sample		CW02-SB33-A02		CW04-SB01-A02		CW04-SB04-A02		CW05-SB01-A02		CW05-SB01-A02RE		CW05-SB02-A02	
Sample Type													
Batch#		9412G154		9412G264		9412G264		9412G245		9412G245		9412G245	
Prep#		94GBS0835		94GBO847		95GIR002		94GBO847		94GBO847		94GBO847	
RFW#		002		008				001		001		001	
Sample Depth (bgs)		7-9'											
Dilution Factor		1.00		1.00				1.00		1.00		1.00	
Matrix		soil		soil		water		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/l		mg/kg		mg/kg		mg/kg	
Sampling Date		12/15/94		12/21/94		NA		12/20/94		12/20/94		12/20/94	
Analysis Date		12/27/94		1/3/95		1/5/95		1/3/95		1/3/95		1/3/95	
Analysis	Standard	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Dibenzofuran		0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
2,4-Dinitrotoluene	1	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
Diethylphthalate	10000	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
4-Chlorophenyl-phenylether		0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
Fluorene	2300	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
4-Nitroaniline		1 U	1	0.98 U	0.98			0.95 U	0.95	0.95 U	0.95	0.98 U	0.98
4,6-Dinitro-2-methylphenol		1 U	1	0.98 U	0.98			0.95 U	0.95	0.95 U	0.95	0.98 U	0.98
N-Nitrosodiphenylamine (1)	140	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
4-Bromophenyl-phenylether		0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
Hexachlorobenzene	0.66	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
Pentachlorophenol	6	1 U	1	0.98 U	0.98			0.95 U	0.95	0.95 U	0.95	0.98 U	0.98
Phenanthrene		0.075 J	0.41	0.39 U	0.39			0.085 J	0.38	0.086 J	0.38	0.39 U	0.39
Anthracene	10000	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
Carbazole		0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
Di-n-butylphthalate	5700	0.42 B	0.41	2.5 B	0.39			0.16 JB	0.38	0.17 JB	0.38	0.18 JB	0.39
Fluoranthene	2300	0.073 J	0.41	0.39 U	0.39			0.21 J	0.38	0.22 J	0.38	0.39 U	0.39
Pyrene	1700	0.067 J	0.41	0.39 U	0.39			0.25 J	0.38	0.24 J	0.38	0.39 U	0.39
Butylbenzylphthalate	1100	0.41 U	0.41	0.23 J	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
3,3'-Dichlorobenzidine	2	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
Benzo(a)anthracene	0.9	0.41 U	0.41	0.39 U	0.39			0.14 J	0.38	0.13 J	0.38	0.39 U	0.39
Chrysene	9	0.043 J	0.41	0.39 U	0.39			0.15 J	0.38	0.15 J	0.38	0.39 U	0.39
bis(2-Ethylhexy)phthalate	49	0.41 U	0.41	0.39 U	0.39			0.21 J	0.38	0.21 J	0.38	0.39 U	0.39
Di-n-octyl phthalate	1100	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
Benzo(b)fluoranthene	0.9	0.41 U	0.41	0.39 U	0.39			0.2 J	0.38	0.22 J	0.38	0.39 U	0.39
Benzo(k)fluoranthene	0.9	0.41 U	0.41	0.39 U	0.39			0.084 J	0.38	0.089 J	0.38	0.39 U	0.39
Benzo(a)pyrene	0.66	0.094 J	0.41	0.39 U	0.39			0.11 J	0.38	0.1 J	0.38	0.39 U	0.39
Indeno(1,2,3-cd)pyrene	0.9	0.41 U	0.41	0.39 U	0.39			0.066 J	0.38	0.38 U	0.38	0.39 U	0.39
Dibenzo(a,h)anthracene	0.66	0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
Benzo(g,h,i)perylene		0.41 U	0.41	0.39 U	0.39			0.38 U	0.38	0.38 U	0.38	0.39 U	0.39
Petroleum hydrocarbons						29 U	29						
Total Est. Conc. of TIC				5				9.38		10.08		10.65	
Method:TCL Semivolatiles						From inorganics list.							

CHARLES WOOD
SOIL BORING SEMIVOLATILES

Geographical Location		CW6		CW6		CW6		CW9		B6		B6	
Sample		CW06-SB02-A01		CW06-SB34-A01		CW06-SB34-A02		CW09-SB01-A02		B6-SB01-A01		B6-SB01-A01RE	
Sample Type													
Batch#		9505G840		9501G423		9501G423		9501G450		9412G553		9412G553	
Prep#		95GB0323		95GB0017		95GB0017		95GB0017		94GTS0035		94GTS0083	
RFW#		001		001		002		001		008		008	
Sample Depth (bgs)													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		5/10/95		1/3/95		1/3/95		1/4/95		1/10/95		1/10/95	
Analysis Date		5/30/95		1/20/95		1/20/95		1/21/95		2/9/95		2/9/95	
Analysis	Standard	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	10000	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
bis(2-Chloroethyl) ether	0.66	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
2-Chlorophenol	280	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
1,3-Dichlorobenzene	5100	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
1,4-Dichlorobenzene	570	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
1,2-Dichlorobenzene	5100	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
2-Methylphenol	2800	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
2,2'-oxybis(1-Chloropropane)		0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
4-Methylphenol	2800	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
N-Nitroso-di-n-propylamine	0.66	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Hexachloroethane	6	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Nitrobenzene	28	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Isophorone	1100	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
2-Nitrophenol		0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
2,4-Dimethylphenol	1100	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
bis(2-Chloroethoxy) methane		0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
2,4-Dichlorophenol	170	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
1,2,4-Trichlorobenzene	68	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Naphthalene	230	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
4-Chloroaniline	230	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Hexachlorobutadiene	1	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
4-Chloro-3-methylphenol	10000	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
2-Methylnaphthalene		0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Hexachlorocyclopentadiene	400	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
2,4,6-Trichlorophenol	62	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
2,4,5-Trichlorophenol	5600	1.2 U	1.2	1 U	1	0.96 U	0.96	0.96 U	0.96	0.94 U	0.94	0.94 U	0.94
2-Chloronaphthalene		0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
2-Nitroaniline		1.2 U	1.2	1 U	1	0.96 U	0.96	0.96 U	0.96	0.94 U	0.94	0.94 U	0.94
Dimethylphthalate	10000	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Acenaphthylene		0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
2,6-Dinitrotoluene	1	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
3-Nitroaniline		1.2 U	1.2	1 U	1	0.96 U	0.96	0.96 U	0.96	0.94 U	0.94	0.94 U	0.94
Acenaphthene	3400	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
2,4-Dinitrophenol	110	1.2 U	1.2	1 U	1	0.96 U	0.96	0.96 U	0.96	0.94 U	0.94	0.94 U	0.94
4-Nitrophenol		1.2 U	1.2	1 U	1	0.96 U	0.96	0.96 U	0.96	0.94 U	0.94	0.94 U	0.94

CHARLES WOOD
SOIL BORING SEMIVOLATILES

Geographical Location		CW6		CW6		CW6		CW9		B6		B6	
Sample		CW06-SB02-A01		CW06-SB34-A01		CW06-SB34-A02		CW09-SB01-A02		B6-SB01-A01		B6-SB01-A01RE	
Sample Type													
Batch#		9505G840		9501G423		9501G423		9501G450		9412G553		9412G553	
Prep#		95GB0323		95GB0017		95GB0017		95GB0017		94GTS0035		94GTS0083	
RFW#		001		001		002		001		008		008	
Sample Depth (bgs)													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		5/10/95		1/3/95		1/3/95		1/4/95		1/10/95		1/10/95	
Analysis Date		5/30/95		1/20/95		1/20/95		1/21/95		2/9/95		2/9/95	
Analysis	Standard	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Dibenzofuran		0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
2,4-Dinitrotoluene	1	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Diethylphthalate	10000	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
4-Chlorophenyl-phenylether		0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Fluorene	2300	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
4-Nitroaniline		1.2 U	1.2	1 U	1	0.96 U	0.96	0.96 U	0.96	0.94 U	0.94	0.94 U	0.94
4,6-Dinitro-2-methylphenol		1.2 U	1.2	1 U	1	0.96 U	0.96	0.96 U	0.96	0.94 U	0.94	0.94 U	0.94
N-Nitrosodiphenylamine (1)	140	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
4-Bromophenyl-phenylether		0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Hexachlorobenzene	0.66	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Pentachlorophenol	6	1.2 U	1.2	1 U	1	0.96 U	0.96	0.96 U	0.96	0.94 U	0.94	0.94 U	0.94
Phenanthrene		0.47 U	0.47	0.4 U	0.4	0.24 J	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Anthracene	10000	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Carbazole		0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Di-n-butylphthalate	5700	0.55 B	0.47	0.081	0.4	0.066	0.38	0.076	0.38	0.14 JB	0.38	1.2 B	0.38
Fluoranthene	2300	0.47 U	0.47	0.049 J	0.4	0.18 J	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Pyrene	1700	0.47 U	0.47	0.056 J	0.4	0.27 J	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Butylbenzylphthalate	1100	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
3,3'-Dichlorobenzidine	2	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Benzo(a)anthracene	0.9	0.47 U	0.47	0.4 U	0.4	0.16 J	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Chrysene	9	0.47 U	0.47	0.4 U	0.4	0.15 J	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
bis(2-Ethylhexy)phthalate	49	0.07 JB	0.47	0.21 J	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.042 J	0.38
Di-n-octyl phthalate	1100	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Benzo(b)fluoranthene	0.9	0.47 U	0.47	0.4 U	0.4	0.11 J	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Benzo(k)fluoranthene	0.9	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Benzo(a)pyrene	0.66	0.47 U	0.47	0.4 U	0.4	0.087 J	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Indeno(1,2,3-cd)pyrene	0.9	0.47 U	0.47	0.4 U	0.4	0.054 J	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Dibenzo(a,h)anthracene	0.66	0.47 U	0.47	0.4 U	0.4	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Benzo(g,h,i)perylene		0.47 U	0.47	0.057	0.4	0.066	0.38	0.38 U	0.38	0.38 U	0.38	0.38 U	0.38
Petroleum hydrocarbons													
Total Est. Conc. of TIC		35.9		12.2		10.3		9.58		7.02		6.03	
Method:TCL Semivolatiles													

CHARLES WOOD
SOIL BORING SEMIVOLATILES

Geographical Location		B6		B6		B7		B7		B7		B7	
Sample		B6-SB01-A02		B6-SB01-A02RE		B7-SB01-A01		B7-SB01-A01RE		B7-SB01-A02		B7-SB01-A02RE	
Sample Type													
Batch#		9412G553		9412G553		9412G553		9412G553		9412G553		9412G553	
Prep#		94GTS0035		94GTS0083		94GTS0035		94GTS0083		94GTS0035		94GTS0083	
RFW#		009		009		006		006		007		007	
Sample Depth (bgs)													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		1/10/95		1/10/95		1/10/95		1/10/95		1/10/95		1/10/95	
Analysis Date		2/9/95		2/9/95		2/9/95		2/9/95		2/9/95		2/9/95	
Analysis	Standard	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	10000	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
bis(2-Chloroethyl) ether	0.66	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2-Chlorophenol	280	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
1,3-Dichlorobenzene	5100	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
1,4-Dichlorobenzene	570	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
1,2-Dichlorobenzene	5100	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2-Methylphenol	2800	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2,2'-oxybis(1-Chloropropane)		0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
4-Methylphenol	2800	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
N-Nitroso-di-n-propylamine	0.66	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Hexachloroethane	6	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Nitrobenzene	28	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Isophorone	1100	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2-Nitrophenol		0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2,4-Dimethylphenol	1100	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
bis(2-Chloroethoxy) methane		0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2,4-Dichlorophenol	170	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
1,2,4-Trichlorobenzene	68	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Naphthalene	230	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
4-Chloroaniline	230	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Hexachlorobutadiene	1	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
4-Chloro-3-methylphenol	10000	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2-Methylnaphthalene		0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Hexachlorocyclopentadiene	400	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2,4,6-Trichlorophenol	62	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2,4,5-Trichlorophenol	5600	0.96 U	0.96	0.98 U	0.98	0.97 U	0.97	0.97 U	0.97	1 U	1	0.98 U	0.98
2-Chloronaphthalene		0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2-Nitroaniline		0.96 U	0.96	0.98 U	0.98	0.97 U	0.97	0.97 U	0.97	1 U	1	0.98 U	0.98
Dimethylphthalate	10000	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Acenaphthylene		0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2,6-Dinitrotoluene	1	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
3-Nitroaniline		0.96 U	0.96	0.98 U	0.98	0.97 U	0.97	0.97 U	0.97	1 U	1	0.98 U	0.98
Acenaphthene	3400	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2,4-Dinitrophenol	110	0.96 U	0.96	0.98 U	0.98	0.97 U	0.97	0.97 U	0.97	1 U	1	0.98 U	0.98
4-Nitrophenol		0.96 U	0.96	0.98 U	0.98	0.97 U	0.97	0.97 U	0.97	1 U	1	0.98 U	0.98

CHARLES WOOD
SOIL BORING SEMIVOLATILES

Geographical Location		B6		B6		B7		B7		B7		B7	
Sample		B6-SB01-A02		B6-SB01-A02RE		B7-SB01-A01		B7-SB01-A01RE		B7-SB01-A02		B7-SB01-A02RE	
Sample Type													
Batch#		9412G553		9412G553		9412G553		9412G553		9412G553		9412G553	
Prep#		94GTS0035		94GTS0083		94GTS0035		94GTS0083		94GTS0035		94GTS0083	
RFW#		009		009		006		006		007		007	
Sample Depth (bgs)													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		1/10/95		1/10/95		1/10/95		1/10/95		1/10/95		1/10/95	
Analysis Date		2/9/95		2/9/95		2/9/95		2/9/95		2/9/95		2/9/95	
Analysis	Standard	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Dibenzofuran		0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
2,4-Dinitrotoluene	1	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Diethylphthalate	10000	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
4-Chlorophenyl-phenylether		0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Fluorene	2300	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
4-Nitroaniline		0.96 U	0.96	0.98 U	0.98	0.97 U	0.97	0.97 U	0.97	1 U	1	0.98 U	0.98
4,6-Dinitro-2-methylphenol		0.96 U	0.96	0.98 U	0.98	0.97 U	0.97	0.97 U	0.97	1 U	1	0.98 U	0.98
N-Nitrosodiphenylamine (1)	140	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
4-Bromophenyl-phenylether		0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Hexachlorobenzene	0.66	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Pentachlorophenol	6	0.96 U	0.96	0.98 U	0.98	0.97 U	0.97	0.97 U	0.97	1 U	1	0.98 U	0.98
Phenanthrene		0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Anthracene	10000	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Carbazole		0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Di-n-butylphthalate	5700	0.17 JB	0.39	1.7 B	0.39	0.37 JB	0.39	0.75 B	0.39	0.28 JB	0.4	1 B	0.39
Fluoranthene	2300	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.042 J	0.39	0.4 U	0.4	0.39 U	0.39
Pyrene	1700	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.048 J	0.39	0.4 U	0.4	0.39 U	0.39
Butylbenzylphthalate	1100	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
3,3'-Dichlorobenzidine	2	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Benzo(a)anthracene	0.9	0.39 U	0.39	0.046 J	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Chrysene	9	0.044 J	0.39	0.083 J	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
bis(2-Ethylhexy)phthalate	49	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.076 J	0.4	0.39 U	0.39
Di-n-octyl phthalate	1100	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Benzo(b)fluoranthene	0.9	0.078 J	0.39	0.06 J	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Benzo(k)fluoranthene	0.9	0.041 J	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Benzo(a)pyrene	0.66	0.39 U	0.39	0.047 J	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Indeno(1,2,3-cd)pyrene	0.9	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Dibenzo(a,h)anthracene	0.66	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Benzo(g,h,i)perylene		0.39 U	0.39	0.042 J	0.39	0.39 U	0.39	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39
Petroleum hydrocarbons													
Total Est. Conc. of TIC		6.19		9.64		6.74		6.59		6.54		7.19	
Method:TCL Semivolatiles													

CHARLES WOOD
SOIL BORING SEMIVOLATILES

Geographical Location		B8		B8		B8		B8		B9		B9	
Sample		B8-SB01-A01		B8-SB01-A01RE		B8-SB01-A02		B8-SB01-A02RE		B9-SB01-A01		B9-SB01-A02	
Sample Type													
Batch#		9412G553		9412G553		9412G553		9412G553		9501G831		9501G831	
Prep#		94GTS0035		94GTS0083		94GTS0035		94GTS0083		95GB0064		95GB0064	
RFW#		004		004		005		005		001		002	
Sample Depth (bgs)													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		1/10/95		1/10/95		1/10/95		1/10/95		1/23/95		1/23/95	
Analysis Date		2/9/95		2/9/95		2/9/95		2/9/95		2/11/95		2/22/95	
Analysis	Standard	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	10000	0.36 U	0.36	0.36 U	0.36	0.39 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
bis(2-Chloroethyl) ether	0.66	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
2-Chlorophenol	280	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
1,3-Dichlorobenzene	5100	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
1,4-Dichlorobenzene	570	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
1,2-Dichlorobenzene	5100	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
2-Methylphenol	2800	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
2,2'-oxybis(1-Chloropropane)		0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
4-Methylphenol	2800	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
N-Nitroso-di-n-propylamine	0.66	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Hexachloroethane	6	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Nitrobenzene	28	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Isophorone	1100	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
2-Nitrophenol		0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
2,4-Dimethylphenol	1100	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
bis(2-Chloroethoxy) methane		0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
2,4-Dichlorophenol	170	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
1,2,4-Trichlorobenzene	68	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Naphthalene	230	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
4-Chloroaniline	230	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Hexachlorobutadiene	1	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
4-Chloro-3-methylphenol	10000	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
2-Methylnaphthalene		0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Hexachlorocyclopentadiene	400	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
2,4,6-Trichlorophenol	62	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
2,4,5-Trichlorophenol	5600	0.9 U	0.9	0.91 U	0.91	1 U	0.96	0.98 U	0.98	0.96 U	0.96	0.99 U	0.99
2-Chloronaphthalene		0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
2-Nitroaniline		0.9 U	0.9	0.91 U	0.91	1 U	0.96	0.98 U	0.98	0.96 U	0.96	0.99 U	0.99
Dimethylphthalate	10000	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Acenaphthylene		0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
2,6-Dinitrotoluene	1	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
3-Nitroaniline		0.9 U	0.9	0.91 U	0.91	1 U	0.96	0.98 U	0.98	0.96 U	0.96	0.99 U	0.99
Acenaphthene	3400	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
2,4-Dinitrophenol	110	0.9 U	0.9	0.91 U	0.91	1 U	0.96	0.98 U	0.98	0.96 U	0.96	0.99 U	0.99
4-Nitrophenol		0.9 U	0.9	0.91 U	0.91	1 U	0.96	0.98 U	0.98	0.96 U	0.96	0.99 U	0.99

CHARLES WOOD
SOIL BORING SEMIVOLATILES

Geographical Location		B8		B8		B8		B8		B9		B9	
Sample		B8-SB01-A01		B8-SB01-A01RE		B8-SB01-A02		B8-SB01-A02RE		B9-SB01-A01		B9-SB01-A02	
Sample Type													
Batch#		9412G553		9412G553		9412G553		9412G553		9501G831		9501G831	
Prep#		94GTS0035		94GTS0083		94GTS0035		94GTS0083		95GB0064		95GB0064	
RFW#		004		004		005		005		001		002	
Sample Depth (bgs)													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		1/10/95		1/10/95		1/10/95		1/10/95		1/23/95		1/23/95	
Analysis Date		2/9/95		2/9/95		2/9/95		2/9/95		2/11/95		2/22/95	
Analysis	Standard	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Dibenzofuran		0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
2,4-Dinitrotoluene	1	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Diethylphthalate	10000	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
4-Chlorophenyl-phenylether		0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Fluorene	2300	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
4-Nitroaniline		0.9 U	0.9	0.91 U	0.91	1 U	0.96	0.98 U	0.98	0.96 U	0.96	0.99 U	0.99
4,6-Dinitro-2-methylphenol		0.9 U	0.9	0.91 U	0.91	1 U	0.96	0.98 U	0.98	0.96 U	0.96	0.99 U	0.99
N-Nitrosodiphenylamine (1)	140	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
4-Bromophenyl-phenylether		0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Hexachlorobenzene	0.66	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Pentachlorophenol	6	0.9 U	0.9	0.91 U	0.91	1 U	0.96	0.98 U	0.98	0.96 U	0.96	0.99 U	0.99
Phenanthrene		0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Anthracene	10000	0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Carbazole		0.36 U	0.36	0.36 U	0.36	0 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Di-n-butylphthalate	5700	0.72 B	0.36	0.14 JB	0.36	0.59 B	0.39	0 JB	0.39	0.12 JB	0.38	0.1 JB	0.4
Fluoranthene	2300	0.36 U	0.36	0.36 U	0.36	0.39 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Pyrene	1700	0.36 U	0.36	0.36 U	0.36	0.39 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Butylbenzylphthalate	1100	0.36 U	0.36	0.36 U	0.36	0.39 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
3,3'-Dichlorobenzidine	2	0.36 U	0.36	0.36 U	0.36	0.39 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Benzo(a)anthracene	0.9	0.36 U	0.36	0.36 U	0.36	0.39 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Chrysene	9	0.36 U	0.36	0.36 U	0.36	0.39 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
bis(2-Ethylhexy)phthalate	49	0.36 U	0.36	0.36 U	0.36	0.39 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Di-n-octyl phthalate	1100	0.36 U	0.36	0.36 U	0.36	0.39 U	0.39	0.39 U	0.39	0.11 J	0.38	0.073 J	0.4
Benzo(b)fluoranthene	0.9	0.36 U	0.36	0.36 U	0.36	0.39 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Benzo(k)fluoranthene	0.9	0.36 U	0.36	0.36 U	0.36	0.39 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Benzo(a)pyrene	0.66	0.36 U	0.36	0.36 U	0.36	0.39 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Indeno(1,2,3-cd)pyrene	0.9	0.36 U	0.36	0.36 U	0.36	0.39 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Dibenzo(a,h)anthracene	0.66	0.36 U	0.36	0.36 U	0.36	0.39 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Benzo(g,h,i)perylene		0.36 U	0.36	0.36 U	0.36	0.39 U	0.39	0.39 U	0.39	0.38 U	0.38	0.4 U	0.4
Petroleum hydrocarbons													
Total Est. Conc. of TIC		5.08		11.26		7.06		7.27		0.56		10.09	
Method:TCL Semivolatiles													

CHARLES WOOD
SOIL BORING SEMIVOLATILES

Geographical Location		B9		B10		B10		B10		B10	
Sample		B9-SB01-C02		B10-SB01-A01		B10-SB01-A01RE		B10-SB01-A02		B10-SB01-A02RE	
Sample Type		Duplicate									
Batch#		9501G831		9412G553		9412G553		9412G553		9412G553	
Prep#		95GB0064		94GTS0035		94GTS0083		94GTS0035		94GTS0083	
RFW#		003		001		001		002		002	
Sample Depth (bgs)											
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		1/23/95		1/10/95		1/10/95		1/10/95		1/10/95	
Analysis Date		2/22/95		2/9/95		2/9/95		2/9/95		2/9/95	
Analysis	Standard	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	10000	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
bis(2-Chloroethyl) ether	0.66	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
2-Chlorophenol	280	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
1,3-Dichlorobenzene	5100	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
1,4-Dichlorobenzene	570	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
1,2-Dichlorobenzene	5100	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
2-Methylphenol	2800	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
2,2'-oxybis(1-Chloropropane)		0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
4-Methylphenol	2800	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
N-Nitroso-di-n-propylamine	0.66	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
Hexachloroethane	6	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
Nitrobenzene	28	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
Isophorone	1100	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
2-Nitrophenol		0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
2,4-Dimethylphenol	1100	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
bis(2-Chloroethoxy) methane		0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
2,4-Dichlorophenol	170	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
1,2,4-Trichlorobenzene	68	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
Naphthalene	230	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
4-Chloroaniline	230	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
Hexachlorobutadiene	1	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
4-Chloro-3-methylphenol	10000	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
2-Methylnaphthalene		0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
Hexachlorocyclopentadiene	400	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
2,4,6-Trichlorophenol	62	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
2,4,5-Trichlorophenol	5600	1 U	1	0.98 U	0.98	0.99 U	0.99	0.97 U	0.97	0.98 U	0.98
2-Chloronaphthalene		0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
2-Nitroaniline		1 U	1	0.98 U	0.98	0.99 U	0.99	0.97 U	0.97	0.98 U	0.98
Dimethylphthalate	10000	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
Acenaphthylene		0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
2,6-Dinitrotoluene	1	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
3-Nitroaniline		1 U	1	0.98 U	0.98	0.99 U	0.99	0.97 U	0.97	0.98 U	0.98
Acenaphthene	3400	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
2,4-Dinitrophenol	110	1 U	1	0.98 U	0.98	0.99 U	0.99	0.97 U	0.97	0.98 U	0.98
4-Nitrophenol		1 U	1	0.98 U	0.98	0.99 U	0.99	0.97 U	0.97	0.98 U	0.98

CHARLES WOOD
SOIL BORING SEMIVOLATILES

Geographical Location		B9		B10		B10		B10		B10	
Sample		B9-SB01-C02		B10-SB01-A01		B10-SB01-A01RE		B10-SB01-A02		B10-SB01-A02RE	
Sample Type		Duplicate									
Batch#		9501G831		9412G553		9412G553		9412G553		9412G553	
Prep#		95GB0064		94GTS0035		94GTS0083		94GTS0035		94GTS0083	
RFW#		003		001		001		002		002	
Sample Depth (bgs)											
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		1/23/95		1/10/95		1/10/95		1/10/95		1/10/95	
Analysis Date		2/22/95		2/9/95		2/9/95		2/9/95		2/9/95	
Analysis	Standard	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Dibenzofuran		0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
2,4-Dinitrotoluene	1	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
Diethylphthalate	10000	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
4-Chlorophenyl-phenylether		0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
Fluorene	2300	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
4-Nitroaniline		1 U	1	0.98 U	0.98	0.99 U	0.99	0.97 U	0.97	0.98 U	0.98
4,6-Dinitro-2-methylphenol		1 U	1	0.98 U	0.98	0.99 U	0.99	0.97 U	0.97	0.98 U	0.98
N-Nitrosodiphenylamine (1)	140	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
4-Bromophenyl-phenylether		0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
Hexachlorobenzene	0.66	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
Pentachlorophenol	6	1 U	1	0.98 U	0.98	0.99 U	0.99	0.97 U	0.97	0.98 U	0.98
Phenanthrene		0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
Anthracene	10000	0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
Carbazole		0.4 U	0.4	0.39 U	0.39	0.4 U	0.4	0.39 U	0.39	0.39 U	0.39
Di-n-butylphthalate	5700	0.088	0.4	2 B	0.39	0 JB	0.4	1.6 B	0.39	0.2 JB	0.39
Fluoranthene	2300	0.4 U	0.4	0.39 U	0.39	0 U	0.4	0.39 U	0.39	0.39 U	0.39
Pyrene	1700	0.4 U	0.4	0.39 U	0.39	0 U	0.4	0.39 U	0.39	0.39 U	0.39
Butylbenzylphthalate	1100	0.4 U	0.4	0.39 U	0.39	0 U	0.4	0.39 U	0.39	0.39 U	0.39
3,3'-Dichlorobenzidine	2	0.4 U	0.4	0.39 U	0.39	0 U	0.4	0.39 U	0.39	0.39 U	0.39
Benzo(a)anthracene	0.9	0.4 U	0.4	0.39 U	0.39	0 U	0.4	0.39 U	0.39	0.39 U	0.39
Chrysene	9	0.4 U	0.4	0.39 U	0.39	0 U	0.4	0.39 U	0.39	0.39 U	0.39
bis(2-Ethylhexy)phthalate	49	0.043 J	0.4	0.057 J	0.39	0 U	0.4	0.39 U	0.39	0.17 J	0.39
Di-n-octyl phthalate	1100	0.4 U	0.4	0.39 U	0.39	0 U	0.4	0.39 U	0.39	0.39 U	0.39
Benzo(b)fluoranthene	0.9	0.4 U	0.4	0.39 U	0.39	0 U	0.4	0.39 U	0.39	0.39 U	0.39
Benzo(k)fluoranthene	0.9	0.4 U	0.4	0.39 U	0.39	0 U	0.4	0.39 U	0.39	0.39 U	0.39
Benzo(a)pyrene	0.66	0.4 U	0.4	0.39 U	0.39	0 U	0.4	0.39 U	0.39	0.39 U	0.39
Indeno(1,2,3-cd)pyrene	0.9	0.4 U	0.4	0.39 U	0.39	0 U	0.4	0.39 U	0.39	0.39 U	0.39
Dibenzo(a,h)anthracene	0.66	0.4 U	0.4	0.39 U	0.39	0 U	0.4	0.39 U	0.39	0.39 U	0.39
Benzo(g,h,i)perylene		0.4 U	0.4	0.39 U	0.39	0 U	0.4	0.39 U	0.39	0.39 U	0.39
Petroleum hydrocarbons											
Total Est. Conc. of TIC		8.97		4.57		13.06		4.74		9.4	
Method:TCL Semivolatiles											

CHARLES WOOD
SOIL BORING INORGANICS

Geographical Location		AOC7		AOC7		AOC7		AOC7		AOC7		AOC7	
Sample		CWA7-SB01-A02		CWA7-SB02-A02		CWA7-SB03-A02		CWA7-SB04-A02		CWA7-SB05-A02		CWA7-SB06-A03	
Sample Type													
Batch#		9412G264		9412G264		9412G264		9412G264		9412G264		9412G264	
Prep#		94GI211		94GI211		94GI211		94GI211		94GI211		94GI211	
RFW#		001		003		002		006		004		005	
Sample Depth (bgs)		7-9'											
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		12/21/94		12/21/94		12/21/94		12/21/94		12/21/94		12/21/94	
Analysis Date		1/4/95		1/4/95		1/4/95		1/4/95		1/4/95		1/4/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
% Solids		90.0	0.10	90.6	0.10	90.8	0.10	89.8	0.10	90.5	0.10	89.8	0.10
Silver	110	0.49 U	0.49	0.50 U	0.50	0.46 U	0.46	0.51 U	0.51	0.47 U	0.47	0.48 U	0.48
Aluminum		3650	2.1	4340	2.1	3820	1.9	5170	2.2	3490	2.0	3610	2.0
Arsenic	20	8.6	1.5 *	1.7	0.29	8.4	0.34	12.7	1.0 *	2.8	0.28	5.9	0.32
Barium	700	2.5	0.16	4.5	0.17	4.5	0.15	6.2	0.17	3.6	0.16	2.4	0.16
Beryllium	1	0.31	0.082	0.29	0.084	0.28	0.076	0.45	0.086	0.30	0.079	0.26	0.080
Calcium		69	1.8	91.9	1.8	134	1.7	275	1.9	63.9	1.7	43.7	1.7
Cadmium	1	0.70 U	0.7	0.71 U	0.71	0.65 U	0.65	0.73 U	0.73	0.67 U	0.67	0.68 U	0.68
Cobalt		0.58 U	0.58	0.94	0.59	0.68	0.53	0.60 U	0.6	0.55 U	0.55	0.56 U	0.56
Chromium		61.1	1.3	61.6	1.3	73.6	1.2	83.4	1.4	64.7	1.3	61.1	1.3
Copper	600	1.6	0.49	1.6	0.5	1.8	0.46	2.2	0.51	1.4	0.47	1.3	0.48
Iron		10800	0.47	12400	0.48	11100	0.44	15900	0.49	11400	0.45	11000	0.46
Mercury	14	0.10 U	0.10	0.085 U	0.085	0.09 U	0.09	0.10 U	0.10	0.10 U	0.10	0.09 U	0.09
Potassium		2060	21.1	2360	21.5	1740	19.4	2570	21.9	2200	20.2	2280	20.5
Magnesium		694	7.9	852	8	602	7.3	919	8.2	720	7.5	766	7.7
Manganese		3.6	0.12	8.2	0.13	12.7	0.11	11.3	0.13	2.8	0.12	1.8	0.12
Sodium		18.8	2.7	12.0	2.8	11.7	2.5	13.8	2.8	14.7	2.6	11.5	2.6
Nickel	250	1.8	0.66	2.6	0.67	1.9	0.61	2.1	0.69	1.6	0.63	1.3	0.64
Lead	400	6.3	0.27	6.9	0.26	4.5	0.3	8.5	1.5 **	6.3	1.2 *	4.9	0.28
Antimony	14	2.3 U	2.3	2.4 U	2.4	2.2 U	2.2	2.4 U	2.4	2.2 U	2.2	2.3 U	2.3
Selenium	63	0.26	0.17	0.18	0.17	0.19 U	0.19	0.3	0.19	0.26	0.16	0.18 U	0.18
Thallium	2	0.21 U	0.21	0.20 U	0.2	0.23 U	0.23	0.23 U	0.23	0.19 U	0.19	0.22 U	0.22
Vanadium	370	93.5	0.43	79.8	0.44	78.4	0.4	95.1	0.45	92.8	0.41	81.7	0.42
Zinc	1500	8.9	0.43	12.0	0.44	10.5	0.4	15.8	0.45	9.0	0.41	9.1	0.42
Cyanide	1100												
Dilution Factor		* = 5.00						* = 3.00, ** = 5.00		* = 5.00			
Method:TAL Metals													

CHARLES WOOD
SOIL BORING INORGANICS

Geographical Location		CW1		CW1		CW1		CW1		CW2		CW2	
Sample		CW01-SB26-A02		CW01-SB27-A02		CW01-SB28-A02		CW01-SB29-A02		CW02-SB30-A02		CW02-SB31-A02	
Sample Type													
Batch#		9412G216		9412G216		9412G216		9412G216		9412G182		9412G182	
Prep#		94GTS484		94GTS484		94GTS484		94GTS484		94GTS484		94GTS484	
RFW#		004		002		003		001		002		003	
Sample Depth (bgs)													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		12/19/94		12/19/94		12/19/94		12/19/94		12/16/94		12/16/94	
Analysis Date		12/22/94		12/22/94		12/22/94		12/22/94		12/22/94		12/22/94	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
% Solids		77.9	0.10	75.5	0.10	81.2	0.1	76.7	0.10	83.1	0.1	74.2	0.10
Silver	110	0.46 U	0.46	0.53 U	0.53	0.47 U	0.47	0.50 U	0.50	0.54 U	0.54	0.60 U	0.6
Aluminum		4070	1.9	5120	2.3	4850	2.0	4010	2.1	6450	2.3	5430	2.6
Arsenic	20	4.1	0.30	4.5	0.35	5.6	0.31	2.2	0.36	5.7	0.31	8.5	0.76 *
Barium	700	3.4	0.15	4.4	0.18	4.2	0.16	2.7	0.17	36.2	0.18	58.6	0.20
Beryllium	1	0.41	0.076	0.45	0.088	0.84	0.079	0.33	0.084	0.58	0.090	0.51	0.10
Calcium		236	1.7	283	1.9	229	1.7	669	1.8	655	2.0	976	2.2
Cadmium	1	0.65 U	0.65	0.75 U	0.75	0.67 U	0.67	0.71 U	0.71	0.76 U	0.76	0.86 U	0.86
Cobalt		0.53 U	0.53	0.73	0.62	0.86	0.55	0.59 U	0.59	0.95	0.63	4.20	0.71
Chromium		52.2	1.2	71.7	1.4	59.7	1.3	46.4	1.3	69.9	1.4	48.6	1.6
Copper	600	1.8	0.46	2	0.53	1.1	0.47	1.2	0.50	2.7	0.54	2.9	0.60
Iron		10800	0.44	14500	0.51	12900	0.45	9440	0.48	20400	0.52	19200	0.58
Mercury	14	0.10 U	0.10	0.11 U	0.11	0.21	0.091	0.10 U	0.10	0.10 U	0.10	0.11 U	0.11
Potassium		2700	19.5	3540	22.6	3660	20.2	2700	21.5	4210	23.0	2610	25.8
Magnesium		960	7.3	1310	8.4	1310	7.5	943	8.0	1720	8.6	1270	9.6
Manganese		7.2	0.11	10.6	0.13	8.0	0.12	5.4	0.13	25.1	0.13	24.8	0.15
Sodium		33.4	2.5	29.7	2.9	20.4	2.6	15.5	2.8	34.8	2.9	45.8	3.3
Nickel	250	1.5	0.61	3.1	0.71	2.7	0.63	1.4	0.67	4.9	0.72	11.2	0.81
Lead	400	3.9	0.26	5.9	0.30	3.9	0.27	3.2	0.31	8.1	0.54 *	7.5	0.33
Antimony	14	2.2 U	2.2	2.5 U	2.5	2.2 U	2.2	2.4 U	2.4	2.6 U	2.6	2.9 U	2.9
Selenium	63	0.19	0.17	0.20 U	0.20	0.17 U	0.17	0.20 U	0.20	0.29	0.17	0.70	0.21
Thallium	2	0.20 U	0.20	0.24 U	0.24	0.21 U	0.21	0.25 U	0.25	0.21 U	0.21	0.26 U	0.26
Vanadium	370	28.8	0.40	42.4	0.46	31.8	0.41	26.7	0.44	36.6	0.47	29.1	0.53
Zinc	1500	12.8	0.40	16.2	0.46	15.2	0.41	11.7	0.44	27.8	0.47	44.2	0.53
Cyanide	1100												
Dilution Factor										* = 2.00		* = 2.00	
Method:TAL Metals													

CHARLES WOOD
SOIL BORING INORGANICS

Geographical Location		CW2		CW2		CW2		CW4		CW5		CW5	
Sample		CW02-SB32-A02		CW02-SB33-A02		CW02-SB33-A02		CW04-SB01-A02		CW05-SB01-A02		CW05-SB02-A02	
Sample Type													
Batch#		9412G182		9412G154		9412G154		9412G264		9412G245		9412G245	
Prep#		94GTS484		95GTS001		95GTS001		94GI211					
RFW#		001		001		002		008		001		002	
Sample Depth (bgs)				2-4'		7-9'							
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		12/16/94		12/15/94		12/15/94		12/21/94					
Analysis Date		12/22/94		1/3/95		1/3/95		1/4/95					
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
% Solids		80.7	0.1	84.4	0.10	80.0	0.10	83.2	0.10	86.1	0.10	83.9	0.10
Silver	110	0.52 U	0.52			0.5 U	0.5	0.52 U	0.52	7.4	0.47	0.40 U	0.40
Aluminum		2920	2.2			7310	2.1	5030	2.2	3920	2.0	3400	1.7
Arsenic	20	2.6	0.34			15.7	1.9 *	1.5	0.31	3.8	0.34	1.5	0.29
Barium	700	23.6	0.17			326	0.17	2.7	0.17	36.2	0.16	21.0	0.13
Beryllium	1	0.28	0.087			1.5	0.083	0.47	0.087	0.14	0.079	0.32	0.067
Calcium		502	1.9			1270	1.8	302	1.9	1000	1.7	851	1.5
Cadmium	1	0.74 U	0.74			0.9	0.71	0.74 U	0.74	0.67 U	0.67	0.57 U	0.57
Cobalt		0.91	0.61			5.9	0.58	0.61 U	0.61	1.0	0.55	0.47 U	0.47
Chromium		32.2	1.4			56.5	1.3	63.5	1.4	42.2	1.3	38.3	1.1
Copper	600	2.7	0.52			5.5	0.5	379	0.52	21.5	0.47	2.0	0.40
Iron		11100	0.50			17600	0.48	11500	0.50	8950	0.45	5930	0.39
Mercury	14	0.083 U	0.083			0.12 U	0.12	0.09 U	0.09	0.63	0.12	0.09 U	0.09
Potassium		1980	22.2			3350	21.3	3490	22.2	944	20.1	1880	17.2
Magnesium		776	8.3			1880	8	1320	8.3	527	7.5	717	6.4
Manganese		12.5	0.13			35.1	0.12	8.8	0.13	19.7	0.12	7.2	0.10
Sodium		40.8	2.8			42.7	2.7	15.3	2.8	28.9	2.6	13.5	2.2
Nickel	250	2.6	0.70			23.2	0.67	1.5	0.69	2.7	0.63	1.6	0.54
Lead	400	3.1	0.29			5.6	1.7 *	1440	5.8	20.7	3.0 *	3.3	0.25
Antimony	14	2.5 U	2.5			2.4 U	2.4	2.5	2.5	2.2 U	2.2	1.9 U	1.9
Selenium	63	0.20	0.19			4.2	0.44 *	0.17 U	0.17	0.40	0.19	0.35	0.16
Thallium	2	0.23 U	0.23			0.27 U	0.27	0.21 U	0.21	0.24 U	0.24	0.33	0.20
Vanadium	370	19.4	0.46			23.6	0.44	20.6	0.45	20.7	0.41	21.4	0.35
Zinc	1500	19.3	0.46			63.9	0.44	46.2	0.45	40.4	0.41	11.4	0.35
Cyanide	1100									0.43 U	0.43	0.33 U	0.33
Dilution Factor		* = 10.0				* = 5.00				* = 10.0			
Method:TAL Metals													

CHARLES WOOD
SOIL BORING INORGANICS

Geographical Location		CW6		CW6		CW6		CW9		B6	
Sample		CW06-SB34-A01		CW06-SB34-A02		CW06-SB34-A02		CW09-SB01-A02		B6-SB01-A01	
Sample Type											
Batch#		9501G423		9501G423		9505G840		9501G450		9501G553	
Prep#		95GTS006		95GTS006		95GTS285		95GTS006		95GTS013	
RFW#		001		002		001		003		008	
Sample Depth (bgs)											
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		1/3/95		1/3/95		5/10/95		1/4/95		1/10/95	
Analysis Date		1/9/95		1/9/95		5/16/95		1/9/95		1/13/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
% Solids		83.8	0.10	86.6	0.10	70.9	0.10	86.9	0.10	88.0	0.1
Silver	110							0.93	0.50	0.45 U	0.45
Aluminum								3830	2.1	4220	3.1
Arsenic	20							2.6	0.33	4.6	0.35
Barium	700							6.6	0.17	6.3	0.15
Beryllium	1							0.39	0.084	0.055 U	0.055
Calcium								366	1.8	303	1.5
Cadmium	1							0.71 U	0.71	0.53 U	0.53
Cobalt								1.0	0.59	0.59	0.42
Chromium								44.0	1.3	51.8	0.85
Copper	600							2.3	0.50	1.4	0.73
Iron								9720	0.48	11000	0.45
Mercury	14							0.12	0.11	0.095 U	0.095
Potassium								1480	21.4	2570	12.3
Magnesium								698	8.0	1040	6.2
Manganese								11.9	0.13	5.6	0.16
Sodium								21.4	2.7	24.2	3.5
Nickel	250							2.8	0.67	1.9	0.76
Lead	400							3.9	0.29	1.9	0.18
Antimony	14							2.4 U	2.4	2.0 U	2.0
Selenium	63							0.19 U	0.19	0.4	0.27
Thallium	2							0.36 U	0.36	0.13 U	0.13
Vanadium	370							27.4	0.44	25.6	0.38
Zinc	1500							12.8	0.44	18.4	0.35
Cyanide	1100									0.42 U	0.42
Dilution Factor											
Method:TAL Metals											

CHARLES WOOD
SOIL BORING INORGANICS

Geographical Location		B6		B7		B7		B8		B8		B9	
Sample		B6-SB01-A02		B7-SB01-A01		B7-SB01-A02		B8-SB01-A01		B8-SB01-A02		B9-SB01-A01	
Sample Type													
Batch#		9501G553		9501G553		9501G553		9501G553		9501G553		9501G831	
Prep#		95GTS013		95GTS013		95GTS013		95GTS013		95GTS013			
RFW#		009		006		007		004		005		001	
Sample Depth (bgs)													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		1/10/95		1/10/95		1/10/95		1/10/95		1/10/95			
Analysis Date		1/13/95		1/13/95		1/13/95		1/13/95		1/13/95			
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
% Solids		84.6	0.1	85.5	0.1	83.4	0.10	91.2	0.1	84.8	0.10	84.7	0.10
Silver	110	0.49 U	0.49	0.49 U	0.49	0.48 U	0.48	0.44 U	0.44	0.48 U	0.48	0.58 U	0.58
Aluminum		6800	3.3	15700	3.3	2220	3.2	4510	3.0	5800	3.2	7800	3.9
Arsenic	20	4.3	0.38	10.3	0.72 *	1.3	0.38	3.5	0.35	7.5	0.73 *	19.5	2.0 **
Barium	700	5.0	0.16	25.9	0.16	2.3	0.15	3.3	0.14	8.8	0.15	40.1	0.19
Beryllium	1	0.72	0.059	1.1	0.059	0.06 U	0.06	0.053 U	0.053	0.76	0.058	0.85	0.070
Calcium		235	1.7	653	1.7	76.2	1.6	44.8	1.5	76	1.6	746	2.0
Cadmium	1	0.57 U	0.57	0.57 U	0.57	0.56 U	0.56	0.51 U	0.51	0.56 U	0.56	0.58 U	0.68
Cobalt		1.1	0.45	4.5	0.45	0.54	0.44	0.65	0.41	1.1	0.44	3.0	0.54
Chromium		77.5	0.93	66.1	0.92	33.6	0.90	48.0	0.83	64.7	0.91	76.5	1.1
Copper	600	1.8	0.79	6.6	0.79	0.77 U	0.77	1.2	0.71	1.7	0.77	5.1	0.94
Iron		16700	0.49	32000	0.49	6100	0.48	11800	0.44	16000	0.48	28300	0.58
Mercury	14	0.11 U	0.11	0.1 U	0.1	0.09 U	0.09	0.081 U	0.081	0.12 U	0.12	0.14	0.10
Potassium		3900	13.4	2780	13.3	1710	13.0	2410	12.0	3740	13.1	4080	15.9
Magnesium		1710	6.8	2390	6.7	622	6.6	932	6.1	1450	6.6	1890	8.0
Manganese		9.4	0.18	122	0.18	2.8	0.17	3.4	0.16	6.8	0.17	48.7	0.21
Sodium		56.8	3.8	37.7	3.8	39.9	3.7	22.4	3.4	18.7	3.7	29.8	4.5
Nickel	250	3.1	0.83	8.3	0.83	1.4	0.81	2.2	0.74	3	0.81	5.6	0.98
Lead	400	3.5	0.20	11.1	0.95 **	1.7	0.20	2.7	0.18	4.1	0.19	12.1	0.56 *
Antimony	14	2.1 U	2.1	2.1 U	2.1	2.1 U	2.1	1.9 U	1.9	2.1 U	2.1	2.5 U	2.5
Selenium	63	0.30 U	0.30	0.85	0.29	0.30 U	0.30	0.49	0.28	0.55	0.29	0.90	0.35
Thallium	2	0.14 U	0.14	0.13 U	0.13	0.14 U	0.14	0.13 U	0.13	0.14 U	0.14	0.26 U	0.26
Vanadium	370	35.0	0.41	59.6	0.41	17.3	0.40	25.0	0.37	35.1	0.41	23.5	0.49
Zinc	1500	20.3	0.37	34.3	0.37	6.9	0.36	11.6	0.34	17.5	0.37	47.7	0.44
Cyanide	1100	0.51 U	0.51	0.41	0.41	0.39 U	0.39	0.38 U	0.38	0.55 U	0.55	0.47 U	0.47
Dilution Factor				* = 2.00, ** = 5.00						* = 2.00		* = 2.00, ** = 5.00	
Method:TAL Metals													

CHARLES WOOD
SOIL BORING INORGANICS

Geographical Location		B9		B9		B10		B10	
Sample		B9-SB01-A02		B9-SB01-C02		B10-SB01-A01		B10-SB01-A02	
Sample Type									
Batch#		9501G831		9501G831		9501G553		9501G553	
Prep#						95GTS013		95GTS013	
RFW#		002		003		001		002	
Sample Depth (bgs)									
Dilution Factor		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date						1/10/95		1/10/95	
Analysis Date						1/13/95		1/13/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
% Solids		83.4	0.10	81.9	0.10	84.1	0.1	84.9	0.1
Silver	110	0.58 U	0.58	0.47 U	0.47	0.49 U	0.49	0.48 U	0.48
Aluminum		6250	3.9	6520	3.1	9790	3.3	10200	3.2
Arsenic	20	22.7	2.6 *	20.4	1.6 *	31.6	3.8 *	24.9	3.7 *
Barium	700	39.2	0.18	35.3	0.15	22.3	0.16	26.0	0.15
Beryllium	1	0.68	0.069	0.74	0.056	1.7	0.058	1.6	0.058
Calcium		297	1.9	244	1.6	517	1.6	501	1.6
Cadmium	1	0.67 U	0.67	0.54 U	0.54	0.57 U	0.57	0.56 U	0.56
Cobalt		2.9	0.53	2.8	0.43	3.3	0.45	3.4	0.44
Chromium		69.2	1.1	70.0	0.88	126	0.92	128	0.91
Copper	600	3.5	0.92	3.4	0.75	3.3	0.78	3.1	0.77
Iron		25200	0.58	23800	0.47	45500	0.49	43200	0.48
Mercury	14	0.32	0.092	0.12 U	0.12	0.10 U	0.10	0.10 U	0.10
Potassium		3300	15.7	4080	12.7	10600	13.2	10400	13.1
Magnesium		1490	7.9	1830	6.4	3920	6.7	3960	6.6
Manganese		25.1	0.21	25.9	0.17	31.0	0.18	23.6	0.17
Sodium		19.8	4.4	20.3	3.6	55.2	3.7	44.6	3.7
Nickel	250	5.6	0.97	6.0	0.78	7.1	0.82	7.4	0.81
Lead	400	6.1	0.19	5.6	0.23	5.1	0.20	4.5	0.19
Antimony	14	2.5 U	2.5	2.0 U	2.0	2.1 U	2.1	2.1 U	2.1
Selenium	63	0.49	0.23	0.50	0.29	0.56	0.30	0.61	0.29
Thallium	2	0.17 U	0.17	0.21 U	0.21	0.14 U	0.14	0.14 U	0.14
Vanadium	370	25.6	0.48	20.6	0.39	42.9	0.41	40.9	0.41
Zinc	1500	49.4	0.44	49.8	0.35	55.6	0.37	53.6	0.37
Cyanide	1100	0.42 U	0.42	0.40 U	0.40	0.56 U	0.56	0.49 U	0.49
Dilution Factor		* = 10.00		* = 5.00		* = 10.0		* = 10.0	
Method:TAL Metals									

CHARLES WOOD
SOIL BORING PESTICIDES/PCBS

Geographical Location		AOC7		AOC7		AOC7		AOC7		AOC7		AOC7	
Sample		CWA7-SB01-A02		CWA7-SB02-A02		CWA7-SB03-A02		CWA7-SB04-A02		CWA7-SB05-A02		CWA7-SB06-A03	
Sample Type													
Batch#		9412G264		9412G264		9412G264		9412G264		9412G264		9412G264	
Prep#		94GP1108		94GP1108		94GP1108		94GP1108		94GP1108		94GP1108	
RFW#		001		003		002		006		004		005	
Sample Depth (bgs)													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		12/21/94		12/21/94		12/21/94		12/21/94		12/21/94		12/21/94	
Analysis Date		1/4/95		1/4/95		1/4/95		1/4/95		1/4/95		1/4/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
alpha-BHC		0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018
beta-BHC		0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018
delta-BHC		0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018
gamma-BHC (Lindane)	0.52	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018
Heptachlor	0.15	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018
Aldrin	0.04	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018
Heptachlor epoxide		0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018
Endosulfan I	340	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018
Dieldrin	0.042	0.0037 U	0.0037	0.0036 U	0.0036	0.0036 U	0.0036	0.0037 U	0.0037	0.0036 U	0.0036	0.0036 U	0.0036
4,4'-DDE	2	0.0037 U	0.0037	0.0036 U	0.0036	0.0036 U	0.0036	0.0037 U	0.0037	0.0036 U	0.0036	0.0036 U	0.0036
Endrin	17	0.0037 U	0.0037	0.0036 U	0.0036	0.0036 U	0.0036	0.0037 U	0.0037	0.0036 U	0.0036	0.0036 U	0.0036
Endosulfan II	340	0.0037 U	0.0037	0.0036 U	0.0036	0.0036 U	0.0036	0.0037 U	0.0037	0.0036 U	0.0036	0.0036 U	0.0036
4,4'-DDD	3	0.0037 U	0.0037	0.0036 U	0.0036	0.0036 U	0.0036	0.0037 U	0.0037	0.0036 U	0.0036	0.0036 U	0.0036
Endosulfan sulfate		0.0037 U	0.0037	0.0036 U	0.0036	0.0036 U	0.0036	0.0037 U	0.0037	0.0036 U	0.0036	0.0036 U	0.0036
4,4'-DDT	2	0.0037 U	0.0037	0.0036 U	0.0036	0.004	0.0036	0.0037 U	0.0037	0.0036 U	0.0036	0.0036 U	0.0036
Methoxychlor	280	0.018 U	0.018	0.018 U	0.018	0.018 U	0.018	0.018 U	0.018	0.018 U	0.018	0.018 U	0.018
Endrin ketone		0.0037 U	0.0037	0.0036 U	0.0036	0.0036 U	0.0036	0.0037 U	0.0037	0.0036 U	0.0036	0.0036 U	0.0036
Endrin aldehyde		0.0037 U	0.0037	0.0036 U	0.0036	0.0036 U	0.0036	0.0037 U	0.0037	0.0036 U	0.0036	0.0036 U	0.0036
alpha-Chlordane		0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018
gamma-Chlordane		0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018	0.0018 U	0.0018
Toxaphene	0.1	0.18 U	0.18	0.18 U	0.18	0.18 U	0.18	0.18 U	0.18	0.18 U	0.18	0.18 U	0.18
Aroclor-1016	0.49	0.037 U	0.037	0.036 U	0.036	0.036 U	0.036	0.037 U	0.037	0.036 U	0.036	0.036 U	0.036
Aroclor-1221	0.49	0.073 U	0.073	0.073 U	0.073	0.072 U	0.072	0.073 U	0.073	0.073 U	0.073	0.073 U	0.073
Aroclor-1232	0.49	0.037 U	0.037	0.036 U	0.036	0.036 U	0.036	0.037 U	0.037	0.036 U	0.036	0.036 U	0.036
Aroclor-1242	0.49	0.037 U	0.037	0.036 U	0.036	0.036 U	0.036	0.037 U	0.037	0.036 U	0.036	0.036 U	0.036
Aroclor-1248	0.49	0.037 U	0.037	0.036 U	0.036	0.036 U	0.036	0.037 U	0.037	0.036 U	0.036	0.036 U	0.036
Aroclor-1254	0.49	0.037 U	0.037	0.036 U	0.036	0.036 U	0.036	0.037 U	0.037	0.036 U	0.036	0.036 U	0.036
Aroclor-1260	0.49	0.037 U	0.037	0.036 U	0.036	0.036 U	0.036	0.037 U	0.037	0.036 U	0.036	0.036 U	0.036
Method:TCL Pesticides/PCBs													

CHARLES WOOD
SOIL BORING PESTICIDES/PCBS

Geographical Location		CW1		CW1		CW1		CW1		CW2		CW2	
Sample		CW01-SB26-A02		CW01-SB27-A02		CW01-SB28-A02		CW01-SB29-A02		CW02-SB30-A02		CW02-SB30-A02DL	
Sample Type													
Batch#		9412G216		9412G216		9412G216		9412G216		9412G182		9412G182	
Prep#		94GP1108		94GP1108		94GP1108		94GP1108		94GP1090		94GP1090	
RFW#		004		002		003		001		002		002DL	
Sample Depth (bgs)													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		5.0	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		12/19/94		12/19/94		12/19/94		12/19/94		12/16/94		12/16/94	
Analysis Date		1/4/95		1/4/95		1/4/95		1/4/95		1/3/95		1/3/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
alpha-BHC		0.0021 U	0.0021	0.0022 U	0.0022	0.002 U	0.002	0.0022 U	0.0022	0.0019 U	0.0019	0.0097 U	0.0097
beta-BHC		0.0021 U	0.0021	0.0022 U	0.0022	0.002 U	0.002	0.0022 U	0.0022	0.0019 U	0.0019	0.0097 U	0.0097
delta-BHC		0.0021 U	0.0021	0.0022 U	0.0022	0.002 U	0.002	0.0022 U	0.0022	0.0019 U	0.0019	0.0097 U	0.0097
gamma-BHC (Lindane)	0.52	0.0021 U	0.0021	0.0022 U	0.0022	0.002 U	0.002	0.0022 U	0.0022	0.0019 U	0.0019	0.0097 U	0.0097
Heptachlor	0.15	0.0021 U	0.0021	0.0022 U	0.0022	0.002 U	0.002	0.0022 U	0.0022	0.0019 U	0.0019	0.0097 U	0.0097
Aldrin	0.04	0.0021 U	0.0021	0.0022 U	0.0022	0.002 U	0.002	0.0022 U	0.0022	0.0019 U	0.0019	0.0097 U	0.0097
Heptachlor epoxide		0.0021 U	0.0021	0.0022 U	0.0022	0.002 U	0.002	0.0022 U	0.0022	0.0019 U	0.0019	0.0097 U	0.0097
Endosulfan I	340	0.0021 U	0.0021	0.0022 U	0.0022	0.002 U	0.002	0.0022 U	0.0022	0.0019 U	0.0019	0.0097 U	0.0097
Dieldrin	0.042	0.0042 U	0.0042	0.0043 U	0.0043	0.0041 U	0.0041	0.0043 U	0.0043	0.0039 U	0.0039	0.019 U	0.019
4,4'-DDE	2	0.0038 J	0.0042	0.0043 U	0.0043	0.0041 U	0.0041	0.0043 U	0.0043	0.0035 JP	0.0039	0.019 U	0.019
Endrin	17	0.0042 U	0.0042	0.0043 U	0.0043	0.0041 U	0.0041	0.0043 U	0.0043	0.0039 U	0.0039	0.019 U	0.019
Endosulfan II	340	0.0042 U	0.0042	0.0043 U	0.0043	0.0041 U	0.0041	0.0043 U	0.0043	0.0039 U	0.0039	0.019 U	0.019
4,4'-DDD	3	0.0042 U	0.0042	0.0043 U	0.0043	0.0041 U	0.0041	0.0043 U	0.0043	0.012 P	0.0039	.014 JD	0.019
Endosulfan sulfate		0.0042 U	0.0042	0.0043 U	0.0043	0.0041 U	0.0041	0.0043 U	0.0043	0.0039 U	0.0039	0.019 U	0.019
4,4'-DDT	2	0.0042 U	0.0042	0.0043 U	0.0043	0.0041 U	0.0041	0.0043 U	0.0043	0.062 P	0.0039	.053 DP	0.019
Methoxychlor	280	0.021 U	0.021	0.022 U	0.022	0.02 U	0.02	0.022 U	0.022	0.019 U	0.019	0.097 U	0.097
Endrin ketone		0.0042 U	0.0042	0.0043 U	0.0043	0.0041 U	0.0041	0.0043 U	0.0043	0.0039 U	0.0039	0.019 U	0.019
Endrin aldehyde		0.0042 U	0.0042	0.0043 U	0.0043	0.0041 U	0.0041	0.0043 U	0.0043	0.0039 U	0.0039	0.019 U	0.019
alpha-Chlordane		0.0021 U	0.0021	0.0022 U	0.0022	0.002 U	0.002	0.0022 U	0.0022	0.0019 U	0.0019	0.0097 U	0.0097
gamma-Chlordane		0.0021 U	0.0021	0.0022 U	0.0022	0.002 U	0.002	0.0022 U	0.0022	0.0019 U	0.0019	0.0097 U	0.0097
Toxaphene	0.1	0.21 U	0.21	0.22 U	0.22	0.2 U	0.2	0.22 U	0.22	0.19 U	0.19	0.97 U	0.97
Aroclor-1016	0.49	0.042 U	0.042	0.043 U	0.043	0.041 U	0.041	0.043 U	0.043	0.039 U	0.039	0.19 U	0.19
Aroclor-1221	0.49	0.085 U	0.085	0.087 U	0.087	0.082 U	0.082	0.086 U	0.086	0.078 U	0.078	0.39 U	0.39
Aroclor-1232	0.49	0.042 U	0.042	0.043 U	0.043	0.041 U	0.041	0.043 U	0.043	0.039 U	0.039	0.19 U	0.19
Aroclor-1242	0.49	0.042 U	0.042	0.043 U	0.043	0.041 U	0.041	0.043 U	0.043	0.039 U	0.039	0.19 U	0.19
Aroclor-1248	0.49	0.042 U	0.042	0.043 U	0.043	0.041 U	0.041	0.043 U	0.043	0.039 U	0.039	0.19 U	0.19
Aroclor-1254	0.49	0.042 U	0.042	0.043 U	0.043	0.041 U	0.041	0.043 U	0.043	0.61	0.039	.75 D	0.19
Aroclor-1260	0.49	0.042 U	0.042	0.043 U	0.043	0.041 U	0.041	0.043 U	0.043	0.039 U	0.039	0.19 U	0.19
Method:TCL Pesticides/PCBs													

CHARLES WOOD
SOIL BORING PESTICIDES/PCBS

Geographical Location		CW2		CW2		CW2		CW2		CW4		CW5	
Sample		CW02-SB31-A02		CW02-SB32-A02		CW02-SB33-A02		CW02-SB33-A02DL		CW04-SB01-A02		CW05-SB01-A02	
Sample Type													
Batch#		9412G182		9412G182		9412G154		9412G154		9412G264		9412G245	
Prep#		94GP1090		94GP1090		94GP1090		94GP1090		94GP1108		94GP1108	
RFW#		003		001		002		002DL		008		001	
Sample Depth (bgs)						7-9'		7-9'					
Dilution Factor		1.00		1.00		1.00		10.0		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		12/16/94		12/16/94		12/15/94		NA		12/21/94		12/20/94	
Analysis Date		1/3/95		1/3/95		1/3/95		1/3/95		1/4/95		1/4/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
alpha-BHC		0.0022 U	0.0022	0.002 U	0.002	0.0021 U	0.0021	0.021 U	0.021	0.002 U	0.002	0.0019 U	0.0019
beta-BHC		0.0022 U	0.0022	0.002 U	0.002	0.0021 U	0.0021	0.021 U	0.021	0.002 U	0.002	0.0019 U	0.0019
delta-BHC		0.0022 U	0.0022	0.002 U	0.002	0.0021 U	0.0021	0.021 U	0.021	0.002 U	0.002	0.0019 U	0.0019
gamma-BHC (Lindane)	0.52	0.0022 U	0.0022	0.002 U	0.002	0.0021 U	0.0021	0.021 U	0.021	0.002 U	0.002	0.0019 U	0.0019
Heptachlor	0.15	0.0022 U	0.0022	0.002 U	0.002	0.0021 U	0.0021	0.021 U	0.021	0.002 U	0.002	0.0019 U	0.0019
Aldrin	0.04	0.0022 U	0.0022	0.002 U	0.002	0.0021 U	0.0021	0.021 U	0.021	0.002 U	0.002	0.0019 U	0.0019
Heptachlor epoxide		0.0022 U	0.0022	0.002 U	0.002	0.0021 U	0.0021	0.021 U	0.021	0.002 U	0.002	0.0019 U	0.0019
Endosulfan I	340	0.0022 U	0.0022	0.002 U	0.002	0.0021 U	0.0021	0.021 U	0.021	0.002 U	0.002	0.0019 U	0.0019
Dieldrin	0.042	0.0044 U	0.0044	0.0041 U	0.0041	0.0041 U	0.0041	0.041 U	0.041	0.004 U	0.004	0.0038 U	0.0038
4,4'-DDE	2	0.0044 U	0.0044	0.0041 U	0.0041	0.0083 P	0.0041	0.041 U	0.041	0.004 U	0.004	0.21 P	0.0038
Endrin	17	0.0044 U	0.0044	0.0041 U	0.0041	0.0041 U	0.0041	0.041 U	0.041	0.004 U	0.004	0.0038 U	0.0038
Endosulfan II	340	0.0044 U	0.0044	0.0041 U	0.0041	0.0041 U	0.0041	0.041 U	0.041	0.004 U	0.004	0.0038 U	0.0038
4,4'-DDD	3	0.0098	0.0044	0.0073	0.0041	0.26	0.0041	.2 D	0.041	0.004 U	0.004	0.087	0.0038
Endosulfan sulfate		0.0044 U	0.0044	0.0041 U	0.0041	0.0041 U	0.0041	0.041 U	0.041	0.004 U	0.004	0.0038 U	0.0038
4,4'-DDT	2	0.0058	0.0044	0.0041 U	0.0041	0.046	0.0041	.043 D	0.041	0.004 U	0.004	0.087	0.0038
Methoxychlor	280	0.022 U	0.022	0.02 U	0.02	0.021 U	0.021	0.21 U	0.21	0.02 U	0.02	0.0038 U	0.0038
Endrin ketone		0.0044 U	0.0044	0.0041 U	0.0041	0.0041 U	0.0041	0.041 U	0.041	0.004 U	0.004	0.0038 U	0.0038
Endrin aldehyde		0.0044 U	0.0044	0.0041 U	0.0041	0.0041 U	0.0041	0.041 U	0.041	0.004 U	0.004	0.0038 U	0.0038
alpha-Chlordane		0.0022 U	0.0022	0.002 U	0.002	0.0021 U	0.0021	0.021 U	0.021	0.002 U	0.002	0.0084 P	0.0019
gamma-Chlordane		0.0022 U	0.0022	0.002 U	0.002	0.0021 U	0.0021	0.021 U	0.021	0.002 U	0.002	0.0092	0.0019
Toxaphene	0.1	0.22 U	0.22	0.2 U	0.2	0.21 U	0.21	2.1 U	2.1	0.2 U	0.2	0.19 U	0.19
Aroclor-1016	0.49	0.044 U	0.044	0.041 U	0.041	0.041 U	0.041	0.41 U	0.41	0.04 U	0.04	0.038 U	0.038
Aroclor-1221	0.49	0.089 U	0.089	0.082 U	0.082	0.083 U	0.083	0.83 U	0.83	0.079 U	0.079	0.077 U	0.077
Aroclor-1232	0.49	0.044 U	0.044	0.041 U	0.041	0.041 U	0.041	0.41 U	0.41	0.04 U	0.04	0.038 U	0.038
Aroclor-1242	0.49	0.044 U	0.044	0.041 U	0.041	0.041 U	0.041	0.41 U	0.41	0.04 U	0.04	0.038 U	0.038
Aroclor-1248	0.49	0.044 U	0.044	0.041 U	0.041	0.041 U	0.041	0.41 U	0.41	0.04 U	0.04	0.038 U	0.038
Aroclor-1254	0.49	0.044 U	0.044	0.041 U	0.041	0.041 U	0.041	0.41 U	0.41	0.04 U	0.04	0.17	0.038
Aroclor-1260	0.49	0.044 U	0.044	0.041 U	0.041	0.041 U	0.041	0.41 U	0.41	0.04 U	0.04	0.15	0.038
Method:TCL Pesticides/PCBs													

CHARLES WOOD
SOIL BORING PESTICIDES/PCBS

Geographical Location		CW5		CW5		CW6		CW6		CW6		CW6	
Sample		CW05-SB01-A02DL		CW05-SB02-A02		CW06-SB02-A01		CW06-SB02-A01DL		CW06-SB34-A01		CW06-SB34-A01DL	
Sample Type													
Batch#		9412G245		9412G245		9505G840		9505G840		9501G423		9501G423	
Prep#		94GP1108		94GP1108		95GP0512		95GP0512		95GP0028		95GP0028	
RFW#		001DL		002		001		001 DL		001		001DL	
Sample Depth (bgs)													
Dilution Factor		10.0		1.00		1.00		1.00		1.00		10.0	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		12/20/94		12/20/94		5/10/95		5/10/95		1/3/95		1/3/95	
Analysis Date		1/5/95		1/4/95		5/29/95		5/29/95		1/17/95		1/18/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
alpha-BHC		0.019 U	0.019	0.0019 U	0.0019	0.0023 U	0.0023	0.23 U	0.23	0.002 U	0.002	0.02 U	0.02
beta-BHC		0.019 U	0.019	0.0019 U	0.0019	0.0023 U	0.0023	0.23 U	0.23	0.002 U	0.002	0.02 U	0.02
delta-BHC		0.019 U	0.019	0.0019 U	0.0019	0.0023 U	0.0023	0.23 U	0.23	0.002 U	0.002	0.02 U	0.02
gamma-BHC (Lindane)	0.52	0.019 U	0.019	0.0019 U	0.0019	0.0023 U	0.0023	0.23 U	0.23	0.002 U	0.002	0.02 U	0.02
Heptachlor	0.15	0.019 U	0.019	0.0019 U	0.0019	0.0023 U	0.0023	0.23 U	0.23	0.002 U	0.002	0.02 U	0.02
Aldrin	0.04	0.019 U	0.019	0.0019 U	0.0019	0.0023 U	0.0023	0.23 U	0.23	0.002 U	0.002	0.02 U	0.02
Heptachlor epoxide		0.019 U	0.019	0.0019 U	0.0019	0.0078 P	0.0023	0.23 U	0.23	0.018 P	0.002	0.02 U	0.02
Endosulfan I	340	0.019 U	0.019	0.0019 U	0.0019	0.0023 U	0.0023	0.23 U	0.23	0.002 U	0.002	0.039 U	0.039
Dieldrin	0.042	0.038 U	0.038	0.0039 U	0.0039	0.0046 U	0.0046	0.46 U	0.46	0.0047 P	0.0039	.061 DP	0.039
4,4'-DDE	2	.18 D	0.038	0.0058	0.0039	0.11 CP	0.0046	.34 JCD	0.46	0.074 P	0.0039	0.039 U	0.039
Endrin	17	0.038 U	0.038	0.0039 U	0.0039	0.0046 U	0.0046	0.46 U	0.46	0.0039 U	0.0039	0.039 U	0.039
Endosulfan II	340	0.038 U	0.038	0.0039 U	0.0039	0.0046 U	0.0046	0.46 U	0.46	0.0039 U	0.0039	0.039 U	0.039
4,4'-DDD	3	.069 D	0.038	0.0035 J	0.0039	0.21 CP	0.0046	2.9 CD	0.46	0.0095 P	0.0039	0.039 U	0.039
Endosulfan sulfate		0.038 U	0.038	0.0039 U	0.0039	0.0046 U	0.0046	0.46 U	0.46	0.0039 U	0.0039	0.039 U	0.039
4,4'-DDT	2	.067 D	0.038	0.0039 U	0.0039	0.46 UZ	0.0046	0.46 UZ	0.46	0.16 P	0.0039	.18 DP	0.039
Methoxychlor	280	0.19 U	0.19	0.019 U	0.019	0.023 U	0.023	2.3 U	2.3	0.02 U	0.02	0.2 U	0.2
Endrin ketone		0.038 U	0.038	0.0039 U	0.0039	0.0046 U	0.0046	0.46 U	0.46	0.0039 U	0.0039	0.039 U	0.039
Endrin aldehyde		0.038 U	0.038	0.0039 U	0.0039	0.0046 U	0.0046	0.46 U	0.46	0.0039 U	0.0039	0.039 U	0.039
alpha-Chlordane		0.019 U	0.019	0.0019 U	0.0019	0.043	0.0023	.07 JD	0.23	0.14 P	0.002	.14 DP	0.02
gamma-Chlordane		0.019 U	0.019	0.0019 U	0.0019	0.047	0.0023	.068 JD	0.23	0.11 P	0.002	.11 DP	0.02
Toxaphene	0.1	1.9 U	1.9	0.19 U	0.19	0.23 U	0.23	23 U	23	0.2 U	0.2	2 U	2
Aroclor-1016	0.49	0.38 U	0.38	0.039 U	0.039	0.046 U	0.046	4.6 U	4.6	0.039 U	0.039	0.39 U	0.39
Aroclor-1221	0.49	0.77 U	0.77	0.077 U	0.077	0.092 U	0.092	9.2 U	9.2	0.079 U	0.079	0.79 U	0.79
Aroclor-1232	0.49	0.38 U	0.38	0.039 U	0.039	0.046 U	0.046	4.6 U	4.6	0.039 U	0.039	0.39 U	0.39
Aroclor-1242	0.49	0.38 U	0.38	0.039 U	0.039	0.046 U	0.046	4.6 U	4.6	0.039 U	0.039	0.39 U	0.39
Aroclor-1248	0.49	0.38 U	0.38	0.039 U	0.039	0.046 U	0.046	4.6 U	4.6	0.039 U	0.039	0.39 U	0.39
Aroclor-1254	0.49	.2 JD	0.38	0.039 U	0.039	0.046 U	0.046	4.6 U	4.6	0.039 U	0.039	0.39 U	0.39
Aroclor-1260	0.49	.18 JD	0.38	0.039 U	0.039	0.046 U	0.046	4.6 U	4.6	0.039 U	0.039	0.39 U	0.39
Method:TCL Pesticides/PCBs													

CHARLES WOOD
SOIL BORING PESTICIDES/PCBS

Geographical Location		CW6		CW9		B6		B6		B6		B7	
Sample		CW06-SB34-A02		CW09-SB01-A02		B6-SB01-A01		B6-SB01-A02		B6-SB01-A02DL		B7-SB01-A01	
Sample Type													
Batch#		9501G423		9501G450		9501G553		9501G553		9501G553		9501G553	
Prep#		95GP0028		95GP0028		95GP0050		95GP0050		95GP0050		95GP0050	
RFW#		002		001		008		009		009DL		006	
Sample Depth (bgs)													
Dilution Factor		1.00		1.00		1.00		1.00		5.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		1/3/95		1/4/95		1/10/95		1/10/95		1/10/95		1/10/95	
Analysis Date		1/17/95		1/17/95		1/26/95		1/26/95		2/6/95		1/26/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
alpha-BHC		0.0019 U	0.0019	0.0019 U	0.0019	0.0018 U	0.0018	0.002 U	0.002	0.0098 U	0.0098	0.0019 U	0.0019
beta-BHC		0.0019 U	0.0019	0.0019 U	0.0019	0.0018 U	0.0018	0.002 U	0.002	0.0098 U	0.0098	0.0019 U	0.0019
delta-BHC		0.0019 U	0.0019	0.0019 U	0.0019	0.0018 U	0.0018	0.002 U	0.002	0.0098 U	0.0098	0.0019 U	0.0019
gamma-BHC (Lindane)	0.52	0.0019 U	0.0019	0.0019 U	0.0019	0.0018 U	0.0018	0.002 U	0.002	0.0098 U	0.0098	0.0019 U	0.0019
Heptachlor	0.15	0.0019 U	0.0019	0.0019 U	0.0019	0.0018 U	0.0018	0.002 U	0.002	0.0098 U	0.0098	0.0019 U	0.0019
Aldrin	0.04	0.0019 U	0.0019	0.0019 U	0.0019	0.0018 U	0.0018	0.002 U	0.002	0.0098 U	0.0098	0.0019 U	0.0019
Heptachlor epoxide		0.0019 U	0.0019	0.0019 U	0.0019	0.0018 U	0.0018	0.002 U	0.002	0.0098 U	0.0098	0.0019 U	0.0019
Endosulfan I	340	0.0019 U	0.0019	0.0019 U	0.0019	0.0018 U	0.0018	0.002 U	0.002	0.0098 U	0.0098	0.0019 U	0.0019
Dieldrin	0.042	0.0038 U	0.0038	0.0038 U	0.0038	0.0037 U	0.0037	0.0039 U	0.0039	0.02 U	0.02	0.0038 U	0.0038
4,4'-DDE	2	0.0038 U	0.0038	0.0076 P	0.0038	0.028	0.0037	0.071	0.0039	.066 D	0.02	0.023	0.0038
Endrin	17	0.0038 U	0.0038	0.0038 U	0.0038	0.0037 U	0.0037	0.0039 U	0.0039	0.02 U	0.02	0.0038 U	0.0038
Endosulfan II	340	0.0038 U	0.0038	0.0038 U	0.0038	0.0037 U	0.0037	0.0039 U	0.0039	0.02 U	0.02	0.0038 U	0.0038
4,4'-DDD	3	0.0038 U	0.0038	0.0038 U	0.0038	0.0037 U	0.0037	0.0039 U	0.0039	0.02 U	0.02	0.0038 U	0.0038
Endosulfan sulfate		0.0038 U	0.0038	0.0038 U	0.0038	0.0037 U	0.0037	0.0039 U	0.0039	0.02 U	0.02	0.0038 U	0.0038
4,4'-DDT	2	0.011 P	0.0038	0.008 P	0.0038	0.032	0.0037	0.053	0.0039	.047 D	0.02	0.013	0.0038
Methoxychlor	280	0.019 U	0.019	0.019 U	0.019	0.018 U	0.018	0.02 U	0.02	0.098 U	0.098	0.019 U	0.019
Endrin ketone		0.0038 U	0.0038	0.0038 U	0.0038	0.0037 U	0.0037	0.0039 U	0.0039	0.02 U	0.02	0.0038 U	0.0038
Endrin aldehyde		0.0038 U	0.0038	0.0038 U	0.0038	0.0037 U	0.0037	0.0039 U	0.0039	0.02 U	0.02	0.0038 U	0.0038
alpha-Chlordane		0.0034 P	0.0019	0.0019 U	0.0019	0.0018 U	0.0018	0.002 U	0.002	0.0098 U	0.0098	0.0019 U	0.0019
gamma-Chlordane		0.0027 P	0.0019	0.0019 U	0.0019	0.0018 U	0.0018	0.002 U	0.002	0.0098 U	0.0098	0.0019 U	0.0019
Toxaphene	0.1	0.19 U	0.19	0.19 U	0.19	0.18 U	0.18	0.2 U	0.2	0.98 U	0.98	0.19 U	0.19
Aroclor-1016	0.49	0.038 U	0.038	0.038 U	0.038	0.037 U	0.037	0.039 U	0.039	0.2 U	0.2	0.038 U	0.038
Aroclor-1221	0.49	0.076 U	0.076	0.076 U	0.076	0.074 U	0.074	0.078 U	0.078	0.39 U	0.39	0.077 U	0.077
Aroclor-1232	0.49	0.038 U	0.038	0.038 U	0.038	0.037 U	0.037	0.039 U	0.039	0.2 U	0.2	0.038 U	0.038
Aroclor-1242	0.49	0.038 U	0.038	0.038 U	0.038	0.037 U	0.037	0.039 U	0.039	0.2 U	0.2	0.038 U	0.038
Aroclor-1248	0.49	0.038 U	0.038	0.038 U	0.038	0.037 U	0.037	0.039 U	0.039	0.2 U	0.2	0.038 U	0.038
Aroclor-1254	0.49	0.038 U	0.038	0.038 U	0.038	0.037 U	0.037	0.039 U	0.039	0.2 U	0.2	0.038 U	0.038
Aroclor-1260	0.49	0.038 U	0.038	0.038 U	0.038	0.037 U	0.037	0.039 U	0.039	0.2 U	0.2	0.038 U	0.038
Method:TCL Pesticides/PCBs													

CHARLES WOOD
SOIL BORING PESTICIDES/PCBS

Geographical Location		B7		B8		B8		B9		B9		B9	
Sample		B7-SB01-A02		B8-SB01-A01		B8-SB01-A02		B9-SB01-A01		B9-SB01-A02		B9-SB01-C02	
Sample Type												Duplicate	
Batch#		9501G553		9501G553		9501G553		9501G831		9501G831		9501G831	
Prep#		95GP0050		95GP0050		95GP0050		95GP0079		95GP0079		95GP0079	
RFW#		007		004		005		001		002		003	
Sample Depth (bgs)													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		1/10/95		1/10/95		1/10/95		1/23/95		1/23/95		1/23/95	
Analysis Date		1/26/95		1/26/95		1/26/95		2/3/95		2/3/95		2/3/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
alpha-BHC		0.0019 U	0.0019	0.0018 U	0.0018	0.0019 U	0.0019	0.0019 U	0.0019	0.002 U	0.002	0.002 U	0.002
beta-BHC		0.0019 U	0.0019	0.0018 U	0.0018	0.0019 U	0.0019	0.0019 U	0.0019	0.002 U	0.002	0.002 U	0.002
delta-BHC		0.0019 U	0.0019	0.0018 U	0.0018	0.0019 U	0.0019	0.0019 U	0.0019	0.002 U	0.002	0.002 U	0.002
gamma-BHC (Lindane)	0.52	0.0019 U	0.0019	0.0018 U	0.0018	0.0019 U	0.0019	0.0019 U	0.0019	0.002 U	0.002	0.002 U	0.002
Heptachlor	0.15	0.0019 U	0.0019	0.0018 U	0.0018	0.0019 U	0.0019	0.0019 U	0.0019	0.002 U	0.002	0.002 U	0.002
Aldrin	0.04	0.0019 U	0.0019	0.0018 U	0.0018	0.0019 U	0.0019	0.0019 U	0.0019	0.002 U	0.002	0.002 U	0.002
Heptachlor epoxide		0.0019 U	0.0019	0.0018 U	0.0018	0.0019 U	0.0019	0.0019 U	0.0019	0.002 U	0.002	0.002 U	0.002
Endosulfan I	340	0.0019 U	0.0019	0.0018 U	0.0018	0.0019 U	0.0019	0.0019 U	0.0019	0.002 U	0.002	0.002 U	0.002
Dieldrin	0.042	0.0039 U	0.0039	0.0036 U	0.0036	0.0038 U	0.0038	0.0039 U	0.0039	0.004 U	0.004	0.004 U	0.004
4,4'-DDE	2	0.0039 U	0.0039	0.0036 U	0.0036	0.0038 U	0.0038	0.011	0.0039	0.004 U	0.004	0.0044	0.004
Endrin	17	0.0039 U	0.0039	0.0036 U	0.0036	0.0038 U	0.0038	0.0039 U	0.0039	0.004 U	0.004	0.004 U	0.004
Endosulfan II	340	0.0039 U	0.0039	0.0036 U	0.0036	0.0038 U	0.0038	0.0039 U	0.0039	0.004 U	0.004	0.004 U	0.004
4,4'-DDD	3	0.0039 U	0.0039	0.0036 U	0.0036	0.0038 U	0.0038	0.0039 U	0.0039	0.004 U	0.004	0.004 U	0.004
Endosulfan sulfate		0.0039 U	0.0039	0.0036 U	0.0036	0.0038 U	0.0038	0.0039 U	0.0039	0.004 U	0.004	0.004 U	0.004
4,4'-DDT	2	0.0039 U	0.0039	0.0036 U	0.0036	0.0038 U	0.0038	0.02	0.0039	0.0024 J	0.004	0.0053	0.004
Methoxychlor	280	0.019 U	0.019	0.018 U	0.018	0.019 U	0.019	0.019 U	0.019	0.02 U	0.02	0.02 U	0.02
Endrin ketone		0.0039 U	0.0039	0.0036 U	0.0036	0.0038 U	0.0038	0.0039 U	0.0039	0.004 U	0.004	0.004 U	0.004
Endrin aldehyde		0.0039 U	0.0039	0.0036 U	0.0036	0.0038 U	0.0038	0.0039 U	0.0039	0.004 U	0.004	0.004 U	0.004
alpha-Chlordane		0.0019 U	0.0019	0.0018 U	0.0018	0.0019 U	0.0019	0.0019 U	0.0019	0.002 U	0.002	0.002 U	0.002
gamma-Chlordane		0.0019 U	0.0019	0.0018 U	0.0018	0.0019 U	0.0019	0.0019 U	0.0019	0.002 U	0.002	0.002 U	0.002
Toxaphene	0.1	0.19 U	0.19	0.18 U	0.18	0.19 U	0.19	0.19 U	0.19	0.2 U	0.2	0.2 U	0.2
Aroclor-1016	0.49	0.039 U	0.039	0.036 U	0.036	0.038 U	0.038	0.039 U	0.039	0.04 U	0.04	0.04 U	0.04
Aroclor-1221	0.49	0.078 U	0.078	0.072 U	0.072	0.077 U	0.077	0.078 U	0.078	0.079 U	0.079	0.081 U	0.081
Aroclor-1232	0.49	0.039 U	0.039	0.036 U	0.036	0.038 U	0.038	0.039 U	0.039	0.04 U	0.04	0.04 U	0.04
Aroclor-1242	0.49	0.039 U	0.039	0.036 U	0.036	0.038 U	0.038	0.039 U	0.039	0.04 U	0.04	0.04 U	0.04
Aroclor-1248	0.49	0.039 U	0.039	0.036 U	0.036	0.038 U	0.038	0.039 U	0.039	0.04 U	0.04	0.04 U	0.04
Aroclor-1254	0.49	0.039 U	0.039	0.036 U	0.036	0.038 U	0.038	0.039 U	0.039	0.04 U	0.04	0.04 U	0.04
Aroclor-1260	0.49	0.039 U	0.039	0.036 U	0.036	0.038 U	0.038	0.039 U	0.039	0.04 U	0.04	0.04 U	0.04
Method:TCL Pesticides/PCBs													

CHARLES WOOD
SOIL BORING PESTICIDES/PCBS

Geographical Location		B10		B10		B10	
Sample		B10-SB01-A01		B10-SB01-A02		B10-SB01-A02RE	
Sample Type							
Batch#		9501G553		9501G553		9501G553	
Prep#		95GP0050		95GP0050		95GP0079	
RFW#		001		002		002RE	
Sample Depth (bgs)							
Dilution Factor		1.00		1.00		1.00	
Matrix		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg	
Sampling Date		1/10/94		1/10/95		1/10/95	
Analysis Date		1/26/95		1/26/95		2/3/95	
Analysis	Standard	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
alpha-BHC		0.002 U	0.002	0.0019 U	0.0019	0.0019 U	0.0019
beta-BHC		0.002 U	0.002	0.0019 U	0.0019	0.0019 U	0.0019
delta-BHC		0.002 U	0.002	0.0019 U	0.0019	0.0019 U	0.0019
gamma-BHC (Lindane)	0.52	0.002 U	0.002	0.0019 U	0.0019	0.0019 U	0.0019
Heptachlor	0.15	0.002 U	0.002	0.0019 U	0.0019	0.0019 U	0.0019
Aldrin	0.04	0.002 U	0.002	0.0019 U	0.0019	0.0019 U	0.0019
Heptachlor epoxide		0.002 U	0.002	0.0019 U	0.0019	0.0019 U	0.0019
Endosulfan I	340	0.002 U	0.002	0.0019 U	0.0019	0.0019 U	0.0019
Dieldrin	0.042	0.0039 U	0.0039	0.0039 U	0.0039	0.0039 U	0.0039
4,4'-DDE	2	0.0035 J	0.0039	0.0039 U	0.0039	0.0039 U	0.0039
Endrin	17	0.0039 U	0.0039	0.0039 U	0.0039	0.0039 U	0.0039
Endosulfan II	340	0.0039 U	0.0039	0.0039 U	0.0039	0.0039 U	0.0039
4,4'-DDD	3	0.0039 U	0.0039	0.0039 U	0.0039	0.0039 U	0.0039
Endosulfan sulfate		0.0039 U	0.0039	0.0039 U	0.0039	0.0039 U	0.0039
4,4'-DDT	2	0.0024 J	0.0039	0.0039 U	0.0039	0.0039 U	0.0039
Methoxychlor	280	0.02 U	0.02	0.019 U	0.019	0.019 U	0.019
Endrin ketone		0.0039 U	0.0039	0.0039 U	0.0039	0.0039 U	0.0039
Endrin aldehyde		0.0039 U	0.0039	0.0039 U	0.0039	0.0039 U	0.0039
alpha-Chlordane		0.002 U	0.002	0.0019 U	0.0019	0.0019 U	0.0019
gamma-Chlordane		0.002 U	0.002	0.0019 U	0.0019	0.0019 U	0.0019
Toxaphene	0.1	0.2 U	0.2	0.19 U	0.19	0.19 U	0.19
Aroclor-1016	0.49	0.039 U	0.039	0.039 U	0.039	0.039 U	0.039
Aroclor-1221	0.49	0.079 U	0.079	0.078 U	0.078	0.077 U	0.077
Aroclor-1232	0.49	0.039 U	0.039	0.039 U	0.039	0.039 U	0.039
Aroclor-1242	0.49	0.039 U	0.039	0.039 U	0.039	0.039 U	0.039
Aroclor-1248	0.49	0.039 U	0.039	0.039 U	0.039	0.039 U	0.039
Aroclor-1254	0.49	0.039 U	0.039	0.039 U	0.039	0.039 U	0.039
Aroclor-1260	0.49	0.039 U	0.039	0.039 U	0.039	0.039 U	0.039
Method:TCL Pesticides/PCBs							

CHARLES WOOD
GROUNDWATER VOLATILES

Geographical Location			CW1		CW1		CW1		CW1		CW1		CW1		CW1	
Sample			CW01-MW26-A01		CW01-MW26-A02		CW01-MW26-D02		CW01-MW26-E02		CW01-MW27-A01		CW01-MW27-A02		CW01-MW28-A01	
Sample Type							Trip Blank		Field Rinsate Blank							
Batch#			9502G358		9503G739		9503G739		9503G739		9502G358		9503G739		9502G358	
Prep#			95GVC041		95GVE071		95GVE071		95GVE071		95GVC039		95GVE071		95GVC039	
RFW#			001		003		005		006		003		001		005	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/21/95		3/14/95		3/14/95		3/14/95		2/21/95		3/14/95		2/21/95	
Analysis Date			3/1/95		3/19/95		3/19/95		3/19/95		2/27/95		3/19/95		2/27/95	
Analysis	Standard	MDL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting
			Result		Result		Result		Result		Result	Limit	Result	Limit	Result	Limit
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	23	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	4 J	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dilution Factor																
Method:TCL Volatiles																

CHARLES WOOD
GROUNDWATER VOLATILES

Geographical Location			CW1		CW1		CW1		CW1		CW1		CW2		CW2	
Sample			CW01-MW28-A02		CW01-MW29-A01		CW01-MW29-A02		CW01-MW29-D01		CW01-MW29-E01		CW02-MW30-A01		CW02-MW30-A02	
Sample Type									Trip Blank		Field Rinsate Blank					
Batch#			9503G739		9502G358		9503G739		9502G358		9502G358		9502G358		9503G739	
Prep#			95GVE071		95GVC039		95GVE071 & 62		95GVC039		95GVC039		95GVC041		95GVE071	
RFW#			008		007		010		009		010		012		012	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/14/95		2/21/95		3/14/95		2/21/95		2/21/95		2/21/95		3/14/95	
Analysis Date			3/19/95		2/27/95		3/19/95		2/27/95		2/27/95		3/1/95		3/19/95	
Analysis	Standard	MDL	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	10 U	10	20	10	10 U	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	4 J	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	110	10	360	50 *	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	10 U	10	10 U	10	10 U	10	36	10	10 U	10	10 U	10	10 U	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	48	10	780	100 *	990	50 *	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dilution Factor					* = 10		* = 5									
Method:TCL Volatiles																

CHARLES WOOD
GROUNDWATER VOLATILES

Geographical Location			CW2		CW2		CW2		CW2		CW2		CW2		CW6	
Sample			CW02-MW31-A01		CW02-MW31-A02		CW02-MW32-A01		CW02-MW32-A02		CW02-MW33-A01		CW02-MW33-A02		CW06-MW01-A01	
Sample Type																
Batch#			9502G358		9503G739		9502G358		9503G739		9502G358		9503G739		9505G840	
Prep#			95GVC041		95GVE072		95GVC041		95GVE072		95GVC041		95GVE072		95GVC129	
RFW#			014		014		016		016		018		018		002	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/21/95		3/14/95		2/21/95		3/14/95		2/21/95		3/14/95		5/10/95	
Analysis Date			3/1/95		3/20/95		3/1/95		3/20/95		3/1/95		3/20/95		5/16/95	
Analysis	Standard	MDL	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting
			Result	Limit	Result	Limit	Result	Limit	Result	Limit	Result	Limit	Result	Limit	Result	Limit
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	11	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	10 U	10	10 U	10	3 J	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	2 J	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	4 J	10
Dilution Factor																
Method:TCL Volatiles																

CHARLES WOOD
GROUNDWATER VOLATILES

Geographical Location			CW6		CW6		CW6		CW6		CW6		CW6	
Sample			CW06-MW01-A02		CW06-MW01-E02		CW06-MW01-D02		CW06-MW34-A01		CW06-MW34-A02		CW06-MW34-D01	
Sample Type					Field Rinsate Blank		Trip Blank						Trip Blank	
Batch#			9505G138		9505G138		9505G138		9502G300		9503G723		9502G300	
Prep#			95GVB148		95GVB148		95GVB148		95GVC034		95GVE071		95GVC034	
RFW#			002		003		004		001		001		002	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			5/25/95		5/25/95		5/25/95		2/20/95		3/13/95		2/20/95	
Analysis Date			6/1/95		6/1/95		6/1/95		2/23/95		3/19/95		2/23/95	
Analysis	Standard	MDL	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	30	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dilution Factor														
Method:TCL Volatiles														

CHARLES WOOD
GROUNDWATER VOLATILES

Geographical Location			CW9		CW9		CW9		CW9		CW9		B6	
Sample			CW09-MW35-A01		CW09-MW35-A02		CW09-MW35-E01		CW09-MW36-A01		CW09-MW36-A02		B6-MW06B-A01	
Sample Type							Field Rinsate Blank							
Batch#			9502G300		9503G723		9502G300		9502G300		9503G723		9502G198	
Prep#			95GVC034		95GVE071		95GVC036		95GVC036		95GVE071		95GVC029	
RFW#			003		002		007		005		004		003	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/20/95		3/13/95		2/20/95		2/20/95		3/13/95		2/15/95	
Analysis Date			2/23/95		3/19/95		2/24/95		2/24/95		3/19/95		2/20/95	
Analysis	Standard	MDL	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	12	10	10 U	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	10 U	10	10 U	10	25	10	10 U	10	10 U	10	10 U	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dilution Factor														
Method:TCL Volatiles														

CHARLES WOOD
GROUNDWATER VOLATILES

Geographical Location			B6		B7		B7		B8		B8		B9		B9	
Sample			B6-MW06B-A02		B7-MW07B-A01		B7-MW07B-A02		B8-MW08B-A01		B8-MW08B-A02		B9-MW09B-A01		B9-MW09B-A02	
Sample Type																
Batch#			9503G641		9502G198		9503G617		9502G198		9503G641		9502G198		9503G617	
Prep#			95GVC053		95GVC029		95GVC052		95GVC029		95GVC053		95GVC029		95GVC052	
RFW#			001		005		003		007		003		001		001	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/8/95		2/15/95		3/7/95		2/15/95		3/8/95		2/15/95		3/7/95	
Analysis Date			3/10/95		2/20/95		3/9/95		2/20/95		3/10/95		2/20/95		3/9/95	
Analysis	Standard	MDL	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit	Analytical Result	Reporting Limit
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	2 J	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dilution Factor																
Method:TCL Volatiles																

CHARLES WOOD
GROUNDWATER VOLATILES

Geographical Location			B10		B10		B10		B10		B10		B10	
Sample			B10-MW10B-A01		B10-MW10B-A02		B10-MW10B-D01		B10-MW10B-D02		B10-MW10B-E01		B10-MW10B-E02	
Sample Type							Trip Blank		Trip Blank		Field Rinsate Blank		Field Rinsate Blank	
Batch#			9502G198		9503G641		9502G198		9503G641		9502G198		9503G641	
Prep#			95GVC030		95GVC053		95GVC030		95GVC053		95GVC030		95GVC053	
RFW#			009		005		011		007		012		008	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/15/95		3/8/95		2/13/95		3/8/95		2/13/95		3/8/95	
Analysis Date			2/21/95		3/10/95		2/21/95		3/10/95		2/21/95		3/10/95	
Analysis	Standard	MDL	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting
			Result	Limit	Result	Limit	Result	Limit	Result	Limit	Result	Limit	Result	Limit
Chloromethane		7.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromomethane		6.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Vinyl Chloride	5	7.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroethane		9.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Methylene Chloride	2	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Acetone	700	6.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Disulfide		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethene		4.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1-Dichloroethane	70	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethene (total)		4.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chloroform	6	2.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloroethane	2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Butanone		4.1	10 U	10	10 U	10	14	10	10 U	10	15	10	10 U	10
1,1,1-Trichloroethane	30	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Carbon Tetrachloride	2	1.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromodichloromethane	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,2-Dichloropropane	1	1.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
cis-1,3-Dichloropropene	0.2	3.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Trichloroethene	1	2.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dibromochloromethane	10	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2-Trichloroethane	3	4.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Benzene	1	3.3	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
trans-1,3-Dichloropropene	0.2	2.4	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Bromoform	4	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
4-Methyl-2-pentanone	400	5.5	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
2-Hexanone		3.9	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Tetrachloroethene	1	4.0	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
1,1,2,2-Tetrachloroethane	2	4.2	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Toluene	1000	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Chlorobenzene	4	2.7	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Ethylbenzene	700	3.1	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Styrene	100	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Xylene (total)	40	3.8	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10	10 U	10
Dilution Factor														
Method:TCL Volatiles														

CHARLES WOOD
GROUNDWATER SEMIVOLATILES

Geographical Location			CW1		CW1		CW1		CW1		CW1		CW1	
Sample			CW01-MW26-A01		CW01-MW26-A02		CW01-MW26-E02		CW01-MW27-A01		CW01-MW27-A02		CW01-MW28-A01	
Sample Type							Field Rinsate Blank							
Batch#			9502G358		9503G739		9503G739		9502G358		9503G739		9502G358	
Prep#			95GB0123		95GB0181		95GB0181		95GB0123		95GB0181		95GB0123	
RFW#			001		003		006		003		001		005	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/21/95		3/14/95		3/14/95		2/21/95		3/14/95		2/21/95	
Analysis Date			3/12/95		3/30/95		3/29/95		3/13/95		3/29/95		3/15/95	
Analysis	Standard	MDL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL
			Result		Result		Result		Result		Result		Result	
Phenol	4000	7.1	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
bis(2-Chloroethyl) ether	10	9.7	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
2-Chlorophenol	40	7.3	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
1,3-Dichlorobenzene	600	5.3	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
1,4-Dichlorobenzene	75	4.8	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
1,2-Dichlorobenzene	600	5.7	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
2-Methylphenol		6.7	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
2,2'-oxybis(1-Chloropropane)		7.0	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
4-Methylphenol		12.9	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
N-Nitroso-di-n-propylamine	20	8.0	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Hexachloroethane	10	5.3	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Nitrobenzene	10	7.4	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Isophorone	100	3.9	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
2-Nitrophenol		7.0	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
2,4-Dimethylphenol	100	4.8	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
bis(2-Chloroethoxy) methane		6.1	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
2,4-Dichlorophenol	20	4.4	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
1,2,4-Trichlorobenzene	9	9.6	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Naphthalene		8.4	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
4-Chloroaniline		2.9	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Hexachlorobutadiene	1	4.6	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
4-Chloro-3-methylphenol	20	3.1	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
2-Methylnaphthalene		8.7	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Hexachlorocyclopentadiene	50	3.6	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
2,4,6-Trichlorophenol		5.6	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
2,4,5-Trichlorophenol	700	4.7	26 U	26	25 U	25	28 U	28	26 U	26	26 U	26	27 U	27
2-Chloronaphthalene		8.2	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
2-Nitroaniline		6.1	26 U	26	25 U	25	28 U	28	26 U	26	26 U	26	27 U	27
Dimethylphthalate	7000	4.4	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Acenaphthylene	10	6.0	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
2,6-Dinitrotoluene	10	5.2	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
3-Nitroaniline		5.2	26 U	26	25 U	25	28 U	28	26 U	26	26 U	26	27 U	27
Acenaphthene	400	6.7	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
2,4-Dinitrophenol	40	4.6	26 U	26	25 U	25	28 U	28	26 U	26	26 U	26	27 U	27

CHARLES WOOD
GROUNDWATER SEMIVOLATILES

Geographical Location			CW1		CW1		CW1		CW1		CW1		CW1	
Sample			CW01-MW26-A01		CW01-MW26-A02		CW01-MW26-E02		CW01-MW27-A01		CW01-MW27-A02		CW01-MW28-A01	
Sample Type							Field Rinsate Blank							
Batch#			9502G358		9503G739		9503G739		9502G358		9503G739		9502G358	
Prep#			95GB0123		95GB0181		95GB0181		95GB0123		95GB0181		95GB0123	
RFW#			001		003		006		003		001		005	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/21/95		3/14/95		3/14/95		2/21/95		3/14/95		2/21/95	
Analysis Date			3/12/95		3/30/95		3/29/95		3/13/95		3/29/95		3/15/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	26 U	26	25 U	25	28 U	28	26 U	26	26 U	26	27 U	27
Dibenzofuran		6.5	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
2,4-Dinitrotoluene	10	5.8	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Diethylphthalate	5000	5.4	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
4-Chlorophenyl-phenylether		7.0	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Fluorene	300	6.3	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
4-Nitroaniline		6.4	26 U	26	25 U	25	28 U	28	26 U	26	26 U	26	27 U	27
4,6-Dinitro-2-methylphenol		5.3	26 U	26	25 U	25	28 U	28	26 U	26	26 U	26	27 U	27
N-Nitrosodiphenylamine (1)	20	4.2	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
4-Bromophenyl-phenylether		5.3	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Hexachlorobenzene	10	5.5	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Pentachlorophenol	1	4.0	26 U	26	25 U	25	28 U	28	26 U	26	26 U	26	27 U	27
Phenanthrene	10	5.0	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Anthracene	2000	4.6	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Carbazole		4.4	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Di-n-butylphthalate	900	6.5	11 U	11	10 U	10	11 U	11	11 U	11	5 J	11	11 U	11
Fluoranthene	300	6.0	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Pyrene	200	5.4	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Butylbenzylphthalate	100	5.3	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
3,3'-Dichlorobenzidine	60	2.8	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Benzo(a)anthracene	10	4.9	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Chrysene	20	4.4	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
bis(2-Ethylhexy)phthalate	30	9.7	2 J	11	10 U	10	11 U	11	2 J	11	2 J	11	2 J	11
Di-n-octyl phthalate	100	5.6	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Benzo(b)fluoranthene	2	5.7	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Benzo(k)fluoranthene	2	6.2	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Benzo(a)pyrene	20	4.9	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Indeno(1,2,3-cd)pyrene	20	7.1	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Dibenzo(a,h)anthracene	20	6.0	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Benzo(g,h,i)perylene	20	6.8	11 U	11	10 U	10	11 U	11	11 U	11	11 U	11	11 U	11
Total Est. Conc. of TIC			8 JB		5 J		5 J		5 J				40 J	
Dilution Factor														
Method:TCL Semivolatiles									6 JB				5 JB	

CHARLES WOOD
GROUNDWATER SEMIVOLATILES

Geographical Location			CW1		CW1		CW1		CW1		CW2		CW2	
Sample			CW01-MW28-A02		CW01-MW29-A01		CW01-MW29-A02		CW01-MW29-E01		CW02-MW30-A01		CW02-MW30-A02	
Sample Type									Field Rinsate Blank					
Batch#			9503G739		9502G358		9503G739		9502G358		9502G358		9503G739	
Prep#			95GB0181		95GB0123		95GB0181		95GB0123		95GB0123		95GB0181	
RFW#			008		007		010		010		012		012	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/14/95		2/21/95		3/14/95		2/21/95		2/21/95		3/14/95	
Analysis Date			3/29/95		3/15/95		3/29/95		3/15/95		3/15/95		3/29/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
bis(2-Chloroethyl) ether	10	9.7	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
2-Chlorophenol	40	7.3	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
1,3-Dichlorobenzene	600	5.3	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
1,4-Dichlorobenzene	75	4.8	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
1,2-Dichlorobenzene	600	5.7	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
2-Methylphenol		6.7	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
2,2'-oxybis(1-Chloropropane)		7.0	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
4-Methylphenol		12.9	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
N-Nitroso-di-n-propylamine	20	8.0	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Hexachloroethane	10	5.3	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Nitrobenzene	10	7.4	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Isophorone	100	3.9	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
2-Nitrophenol		7.0	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
2,4-Dimethylphenol	100	4.8	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
bis(2-Chloroethoxy) methane		6.1	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
2,4-Dichlorophenol	20	4.4	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
1,2,4-Trichlorobenzene	9	9.6	10 U	10	3 J	10	5 J	10	10 U	10	12 U	12	12 U	12
Naphthalene		8.4	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
4-Chloroaniline		2.9	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Hexachlorobutadiene	1	4.6	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
4-Chloro-3-methylphenol	20	3.1	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
2-Methylnaphthalene		8.7	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Hexachlorocyclopentadiene	50	3.6	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
2,4,6-Trichlorophenol		5.6	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
2,4,5-Trichlorophenol	700	4.7	26 U	26	24 U	24	26 U	26	24 U	24	31 U	31	30 U	30
2-Chloronaphthalene		8.2	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
2-Nitroaniline		6.1	26 U	26	24 U	24	26 U	26	24 U	24	31 U	31	30 U	30
Dimethylphthalate	7000	4.4	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Acenaphthylene	10	6.0	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
2,6-Dinitrotoluene	10	5.2	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
3-Nitroaniline		5.2	26 U	26	24 U	24	26 U	26	24 U	24	31 U	31	30 U	30
Acenaphthene	400	6.7	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
2,4-Dinitrophenol	40	4.6	26 U	26	24 U	24	26 U	26	24 U	24	31 U	31	30 U	30

CHARLES WOOD
GROUNDWATER SEMIVOLATILES

Geographical Location			CW1		CW1		CW1		CW1		CW2		CW2	
Sample			CW01-MW28-A02		CW01-MW29-A01		CW01-MW29-A02		CW01-MW29-E01		CW02-MW30-A01		CW02-MW30-A02	
Sample Type									Field Rinsate Blank					
Batch#			9503G739		9502G358		9503G739		9502G358		9502G358		9503G739	
Prep#			95GB0181		95GB0123		95GB0181		95GB0123		95GB0123		95GB0181	
RFW#			008		007		010		010		012		012	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/14/95		2/21/95		3/14/95		2/21/95		2/21/95		3/14/95	
Analysis Date			3/29/95		3/15/95		3/29/95		3/15/95		3/15/95		3/29/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	26 U	26	24 U	24	26 U	26	24 U	24	31 U	31	30 U	30
Dibenzofuran		6.5	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
2,4-Dinitrotoluene	10	5.8	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Diethylphthalate	5000	5.4	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
4-Chlorophenyl-phenylether		7.0	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Fluorene	300	6.3	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
4-Nitroaniline		6.4	26 U	26	24 U	24	26 U	26	24 U	24	31 U	31	30 U	30
4,6-Dinitro-2-methylphenol		5.3	26 U	26	24 U	24	26 U	26	24 U	24	31 U	31	30 U	30
N-Nitrosodiphenylamine (1)	20	4.2	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
4-Bromophenyl-phenylether		5.3	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Hexachlorobenzene	10	5.5	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Pentachlorophenol	1	4.0	26 U	26	24 U	24	26 U	26	24 U	24	31 U	31	30 U	30
Phenanthrene	10	5.0	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Anthracene	2000	4.6	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Carbazole		4.4	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Di-n-butylphthalate	900	6.5	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	2 J	12
Fluoranthene	300	6.0	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Pyrene	200	5.4	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Butylbenzylphthalate	100	5.3	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
3,3'-Dichlorobenzidine	60	2.8	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Benzo(a)anthracene	10	4.9	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Chrysene	20	4.4	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
bis(2-Ethylhexy)phthalate	30	9.7	1 J	10	1 J	10	10 U	10	10 U	10	2 J	12	2 J	12
Di-n-octyl phthalate	100	5.6	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Benzo(b)fluoranthene	2	5.7	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Benzo(k)fluoranthene	2	6.2	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Benzo(a)pyrene	20	4.9	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Indeno(1,2,3-cd)pyrene	20	7.1	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Dibenzo(a,h)anthracene	20	6.0	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Benzo(g,h,i)perylene	20	6.8	10 U	10	10 U	10	10 U	10	10 U	10	12 U	12	12 U	12
Total Est. Conc. of TIC					2 J		2 J		99 J		78 J		3 J	
Dilution Factor														
Method:TCL Semivolatiles					5 JB				5 JB		6 JB			

CHARLES WOOD
GROUNDWATER SEMIVOLATILES

Geographical Location			CW2		CW2		CW2		CW2		CW2		CW2	
Sample			CW02-MW31-A01		CW02-MW31-A02		CW02-MW32-A01		CW02-MW32-A02		CW02-MW33-A01		CW02-MW33-A02	
Sample Type														
Batch#			9502G358		9503G739		9502G358		9503G739		9502G358		9503G739	
Prep#			95GB0123		95GB0181		95GB0123		95GB0181		95GB0123		95GB0181	
RFW#			014		014		016		016		018		018	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/21/95		3/14/95		2/21/95		3/14/95		2/21/95		3/14/95	
Analysis Date			3/15/95		3/29/95		3/15/95		3/29/95		3/15/95		3/29/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
bis(2-Chloroethyl) ether	10	9.7	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
2-Chlorophenol	40	7.3	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
1,3-Dichlorobenzene	600	5.3	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
1,4-Dichlorobenzene	75	4.8	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
1,2-Dichlorobenzene	600	5.7	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
2-Methylphenol		6.7	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
2,2'-oxybis(1-Chloropropane)		7.0	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
4-Methylphenol		12.9	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
N-Nitroso-di-n-propylamine	20	8.0	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Hexachloroethane	10	5.3	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Nitrobenzene	10	7.4	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Isophorone	100	3.9	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
2-Nitrophenol		7.0	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
2,4-Dimethylphenol	100	4.8	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
bis(2-Chloroethoxy) methane		6.1	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
2,4-Dichlorophenol	20	4.4	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
1,2,4-Trichlorobenzene	9	9.6	10 U	10	5 J	10	11 U	11	12 U	12	11 U	11	12 U	12
Naphthalene		8.4	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
4-Chloroaniline		2.9	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Hexachlorobutadiene	1	4.6	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
4-Chloro-3-methylphenol	20	3.1	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
2-Methylnaphthalene		8.7	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Hexachlorocyclopentadiene	50	3.6	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
2,4,6-Trichlorophenol		5.6	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
2,4,5-Trichlorophenol	700	4.7	25 U	25	26 U	26	26 U	26	30 U	30	26 U	26	30 U	30
2-Chloronaphthalene		8.2	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
2-Nitroaniline		6.1	25 U	25	26 U	26	26 U	26	30 U	30	26 U	26	30 U	30
Dimethylphthalate	7000	4.4	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Acenaphthylene	10	6.0	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
2,6-Dinitrotoluene	10	5.2	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
3-Nitroaniline		5.2	25 U	25	26 U	26	26 U	26	30 U	30	26 U	26	30 U	30
Acenaphthene	400	6.7	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
2,4-Dinitrophenol	40	4.6	25 U	25	26 U	26	26 U	26	30 U	30	26 U	26	30 U	30

CHARLES WOOD
GROUNDWATER SEMIVOLATILES

Geographical Location			CW2		CW2		CW2		CW2		CW2		CW2	
Sample			CW02-MW31-A01		CW02-MW31-A02		CW02-MW32-A01		CW02-MW32-A02		CW02-MW33-A01		CW02-MW33-A02	
Sample Type														
Batch#			9502G358		9503G739		9502G358		9503G739		9502G358		9503G739	
Prep#			95GB0123		95GB0181		95GB0123		95GB0181		95GB0123		95GB0181	
RFW#			014		014		016		016		018		018	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/21/95		3/14/95		2/21/95		3/14/95		2/21/95		3/14/95	
Analysis Date			3/15/95		3/29/95		3/15/95		3/29/95		3/15/95		3/29/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	25 U	25	26 U	26	26 U	26	30 U	30	26 U	26	30 U	30
Dibenzofuran		6.5	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
2,4-Dinitrotoluene	10	5.8	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Diethylphthalate	5000	5.4	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
4-Chlorophenyl-phenylether		7.0	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Fluorene	300	6.3	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
4-Nitroaniline		6.4	25 U	25	26 U	26	26 U	26	30 U	30	26 U	26	30 U	30
4,6-Dinitro-2-methylphenol		5.3	25 U	25	26 U	26	26 U	26	30 U	30	26 U	26	30 U	30
N-Nitrosodiphenylamine (1)	20	4.2	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
4-Bromophenyl-phenylether		5.3	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Hexachlorobenzene	10	5.5	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Pentachlorophenol	1	4.0	25 U	25	26 U	26	26 U	26	30 U	30	26 U	26	30 U	30
Phenanthrene	10	5.0	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Anthracene	2000	4.6	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Carbazole		4.4	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Di-n-butylphthalate	900	6.5	10 U	10	11	10	11 U	11	2 J	12	11 U	11	2 J	12
Fluoranthene	300	6.0	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Pyrene	200	5.4	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Butylbenzylphthalate	100	5.3	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
3,3'-Dichlorobenzidine	60	2.8	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Benzo(a)anthracene	10	4.9	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Chrysene	20	4.4	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
bis(2-Ethylhexy)phthalate	30	9.7	10 U	10	10 U	10	1 J	11	2 J	12	1 J	11	2 J	12
Di-n-octyl phthalate	100	5.6	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Benzo(b)fluoranthene	2	5.7	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Benzo(k)fluoranthene	2	6.2	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Benzo(a)pyrene	20	4.9	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Indeno(1,2,3-cd)pyrene	20	7.1	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Dibenzo(a,h)anthracene	20	6.0	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Benzo(g,h,i)perylene	20	6.8	10 U	10	10 U	10	11 U	11	12 U	12	11 U	11	12 U	12
Total Est. Conc. of TIC			4 JB				5 JB				3 J			
Dilution Factor														
Method:TCL Semivolatiles											5 JB			

CHARLES WOOD
GROUNDWATER SEMIVOLATILES

Geographical Location			CW6		CW6		CW6		CW6		CW6		CW9	
Sample			CW06-MW01-A01		CW06-MW01-A02		CW06-MW01-E02		CW06-MW34-A01		CW06-MW34-A02		CW09-MW35-A01	
Sample Type							Field Rinsate Blank							
Batch#			9505G840		9505G138		9505G138		9502G300		9503G723		9502G300	
Prep#			95GB0319		95GB0350		95GB0350		95GB0118		95GB0181		95GB0118	
RFW#			002		002		003		001		001		003	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			5/10/95		5/25/95		5/25/95		2/20/95		3/13/95		2/20/95	
Analysis Date			5/29/95		6/2/95		6/2/95		3/15/95		3/27/95		3/15/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
bis(2-Chloroethyl) ether	10	9.7	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
2-Chlorophenol	40	7.3	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
1,3-Dichlorobenzene	600	5.3	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
1,4-Dichlorobenzene	75	4.8	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
1,2-Dichlorobenzene	600	5.7	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
2-Methylphenol		6.7	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
2,2'-oxybis(1-Chloropropane)		7.0	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
4-Methylphenol		12.9	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
N-Nitroso-di-n-propylamine	20	8.0	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Hexachloroethane	10	5.3	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Nitrobenzene	10	7.4	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Isophorone	100	3.9	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
2-Nitrophenol		7.0	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
2,4-Dimethylphenol	100	4.8	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
bis(2-Chloroethoxy) methane		6.1	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
2,4-Dichlorophenol	20	4.4	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
1,2,4-Trichlorobenzene	9	9.6	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Naphthalene		8.4	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
4-Chloroaniline		2.9	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Hexachlorobutadiene	1	4.6	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
4-Chloro-3-methylphenol	20	3.1	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
2-Methylnaphthalene		8.7	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Hexachlorocyclopentadiene	50	3.6	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
2,4,6-Trichlorophenol		5.6	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
2,4,5-Trichlorophenol	700	4.7	28 U	28	24 U	24	27 U	27	24 U	24	26 U	26	24 U	24
2-Chloronaphthalene		8.2	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
2-Nitroaniline		6.1	28 U	28	24 U	24	27 U	27	24 U	24	26 U	26	24 U	24
Dimethylphthalate	7000	4.4	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Acenaphthylene	10	6.0	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
2,6-Dinitrotoluene	10	5.2	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
3-Nitroaniline		5.2	28 U	28	24 U	24	27 U	27	24 U	24	26 U	26	24 U	24
Acenaphthene	400	6.7	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
2,4-Dinitrophenol	40	4.6	28 U	28	24 U	24	27 U	27	24 U	24	26 U	26	24 U	24

CHARLES WOOD
GROUNDWATER SEMIVOLATILES

Geographical Location			CW6		CW6		CW6		CW6		CW6		CW9	
Sample			CW06-MW01-A01		CW06-MW01-A02		CW06-MW01-E02		CW06-MW34-A01		CW06-MW34-A02		CW09-MW35-A01	
Sample Type							Field Rinsate Blank							
Batch#			9505G840		9505G138		9505G138		9502G300		9503G723		9502G300	
Prep#			95GB0319		95GB0350		95GB0350		95GB0118		95GB0181		95GB0118	
RFW#			002		002		003		001		001		003	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			5/10/95		5/25/95		5/25/95		2/20/95		3/13/95		2/20/95	
Analysis Date			5/29/95		6/2/95		6/2/95		3/15/95		3/27/95		3/15/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	28 U	28	24 U	24	27 U	27	24 U	24	26 U	26	24 U	24
Dibenzofuran		6.5	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
2,4-Dinitrotoluene	10	5.8	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Diethylphthalate	5000	5.4	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
4-Chlorophenyl-phenylether		7.0	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Fluorene	300	6.3	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
4-Nitroaniline		6.4	28 U	28	24 U	24	27 U	27	24 U	24	26 U	26	24 U	24
4,6-Dinitro-2-methylphenol		5.3	28 U	28	24 U	24	27 U	27	24 U	24	26 U	26	24 U	24
N-Nitrosodiphenylamine (1)	20	4.2	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
4-Bromophenyl-phenylether		5.3	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Hexachlorobenzene	10	5.5	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Pentachlorophenol	1	4.0	28 U	28	24 U	24	27 U	27	24 U	24	26 U	26	24 U	24
Phenanthrene	10	5.0	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Anthracene	2000	4.6	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Carbazole		4.4	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Di-n-butylphthalate	900	6.5	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Fluoranthene	300	6.0	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Pyrene	200	5.4	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Butylbenzylphthalate	100	5.3	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
3,3'-Dichlorobenzidine	60	2.8	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Benzo(a)anthracene	10	4.9	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Chrysene	20	4.4	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
bis(2-Ethylhexy)phthalate	30	9.7	11 U	11	21 B	10	1 JB	11	2 J	10	11 U	11	10 U	10
Di-n-octyl phthalate	100	5.6	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Benzo(b)fluoranthene	2	5.7	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Benzo(k)fluoranthene	2	6.2	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Benzo(a)pyrene	20	4.9	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Indeno(1,2,3-cd)pyrene	20	7.1	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Dibenzo(a,h)anthracene	20	6.0	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Benzo(g,h,i)perylene	20	6.8	11 U	11	10 U	10	11 U	11	10 U	10	11 U	11	10 U	10
Total Est. Conc. of TIC					29 J		42 J		6 J		300 J			
Dilution Factor														
Method:TCL Semivolatiles														

CHARLES WOOD
GROUNDWATER SEMIVOLATILES

Geographical Location			CW9		CW9		CW9		CW9		B6		B6	
Sample			CW09-MW35-A02		CW09-MW35-E01		CW09-MW36-A01		CW09-MW36-A02		B6-MW06B-A01		B6-MW06B-A02	
Sample Type					Field Rinsate Blank									
Batch#			9503G723		9502G300		9502G300		9503G723		9502G198		9503G641	
Prep#			95GB0181		95GB0118		95GB0118		95GB0181		95GB0108		95GB0172	
RFW#			002		007		005		004		003		001	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/13/95		2/20/95		2/20/95		3/13/95		2/15/95		3/8/95	
Analysis Date			3/27/95		3/15/95		3/15/95		3/27/95		3/7/95		3/25/95	
Analysis	Standard	MDL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL	Analytical	CRQL
			Result		Result		Result		Result		Result		Result	
Phenol	4000	7.1	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
bis(2-Chloroethyl) ether	10	9.7	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
2-Chlorophenol	40	7.3	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
1,3-Dichlorobenzene	600	5.3	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
1,4-Dichlorobenzene	75	4.8	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
1,2-Dichlorobenzene	600	5.7	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
2-Methylphenol		6.7	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
2,2'-oxybis(1-Chloropropane)		7.0	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
4-Methylphenol		12.9	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
N-Nitroso-di-n-propylamine	20	8.0	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Hexachloroethane	10	5.3	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Nitrobenzene	10	7.4	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Isophorone	100	3.9	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
2-Nitrophenol		7.0	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
2,4-Dimethylphenol	100	4.8	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
bis(2-Chloroethoxy) methane		6.1	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
2,4-Dichlorophenol	20	4.4	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
1,2,4-Trichlorobenzene	9	9.6	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Naphthalene		8.4	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
4-Chloroaniline		2.9	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Hexachlorobutadiene	1	4.6	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
4-Chloro-3-methylphenol	20	3.1	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
2-Methylnaphthalene		8.7	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Hexachlorocyclopentadiene	50	3.6	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
2,4,6-Trichlorophenol		5.6	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
2,4,5-Trichlorophenol	700	4.7	24 U	24	26 U	26	24 U	24	28 U	28	25 U	25	24 U	24
2-Chloronaphthalene		8.2	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
2-Nitroaniline		6.1	24 U	24	26 U	26	24 U	24	28 U	28	25 U	25	24 U	24
Dimethylphthalate	7000	4.4	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Acenaphthylene	10	6.0	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
2,6-Dinitrotoluene	10	5.2	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
3-Nitroaniline		5.2	24 U	24	26 U	26	24 U	24	28 U	28	25 U	25	24 U	24
Acenaphthene	400	6.7	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
2,4-Dinitrophenol	40	4.6	24 U	24	26 U	26	24 U	24	28 U	28	25 U	25	24 U	24

CHARLES WOOD
GROUNDWATER SEMIVOLATILES

Geographical Location			CW9		CW9		CW9		CW9		B6		B6	
Sample			CW09-MW35-A02		CW09-MW35-E01		CW09-MW36-A01		CW09-MW36-A02		B6-MW06B-A01		B6-MW06B-A02	
Sample Type					Field Rinsate Blank									
Batch#			9503G723		9502G300		9502G300		9503G723		9502G198		9503G641	
Prep#			95GB0181		95GB0118		95GB0118		95GB0181		95GB0108		95GB0172	
RFW#			002		007		005		004		003		001	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			3/13/95		2/20/95		2/20/95		3/13/95		2/15/95		3/8/95	
Analysis Date			3/27/95		3/15/95		3/15/95		3/27/95		3/7/95		3/25/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	24 U	24	26 U	26	24 U	24	28 U	28	25 U	25	24 U	24
Dibenzofuran		6.5	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
2,4-Dinitrotoluene	10	5.8	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Diethylphthalate	5000	5.4	10 U	10	10 U	10	10 U	10	11 U	11	1 J	10	1 JB	10
4-Chlorophenyl-phenylether		7.0	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Fluorene	300	6.3	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
4-Nitroaniline		6.4	24 U	24	26 U	26	24 U	24	28 U	28	25 U	25	24 U	24
4,6-Dinitro-2-methylphenol		5.3	24 U	24	26 U	26	24 U	24	28 U	28	25 U	25	24 U	24
N-Nitrosodiphenylamine (1)	20	4.2	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
4-Bromophenyl-phenylether		5.3	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Hexachlorobenzene	10	5.5	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Pentachlorophenol	1	4.0	24 U	24	26 U	26	24 U	24	28 U	28	25 U	25	24 U	24
Phenanthrene	10	5.0	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Anthracene	2000	4.6	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Carbazole		4.4	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Di-n-butylphthalate	900	6.5	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Fluoranthene	300	6.0	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Pyrene	200	5.4	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Butylbenzylphthalate	100	5.3	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
3,3'-Dichlorobenzidine	60	2.8	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Benzo(a)anthracene	10	4.9	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Chrysene	20	4.4	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
bis(2-Ethylhexy)phthalate	30	9.7	10 U	10	10 U	10	2 J	10	6 J	11	10 U	10	10 U	10
Di-n-octyl phthalate	100	5.6	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Benzo(b)fluoranthene	2	5.7	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Benzo(k)fluoranthene	2	6.2	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Benzo(a)pyrene	20	4.9	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Indeno(1,2,3-cd)pyrene	20	7.1	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Dibenzo(a,h)anthracene	20	6.0	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Benzo(g,h,i)perylene	20	6.8	10 U	10	10 U	10	10 U	10	11 U	11	10 U	10	10 U	10
Total Est. Conc. of TIC			600 J		13 J		4 J		430 J		11 JB			
Dilution Factor														
Method:TCL Semivolatiles														

CHARLES WOOD
GROUNDWATER SEMIVOLATILES

Geographical Location			B7		B7		B8		B8		B9		B9	
Sample			B7-MW07B-A01		B7-MW07B-A02		B8-MW08B-A01		B8-MW08B-A02		B9-MW09B-A01		B9-MW09B-A02	
Sample Type														
Batch#			9502G198		9503G617		9502G198		9503G641		9502G198		9503G617	
Prep#			95GB0108		95GB0166		95GB0108		95GB0172		95GB0108		95GB0166	
RFW#			005		003		007		003		001		001	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/15/95		3/7/95		2/15/95		3/8/95		2/15/95		3/7/95	
Analysis Date			3/7/95		3/26/95		3/7/95		3/26/95		3/7/95		3/26/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
bis(2-Chloroethyl) ether	10	9.7	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
2-Chlorophenol	40	7.3	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
1,3-Dichlorobenzene	600	5.3	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
1,4-Dichlorobenzene	75	4.8	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
1,2-Dichlorobenzene	600	5.7	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
2-Methylphenol		6.7	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
2,2'-oxybis(1-Chloropropane)		7.0	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
4-Methylphenol		12.9	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
N-Nitroso-di-n-propylamine	20	8.0	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Hexachloroethane	10	5.3	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Nitrobenzene	10	7.4	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Isophorone	100	3.9	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
2-Nitrophenol		7.0	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
2,4-Dimethylphenol	100	4.8	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
bis(2-Chloroethoxy) methane		6.1	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
2,4-Dichlorophenol	20	4.4	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
1,2,4-Trichlorobenzene	9	9.6	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Naphthalene		8.4	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
4-Chloroaniline		2.9	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Hexachlorobutadiene	1	4.6	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
4-Chloro-3-methylphenol	20	3.1	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
2-Methylnaphthalene		8.7	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Hexachlorocyclopentadiene	50	3.6	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
2,4,6-Trichlorophenol		5.6	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
2,4,5-Trichlorophenol	700	4.7	26 U	26	26 U	26	26 U	26	26 U	26	24 U	24	24 U	24
2-Chloronaphthalene		8.2	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
2-Nitroaniline		6.1	26 U	26	26 U	26	26 U	26	26 U	26	24 U	24	24 U	24
Dimethylphthalate	7000	4.4	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Acenaphthylene	10	6.0	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
2,6-Dinitrotoluene	10	5.2	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
3-Nitroaniline		5.2	26 U	26	26 U	26	26 U	26	26 U	26	24 U	24	24 U	24
Acenaphthene	400	6.7	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
2,4-Dinitrophenol	40	4.6	26 U	26	26 U	26	26 U	26	26 U	26	24 U	24	24 U	24

CHARLES WOOD
GROUNDWATER SEMIVOLATILES

Geographical Location			B7		B7		B8		B8		B9		B9	
Sample			B7-MW07B-A01		B7-MW07B-A02		B8-MW08B-A01		B8-MW08B-A02		B9-MW09B-A01		B9-MW09B-A02	
Sample Type														
Batch#			9502G198		9503G617		9502G198		9503G641		9502G198		9503G617	
Prep#			95GB0108		95GB0166		95GB0108		95GB0172		95GB0108		95GB0166	
RFW#			005		003		007		003		001		001	
Dilution Factor			1.00		1.00		1.00		1.00		1.00		1.00	
Matrix			water		water		water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/15/95		3/7/95		2/15/95		3/8/95		2/15/95		3/7/95	
Analysis Date			3/7/95		3/26/95		3/7/95		3/26/95		3/7/95		3/26/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	26 U	26	26 U	26	26 U	26	26 U	26	24 U	24	24 U	24
Dibenzofuran		6.5	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
2,4-Dinitrotoluene	10	5.8	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Diethylphthalate	5000	5.4	1 J	10	10 U	10	11 U	11	2 JB	11	1 J	10	10 U	10
4-Chlorophenyl-phenylether		7.0	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Fluorene	300	6.3	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
4-Nitroaniline		6.4	26 U	26	26 U	26	26 U	26	26 U	26	24 U	24	24 U	24
4,6-Dinitro-2-methylphenol		5.3	26 U	26	26 U	26	26 U	26	26 U	26	24 U	24	24 U	24
N-Nitrosodiphenylamine (1)	20	4.2	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
4-Bromophenyl-phenylether		5.3	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Hexachlorobenzene	10	5.5	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Pentachlorophenol	1	4.0	26 U	26	26 U	26	26 U	26	26 U	26	24 U	24	24 U	24
Phenanthrene	10	5.0	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Anthracene	2000	4.6	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Carbazole		4.4	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Di-n-butylphthalate	900	6.5	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Fluoranthene	300	6.0	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Pyrene	200	5.4	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Butylbenzylphthalate	100	5.3	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
3,3'-Dichlorobenzidine	60	2.8	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Benzo(a)anthracene	10	4.9	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Chrysene	20	4.4	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
bis(2-Ethylhexy)phthalate	30	9.7	10 U	10	1 J	10	11 U	11	11 U	11	10 U	10	10 U	10
Di-n-octyl phthalate	100	5.6	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Benzo(b)fluoranthene	2	5.7	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Benzo(k)fluoranthene	2	6.2	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Benzo(a)pyrene	20	4.9	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Indeno(1,2,3-cd)pyrene	20	7.1	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Dibenzo(a,h)anthracene	20	6.0	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Benzo(g,h,i)perylene	20	6.8	10 U	10	10 U	10	11 U	11	11 U	11	10 U	10	10 U	10
Total Est. Conc. of TIC			6 JB		2 J		5 JB		3 J		8 JB		3 J	
Dilution Factor														
Method:TCL Semivolatiles														

CHARLES WOOD
GROUNDWATER SEMIVOLATILES

Geographical Location			B10		B10		B10		B10	
Sample			B10-MW10B-A01		B10-MW10B-A02		B10-MW10B-E01		B10-MW10B-E02	
Sample Type							Field Rinsate Blank		Field Rinsate Blank	
Batch#			9502G198		9503G641		9502G198		9503G641	
Prep#			95GB0108		95GB0172		95GB0108		95GB0172	
RFW#			009		005		012		008	
Dilution Factor			1.00		1.00		1.00		1.00	
Matrix			water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/15/95		3/8/95		2/13/95		3/8/95	
Analysis Date			3/7/95		3/25/95		3/7/95		3/25/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
Phenol	4000	7.1	12 U	12	11 U	11	11 U	11	11 U	11
bis(2-Chloroethyl) ether	10	9.7	12 U	12	11 U	11	11 U	11	11 U	11
2-Chlorophenol	40	7.3	12 U	12	11 U	11	11 U	11	11 U	11
1,3-Dichlorobenzene	600	5.3	12 U	12	11 U	11	11 U	11	11 U	11
1,4-Dichlorobenzene	75	4.8	12 U	12	11 U	11	11 U	11	11 U	11
1,2-Dichlorobenzene	600	5.7	12 U	12	11 U	11	11 U	11	11 U	11
2-Methylphenol		6.7	12 U	12	11 U	11	11 U	11	11 U	11
2,2'-oxybis(1-Chloropropane)		7.0	12 U	12	11 U	11	11 U	11	11 U	11
4-Methylphenol		12.9	12 U	12	11 U	11	11 U	11	11 U	11
N-Nitroso-di-n-propylamine	20	8.0	12 U	12	11 U	11	11 U	11	11 U	11
Hexachloroethane	10	5.3	12 U	12	11 U	11	11 U	11	11 U	11
Nitrobenzene	10	7.4	12 U	12	11 U	11	11 U	11	11 U	11
Isophorone	100	3.9	12 U	12	11 U	11	11 U	11	11 U	11
2-Nitrophenol		7.0	12 U	12	11 U	11	11 U	11	11 U	11
2,4-Dimethylphenol	100	4.8	12 U	12	11 U	11	11 U	11	11 U	11
bis(2-Chloroethoxy) methane		6.1	12 U	12	11 U	11	11 U	11	11 U	11
2,4-Dichlorophenol	20	4.4	12 U	12	11 U	11	11 U	11	11 U	11
1,2,4-Trichlorobenzene	9	9.6	12 U	12	11 U	11	11 U	11	11 U	11
Naphthalene		8.4	12 U	12	11 U	11	11 U	11	11 U	11
4-Chloroaniline		2.9	12 U	12	11 U	11	11 U	11	11 U	11
Hexachlorobutadiene	1	4.6	12 U	12	11 U	11	11 U	11	11 U	11
4-Chloro-3-methylphenol	20	3.1	12 U	12	11 U	11	11 U	11	11 U	11
2-Methylnaphthalene		8.7	12 U	12	11 U	11	11 U	11	11 U	11
Hexachlorocyclopentadiene	50	3.6	12 U	12	11 U	11	11 U	11	11 U	11
2,4,6-Trichlorophenol		5.6	12 U	12	11 U	11	11 U	11	11 U	11
2,4,5-Trichlorophenol	700	4.7	30 U	30	26 U	26	28 U	28	28 U	28
2-Chloronaphthalene		8.2	12 U	12	11 U	11	11 U	11	11 U	11
2-Nitroaniline		6.1	30 U	30	26 U	26	28 U	28	28 U	28
Dimethylphthalate	7000	4.4	12 U	12	11 U	11	11 U	11	11 U	11
Acenaphthylene	10	6.0	12 U	12	11 U	11	11 U	11	11 U	11
2,6-Dinitrotoluene	10	5.2	12 U	12	11 U	11	11 U	11	11 U	11
3-Nitroaniline		5.2	30 U	30	26 U	26	28 U	28	28 U	28
Acenaphthene	400	6.7	12 U	12	11 U	11	11 U	11	11 U	11
2,4-Dinitrophenol	40	4.6	30 U	30	26 U	26	28 U	28	28 U	28

CHARLES WOOD
GROUNDWATER SEMIVOLATILES

Geographical Location			B10		B10		B10		B10	
Sample			B10-MW10B-A01		B10-MW10B-A02		B10-MW10B-E01		B10-MW10B-E02	
Sample Type							Field Rinsate Blank		Field Rinsate Blank	
Batch#			9502G198		9503G641		9502G198		9503G641	
Prep#			95GB0108		95GB0172		95GB0108		95GB0172	
RFW#			009		005		012		008	
Dilution Factor			1.00		1.00		1.00		1.00	
Matrix			water		water		water		water	
Units	ug/l	ug/l	ug/l		ug/l		ug/l		ug/l	
Sampling Date			2/15/95		3/8/95		2/13/95		3/8/95	
Analysis Date			3/7/95		3/25/95		3/7/95		3/25/95	
Analysis	Standard	MDL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL	Analytical Result	CRQL
4-Nitrophenol		7.5	30 U	30	26 U	26	28 U	28	28 U	28
Dibenzofuran		6.5	12 U	12	11 U	11	11 U	11	11 U	11
2,4-Dinitrotoluene	10	5.8	12 U	12	11 U	11	11 U	11	11 U	11
Diethylphthalate	5000	5.4	12 U	12	1 JB	11	11 U	11	2 JB	11
4-Chlorophenyl-phenylether		7.0	12 U	12	11 U	11	11 U	11	11 U	11
Fluorene	300	6.3	12 U	12	11 U	11	11 U	11	11 U	11
4-Nitroaniline		6.4	30 U	30	26 U	26	28 U	28	28 U	28
4,6-Dinitro-2-methylphenol		5.3	30 U	30	26 U	26	28 U	28	28 U	28
N-Nitrosodiphenylamine (1)	20	4.2	12 U	12	11 U	11	11 U	11	11 U	11
4-Bromophenyl-phenylether		5.3	12 U	12	11 U	11	11 U	11	11 U	11
Hexachlorobenzene	10	5.5	12 U	12	11 U	11	11 U	11	11 U	11
Pentachlorophenol	1	4.0	30 U	30	26 U	26	28 U	28	28 U	28
Phenanthrene	10	5.0	12 U	12	11 U	11	11 U	11	11 U	11
Anthracene	2000	4.6	12 U	12	11 U	11	11 U	11	11 U	11
Carbazole		4.4	12 U	12	11 U	11	11 U	11	11 U	11
Di-n-butylphthalate	900	6.5	12 U	12	11 U	11	11 U	11	11 U	11
Fluoranthene	300	6.0	12 U	12	11 U	11	11 U	11	11 U	11
Pyrene	200	5.4	12 U	12	11 U	11	11 U	11	11 U	11
Butylbenzylphthalate	100	5.3	12 U	12	11 U	11	11 U	11	11 U	11
3,3'-Dichlorobenzidine	60	2.8	12 U	12	11 U	11	11 U	11	11 U	11
Benzo(a)anthracene	10	4.9	12 U	12	11 U	11	11 U	11	11 U	11
Chrysene	20	4.4	12 U	12	11 U	11	11 U	11	11 U	11
bis(2-Ethylhexy)phthalate	30	9.7	12 U	12	600	110 *	11 U	11	11 U	11
Di-n-octyl phthalate	100	5.6	12 U	12	11 U	11	11 U	11	11 U	11
Benzo(b)fluoranthene	2	5.7	12 U	12	11 U	11	11 U	11	11 U	11
Benzo(k)fluoranthene	2	6.2	12 U	12	11 U	11	11 U	11	11 U	11
Benzo(a)pyrene	20	4.9	12 U	12	11 U	11	11 U	11	11 U	11
Indeno(1,2,3-cd)pyrene	20	7.1	12 U	12	11 U	11	11 U	11	11 U	11
Dibenzo(a,h)anthracene	20	6.0	12 U	12	11 U	11	11 U	11	11 U	11
Benzo(g,h,i)perylene	20	6.8	12 U	12	11 U	11	11 U	11	11 U	11
Total Est. Conc. of TIC			9 JB				15 JB			
Dilution Factor					* = 10					
Method:TCL Semivolatiles										

CHARLES WOOD
GROUNDWATER INORGANICS

Geographical Location		CW1		CW1		CW1		CW1		CW1	
Sample		CW01-MW26-A01		CW01-MW26-A01 SOL		CW01-MW26-A02		CW01-MW26-A02		CW01-MW26-A02 SOL	
Sample Type		Total		Soluble		Total		Total		Soluble	
Batch#		9502G358		9502G358		9502G739		9502G739		9502G739	
Prep#		95GI454		95GI454		95GI508		95GI508		95GI508	
RFW#		001		002		002		003		004	
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/21/95		2/21/95		3/14/95		3/14/95		3/14/95	
Analysis Date		3/8/95		3/8/95		3/8/95		3/8/95		3/8/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5
Aluminum	200	6830	24.0	279	24.0	885	16.8	4990	16.8	375	16.8
Arsenic	8	7.8	1.9	1.9 U	1.9	1.9 U	1.9	3.8	1.9	1.9 U	1.9
Barium	2000	81.4	1.7	62.9	1.7	116	0.80	99.3	0.80	86.7	0.80
Beryllium	20	0.90 U	0.90	0.90 U	0.90	0.30 U	0.30	0.56	0.30	0.30 U	0.30
Calcium		25800	10.4	24500	10.4	24900	8.4	32700	8.4	31300	8.4
Cadmium	4	2.8 U	2.8	2.8 U	2.8	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9
Cobalt		6.0	3.0	5.1	3.0	13.2	2.3	8.0	2.3	4.2	2.3
Chromium	100	79.7	2.9	2.9 U	2.9	4.7 U	4.7	54.0	4.7	4.7 U	4.7
Copper	1000	1.9 U	1.9	1.9 U	1.9	8.1	4.0	8.9	4.0	5.7	4.0
Iron	300	15500	6.4	25.0	6.4	93.3	2.5	10700	2.5	18.6	2.5
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		13100	685	9970	685	11800	67.9	14500	67.9	12300	67.9
Magnesium		4810	18.3	3390	18.3	13500	34.3	5340	34.3	4240	34.3
Manganese	50	68.3	1.8	45.2	1.8	114	0.90	71.8	0.90	54.6	0.90
Sodium	50000	55300	30.5	53100	30.5	73800	19.1	58600	19.1	56800	19.1
Nickel	100	24.6	10.8	10.8 U	10.8	15.0	4.2	7.9	4.2	8.7	4.2
Lead	10	5.6	1.6	1.6 U	1.6	2.2	1.2	4.1	1.2	1.2	1.2
Antimony	20	20.7 U	20.7	20.7 U	20.7	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9
Selenium	50	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8
Thallium	10	0.70 U	0.70	0.70 U	0.70	1.1 U	1.1	1.1 U	1.1	1.1 U	1.1
Vanadium		57.7	2.3	2.3 U	2.3	2.1 U	2.1	39.7	2.1	2.1 U	2.1
Zinc	5000	39.0	3.8	14.4	3.8	32.5	1.9	35.6	1.9	17.2	1.9
Cyanide	200										
Method:TAL Metals, Cyanide											

CHA S WOOD
GROUNDWATER INORGANICS

Geographical Location		CW1		CW1		CW1		CW1		CW1	
Sample		CW01-MW26-E02		CW01-MW26-E02 SOL		CW01-MW27-A01		CW01-MW27-A01 SOL		CW01-MW27-A02	
Sample Type		Field Rinsate - Total		Field Rinsate - Soluble		Total		Soluble		Total	
Batch#		9502G739		9502G739		9502G358		9502G358		9502G739	
Prep#		95GI508		95GI508		95GI454		95GI454		95GI508	
RFW#		004		007		003		004		001	
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/14/95		3/14/95		2/21/95		2/21/95		3/14/95	
Analysis Date		3/8/95		3/8/95		3/8/95		3/8/95		3/8/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	2.5 U	2.5	2.5 U	2.5	3.0 U	3.0	3.0 U	3.0	2.5 U	2.5
Aluminum	200	20.2	16.8	18.4	16.8	3770	24.0	653	24.0	7620	16.8
Arsenic	8	1.9 U	1.9	1.9 U	1.9	5.0	1.9	1.9 U	1.9	4.4	1.9
Barium	2000	0.80 U	0.80	0.80 U	0.80	112	1.7	95.6	1.7	142	0.80
Beryllium	20	0.30 U	0.30	0.30 U	0.30	0.90 U	0.90	0.90 U	0.90	0.99	0.30
Calcium		105	8.4	115	8.4	22000	10.4	21500	10.4	26200	8.4
Cadmium	4	2.9 U	2.9	2.9 U	2.9	2.8 U	2.8	2.8 U	2.8	2.9 U	2.9
Cobalt		2.3 U	2.3	2.3 U	2.3	12.4	3.0	12.2	3.0	16.6	2.3
Chromium	100	4.7 U	4.7	4.7 U	4.7	34.5	2.9	2.9 U	2.9	76.6	4.7
Copper	1000	4.0 U	4.0	4.0 U	4.0	1.9 U	1.9	1.9 U	1.9	10.4	4.0
Iron	300	12.0	2.5	16.8	2.5	7190	6.4	122	6.4	15400	2.5
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		67.9	67.9	119	67.9	11400	685	10500	685	14500	67.9
Magnesium		34.3	34.3	47.6	34.3	11700	18.3	10900	18.3	15600	34.3
Manganese	50	0.90 U	0.90	0.90 U	0.90	110	1.8	98.4	1.8	140	0.90
Sodium	50000	132	19.1	156	19.1	64300	30.5	62700	30.5	79100	19.1
Nickel	100	4.2 U	4.2	4.2 U	4.2	11.9	10.8	20.4	10.8	30.0	4.2
Lead	10	2.6	1.2	1.5	1.2	5.6	1.6	1.6 U	1.6	11.0	1.2
Antimony	20	10.9 U	10.9	13.2	10.9	20.7 U	20.7	20.7 U	20.7	10.9 U	10.9
Selenium	50	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8
Thallium	10	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70	0.70 U	0.70	1.1 U	1.1
Vanadium		2.1 U	2.1	2.1 U	2.1	34.4	2.3	2.3 U	2.3	71.5	2.1
Zinc	5000	1.9 U	1.9	1.9 U	1.9	41.9	3.8	33.4	3.8	56.6	1.9
Cyanide	200										
Method:TAL Metals, Cyanide											

CHARLES WOOD
GROUNDWATER INORGANICS

Geographical Location		CW1		CW1		CW1		CW1		CW1	
Sample		CW01-MW27-A02 SOL		CW01-MW28-A01		CW01-MW28-A01 SOL		CW01-MW28-A02		CW01-MW28-A02 SOL	
Sample Type		Soluble		Total		Soluble		Total		Soluble	
Batch#		9503G739		9502G358		9502G358		9502G739		9502G739	
Prep#		95GI508		95GI454		95GI454		95GI508		95GI508	
RFW#		002		005		006		008		009	
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/14/95		2/21/95		2/21/95		3/14/95		3/14/95	
Analysis Date		3/8/95		3/8/95		3/8/95		3/8/95		3/8/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	2.5 U	2.5	3.0 U	3.0	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5
Aluminum	200	885	16.8	3480	24.0	510	24.0	4150	16.8	498	16.8
Arsenic	8	1.9 U	1.9	4.3	1.9	1.9 U	1.9	3.7	1.9	1.9 U	1.9
Barium	2000	116	0.80	54.3	1.7	49.3	1.7	51.8	0.80	39.7	0.80
Beryllium	20	0.30 U	0.30	0.90 U	0.90	0.90 U	0.90	0.30 U	0.30	0.33	0.30
Calcium		24900	8.4	15300	10.4	15100	10.4	14800	8.4	14500	8.4
Cadmium	4	2.9 U	2.9	2.8 U	2.8	2.8 U	2.8	2.9 U	2.9	2.9 U	2.9
Cobalt		13.2	2.3	7.5	3.0	4.7	3.0	6.4	2.3	4.4	2.3
Chromium	100	4.7 U	4.7	27.1	2.9	2.9 U	2.9	29.2	4.7	4.7 U	4.7
Copper	1000	8.1	4.0	1.9 U	1.9	1.9 U	1.9	4.4	4.0	4.0 U	4.0
Iron	300	93.3	2.5	5760	6.4	8.4	6.4	6610	2.5	28.6	2.5
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		11800	67.9	12900	685	12100	685	12900	67.9	11600	67.9
Magnesium		13500	34.3	3890	18.3	3380	18.3	4270	34.3	3580	34.3
Manganese	50	114	0.90	44.0	1.8	36.3	1.8	48.7	0.90	39.5	0.90
Sodium	50000	73800	19.1	17000	30.5	17100	30.5	19200	19.1	19000	19.1
Nickel	100	15.0	4.2	11.5	10.8	17.2	10.8	6.0	4.2	7.2	4.2
Lead	10	2.2	1.2	2.7	1.6	1.6 U	1.6	3.6	1.2	1.5	1.2
Antimony	20	10.9 U	10.9	20.7 U	20.7	20.7 U	20.7	10.9 U	10.9	10.9 U	10.9
Selenium	50	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8
Thallium	10	1.1 U	1.1	0.70 U	0.70	0.70 U	0.70	1.1 U	1.1	1.1 U	1.1
Vanadium		2.1 U	2.1	23.4	2.3	2.3 U	2.3	24.4	2.1	2.1 U	2.1
Zinc	5000	32.5	1.9	21.9	3.8	13.1	3.8	27.8	1.9	14.4	1.9
Cyanide	200										
Method:TAL Metals, Cyanide											

CHA S WOOD
GROUNDWATER INORGANICS

Geographical Location		CW1		CW1		CW1		CW1		CW1	
Sample		CW01-MW29-A01		CW01-MW29-A01 SOL		CW01-MW29-A02		CW01-MW29-A02 SOL		CW01-MW29-E01	
Sample Type		Total		Soluble		Total		Soluble		Field Rinsate - Total	
Batch#		9502G358		9502G358		9502G739		9502G739		9502G358	
Prep#		95GI454		95GI454		95GI508		95GI508		95GI454	
RFW#		007		008		010		011		010	
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/21/95		2/21/95		3/14/95		3/14/95		2/21/95	
Analysis Date		3/8/95		3/8/95		3/8/95		3/8/95		3/8/95	
Analysis	Standard	Analytical	MDL	Analytical	MDL	Analytical	MDL	Analytical	MDL	Analytical	MDL
		Result		Result		Result		Result		Result	
Silver	20	3.0 U	3.0	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5	3.0 U	3.0
Aluminum	200	1980	24.0	118	24.0	2760	16.8	143	16.8	24.0 U	24.0
Arsenic	8	2.3	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9
Barium	2000	46.3	1.7	37.6	1.7	55.3	0.80	46.0	0.80	1.7 U	1.7
Beryllium	20	0.90 U	0.90	0.90 U	0.90	0.30 U	0.30	0.30 U	0.30	0.90 U	0.90
Calcium		25400	10.4	25000	10.4	31300	8.4	31400	8.4	113	10.4
Cadmium	4	2.8 U	2.8	2.8 U	2.8	2.9 U	2.9	2.9 U	2.9	2.8 U	2.8
Cobalt		4.4	3.0	3.6	3.0	5.2	2.3	4.1	2.3	3.0 U	3.0
Chromium	100	17.5	2.9	2.9 U	2.9	21.9	4.7	4.7 U	4.7	2.9 U	2.9
Copper	1000	1.9 U	1.9	1.9 U	1.9	4.0 U	4.0	4.0 U	4.0	1.9 U	1.9
Iron	300	3810	6.4	134	6.4	5300	2.5	238	2.5	6.4 U	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		10700	685	9660	685	11300	67.9	11000	67.9	685 U	685
Magnesium		4940	18.3	4520	18.3	6100	34.3	5890	34.3	18.3 U	18.3
Manganese	50	65.8	1.8	60.5	1.8	75.3	0.90	70.3	0.90	1.8 U	1.8
Sodium	50000	28000	30.5	27600	30.5	30800	19.1	33500	19.1	321	30.5
Nickel	100	15.4	10.8	10.8 U	10.8	4.8	4.2	5.8	4.2	10.8 U	10.8
Lead	10	1.6 U	1.6	1.6 U	1.6	2.3	1.2	1.2	1.2	1.6 U	1.6
Antimony	20	20.7 U	20.7	20.7 U	20.7	10.9 U	10.9	10.9 U	10.9	20.7 U	20.7
Selenium	50	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8
Thallium	10	0.70 U	0.70	0.70 U	0.70	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70
Vanadium		14.5	2.3	2.3 U	2.3	16.7	2.1	2.1 U	2.1	2.3 U	2.3
Zinc	5000	21.4	3.8	15.8	3.8	23.8	1.9	16.3	1.9	3.8 U	3.8
Cyanide	200										
Method:TAL Metals, Cyanide											

CHARLES WOOD
GROUNDWATER INORGANICS

Geographical Location		CW1		CW2		CW2		CW2		CW2		CW2	
Sample		CW01-MW29-E01 SOL		CW02-MW30-A01		CW02-MW30-A01 SOL		CW02-MW30-A02		CW02-MW30-A02 SOL		CW02-MW31-A01	
Sample Type		Field Rinsate - Soluble		Total		Soluble		Total		Soluble		Total	
Batch#		9502G358		9502G358		9502G358		9502G739		9502G739		9502G358	
Prep#		95GI454		95GI454		95GI454		95GI508		95GI508		95GI454	
RFW#		011		012		013		012		013		014	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/21/95		2/21/95		2/21/95		3/14/95		3/14/95		2/21/95	
Analysis Date		3/8/95		3/8/95		3/8/95		3/8/95		3/8/95		3/8/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5	3.0 U	3.0
Aluminum	200	24.0 U	24.0	127	24.0	24.0 U	24.0	131	16.8	22.2	16.8	24.0 U	24.0
Arsenic	8	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9
Barium	2000	1.7 U	1.7	227	1.7	219	1.7	240	0.80	235	0.80	170	1.7
Beryllium	20	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.30 U	0.30	0.30 U	0.30	0.90 U	0.90
Calcium		72.3	10.4	61200	10.4	59100	10.4	66000	8.4	66000	8.4	37100	10.4
Cadmium	4	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.9 U	2.9	2.9 U	2.9	2.8 U	2.8
Cobalt		3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	2.3 U	2.3	2.3 U	2.3	3.0 U	3.0
Chromium	100	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	4.7 U	4.7	4.7 U	4.7	2.9 U	2.9
Copper	1000	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	7.6	4.0	8.2	4.0	1.9 U	1.9
Iron	300	6.4 U	6.4	42800	6.4	40500	6.4	48700	2.5	47500	2.5	34600	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		685 U	685	9460	685	9590	685	10500	67.9	10600	67.9	8270	685
Magnesium		18.3 U	18.3	6770	18.3	6560	18.3	7320	34.3	7300	34.3	4500	18.3
Manganese	50	1.8 U	1.8	352	1.8	340	1.8	378	0.90	375	0.90	212	1.8
Sodium	50000	137	30.5	18000	30.5	17600	30.5	16200	19.1	16200	19.1	9650	30.5
Nickel	100	12.9	10.8	16.7	10.8	21.1	10.8	4.6	4.2	4.2 U	4.2	26.0	10.8
Lead	10	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6	1.2 U	1.2	1.8	1.2	1.6 U	1.6
Antimony	20	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	10.9 U	10.9	12.7	10.9	20.7 U	20.7
Selenium	50	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8
Thallium	10	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70
Vanadium		2.3 U	2.3	3.2	2.3	2.3 U	2.3	2.1 U	2.1	2.1 U	2.1	2.3 U	2.3
Zinc	5000	3.8 U	3.8	6.6	3.8	5.1	3.8	4.8	1.9	6.1	1.9	5.6	3.8
Cyanide	200												
Method:TAL Metals, Cyanide													

CHA S WOOD
GROUNDWATER INORGANICS

Geographical Location		CW2		CW2		CW2		CW2		CW2	
Sample		CW02-MW31-A01 SOL		CW02-MW31-A02		CW02-MW31-A02 SOL		CW02-MW32-A01		CW02-MW32-A01 SOL	
Sample Type		Soluble		Total		Soluble		Total		Soluble	
Batch#		9502G358		9502G739		9502G739		9502G358		9502G358	
Prep#		95GI454		95GI508		95GI508		95GI454		95GI454	
RFW#		015		014		015		016		017	
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/21/95		3/14/95		3/14/95		2/21/95		2/21/95	
Analysis Date		3/8/95		3/8/95		3/8/95		3/8/95		3/8/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5	3.0 U	3.0	3.0 U	3.0
Aluminum	200	24.0 U	24.0	35.3	16.8	26.1	16.8	530	24.0	24.0 U	24.0
Arsenic	8	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9
Barium	2000	169	1.7	191	0.80	183	0.80	216	1.7	187	1.7
Beryllium	20	0.90 U	0.90	0.30 U	0.30	0.30 U	0.30	0.90 U	0.90	0.90 U	0.90
Calcium		37600	10.4	40400	8.4	39500	8.4	45800	10.4	43700	10.4
Cadmium	4	2.8 U	2.8	2.9 U	2.9	2.9 U	2.9	2.8 U	2.8	2.8 U	2.8
Cobalt		3.0 U	3.0	2.3 U	2.3	2.3 U	2.3	3.0 U	3.0	3.0 U	3.0
Chromium	100	2.9 U	2.9	4.7 U	4.7	4.7 U	4.7	2.9 U	2.9	2.9 U	2.9
Copper	1000	1.9 U	1.9	4.3	4.0	4.0 U	4.0	1.9 U	1.9	1.9 U	1.9
Iron	300	33300	6.4	38100	2.5	34200	2.5	47700	6.4	38300	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		8210	685	9150	67.9	8930	67.9	9480	685	9210	685
Magnesium		4540	18.3	5050	34.3	4960	34.3	5560	18.3	5230	18.3
Manganese	50	214	1.8	233	0.90	228	0.90	266	1.8	250	1.8
Sodium	50000	9790	30.5	11000	19.1	10900	19.1	11500	30.5	11000	30.5
Nickel	100	26.4	10.8	4.2 U	4.2	14.7	4.2	10.8 U	10.8	10.8 U	10.8
Lead	10	1.6 U	1.6	1.2 U	1.2	1.7	1.2	1.6 U	1.6	1.6 U	1.6
Antimony	20	20.7 U	20.7	10.9 U	10.9	15.8	10.9	20.7 U	20.7	22.3	20.7
Selenium	50	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8
Thallium	10	0.70 U	0.70	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70	0.70 U	0.70
Vanadium		2.3 U	2.3	2.1 U	2.1	2.1 U	2.1	3.9	2.3	2.3 U	2.3
Zinc	5000	3.8 U	3.8	2.2	1.9	5.4	1.9	14.2	3.8	4.1	3.8
Cyanide	200										
Method:TAL Metals, Cyanide											

CHARLES WOOD
GROUNDWATER INORGANICS

Geographical Location		CW2		CW2		CW2		CW2		CW2	
Sample		CW02-MW32-A02		CW02-MW32-A02 SOL		CW02-MW33-A01		CW02-MW33-A01 SOL		CW02-MW33-A02	
Sample Type		Total		Soluble		Total		Soluble		Total	
Batch#		9502G739		9502G739		9502G358		9502G358		9502G739	
Prep#		95GI508		95GI508		95GI454		95GI454		95GI508	
RFW#		016		017		018		019		018	
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/14/95		3/14/95		2/21/95		2/21/95		3/14/95	
Analysis Date		3/8/95		3/8/95		3/8/95		3/8/95		3/8/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	2.5 U	2.5	2.5 U	2.5	3.0 U	3.0	3.0 U	3.0	2.5 U	2.5
Aluminum	200	365	16.8	16.8	16.8	651	24.0	24.0 U	24.0	701	16.8
Arsenic	8	1.9 U	1.9	1.9 U	1.9	3.0	1.9	1.9 U	1.9	1.9 U	1.9
Barium	2000	206	0.80	189	0.80	235	1.7	184	1.7	233	0.80
Beryllium	20	0.30 U	0.30	0.30 U	0.30	0.90 U	0.90	0.90 U	0.90	0.30 U	0.30
Calcium		46700	8.4	47100	8.4	49300	10.4	48600	10.4	53200	8.4
Cadmium	4	2.9 U	2.9	2.9 U	2.9	2.8 U	2.8	2.8 U	2.8	2.9 U	2.9
Cobalt		2.3 U	2.3	2.5	2.3	3.0 U	3.0	3.0 U	3.0	5.8	2.3
Chromium	100	4.7 U	4.7	4.7 U	4.7	4.3	2.9	2.9 U	2.9	4.7 U	4.7
Copper	1000	4.0	4.0	4.4	4.0	8.4	1.9	1.9 U	1.9	15.4	4.0
Iron	300	50200	2.5	42700	2.5	54900	6.4	39700	6.4	54000	2.5
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		9680	67.9	9720	67.9	8030	685	8130	685	8880	67.9
Magnesium		5630	34.3	5670	34.3	5890	18.3	5710	18.3	6310	34.3
Manganese	50	271	0.90	270	0.90	252	1.8	248	1.8	294	0.90
Sodium	50000	12100	19.1	12300	19.1	12800	30.5	12600	30.5	15900	19.1
Nickel	100	23.5	4.2	6.1	4.2	10.8 U	10.8	10.8 U	10.8	5.4	4.2
Lead	10	1.4	1.2	1.2	1.2	1.6 U	1.6	1.6 U	1.6	6.6	1.2
Antimony	20	10.9 U	10.9	10.9 U	10.9	20.7 U	20.7	20.7 U	20.7	10.9 U	10.9
Selenium	50	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8
Thallium	10	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70	0.70 U	0.70	1.1 U	1.1
Vanadium		2.7	2.1	2.1 U	2.1	4.5	2.3	2.3 U	2.3	5.8	2.1
Zinc	5000	13.5	1.9	4.5	1.9	14.0	3.8	6.1	3.8	37.2	1.9
Cyanide	200										
Method:TAL Metals, Cyanide											

CHA S WOOD
GROUNDWATER INORGANICS

Geographical Location		CW2		CW9		CW9		CW9		CW9	
Sample		CW02-MW33-A02 SOL		CW09-MW35-A01		CW09-MW35-A01 SOL		CW09-MW35-A02		CW09-MW35-A02 SOL	
Sample Type		Soluble		Total		Soluble		Total		Soluble	
Batch#		9502G739		9502G300		9502G300		9503G723		9503G723	
Prep#		95GI508		95GI450		95GI450		95GI503		95GI503	
RFW#		019		003		004		002		003	
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/14/95		2/20/95		2/20/95		3/13/95		3/13/95	
Analysis Date		3/8/95		3/6/95		3/6/95		3/15/95		3/15/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5
Aluminum	200	25.6	16.8	242	16.8	85.2	16.8	210	16.8	91.0	16.8
Arsenic	8	1.9 U	1.9	1.3 U	1.3	1.3 U	1.3	1.3 U	1.3	1.3 U	1.3
Barium	2000	192	0.80	40.5	0.80	36.8	0.80	34.0	0.80	35.4	0.80
Beryllium	20	0.30 U	0.30	0.30 U	0.30	0.30 U	0.30	0.35	0.30	0.33	0.30
Calcium		51800	8.4	21800	8.4	20700	8.4	25000	8.4	25800	8.4
Cadmium	4	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9
Cobalt		4.0	2.3	4.9	2.3	4.2	2.3	2.3 U	2.3	2.3 U	2.3
Chromium	100	4.7 U	4.7	4.7 U	4.7	4.7 U	4.7	4.7 U	4.7	4.7 U	4.7
Copper	1000	7.7	4.0	4.0 U	4.0	4.0 U	4.0	4.0 U	4.0	6.5	4.0
Iron	300	38900	2.5	123	2.5	17.1	2.5	85.4	2.5	30.1	2.5
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		8700	67.9	2110	67.9	1990	67.9	1960	67.9	2180	67.9
Magnesium		6140	34.3	5770	34.3	5360	34.3	5980	34.3	6200	34.3
Manganese	50	284	0.90	43.9	0.90	40.2	0.90	36.3	0.90	37.9	0.90
Sodium	50000	15900	19.1	7300	19.1	6760	19.1	6660	19.1	7080	19.1
Nickel	100	4.3	4.2	11.3	4.2	9.6	4.2	4.2 U	4.2	9.3	4.2
Lead	10	5.6	1.2	1.6 U	1.6	1.6 U	1.6	1.1 U	1.1	1.1 U	1.1
Antimony	20	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9
Selenium	50	1.8 U	1.8	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5
Thallium	10	1.1 U	1.1	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70
Vanadium		2.1 U	2.1	2.1 U	2.1	2.1 U	2.1	2.1 U	2.1	2.1 U	2.1
Zinc	5000	25.4	1.9	60.1	1.9	55.0	1.9	51.6	1.9	58.4	1.9
Cyanide	200										
Method:TAL Metals, Cyanide											

CHARLES WOOD
GROUNDWATER INORGANICS

Geographical Location		CW9		CW9		CW9		CW9		CW9	
Sample		CW09-MW35-E01		CW09-MW35-E01 SOL		CW09-MW36-A01		CW09-MW36-A01 SOL		CW09-MW36-A02	
Sample Type		Total		Soluble		Total		Soluble		Total	
Batch#		9502G300		9502G300		9502G300		9502G300		9503G723	
Prep#		95GI450		95GI450		95GI450		95GI450		95GI503	
RFW#		007		008		005		006		004	
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/20/95		2/20/95		2/20/95		2/20/95		3/13/95	
Analysis Date		3/6/95		3/6/95		3/6/95		3/6/95		3/15/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5	2.5 U	2.5
Aluminum	200	231	16.8	16.8 U	16.8	460	16.8	39.5	16.8	645	16.8
Arsenic	8	1.3 U	1.3	1.3 U	1.3	1.3 U	1.3	1.3 U	1.3	1.3 U	1.3
Barium	2000	40.8	0.80	0.80 U	0.80	33.2	0.80	28.3	0.80	29.4	0.80
Beryllium	20	0.30 U	0.30	0.30 U	0.30	0.30 U	0.30	0.30 U	0.30	0.30 U	0.30
Calcium		21100	8.4	191	8.4	37400	8.4	37600	8.4	32700	8.4
Cadmium	4	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9
Cobalt		4.0	2.3	2.3 U	2.3	3.2	2.3	4.2	2.3	2.5	2.3
Chromium	100	4.7 U	4.7	4.7 U	4.7	6.4	4.7	6.5	4.7	5.0	4.7
Copper	1000	4.0 U	4.0	4.0 U	4.0	4.0 U	4.0	4.0 U	4.0	4.0 U	4.0
Iron	300	85.8	2.5	3.8	2.5	1120	2.5	44.1	2.5	1420	2.5
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		2090	67.9	82.5	67.9	4180	67.9	4110	67.9	3820	67.9
Magnesium		5580	34.3	34.3 U	34.3	8200	34.3	8170	34.3	7470	34.3
Manganese	50	43.9	0.90	0.90 U	0.90	239	0.90	240	0.90	195	0.90
Sodium	50000	7230	19.1	654	19.1	5990	19.1	6120	19.1	5810	19.1
Nickel	100	10.8	4.2	4.2 U	4.2	6.4	4.2	8.3	4.2	4.9	4.2
Lead	10	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6	1.6 U	1.6	4.1	1.1
Antimony	20	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9	10.9 U	10.9
Selenium	50	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5
Thallium	10	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70
Vanadium		2.1 U	2.1	2.8	2.1	3.5	2.1	2.1 U	2.1	4.2	2.1
Zinc	5000	60.7	1.9	2.6	1.9	25.7	1.9	24.9	1.9	28.3	1.9
Cyanide	200										
Method:TAL Metals, Cyanide											

CHA S WOOD
GROUNDWATER INORGANICS

Geographical Location		CW9		B6		B6		B6		B6		B7	
Sample		CW09-MW36-A02 SOL		B6-MW06B-A01		B6-MW06B-A01 SOL		B6-MW06B-A02		B6-MW06B-A02 SOL		B7-MW07B-A01	
Sample Type		Soluble		Total		Soluble		Total		Soluble		Total	
Batch#		9503G723		9502G198		9502G198		9503G641		9503G641		9502G198	
Prep#		95GI503		95GI427		95GI427		95GI479		95GI479		95GI427	
RFW#		005		003		004		001		002		005	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/13/95		2/15/95		2/15/95		3/8/95		3/8/95		2/15/95	
Analysis Date		3/15/95		2/23/95		2/28/95		3/14/95		3/10/95		2/23/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	2.5 U	2.5	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0
Aluminum	200	36.2	16.8	7500	24.0	152	24.0	8210	24.0	245	24.0	1360	24.0
Arsenic	8	1.3 U	1.3	14.6	1.9	1.9 U	1.9	25.1	1.6	2.3	1.6	1.9 U	1.9
Barium	2000	22.6	0.80	170	1.7	50.8	1.7	192	1.7	34.9	1.7	71.0	1.7
Beryllium	20	0.35	0.30	2.3	0.90	0.90 U	0.90	2.8	0.90	0.94	0.90	0.90 U	0.90
Calcium		31700	8.4	5270	10.4	5050	10.4	4500	10.4	4200	10.4	7610	10.4
Cadmium	4	2.9 U	2.9	3.7	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8
Cobalt		2.6	2.3	12.5	3.0	5.2	3.0	10.7	3.0	8.7	3.0	30.6	3.0
Chromium	100	4.7 U	4.7	49.6	2.9	2.9 U	2.9	48.3	2.9	2.9 U	2.9	9.7	2.9
Copper	1000	4.0 U	4.0	6.8	1.9	1.9 U	1.9	9.8	1.9	4.0	1.9	1.9 U	1.9
Iron	300	29.3	2.5	15600	6.4	1800	6.4	19600	6.4	1010	6.4	2150	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		3600	67.9	4030	685	2450	685	4630	685	2060	685	2140	685
Magnesium		7080	34.3	4770	18.3	2940	18.3	4430	18.3	2540	18.3	6670	18.3
Manganese	50	186	0.90	59.2	1.8	36.3	1.8	51.5	1.8	27.3	1.8	232	1.8
Sodium	50000	5640	19.1	16600	30.5	16600	30.5	17000	30.5	16900	30.5	36400	30.5
Nickel	100	5.0	4.2	48.3	10.8	23.3	10.8	35.7	10.8	22.8	10.8	12.5	10.8
Lead	10	1.1 U	1.1	2.8	1.6	4.1	1.6	3.9	1.0	1.0 U	1.0	3.3	1.6
Antimony	20	10.9 U	10.9	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7
Selenium	50	1.5 U	1.5	3.8	1.5	1.5 U	1.5	3.7	1.8	1.8 U	1.8	1.5 U	1.5
Thallium	10	0.70 U	0.70	0.70 U	0.70	0.70 U	0.70	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70
Vanadium		2.1 U	2.1	27.0	2.3	2.3 U	2.3	28.9	2.3	2.3 U	2.3	9.1	2.3
Zinc	5000	25.4	1.9	133	3.8	70.0	3.8	126	3.8	66.3	3.8	23.5	3.8
Cyanide	200			10 U	10			10 U	10			10 U	10
Method:TAL Metals, Cyanide													

CHARLES WOOD
GROUNDWATER INORGANICS

Geographical Location		B7		B7		B7		B8		B8		B8	
Sample		B7-MW07B-A01 SOL		B7-MW07B-A02		B7-MW07B-A02 SOL		B8-MW08B-A01		B8-MW08B-A01 SOL		B8-MW08B-A02	
Sample Type		Soluble		Total		Soluble		Total		Soluble		Total	
Batch#		9502G198		9503G617		9503G617		9502G198		9502G198		9503G641	
Prep#		95GI427		95GI475		95GI475		95GI427		95GI427		95GI479	
RFW#		006		003		004		007		008		003	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/15/95		3/7/95		3/7/95		2/15/95		2/15/95		3/8/95	
Analysis Date		2/28/95		3/13/95		3/13/95		2/23/95		2/28/95		3/14/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0
Aluminum	200	327	24.0	993	16.8	289	16.8	340	24.0	27.9	24.0	627	24.0
Arsenic	8	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	1.6 U	1.6
Barium	2000	67.0	1.7	64.9	0.80	62.5	0.80	45.3	1.7	45.3	1.7	45.7	1.7
Beryllium	20	0.90 U	0.90	0.45	0.30	0.57	0.30	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90
Calcium		7420	10.4	7420	8.4	7460	8.4	1890	10.4	1960	10.4	1870	10.4
Cadmium	4	2.8 U	2.8	2.9 U	2.9	2.9 U	2.9	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8
Cobalt		30.6	3.0	29.3	2.3	29.7	2.3	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0
Chromium	100	2.9 U	2.9	5.7	4.7	4.7 U	4.7	2.9 U	2.9	2.9 U	2.9	5.7	2.9
Copper	1000	1.9 U	1.9	4.0 U	4.0	4.0 U	4.0	2.9	1.9	3.8	1.9	1.9 U	1.9
Iron	300	6.4 U	6.4	1430	2.5	10.9	2.5	702	6.4	6.4 U	6.4	1240	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		1280	685	1400	67.9	1130	67.9	1740	685	2230	685	2120	685
Magnesium		6260	18.3	6160	34.3	6080	34.3	3260	18.3	3310	18.3	3330	18.3
Manganese	50	223	1.8	205	0.90	203	0.90	16.6	1.8	16.6	1.8	15.8	1.8
Sodium	50000	35500	30.5	34100	19.1	34100	19.1	12000	30.5	12300	30.5	12100	30.5
Nickel	100	10.8 U	10.8	4.2 U	4.2	6.5	4.2	10.8 U	10.8	14.2	10.8	10.8 U	10.8
Lead	10	1.6 U	1.6	1.0 U	1.0	1.0 U	1.0	1.6 U	1.6	1.6 U	1.6	1.0 U	1.0
Antimony	20	20.7 U	20.7	10.9 U	10.9	10.9 U	10.9	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7
Selenium	50	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.8 U	1.8
Thallium	10	0.70 U	0.70	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70	0.70 U	0.70	1.1 U	1.1
Vanadium		2.3 U	2.3	4.3	2.1	2.1 U	2.1	2.3 U	2.3	2.4	2.3	4.4	2.3
Zinc	5000	24.7	3.8	22.3	1.9	22.0	1.9	14.7	3.8	14.7	3.8	16.0	3.8
Cyanide	200			10 U	10			10 U	10			10 U	10
Method:TAL Metals, Cyanide													

CHA S WOOD
GROUNDWATER INORGANICS

Geographical Location		B8		B8		B9		B9		B9		B9	
Sample		B8-MW08B-A02 SOL		B8-MW10B-A02 SOL		B9-MW09B-A01		B9-MW09B-A01 SOL		B9-MW09B-A02		B9-MW09B-A02 SOL	
Sample Type		Soluble		Soluble		Total		Soluble		Total		Soluble	
Batch#		9503G641		9503G641		9502G198		9502G198		9503G617		9503G617	
Prep#		95GI479		95GI479		95GCN040		95GI427		95GI475		95GI475	
RFW#		004		006		001		002		001		002	
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/8/95		3/8/95		2/15/95		2/15/95		3/7/95		3/7/95	
Analysis Date		3/10/95		3/10/95		2/23/95		2/28/95		3/13/95		3/13/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	2.5 U	2.5	2.5 U	2.5
Aluminum	200	29.1	24.0	50.5	24.0	1290	24.0	400	24.0	3880	16.8	399	16.8
Arsenic	8	1.6 U	1.6	2.3	1.6	2.3	1.9	1.9 U	1.9	13.2	1.9	1.9 U	1.9
Barium	2000	35.7	1.7	14.9	1.7	82.8	1.7	71.2	1.7	92.3	0.80	50.0	0.80
Beryllium	20	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.56	0.30	0.45	0.30
Calcium		2010	10.4	3490	10.4	8600	10.4	8700	10.4	7810	8.4	8030	8.4
Cadmium	4	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.9 U	2.9	2.9 U	2.9
Cobalt		3.0 U	3.0	3.0 U	3.0	4.8	3.0	5.1	3.0	6.3	2.3	4.8	2.3
Chromium	100	2.9 U	2.9	2.9 U	2.9	8.1	2.9	2.9 U	2.9	31.8	4.7	4.7 U	4.7
Copper	1000	1.9 U	1.9	4.8	1.9	1.9	1.9	3.0	1.9	4.0 U	4.0	4.0 U	4.0
Iron	300	25.5	6.4	28.2	6.4	2650	6.4	13.6	6.4	12800	2.5	33.3	2.5
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		1300	685	1520	685	2400	685	1890	685	2940	67.9	1620	67.9
Magnesium		3120	18.3	2090	18.3	6460	18.3	6160	18.3	7160	34.3	6380	34.3
Manganese	50	15.3	1.8	23.3	1.8	58.2	1.8	54.1	1.8	62.2	0.90	47.4	0.90
Sodium	50000	12000	30.5	14900	30.5	3330	30.5	3440	30.5	3390	19.1	3530	19.1
Nickel	100	10.8 U	10.8	10.8 U	10.8	23.8	10.8	22.3	10.8	18.4	4.2	15.0	4.2
Lead	10	1.0 U	1.0	1.0 U	1.0	2.0	1.6	1.6 U	1.6	3.6	1.2	1.0 U	1.0
Antimony	20	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	10.9 U	10.9	10.9 U	10.9
Selenium	50	1.8 U	1.8	1.8 U	1.8	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5	1.5 U	1.5
Thallium	10	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70	0.70 U	0.70	1.1 U	1.1	1.1 U	1.1
Vanadium		2.3 U	2.3	2.3 U	2.3	4.4	2.3	2.3 U	2.3	13.2	2.1	2.1 U	2.1
Zinc	5000	18.6	3.8	24.1	3.8	54.8	3.8	53.1	3.8	75.8	1.9	61.3	1.9
Cyanide	200					10 U	10			10 U	10		
Method:TAL Metals, Cyanide													

CHARLES WOOD
GROUNDWATER INORGANICS

Geographical Location		B10		B10		B10		B10		B10	
Sample		B10-MW10B-A01		B10-MW10B-A01 SOL		B10-MW10B-A02		B10-MW10B-A02 SOL		B10-MW10B-E01	
Sample Type		Total		Soluble		Total		Soluble		Field Rinsate - Total	
Batch#		9502G198		9502G198		9503G641		9503G641		9502G198	
Prep#		95GI427		95GI427		95GI479		95GI479		95GI427	
RFW#		009		010		005		006		012	
Dilution Factor		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/15/95		2/15/95		3/8/95		3/8/95		2/15/95	
Analysis Date		2/23/95		2/28/95		3/14/95		3/14/95		2/23/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0
Aluminum	200	1690	24.0	71.1	24.0	1250	24.0	50.5	24.0	24.0 U	24.0
Arsenic	8	3.5	1.9	1.9 U	1.9	4.0	1.6	2.3	1.6	1.9 U	1.9
Barium	2000	77.5	1.7	20.3	1.7	63.2	1.7	14.9	1.7	1.7 U	1.7
Beryllium	20	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90
Calcium		3980	10.4	3690	10.4	3500	10.4	3490	10.4	33.6	10.4
Cadmium	4	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8
Cobalt		3.5	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0
Chromium	100	12.1	2.9	2.9 U	2.9	6.7	2.9	2.9 U	2.9	2.9 U	2.9
Copper	1000	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9	4.8	1.9	1.9 U	1.9
Iron	300	3070	6.4	92.3	6.4	2220	6.4	28.2	6.4	6.4 U	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		2060	685	685 U	685	1870	685	1520	685	685 U	685
Magnesium		2790	18.3	2340	18.3	2450	18.3	2090	18.3	18.3 U	18.3
Manganese	50	34.8	1.8	30.4	1.8	27.6	1.8	23.3	1.8	2.7	1.8
Sodium	50000	16400	30.5	16200	30.5	15600	30.5	14900	30.5	95.0	30.5
Nickel	100	20.4	10.8	17.3	10.8	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8
Lead	10	2.2	1.6	7.3	1.6	1.0 U	1.0	1.0 U	1.0	1.6 U	1.6
Antimony	20	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7
Selenium	50	1.5 U	1.5	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8	1.5 U	1.5
Thallium	10	0.70 U	0.70	0.70 U	0.70	1.1 U	1.1	1.1 U	1.1	0.70 U	0.70
Vanadium		8.5	2.3	2.3 U	2.3	2.8	2.3	2.3 U	2.3	2.3 U	2.3
Zinc	5000	35.9	3.8	32.4	3.8	30.8	3.8	24.1	3.8	3.8 U	3.8
Cyanide	200	10 U	10			10 U	10	10 U	10		
Method:TAL Metals, Cyanide											

CHA S WOOD
GROUNDWATER INORGANICS

Geographical Location		B10		B10		B10	
Sample		B10-MW10B-E01 SOL		B10-MW10B-E02		B10-MW10B-E02 SOL	
Sample Type		Field Rinsate - Soluble		Field Rinsate - Total		Field Rinsate - Soluble	
Batch#		9502G198		9503G641		9503G641	
Prep#		95GI427		95GI479		95GI479	
RFW#		013		008		009	
Dilution Factor		1.00		1.00		1.00	
Matrix		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l	
Sampling Date		2/15/95		3/8/95		3/8/95	
Analysis Date		2/28/95		3/14/95		3/10/95	
Analysis	Standard	Analytical Result	MDL	Analytical Result	MDL	Analytical Result	MDL
Silver	20	3.0 U	3.0	3.0 U	3.0	3.0 U	3.0
Aluminum	200	24.0 U	24.0	24.0 U	24.0	24.0 U	24.0
Arsenic	8	1.9 U	1.9	1.6 U	1.6	1.6 U	1.6
Barium	2000	1.7 U	1.7	1.7 U	1.7	1.7 U	1.7
Beryllium	20	0.90 U	0.90	0.90 U	0.90	0.90 U	0.90
Calcium		111	10.4	141	10.4	130	10.4
Cadmium	4	2.8 U	2.8	2.8 U	2.8	2.8 U	2.8
Cobalt		3.0 U	3.0	3.0 U	3.0	3.0 U	3.0
Chromium	100	2.9 U	2.9	2.9 U	2.9	2.9 U	2.9
Copper	1000	1.9 U	1.9	1.9 U	1.9	1.9 U	1.9
Iron	300	6.4 U	6.4	9.3	6.4	9.8	6.4
Mercury	2	0.20 U	0.20	0.20 U	0.20	0.20 U	0.20
Potassium		685 U	685	685 U	685	685 U	685
Magnesium		18.3 U	18.3	24.0	18.3	18.3 U	18.3
Manganese	50	1.8 U	1.8	1.8 U	1.8	1.8 U	1.8
Sodium	50000	70.4	30.5	170	30.5	231	30.5
Nickel	100	10.8 U	10.8	10.8 U	10.8	10.8 U	10.8
Lead	10	1.6 U	1.6	1.0 U	1.0	1.0 U	1.0
Antimony	20	20.7 U	20.7	20.7 U	20.7	20.7 U	20.7
Selenium	50	1.5 U	1.5	1.8 U	1.8	1.8 U	1.8
Thallium	10	0.70 U	0.70	1.1 U	1.1	1.1 U	1.1
Vanadium		2.3 U	2.3	2.3 U	2.3	2.3 U	2.3
Zinc	5000	3.8 U	3.8	6.5	3.8	6.4	3.8
Cyanide	200			10 U	10		
Method:TAL Metals, Cyanide							

CHARLES WOOD
GROUNDWATER PESTICIDES/PCBS

Geographical Location		CW1		CW1		CW1		CW1		CW1		CW1	
Sample		CW01-MW26-A01		CW01-MW26-A02		CW01-MW26-E02		CW01-MW27-A01		CW01-MW27-A02		CW01-MW28-A01	
Sample Type						Field Rinsate Blank							
Batch#		9503G358		9503G739		9503G739		9503G358		9503G739		9503G358	
Prep#		95GP0154		95GP0251		95GP0251		95GP0154		95GP0251		95GP0154	
RFW#		001		003		006		003		001		005	
Sample Depth													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/21/95		3/14/95		3/14/95		2/21/95		3/14/95		2/21/95	
Analysis Date		3/15/95		3/12/95		3/12/95		3/15/95		3/12/95		3/15/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.048 U	0.048	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.056 U	0.056	0.047 U	0.047
beta-BHC	0.2	0.048 U	0.048	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.056 U	0.056	0.047 U	0.047
delta-BHC		0.048 U	0.048	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.056 U	0.056	0.047 U	0.047
gamma-BHC (Lindane)	0.2	0.048 U	0.048	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.056 U	0.056	0.047 U	0.047
Heptachlor	0.4	0.048 U	0.048	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.056 U	0.056	0.047 U	0.047
Aldrin	0.04	0.048 U	0.048	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.056 U	0.056	0.047 U	0.047
Heptachlor epoxide	0.2	0.048 U	0.048	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.056 U	0.056	0.047 U	0.047
Endosulfan I	0.4	0.048 U	0.048	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.056 U	0.056	0.047 U	0.047
Dieldrin	0.03	0.097 U	0.097	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.11 U	0.11	0.094 U	0.094
4,4'-DDE	0.1	0.097 U	0.097	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.11 U	0.11	0.094 U	0.094
Endrin	2	0.097 U	0.097	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.11 U	0.11	0.094 U	0.094
Endosulfan II	0.4	0.097 U	0.097	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.11 U	0.11	0.094 U	0.094
4,4'-DDD	0.1	0.097 U	0.097	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.11 U	0.11	0.094 U	0.094
Endosulfan sulfate	0.4	0.097 U	0.097	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.11 U	0.11	0.094 U	0.094
4,4'-DDT	0.1	0.097 U	0.097	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.11 U	0.11	0.094 U	0.094
Methoxychlor	40	0.48 U	0.48	0.52 U	0.52	0.52 U	0.52	0.52 U	0.52	0.56 U	0.56	0.47 U	0.47
Endrin ketone		0.097 U	0.097	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.11 U	0.11	0.094 U	0.094
Endrin aldehyde		0.097 U	0.097	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10	0.11 U	0.11	0.094 U	0.094
alpha-Chlordane		0.048 U	0.048	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.056 U	0.056	0.047 U	0.047
gamma-Chlordane	0.5	0.048 U	0.048	0.052 U	0.052	0.052 U	0.052	0.052 U	0.052	0.056 U	0.056	0.047 U	0.047
Toxaphene	3	4.8 U	4.8	5.2 U	5.2	5.2 U	5.2	5.2 U	5.2	5.6 U	5.6	4.7 U	4.7
Aroclor-1016	2	0.97 U	0.97	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.1 U	1.1	0.94 U	0.94
Aroclor-1221	2	1.9 U	1.9	2.1 U	2.1	2.1 U	2.1	2.1 U	2.1	2.2 U	2.2	1.9 U	1.9
Aroclor-1232	2	0.97 U	0.97	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.1 U	1.1	0.94 U	0.94
Aroclor-1242	2	0.97 U	0.97	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.1 U	1.1	0.94 U	0.94
Aroclor-1248	2	0.97 U	0.97	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.1 U	1.1	0.94 U	0.94
Aroclor-1254	2	0.97 U	0.97	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.1 U	1.1	0.94 U	0.94
Aroclor-1260	2	0.97 U	0.97	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0	1.1 U	1.1	0.94 U	0.94
Method:TCL Pesticides/PCBs													

CHARLES WOOD
GROUNDWATER PESTICIDES/PCBS

Geographical Location		CW1		CW1		CW1		CW1		CW2		CW2	
Sample		CW01-MW28A02		CW01-MW29-A01		CW01-MW29-E01		CW01-MW29A02		CW02-MW30-A01		CW02-MW30-A02	
Sample Type						Field Rinsate Blank							
Batch#		9503G739		9503G358		9503G358		9503G739		9503G358		9503G739	
Prep#		95GP0251		95GP0154		95GP0154		95GP0251		95GP0154		95GP0251	
RFW#		008		007		010		010		012		012	
Sample Depth													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/14/95		2/21/95		2/21/95		3/14/95		2/21/95		3/14/95	
Analysis Date		3/12/95		3/16/95		3/16/95		3/12/95		3/16/95		3/12/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.052 U	0.052	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
beta-BHC	0.2	0.052 U	0.052	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
delta-BHC		0.052 U	0.052	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
gamma-BHC (Lindane)	0.2	0.052 U	0.052	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
Heptachlor	0.4	0.052 U	0.052	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
Aldrin	0.04	0.052 U	0.052	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
Heptachlor epoxide	0.2	0.052 U	0.052	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
Endosulfan I	0.4	0.052 U	0.052	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
Dieldrin	0.03	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
4,4'-DDE	0.1	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
Endrin	2	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
Endosulfan II	0.4	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
4,4'-DDD	0.1	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
Endosulfan sulfate	0.4	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
4,4'-DDT	0.1	0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
Methoxychlor	40	0.52 U	0.52	0.47 U	0.47	0.53 U	0.53	0.51 U	0.51	0.52 U	0.52	0.52 U	0.52
Endrin ketone		0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
Endrin aldehyde		0.10 U	0.10	0.094 U	0.094	0.11 U	0.11	0.10 U	0.10	0.10 U	0.10	0.10 U	0.10
alpha-Chlordane		0.052 U	0.052	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
gamma-Chlordane	0.5	0.052 U	0.052	0.047 U	0.047	0.053 U	0.053	0.051 U	0.051	0.052 U	0.052	0.052 U	0.052
Toxaphene	3	5.2 U	5.2	4.7 U	4.7	5.3 U	5.3	5.1 U	5.1	5.2 U	5.2	5.2 U	5.2
Aroclor-1016	2	1.0 U	1.0	0.94 U	0.94	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0
Aroclor-1221	2	2.1 U	2.1	1.9 U	1.9	2.1 U	2.1	2.0 U	2.0	2.1 U	2.1	2.1 U	2.1
Aroclor-1232	2	1.0 U	1.0	0.94 U	0.94	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0
Aroclor-1242	2	1.0 U	1.0	0.94 U	0.94	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0
Aroclor-1248	2	1.0 U	1.0	0.94 U	0.94	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0
Aroclor-1254	2	1.0 U	1.0	0.94 U	0.94	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0
Aroclor-1260	2	1.0 U	1.0	0.94 U	0.94	1.1 U	1.1	1.0 U	1.0	1.0 U	1.0	1.0 U	1.0
Method:TCL Pesticides/PCBs													

CHARLES WOOD
GROUNDWATER PESTICIDES/PCBS

Geographical Location		CW2		CW2		CW2		CW2		CW2		CW2	
Sample		CW02-MW31-A01		CW02-MW31-A02		CW02-MW32-A01		CW02-MW32-A02		CW02-MW33-A01		CW02-MW33-A02	
Sample Type													
Batch#		9503G358		9503G739		9503G358		9503G739		9503G358		9503G739	
Prep#		95GP0154		95GP0251		95GP0154		95GP0251		95GP0154		95GP0251	
RFW#		014		014		016		016		018		018	
Sample Depth													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/21/95		3/14/95		2/21/95		3/14/95		2/21/95		3/14/95	
Analysis Date		3/16/95		3/12/95		3/16/95		3/12/95		3/16/95		3/12/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.070 U	0.070	0.052 U	0.052	0.054 U	0.054	0.052 U	0.052	0.062 U	0.062	0.053 U	0.053
beta-BHC	0.2	0.070 U	0.070	0.052 U	0.052	0.054 U	0.054	0.052 U	0.052	0.062 U	0.062	0.053 U	0.053
delta-BHC		0.070 U	0.070	0.052 U	0.052	0.054 U	0.054	0.052 U	0.052	0.062 U	0.062	0.053 U	0.053
gamma-BHC (Lindane)	0.2	0.070 U	0.070	0.052 U	0.052	0.054 U	0.054	0.052 U	0.052	0.062 U	0.062	0.053 U	0.053
Heptachlor	0.4	0.070 U	0.070	0.052 U	0.052	0.054 U	0.054	0.052 U	0.052	0.062 U	0.062	0.053 U	0.053
Aldrin	0.04	0.070 U	0.070	0.052 U	0.052	0.054 U	0.054	0.052 U	0.052	0.062 U	0.062	0.053 U	0.053
Heptachlor epoxide	0.2	0.070 U	0.070	0.052 U	0.052	0.054 U	0.054	0.052 U	0.052	0.062 U	0.062	0.053 U	0.053
Endosulfan I	0.4	0.070 U	0.070	0.052 U	0.052	0.054 U	0.054	0.052 U	0.052	0.062 U	0.062	0.053 U	0.053
Dieldrin	0.03	0.14 U	0.14	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12	0.11 U	0.11
4,4'-DDE	0.1	0.14 U	0.14	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12	0.11 U	0.11
Endrin	2	0.14 U	0.14	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12	0.11 U	0.11
Endosulfan II	0.4	0.14 U	0.14	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12	0.11 U	0.11
4,4'-DDD	0.1	0.14 U	0.14	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12	0.11 U	0.11
Endosulfan sulfate	0.4	0.14 U	0.14	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12	0.11 U	0.11
4,4'-DDT	0.1	0.14 U	0.14	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12	0.11 U	0.11
Methoxychlor	40	0.70 U	0.70	0.52 U	0.52	0.54 U	0.54	0.52 U	0.52	0.62 U	0.62	0.053 U	0.053
Endrin ketone		0.14 U	0.14	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12	0.11 U	0.11
Endrin aldehyde		0.14 U	0.14	0.10 U	0.10	0.11 U	0.11	0.10 U	0.10	0.12 U	0.12	0.11 U	0.11
alpha-Chlordane		0.070 U	0.070	0.052 U	0.052	0.054 U	0.054	0.052 U	0.052	0.062 U	0.062	0.053 U	0.053
gamma-Chlordane	0.5	0.070 U	0.070	0.052 U	0.052	0.054 U	0.054	0.052 U	0.052	0.062 U	0.062	0.053 U	0.053
Toxaphene	3	7.0 U	7.0	5.2 U	5.2	5.4 U	5.4	5.2 U	5.2	6.2 U	6.2	5.3 U	5.3
Aroclor-1016	2	1.4 U	1.4	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	1.2 U	1.2	1.1 U	1.1
Aroclor-1221	2	2.8 U	2.8	2.1 U	2.1	2.2 U	2.2	2.1 U	2.1	2.5 U	2.5	2.1 U	2.1
Aroclor-1232	2	1.4 U	1.4	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	1.2 U	1.2	1.1 U	1.1
Aroclor-1242	2	1.4 U	1.4	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	1.2 U	1.2	1.1 U	1.1
Aroclor-1248	2	1.4 U	1.4	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	1.2 U	1.2	1.1 U	1.1
Aroclor-1254	2	1.4 U	1.4	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	1.2 U	1.2	1.1 U	1.1
Aroclor-1260	2	1.4 U	1.4	1.0 U	1.0	1.1 U	1.1	1.0 U	1.0	1.2 U	1.2	1.1 U	1.1
Method:TCL Pesticides/PCBs													

CHARLES WOOD
GROUNDWATER PESTICIDES/PCBS

Geographical Location		CW6		CW6		CW6		CW6		CW6		CW6	
Sample		CW06-MW01-A01		CW06-MW01-A02		CW06-MW01-E02		CW06-MW34-A01		CW06-MW34-A02		CW06-MW35-A01	
Sample Type						Field Rinsate Blank							
Batch#		9505G840		9505G138		9505G138		9502G300		9503G723		9502G300	
Prep#		95GP0510		95GP0580		95GP0580		95GP0154		95GP0247		95GP0154	
RFW#		002		002		003		001		001		003	
Sample Depth													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		5/10/95		5/10/95		5/25/95		2/20/95		3/13/95		2/20/95	
Analysis Date		5/19/95		6/1/95		6/1/95		3/15/95		3/29/95		3/12/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.054 U	0.054	0.046 U	0.046	0.053 U	0.053	0.047 U	0.047	0.053 U	0.053	0.048 U	0.048
beta-BHC	0.2	0.054 U	0.054	0.046 U	0.046	0.053 U	0.053	0.047 U	0.047	0.053 U	0.053	0.048 U	0.048
delta-BHC		0.054 U	0.054	0.046 U	0.046	0.053 U	0.053	0.047 U	0.047	0.053 U	0.053	0.048 U	0.048
gamma-BHC (Lindane)	0.2	0.054 U	0.054	0.046 U	0.046	0.053 U	0.053	0.047 U	0.047	0.053 U	0.053	0.048 U	0.048
Heptachlor	0.4	0.054 U	0.054	0.046 U	0.046	0.053 U	0.053	0.047 U	0.047	0.053 U	0.053	0.048 U	0.048
Aldrin	0.04	0.054 U	0.054	0.046 U	0.046	0.053 U	0.053	0.047 U	0.047	0.053 U	0.053	0.048 U	0.048
Heptachlor epoxide	0.2	0.054 U	0.054	0.046 U	0.046	0.053 U	0.053	0.047 U	0.047	0.053 U	0.053	0.048 U	0.048
Endosulfan I	0.4	0.054 U	0.054	0.046 U	0.046	0.053 U	0.053	0.047 U	0.047	0.053 U	0.053	0.048 U	0.048
Dieldrin	0.03	0.11 U	0.11	0.092 U	0.092	0.11 U	0.11	0.094 U	0.094	0.11 U	0.11	0.097 U	0.097
4,4'-DDE	0.1	0.11 U	0.11	0.092 U	0.092	0.11 U	0.11	0.094 U	0.094	0.11 U	0.11	0.097 U	0.097
Endrin	2	0.11 U	0.11	0.092 U	0.092	0.11 U	0.11	0.094 U	0.094	0.11 U	0.11	0.097 U	0.097
Endosulfan II	0.4	0.11 U	0.11	0.092 U	0.092	0.11 U	0.11	0.094 U	0.094	0.11 U	0.11	0.097 U	0.097
4,4'-DDD	0.1	0.098 J	0.11	0.074 J	0.092	0.11 U	0.11	0.094 U	0.094	0.11 U	0.11	0.097 U	0.097
Endosulfan sulfate	0.4	0.11 U	0.11	0.092 U	0.092	0.11 U	0.11	0.094 U	0.094	0.11 U	0.11	0.097 U	0.097
4,4'-DDT	0.1	0.11 U	0.11	0.092 U	0.092	0.11 U	0.11	0.094 U	0.094	0.11 U	0.11	0.097 U	0.097
Methoxychlor	40	0.54 U	0.54	0.46 U	0.46	0.53 U	0.53	0.47 U	0.47	0.53 U	0.53	0.48 U	0.48
Endrin ketone		0.11 U	0.11	0.092 U	0.092	0.11 U	0.11	0.094 U	0.094	0.11 U	0.11	0.097 U	0.097
Endrin aldehyde		0.11 U	0.11	0.092 U	0.092	0.11 U	0.11	0.094 U	0.094	0.11 U	0.11	0.097 U	0.097
alpha-Chlordane		0.054	0.054	0.055	0.046	0.053 U	0.053	0.047 U	0.047	0.053 U	0.053	0.048 U	0.048
gamma-Chlordane	0.5	0.033 JP	0.054	0.037 J	0.046	0.053 U	0.053	0.047 U	0.047	0.053 U	0.053	0.048 U	0.048
Toxaphene	3	5.4 U	4.7	4.6 U	4.6	5.3 U	5.3	4.7 U	4.7	5.3 U	5.3	4.8 U	4.8
Aroclor-1016	2	1.1 U	1.1	0.92 U	0.92	1.1 U	1.1	0.94 U	0.94	1.1 U	1.1	0.97 U	0.97
Aroclor-1221	2	2.2 U	2.2	1.8 U	1.8	2.1 U	2.1	1.9 U	1.9	2.1 U	2.1	1.9 U	1.9
Aroclor-1232	2	1.1 U	1.1	0.092 U	0.092	1.1 U	1.1	0.94 U	0.94	1.1 U	1.1	0.97 U	0.97
Aroclor-1242	2	1.1 U	1.1	0.092 U	0.092	1.1 U	1.1	0.94 U	0.94	1.1 U	1.1	0.97 U	0.97
Aroclor-1248	2	1.1 U	1.1	0.092 U	0.092	1.1 U	1.1	0.94 U	0.94	1.1 U	1.1	0.97 U	0.97
Aroclor-1254	2	1.1 U	1.1	0.092 U	0.092	1.1 U	1.1	0.94 U	0.94	1.1 U	1.1	0.97 U	0.97
Aroclor-1260	2	1.1 U	1.1	0.092 U	0.092	1.1 U	1.1	0.94 U	0.94	1.1 U	1.1	0.97 U	0.97
Method:TCL Pesticides/PCBs													

CHARLES WOOD
GROUNDWATER PESTICIDES/PCBS

Geographical Location		CW9		CW9		CW6		CW9		B6		B6	
Sample		CW09-MW35-A02		CW09-MW35-E01		CW06-MW36-A01		CW09-MW36-A02		B6-MW06B-A01		B6-MW06B-A02	
Sample Type				Field Rinsate Blank									
Batch#		9503G723		9502G300		9502G300		9503G723		9502G198		9503G641	
Prep#		95GP0247		95GP0154		95GP0154		95GP0247		95GP0119		95GP0229	
RFW#		002		007		005		004		003		001	
Sample Depth													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		3/13/95		2/20/95		2/20/95		3/13/95		2/15/95		3/8/95	
Analysis Date		3/29/95		3/15/95		3/15/95		3/29/95		3/4/95		3/19/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.055 U	0.055	0.050 U	0.050	0.048 U	0.048	0.053 U	0.053	0.048 U	0.048	0.050 U	0.050
beta-BHC	0.2	0.055 U	0.055	0.050 U	0.050	0.048 U	0.048	0.053 U	0.053	0.048 U	0.048	0.050 U	0.050
delta-BHC		0.055 U	0.055	0.050 U	0.050	0.048 U	0.048	0.053 U	0.053	0.048 U	0.048	0.050 U	0.050
gamma-BHC (Lindane)	0.2	0.055 U	0.055	0.050 U	0.050	0.048 U	0.048	0.053 U	0.053	0.048 U	0.048	0.050 U	0.050
Heptachlor	0.4	0.055 U	0.055	0.050 U	0.050	0.048 U	0.048	0.053 U	0.053	0.048 U	0.048	0.050 U	0.050
Aldrin	0.04	0.055 U	0.055	0.050 U	0.050	0.048 U	0.048	0.053 U	0.053	0.048 U	0.048	0.050 U	0.050
Heptachlor epoxide	0.2	0.055 U	0.055	0.050 U	0.050	0.048 U	0.048	0.053 U	0.053	0.048 U	0.048	0.050 U	0.050
Endosulfan I	0.4	0.055 U	0.055	0.050 U	0.050	0.048 U	0.048	0.053 U	0.053	0.048 U	0.048	0.050 U	0.050
Dieldrin	0.03	0.11 U	0.11	0.10 U	0.10	0.096 U	0.096	0.11 U	0.11	0.096 U	0.096	0.10 U	0.10
4,4'-DDE	0.1	0.11 U	0.11	0.10 U	0.10	0.096 U	0.096	0.11 U	0.11	0.096 U	0.096	0.10 U	0.10
Endrin	2	0.11 U	0.11	0.10 U	0.10	0.096 U	0.096	0.11 U	0.11	0.096 U	0.096	0.10 U	0.10
Endosulfan II	0.4	0.11 U	0.11	0.10 U	0.10	0.096 U	0.096	0.11 U	0.11	0.096 U	0.096	0.10 U	0.10
4,4'-DDD	0.1	0.11 U	0.11	0.10 U	0.10	0.096 U	0.096	0.11 U	0.11	0.096 U	0.096	0.10 U	0.10
Endosulfan sulfate	0.4	0.11 U	0.11	0.10 U	0.10	0.096 U	0.096	0.11 U	0.11	0.096 U	0.096	0.10 U	0.10
4,4'-DDT	0.1	0.11 U	0.11	0.10 U	0.10	0.096 U	0.096	0.11 U	0.11	0.096 U	0.096	0.10 U	0.10
Methoxychlor	40	0.55 U	0.55	0.50 U	0.50	0.48 U	0.48	0.53 U	0.53	0.48 U	0.48	0.50 U	0.50
Endrin ketone		0.11 U	0.11	0.10 U	0.10	0.096 U	0.096	0.11 U	0.11	0.096 U	0.096	0.10 U	0.10
Endrin aldehyde		0.11 U	0.11	0.10 U	0.10	0.096 U	0.096	0.11 U	0.11	0.096 U	0.096	0.10 U	0.10
alpha-Chlordane		0.055 U	0.055	0.050 U	0.050	0.048 U	0.048	0.053 U	0.053	0.048 U	0.048	0.050 U	0.050
gamma-Chlordane	0.5	0.055 U	0.055	0.050 U	0.050	0.048 U	0.048	0.053 U	0.053	0.048 U	0.048	0.050 U	0.050
Toxaphene	3	5.5 U	5.5	5.0 U	5.0	4.8 U	4.8	5.3 U	5.3	4.8 U	4.8	5.0 U	5.0
Aroclor-1016	2	1.1 U	1.1	1.0 U	1.0	0.96 U	0.96	1.1 U	1.1	0.96 U	0.96	1.0 U	1.0
Aroclor-1221	2	2.2 U	2.2	2.0 U	2.0	1.9 U	1.9	2.1 U	2.1	1.9 U	1.9	2.0 U	2.0
Aroclor-1232	2	1.1 U	1.1	1.0 U	1.0	0.96 U	0.96	1.1 U	1.1	0.96 U	0.96	1.0 U	1.0
Aroclor-1242	2	1.1 U	1.1	1.0 U	1.0	0.96 U	0.96	1.1 U	1.1	0.96 U	0.96	1.0 U	1.0
Aroclor-1248	2	1.1 U	1.1	1.0 U	1.0	0.96 U	0.96	1.1 U	1.1	0.96 U	0.96	1.0 U	1.0
Aroclor-1254	2	1.1 U	1.1	1.0 U	1.0	0.96 U	0.96	1.1 U	1.1	0.96 U	0.96	1.0 U	1.0
Aroclor-1260	2	1.1 U	1.1	1.0 U	1.0	0.96 U	0.96	1.1 U	1.1	0.96 U	0.96	1.0 U	1.0
Method:TCL Pesticides/PCBs													

CHARLES WOOD
GROUNDWATER PESTICIDES/PCBS

Geographical Location		B7		B7		B8		B8		B9		B9	
Sample		B7-MW07B-A01		B7-MW07B-A02		B8-MW08B-A01		B8-MW08B-A02		B9-MW09B-A01		B9-MW09B-A02	
Sample Type													
Batch#		9502G198		9503G617		9502G198		9503G641		9502G198		9503G617	
Prep#		95GP0119		95GP0219		95GP0119		95GP0229		95GP0119		95GP0219	
RFW#		005		003		007		003		001		001	
Sample Depth													
Dilution Factor		1.00		1.00		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/15/95		3/7/95		2/15/95		3/8/95		2/15/95		3/7/95	
Analysis Date		3/4/95		3/17/95		3/7/95		3/19/95		3/4/95		3/17/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.060 U	0.060	0.051 U	0.051	0.060 U	0.060	0.052 U	0.052	0.047 U	0.047	0.048 U	0.048
beta-BHC	0.2	0.060 U	0.060	0.051 U	0.051	0.060 U	0.060	0.052 U	0.052	0.047 U	0.047	0.048 U	0.048
delta-BHC		0.060 U	0.060	0.051 U	0.051	0.060 U	0.060	0.052 U	0.052	0.047 U	0.047	0.048 U	0.048
gamma-BHC (Lindane)	0.2	0.060 U	0.060	0.051 U	0.051	0.060 U	0.060	0.052 U	0.052	0.047 U	0.047	0.048 U	0.048
Heptachlor	0.4	0.060 U	0.060	0.051 U	0.051	0.060 U	0.060	0.052 U	0.052	0.047 U	0.047	0.048 U	0.048
Aldrin	0.04	0.060 U	0.060	0.051 U	0.051	0.060 U	0.060	0.052 U	0.052	0.047 U	0.047	0.048 U	0.048
Heptachlor epoxide	0.2	0.060 U	0.060	0.051 U	0.051	0.060 U	0.060	0.052 U	0.052	0.047 U	0.047	0.048 U	0.048
Endosulfan I	0.4	0.060 U	0.060	0.051 U	0.051	0.060 U	0.060	0.052 U	0.052	0.047 U	0.047	0.048 U	0.048
Dieldrin	0.03	0.12 U	0.12	0.10 U	0.10	0.12 U	0.12	0.10 U	0.10	0.094 U	0.094	0.095 U	0.095
4,4'-DDE	0.1	0.12 U	0.12	0.10 U	0.10	0.12 U	0.12	0.10 U	0.10	0.094 U	0.094	0.095 U	0.095
Endrin	2	0.12 U	0.12	0.10 U	0.10	0.12 U	0.12	0.10 U	0.10	0.094 U	0.094	0.095 U	0.095
Endosulfan II	0.4	0.12 U	0.12	0.10 U	0.10	0.12 U	0.12	0.10 U	0.10	0.094 U	0.094	0.095 U	0.095
4,4'-DDD	0.1	0.12 U	0.12	0.10 U	0.10	0.12 U	0.12	0.10 U	0.10	0.094 U	0.094	0.095 U	0.095
Endosulfan sulfate	0.4	0.12 U	0.12	0.10 U	0.10	0.12 U	0.12	0.10 U	0.10	0.094 U	0.094	0.095 U	0.095
4,4'-DDT	0.1	0.12 U	0.12	0.10 U	0.10	0.12 U	0.12	0.10 U	0.10	0.094 U	0.094	0.095 U	0.095
Methoxychlor	40	0.60 U	0.60	0.51 U	0.51	0.60 U	0.60	0.52 U	0.52	0.47 U	0.47	0.48 U	0.48
Endrin ketone		0.12 U	0.12	0.10 U	0.10	0.12 U	0.12	0.10 U	0.10	0.094 U	0.094	0.095 U	0.095
Endrin aldehyde		0.12 U	0.12	0.10 U	0.10	0.12 U	0.12	0.10 U	0.10	0.094 U	0.094	0.095 U	0.095
alpha-Chlordane		0.060 U	0.060	0.051 U	0.051	0.060 U	0.060	0.052 U	0.052	0.047 U	0.047	0.048 U	0.048
gamma-Chlordane	0.5	0.060 U	0.060	0.051 U	0.051	0.060 U	0.060	0.052 U	0.052	0.047 U	0.047	0.048 U	0.048
Toxaphene	3	6.0 U	6.0	5.1 U	5.1	6.0 U	6.0	5.2 U	5.2	4.7 U	4.7	4.8 U	4.8
Aroclor-1016	2	1.2 U	1.2	1.0 U	1.0	1.2 U	1.2	1.0 U	1.0	0.94 U	0.94	0.95 U	0.95
Aroclor-1221	2	2.4 U	2.4	2.0 U	2.0	2.4 U	2.4	2.1 U	2.1	1.9 U	1.9	1.9 U	1.9
Aroclor-1232	2	1.2 U	1.2	1.0 U	1.0	1.2 U	1.2	1.0 U	1.0	0.94 U	0.94	0.95 U	0.95
Aroclor-1242	2	1.2 U	1.2	1.0 U	1.0	1.2 U	1.2	1.0 U	1.0	0.94 U	0.94	0.95 U	0.95
Aroclor-1248	2	1.2 U	1.2	1.0 U	1.0	1.2 U	1.2	1.0 U	1.0	0.94 U	0.94	0.95 U	0.95
Aroclor-1254	2	1.2 U	1.2	1.0 U	1.0	1.2 U	1.2	1.0 U	1.0	0.94 U	0.94	0.95 U	0.95
Aroclor-1260	2	1.2 U	1.2	1.0 U	1.0	1.2 U	1.2	1.0 U	1.0	0.94 U	0.94	0.95 U	0.95
Method:TCL Pesticides/PCBs													

CHARLES WOOD
GROUNDWATER PESTICIDES/PCBS

Geographical Location		B10		B10		B10		B10	
Sample		B10-MW10B-A01		B10-MW10B-A02		B10-MW10B-E01		B10-MW10B-E02	
Sample Type						Field Rinsate Blank		Field Rinsate Blank	
Batch#		9502G198		9503G641		9502G198		9503G641	
Prep#		95GP0119		95GP0229		95GP0119		95GP0229	
RFW#		009		005		012		008	
Sample Depth									
Dilution Factor		1.00		1.00		1.00		1.00	
Matrix		water		water		water		water	
Units	ug/l	ug/l		ug/l		ug/l		ug/l	
Sampling Date		2/15/95		3/8/95		2/13/95		3/8/95	
Analysis Date		3/7/95		3/19/95		3/7/95		3/19/95	
Analysis	Standard	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL	Analytical Result	CRDL
alpha-BHC	0.02	0.051 U	0.051	0.061 U	0.061	0.052 U	0.052	0.055 U	0.055
beta-BHC	0.2	0.051 U	0.051	0.061 U	0.061	0.052 U	0.052	0.055 U	0.055
delta-BHC		0.051 U	0.051	0.061 U	0.061	0.052 U	0.052	0.055 U	0.055
gamma-BHC (Lindane)	0.2	0.051 U	0.051	0.061 U	0.061	0.052 U	0.052	0.055 U	0.055
Heptachlor	0.4	0.051 U	0.051	0.061 U	0.061	0.052 U	0.052	0.055 U	0.055
Aldrin	0.04	0.051 U	0.051	0.061 U	0.061	0.052 U	0.052	0.055 U	0.055
Heptachlor epoxide	0.2	0.051 U	0.051	0.061 U	0.061	0.052 U	0.052	0.055 U	0.055
Endosulfan I	0.4	0.051 U	0.051	0.061 U	0.061	0.052 U	0.052	0.055 U	0.055
Dieldrin	0.03	0.10 U	0.10	0.12 U	0.12	0.10 U	0.10	0.11 U	0.11
4,4'-DDE	0.1	0.10 U	0.10	0.12 U	0.12	0.10 U	0.10	0.11 U	0.11
Endrin	2	0.10 U	0.10	0.12 U	0.12	0.10 U	0.10	0.11 U	0.11
Endosulfan II	0.4	0.10 U	0.10	0.12 U	0.12	0.10 U	0.10	0.11 U	0.11
4,4'-DDD	0.1	0.10 U	0.10	0.12 U	0.12	0.10 U	0.10	0.11 U	0.11
Endosulfan sulfate	0.4	0.10 U	0.10	0.12 U	0.12	0.10 U	0.10	0.11 U	0.11
4,4'-DDT	0.1	0.10 U	0.10	0.12 U	0.12	0.10 U	0.10	0.11 U	0.11
Methoxychlor	40	0.51 U	0.51	0.61 U	0.61	0.52 U	0.52	0.55 U	0.55
Endrin ketone		0.10 U	0.10	0.12 U	0.12	0.10 U	0.10	0.11 U	0.11
Endrin aldehyde		0.10 U	0.10	0.12 U	0.12	0.10 U	0.10	0.11 U	0.11
alpha-Chlordane		0.051 U	0.051	0.061 U	0.061	0.052 U	0.052	0.055 U	0.055
gamma-Chlordane	0.5	0.051 U	0.051	0.061 U	0.061	0.052 U	0.052	0.055 U	0.055
Toxaphene	3	5.1 U	5.1	6.1 U	6.1	5.2 U	5.2	5.5 U	5.5
Aroclor-1016	2	1.0 U	1.0	1.2 U	1.2	1.0 U	1.0	1.1 U	1.1
Aroclor-1221	2	2.0 U	2.0	2.4 U	2.4	2.1 U	2.1	2.2 U	2.2
Aroclor-1232	2	1.0 U	1.0	1.2 U	1.2	1.0 U	1.0	1.1 U	1.1
Aroclor-1242	2	1.0 U	1.0	1.2 U	1.2	1.0 U	1.0	1.1 U	1.1
Aroclor-1248	2	1.0 U	1.0	1.2 U	1.2	1.0 U	1.0	1.1 U	1.1
Aroclor-1254	2	1.0 U	1.0	1.2 U	1.2	1.0 U	1.0	1.1 U	1.1
Aroclor-1260	2	1.0 U	1.0	1.2 U	1.2	1.0 U	1.0	1.1 U	1.1
Method:TCL Pesticides/PCBs									

CHARLES WOOD
TRANSFORMERS - PCBs

Geographical Location		Building 2000		Building 2000		Building 2000		Building 2000		Building 2018		Building 2018	
Sample		CW07-TR01-A01		CW07-TR02-A01		CW07-TR03-A01		CW07-TR04-A01		CW07-TR05-A01		CW07-TR06-A01	
Sample Type		Transformer		Transformer		Transformer		Transformer		Transformer		Transformer	
Batch#		9411G831		9411G831		9411G831		9411G831		9412G854		9412G854	
Prep#		94GP1024		94GP1024		94GP1024		94GP1024		94GP1024		94GP1024	
RFW#		001		002		003		004		017		018	
Sample Depth													
Dilution Factor		250		50.0		50.0		10.0		50.0		5.0	
Matrix		soil		soil		soil		soil		soil		soil	
Units	mg/kg	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sampling Date		11/29/94		11/29/94		11/29/94		11/29/94		11/30/91		11/30/91	
Analysis Date		12/21/94		12/20/94		12/20/94		12/21/94		12/22/94		12/21/94	
Analysis	Standard	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting	Analytical	Reporting
		Result	Limit	Result	Limit	Result	Limit	Result	Limit	Result	Limit	Result	Limit
% Solids		85.8	0.10	89.0	0.10	90.3	0.10	85.7	0.10	86.4	0.10	92.5	0.10
Aroclor-1016	0.055	23 U	23	4.4 U	4.4	4.4 U	4.4	0.91 U	0.91	4.50	4.5	0.42 U	0.42
Aroclor-1221	0.055	23 U	23	4.4 U	4.4	4.4 U	4.4	0.91 U	0.91	4.50	4.5	0.42 U	0.42
Aroclor-1232	0.055	23 U	23	4.4 U	4.4	4.4 U	4.4	0.91 U	0.91	4.50	4.5	0.42 U	0.42
Aroclor-1242	0.055	23 U	23	4.4 U	4.4	4.4 U	4.4	0.91 U	0.91	4.50	4.5	0.42 U	0.42
Aroclor-1248	0.055	23 U	23	4.4 U	4.4	4.4 U	4.4	0.91 U	0.91	4.50	4.5	0.42 U	0.42
Aroclor-1254	0.055	46 U	46	8.8 U	8.8	8.7 U	8.8	1.8 U	1.8	9 U	9	0.84 U	0.84
Aroclor-1260	0.055	100		27		26		6.4		9 U	9	0.84 U	0.84
Method:TCL PCBs													

CHARLES WOOD
TRANSFORMERS - PCBs

Geographical Location		Building 2276		Building 2276	
Sample		CWAE-TR01-A01		CWAE-TR01-C01	
Sample Type		Transformer		Duplicate	
Batch#		9412G854		9412G854	
Prep#		94GP1024		94GTS467	
RFW#		015		016	
Sample Depth					
Dilution Factor		2.5		0.5	
Matrix		soil		soil	
Units	mg/kg	mg/kg		mg/kg	
Sampling Date		11/30/94		11/30/94	
Analysis Date		12/22/94		12/21/94	
Analysis	Standard	Analytical	Reporting	Analytical	Reporting
		Result	Limit	Result	Limit
% Solids		92.0	1.0	90.7	1.0
Aroclor-1016	0.055	0.21 U	0.21	0.044 U	0.044
Aroclor-1221	0.055	0.21 U	0.21	0.044 U	0.044
Aroclor-1232	0.055	0.21 U	0.21	0.044 U	0.044
Aroclor-1242	0.055	0.21 U	0.21	0.044 U	0.044
Aroclor-1248	0.055	0.21 U	0.21	0.044 U	0.044
Aroclor-1254	0.055	0.43 U	0.43	0.088 U	0.088
Aroclor-1260	0.055	0.43 U	0.43	0.088 U	0.088
Method:TCL PCBs					

APPENDIX E

TIDAL MONITORING GRAPHS

FINAL

SITE INVESTIGATION
FORT MONMOUTH, NEW JERSEY
MAIN POST AND CHARLES WOOD AREAS

Prepared For:

U.S. ARMY CORPS OF ENGINEERS
Baltimore District
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Under:

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TABLE OF CONTENTS

Section	Title	Page
	EXECUTIVE SUMMARY	ES-1
1	INTRODUCTION	1-1
	1.1 Project Objectives	1-1
	1.2 Facility Description	1-2
	1.2.1 Owner/Operator Information	1-2
	1.2.2 Location of Fort Monmouth	1-2
	1.2.2.1 Main Post	1-5
	1.2.2.2 Charles Wood Area	1-5
	1.2.3 Mission Statement	1-5
	1.2.4 History of Fort Monmouth	1-7
2	ENVIRONMENTAL SETTING	2-1
	2.1 Climate	2-1
	2.2 Topography	2-1
	2.2.1 Main Post	2-1
	2.2.2 Charles Wood	2-2
	2.3 Surface-Water Drainage and Wetlands	2-2
	2.3.1 Main Post	2-2
	2.3.2 Charles Wood	2-5
	2.4 Soils	2-5
	2.4.1 Main Post	2-5
	2.4.2 Charles Wood	2-10
	2.5 Geology	2-12
	2.5.1 Regional Geology	2-12
	2.5.2 Local Geology	2-12
	2.6 Hydrogeology	2-14
	2.7 Vegetation and Wildlife	2-15
3	INVESTIGATION ACTIVITIES	3-1
	3.1 Geophysics	3-1
	3.1.1 Electromagnetic (EM) Terrain Conductivity Surveying Methods	3-1
	3.1.1.1 Description	3-1
	3.1.1.2 Methodology	3-2
	3.1.2 Magnetic (MAG) Methods	3-3

Section	Title	Page
	4.2.2.7.1 Conductivity and Salinity Results	4.2-22
	4.2.2.8 Recommendations	4.2-23
4.2.3	Landfill 3 (M-3)	4.2-33
	4.2.3.1 Site Location	4.2-33
	4.2.3.2 Site History	4.2-33
	4.2.3.3 Sampling Effort	4.2-33
	4.2.3.4 Geophysical Results	4.2-34
	4.2.3.5 Hydrogeologic Interpretation	4.2-35
	4.2.3.6 Groundwater Sampling Results	4.2-35
	4.2.3.7 Surface-Water Sampling Results	4.2-38
	4.2.3.8 Recommendations	4.2-40
4.2.4	Landfill 4 (M-4)	4.2-57
	4.2.4.1 Site Location	4.2-57
	4.2.4.2 Site History	4.2-57
	4.2.4.3 Sampling Effort	4.2-57
	4.2.4.4 Hydrogeologic Interpretation	4.2-57
	4.2.4.5 Groundwater Sampling Results	4.2-58
	4.2.4.6 Recommendations	4.2-60
4.2.5	Landfill 5 (M-5)	4.2-63
	4.2.5.1 Site Location	4.2-63
	4.2.5.2 Site History	4.2-63
	4.2.5.3 Sampling Effort	4.2-63
	4.2.5.4 Hydrogeologic Interpretation	4.2-64
	4.2.5.5 Groundwater Sampling Results	4.2-64
	4.2.5.6 Recommendations	4.2-67
4.2.6	Burning Area (M-6)	4.2-69
	4.2.6.1 Site Location	4.2-69
	4.2.6.2 Site History	4.2-69
	4.2.6.3 Sampling Effort	4.2-69
4.2.7	Landfill 8 (M-8)	4.2-71
	4.2.7.1 Site Location	4.2-71
	4.2.7.2 Site History	4.2-71
	4.2.7.3 Sampling Effort	4.2-72
	4.2.7.4 Hydrogeologic Interpretation	4.2-72
	4.2.7.5 Groundwater Sampling Results	4.2-73
	4.2.7.6 Tidal Monitoring	4.2-76
	4.2.7.6.1 Conductivity and Salinity Results	4.2-77

Section		Title	Page
		4.2.12.2 Site History	4.2-139
		4.2.12.3 Sampling Effort	4.2-139
		4.2.12.4 Geophysical Results	4.2-140
		4.2.12.5 Hydrogeologic Interpretation	4.2-141
		4.2.12.6 Soil Sampling Results	4.2-141
		4.2.12.7 Groundwater Sampling Results	4.2-145
		4.2.12.8 Recommendations	4.2-148
	4.2.13	Former Main Post Sanitary Treatment Plant (AOC-3)	4.2-163
		4.2.13.1 Site Location	4.2-163
		4.2.13.2 Site History	4.2-163
		4.2.13.3 Sampling Effort	4.2-163
		4.2.13.4 Soil Sampling Results	4.2-164
		4.2.13.5 Sediment Sampling Results	4.2-166
		4.2.13.6 Recommendations	4.2-168
	4.2.14	Pre-1941 Sanitary Treatment Plant (STP)	4.2-171
		4.2.14.1 Site Location	4.2-171
		4.2.14.2 Site History	4.2-171
		4.2.14.3 Sampling Effort	4.2-171
		4.2.14.4 Sediment Sampling Results	4.2-171
		4.2.14.5 Recommendations	4.2-173
	4.2.15	PCB Transformers	4.2-177
		4.2.15.1 Site Location	4.2-177
		4.2.15.2 Site History	4.2-177
		4.2.15.3 Sampling Effort	4.2-177
		4.2.15.4 PCB Sampling Results	4.2-177
		4.2.15.5 Recommendations	4.2-179
4.3	Charles Wood		4.3-1
	4.3.1	Background Samples	4.3-1
		4.3.1.1 Hydrogeologic Interpretation	4.3-5
		4.3.1.2 Soil Sampling Results	4.3-5
		4.3.1.3 Groundwater Sampling Results	4.3-6
		4.3.1.4 Surface-Water Sampling Results	4.3-7
		4.3.1.5 Sediment Sampling Results	4.3-8
	4.3.2	Wastewater Treatment Lime Pit 1 (CW-1)	4.3-13
		4.3.2.1 Site Location	4.3-13
		4.3.2.2 Site History	4.3-13
		4.3.2.3 Sampling Effort	4.3-14

Section	Title	Page
	4.3.8.1 Site Location	4.3-65
	4.3.8.2 Site History	4.3-65
	4.3.8.3 Sampling Effort	4.3-66
	4.3.8.4 Hydrogeologic Interpretation	4.3-66
	4.3.8.5 Soil Sampling Results	4.3-67
	4.3.8.6 Groundwater Sampling Results	4.3-69
	4.3.8.7 Recommendations	4.3-71
	4.3.9 Sludge Dump (CW-9)	4.3-79
	4.3.9.1 Site Location	4.3-79
	4.3.9.2 Site History	4.3-79
	4.3.9.3 Sampling Effort	4.3-79
	4.3.9.4 Hydrogeologic Interpretation	4.3-80
	4.3.9.5 Soil Sampling Results	4.3-80
	4.3.9.6 Groundwater Sampling Results	4.3-83
	4.3.9.7 Recommendations	4.3-85
	4.3.10 Former Hazardous Waste Storage Area (AOC-7)	4.3-87
	4.3.10.1 Site Location	4.3-87
	4.3.10.2 Site History	4.3-87
	4.3.10.3 Sampling Effort	4.3-88
	4.3.10.4 Soil Sampling Results	4.3-88
	4.3.10.5 Recommendations	4.3-90
	4.3.11 PCB Transformers	4.3-93
	4.3.11.1 Site Location	4.3-93
	4.3.11.2 Site History	4.3-93
	4.3.11.3 Sampling Effort	4.3-93
	4.3.11.4 PCB Sampling Results	4.3-93
	4.3.11.5 Recommendations	4.3-95
5	**DATA QUALITY**	**5-1**
	5.1 Introduction	5-1
	5.2 Quality Control Procedures	5-5
	5.2.1 Field and Laboratory Quality Control Samples	5-5
	5.2.2 Field Activities	5-6
	5.2.3 Laboratory Activities	5-7
	5.2.3.1 Laboratory Equipment Quality Control	5-7
	5.2.3.2 Laboratory Data	5-7

TABLE OF CONTENTS
(Continued)

Section		Title	Page
	6.1.8	Water Tank (M-15)	6-13
		6.1.8.1 Conclusions	6-14
		6.1.8.2 Recommendations	6-14
	6.1.9	Former Pesticide Storage Building (M-16)	6-14
		6.1.9.1 Conclusions	6-14
		6.1.9.2 Recommendations	6-15
	6.1.10	Former Training Areas (M-18)	6-15
		6.1.10.1 Conclusions	6-15
		6.1.10.2 Recommendations	6-16
	6.1.11	Former Main Post Sanitary Treatment Plant (AOC-3)	6-16
		6.1.11.1 Conclusions	6-17
		6.1.11.2 Recommendations	6-17
	6.1.12	Pre-1941 Sanitary Treatment Plant	6-17
		6.1.12.1 Conclusions	6-17
		6.1.12.2 Recommendations	6-17
	6.1.13	PCB Transformers — Main Post	6-18
		6.1.13.1 Conclusions	6-18
		6.1.13.2 Recommendations	6-18
6.2	Charles Wood		6-19
	6.2.1	Wastewater Treatment Lime Pit 1 (CW-1)	6-19
		6.2.1.1 Conclusions	6-19
		6.2.1.2 Recommendations	6-19
	6.2.2	Wastewater Treatment Lime Pit 2 (CW-2)	6-21
		6.2.2.1 Conclusions	6-21
		6.2.2.2 Recommendations	6-22
	6.2.3	Landfill 3 (CW-3)	6-23
	6.2.4	Debris Site (CW-3A)	6-23
		6.2.4.1 Conclusions	6-23
		6.2.4.2 Recommendations	6-23
	6.2.5	Range (Small Arms) (CW-4)	6-24
		6.2.5.1 Conclusions	6-24
		6.2.5.2 Recommendations	6-24
	6.2.6	Former Sanitary Treatment Plant (CW-5)	6-25
		6.2.6.1 Conclusions	6-25
		6.2.6.2 Recommendations	6-25
	6.2.7	Pesticide Storage Building T-2044 (CW-6)	6-25
		6.2.7.1 Conclusions	6-26

LIST OF FIGURES

Figure No.	Title	Page
1.1-1	Location of Main Post and Charles Wood	1-3
2.3-1	Main Post and Charles Wood Wetlands	2-3
2.4-1	Main Post and Charles Wood Soil Series Map	2-7
3.5-1	Transformer Site Sampling Locations at Building 1220, Main Post	3-14
3.5-2	Transformer Site Sampling Locations at Buildings 2000 and 2018, Charles Wood	3-15
4.2-1	Main Post Site Location Map	4.2-11
4.2-2	Main Post Background Sample Locations	4.2-13
4.2-3	Landfill 2 (M-2) Sampling Locations	4.2-25
4.2-4	Landfill 2 (M-2) Approximate Groundwater Flow Directions	4.2-27
4.2-5	Distribution of Contaminants in Site Groundwater and Surface-Water Samples	4.2-29
4.2-6	Main Post Surface-Water and Sediment Sampling Locations	4.2-31
4.2-7	Landfills 3, 4, and 5 (M-3, M-4, and M-5) Sampling Locations	4.2-43
4.2-8	Magnetometer Survey Total Magnetic Field — Site M-3	4.2-45
4.2-9	Magnetometer Survey Magnetic Gradient — Site M-3	4.2-47
4.2-9A	Representative Radar Profile Depicting Landfill Boundary at Site M-3	4.2-49
4.2-9B	Radar Profile Showing Surface Drum and Hyperbolic Radar Signatures at Site M-3	4.2-51
4.2-10	Landfills 3, 4, and 5 (M-3, M-4, and M-5) Approximate Groundwater Flow Directions	4.2-53
4.2-11	Landfills 3, 4, and 5 (M-3, M-4, and M-5) Distribution of Contaminants in Site Groundwater	4.2-55

LIST OF FIGURES
(Continued)

Figure No.	Title	Page
4.2-30	Electromagnetic Survey in Phase Component — Site M-18	4.2-155
4.2-30A	Radar Profile Depicting Potential UST at Site M-18	4.2-157
4.2-31	Former Training Area (M-18) Approximate Groundwater Flow Directions	4.2-159
4.2-32	Former Training Area (M-18) Distribution of Contaminants in Site Soil and Groundwater	4.2-161
4.2-33	Former Sanitary Treatment Plant (AOC-3) Soil and Sediment Sampling Locations	4.2-169
4.2-34	Pre-1941 Sanitary Treatment Plant (Distribution of Contaminants in Site Sediment)	4.2-175
4.2-35	Main Post Transformer Site Sample Locations	4.2-181
4.3-1	Charles Wood Site Location Map	4.3-9
4.3-2	Charles Wood Background Sample Locations	4.3-11
4.3-3	Acid Neutralization Lime Pits (CW-1 and CW-2) Sampling Locations	4.3-21
4.3-4	Acid Neutralization Lime Pits (CW-1 and CW-2) Approximate Groundwater Flow Directions	4.3-23
4.3-5	Acid Neutralization Lime Pits (CW-1 and CW-2) Distribution of Contaminants in Site Soil and Groundwater	4.3-25
4.3-6	Landfills 3 (CW-3) and 3A (CW-3A)	4.3-37
4.3-7	Electromagnetic Survey Quadrature Component — Site CW-3A	4.3-41
4.3-8	Electromagnetic Survey in Phase Component — Site CW-3A	4.3-43
4.3-9	Magnetometer Survey Total Magnetic Field — Site CW-3A	4.3-45
4.3-10	Magnetometer Survey Magnetic Gradient — Site CW-3A	4.3-47
4.3-10A	Radar Profile Showing Subsurface Anomaly at Site CW-3A	4.3-49

LIST OF TABLES

Table No.	Title	Page
2.5-1	Geologic and Hydrogeologic Units in the New Jersey Coastal Plain	2-13
2.7-1	A Partial List of Trees and Shrubs Found in Monmouth County	2-17
2.7-2	Mammals Found in Monmouth County	2-18
2.7-3	Reptiles and Amphibians Found in Monmouth County	2-19
2.7-4	Endangered Birds and Very Rare Fish Found in Monmouth County	2-20
3.3-1	Summary of Surface-Water Field Parameters	3-8
3.5-1	Sampling at Former PCB Transformer Sites	3-11
3.6-1	Main Post and Charles Wood Soil Sampling Analytical Parameters	3-17
3.7-1	Main Post Well Completion Summary	3-20
3.7-2	Charles Wood Well Completion Summary	3-21
3.8-1	Main Post and Charles Wood Sampling Parameters Table for February and March 1995 Sampling Rounds	3-24
4.1-1	NJDEP Groundwater Quality Criteria — Class II-A and Practical Quantitation Levels — February 1993	4.1-2
4.1-2	NJDEP Soil Cleanup Criteria — February 1994	4.1-6
4.1-3	Surface-Water Quality Standards for Fresh and Saline Waters	4.1-11
4.1-4	Sediment Guidance Values for Detected Contaminants	4.1-15
4.1-5	Potentially Applicable PCB Cleanup Levels	4.1-16
4.1-6	Main Post — Summary of Site-Specific and Monmouth County Soil and Groundwater Maximum Background Concentrations	4.1-19
4.1-7	Charles Wood — Summary of Site-Specific and Monmouth County Soil and Groundwater Maximum Background Concentrations	4.1-20
4.1-8	Main Post Surface-Water and Sediment Maximum Background Concentrations	4.1-25

LIST OF TABLES
(Continued)

Table No.	Title	Page
4.2-15	Summary of Average Concentrations of Detected Compounds in Groundwater — Site M-16	4.2-130
4.2-16	Summary of Detected Compounds in Soil — Site M-18 (VOCs and TPH Only)	4.2-143
4.2-17	Summary of Detected Compounds in Soils — Site M-18 Sample SB06-A02	4.2-144
4.2-18	Summary of Average Concentrations of Detected Compounds in Groundwater — Site M-18	4.2-146
4.2-19	Summary of Detected Compounds in Soil — Site AOC-3	4.2-165
4.2-20	Summary of Detected Compounds in Sediment — Site AOC-3	4.2-167
4.2-21	Summary of Detected Compounds in Sediment — Site Pre-1941 Sanitary Treatment Plant	4.2-172
4.2-22	Results of Transformer Site Sampling on Main Post	4.2-178
4.3-1	Site Investigation Summary — Charles Wood	4.3-2
4.3-2	Differences Between Proposed and Actual Work at Charles Wood	4.3-4
4.3-3	Summary of Detected Compounds in Soil — Site CW-1	4.3-16
4.3-4	Summary of Average Concentrations of Detected Compounds in Groundwater — Site CW-1	4.3-17
4.3-5	Summary of Detected Compounds in Soil — Site CW-2	4.3-30
4.3-6	Summary of Average Concentrations of Detected Compounds in Groundwater — Site CW-2	4.3-32
4.3-7	Summary of Detected Compounds in Soil — Site CW-4	4.3-53
4.3-8	Summary of Detected Compounds in Soil — Site CW-5	4.3-61
4.3-9	Summary of Detected Compounds in Sediment — Site CW-5	4.3-64

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

BACKGROUND

The U.S. Army Corps of Engineers (USACE), Baltimore District, contracted Roy F. Weston, Inc. (WESTON®) to perform a field investigation at Fort Monmouth, NJ. This investigation was conducted at two separate areas of Fort Monmouth, i.e., the Main Post and Charles Wood. Suspected hazardous waste sites were initially identified at Fort Monmouth in a report prepared by the U.S. Army Toxic and Hazardous Materials Agency (USATHAMA) in 1980. This report identified 37 sites with known or suspected waste materials on the Main Post and the two subposts (Charles Wood and Evans Area). A background investigation was conducted of the 37 sites and 8 additional sites that were identified by Fort Monmouth and the New Jersey Department of Environmental Protection (NJDEP). WESTON's recommendations were described in a report titled *Investigation of Suspected Hazardous Waste Sites at Fort Monmouth, New Jersey*. Additional investigations (including sampling and other field work) were recommended at 22 of the sites on the Main Post and Charles Wood areas (WESTON, 1993). NJDEP approved the recommendations on 20 April 1995. Additional investigations were also recommended at the Evans Area, but since the Evans Area will be closed, further investigations there will be completed under the Base Realignment and Closure (BRAC) program.

This report presents the results of field investigation activities that were performed at 13 sites at the Main Post area and 8 sites at the Charles Wood area. Field investigation activities were performed between November 1994 and March 1995. The field investigation activities included surface geophysical investigations, sediment and surface-water sampling, transformer site sampling, surface and subsurface soil sampling, groundwater monitor well installation and sampling, and tidal monitoring. At one site in the Charles Wood area (CW-3) the presence of construction rubble prohibited sample collection as planned. The rubble was removed in June 1995 and exploratory trenches are planned at this site.

The geophysical investigations were performed between 29 November and 15 December 1994 to delineate the landfill boundaries at Main Post areas M-3, M-12, M-14, and M-18, and at

Charles Wood area CW-3A. The sediment and surface-water samples were collected on 1 and 2 December 1994 from locations along Parkers Creek on the Main Post and in a tributary to Wampum Brook on the Charles Wood site. The purpose of collecting the surface-water and sediment samples was to evaluate the potential impact of the areas of concern on sediment and surface water, and to confirm sample results collected as part of a previous investigation. The sampling of eight transformer areas at Main Post and three transformer areas at Charles Wood was conducted on 1 and 2 December 1994. The transformer area sampling consisted of collection of concrete chips and soil samples from areas potentially impacted by leaking transformers.

Subsurface soil samples were collected as part of soil boring and monitor well installation program, which was conducted between 13 December 1994 and 23 January 1995.

Soil borings were completed at the following Main Post sites: M-16, M-18, and AOC-3; and at Charles Wood sites: CW-1, CW-2, CW-4, CW-5, CW-6, CW-9, and AOC-7. A total of 45 shallow groundwater monitor wells were installed and developed at both the Main Post and Charles Wood areas. Additionally, at Landfill 8 (M-8), a total of 11 previously installed wells were abandoned because of suspect well integrity (six 4-in. diameter monitor wells and five 2-in. diameter piezometers).

Groundwater monitor wells were sampled twice. Both rounds of sampling were conducted in conjunction with a 72-hr tidal monitoring study to evaluate the effect of tidal fluctuations on water levels in site monitor wells. Round 1 tidal monitoring was performed on 30 January to 3 February 1995, followed by round 1 of groundwater sampling on 13 to 22 February 1995. Round 2 tidal monitoring was performed on 20 to 24 March 1995, which was preceded by round 2 groundwater sampling on 7 to 15 March 1995. Two existing monitor wells, one at site M-18 on the Main Post, and one at site CW-6 on Charles Wood, were sampled for two rounds in May 1995. The two rounds of groundwater sampling were conducted within 30 days of each other as specified in the *Technical Requirements for Site Remediation* (NJAC 7:26) to provide for averaging the analytical results.

The concentrations were then compared to the NJDEP criteria and then to maximum background concentrations. Background concentrations are based on sampling at on-site background locations and a review of Monmouth County data.

The results of and recommendations for the investigated sites follow.

MAIN POST

M-2: Chlorobenzene concentrations were detected in all three wells indicating a potential upgradient source. Other volatile organic compounds (VOCs) were detected in surface-water samples. Samples will be collected on a long-term basis from existing groundwater and surface-water sampling locations.

M-3: Low chlorobenzene concentrations were detected in one downgradient well. No surface-water concentrations exceeded NJDEP criteria and background. Samples will be collected on a long-term basis from existing groundwater and surface-water sampling locations. Additionally, a partially exposed drum was observed in the northeast corner of the site. The location of the exposed drum will be investigated by excavation.

M-4: One pesticide compound was detected at a concentration just above the NJDEP Groundwater Quality Criteria (GWQC) in the upgradient well in both the routine and duplicate samples. The pesticide was not detected in downgradient monitor wells. Existing monitor wells will be sampled on a long-term basis.

M-5: Tetrachloroethene (PCE) was detected in the upgradient well. Existing monitor wells will be sampled on a long-term basis.

M-8: VOCs were detected in upgradient and downgradient wells. Existing monitor wells will be sampled on a long-term basis.

M-12: Compounds of concern were not detected in groundwater samples collected at the site. Existing monitor wells will be sampled on a long-term basis.

M-14: No compounds of concern were detected in groundwater samples. Compounds of concern were not detected in surface-water samples collected at the site. Existing monitor wells and surface-water sampling locations will be sampled on a long-term basis.

M-15: Pesticides, lead, cadmium, and zinc were detected in soil samples collected near the water tank. Paint chips and affected soil will be removed and confirmation samples will be collected following removal.

M-16: Compounds of concern were not detected in the groundwater samples collected at the site. Pesticide concentrations were detected in soil samples collected around the former pesticide storage building. The contaminated soil will be excavated in conjunction with confirmatory sampling and the monitor well will be abandoned.

M-18: Semivolatile organic compound (SVOC) concentrations were detected in soil samples collected from one soil boring and pesticides were detected in groundwater samples from one monitor well. Geophysical results indicate an area where anomalous readings may indicate an underground storage tank (UST). Trenching will be performed at the suspected UST location and the SVOC-contaminated soil will be removed at the soil boring location. Additionally, the monitor wells will be sampled on a long-term basis.

AOC-3: Former Main Post Sanitary Treatment Plant (AOC-3): No compounds of concern were identified in soil borings and sediment samples. No additional action will be taken.

STP: Pre-1941 Sanitary Treatment Plant: Metals were detected in a sediment sample at the outfall of the pre-1941 sanitary treatment plant (STP). No further action will be taken because access to the site is restricted.

PCB Transformers—Main Post: Polychlorinated biphenyl (PCB) levels in stained concrete were found to exceed NJDEP criteria in three indoor vaults. PCBs were also detected above applicable

soil standards in the soil beneath one pole-mounted transformer near Building 292. Since the indoor vaults are normally locked and access is restricted, remedial work will be performed when the transformers are removed from service and the stained areas are made accessible. In addition, the soil beneath the former location of the pole-mounted transformer will be resampled to determine the extent of contamination.

CHARLES WOOD AREA

CW-1: Compounds of concern were not detected in soil samples. VOC concentrations were detected in groundwater samples from three of the four wells. The extent of VOC concentrations in groundwater will be investigated by soil-gas survey techniques. The results of the soil-gas survey will be used to locate two additional monitor wells. The new and existing wells will be sampled on a long-term basis.

CW-2: PCB concentrations were detected slightly above the NJDEP Soil Cleanup Criteria (SCC) in one sample from the 7- to 9-ft interval. VOC concentrations were detected in one well in one of the two sampling rounds. The extent of VOC concentrations in groundwater will be investigated by soil-gas survey techniques. The results of the soil-gas survey will be used to locate two additional monitor wells. The new and existing wells will be sampled on a long-term basis.

CW-3: Investigation activities were not conducted as part of this investigation because of construction rubble that was present at the site during the field effort, which prohibited sample collection as planned. The rubble was removed in June 1995, and exploratory trenches are planned to determine if any subsurface debris or soil staining is present.

CW-3A: The results of the geophysical surveys indicated possible buried material at two areas. Exploratory trenching will be conducted at each area to evaluate the nature of the geophysical anomaly.

CW-4: Lead was detected in one soil sample exceeding background concentrations and the NJDEP SCC. Impacted soils will be removed and confirmation samples will be collected at the base of the excavation.

CW-5: No compounds of concern were identified in soil and sediment samples. No further action will be taken.

CW-6: Dieldrin and cadmium were detected in separate soil samples above NJDEP SCC and site background concentrations. The average concentrations of dieldrin and cadmium in surface soil samples collected at CW-6 and CW-9 do not exceed the NJDEP criteria. Benzene was detected in one monitor well. The existing monitor wells will be sampled on a long-term basis.

CW-9: The average concentration of cadmium in surface soil samples at CW-6 and CW-9 does not exceed the NJDEP criteria. No further action will be taken at this site.

AOC-7: No compounds of concern were identified in soil samples. No further action will be taken at this site.

PCB Transformers—Charles Wood: PCBs were detected above NJDEP criteria in soil samples taken near the former location of a transformer pad (see Figure 4.3-18). The contaminated soil will be removed in conjunction with confirmatory sampling.

REPORT ORGANIZATION

Section 1 of this report is the Introduction and describes project objectives, facility information, site descriptions, sampling strategy, and site history. Section 2, Environmental Setting, summarizes environmental conditions such as climate, topography, surface-water drainage, soils, geology, hydrogeology, vegetation, and wildlife. Section 3, Investigation Activities, describes the procedures and methodologies used for the various site investigation activities. Section 4 summarizes the results of the investigation. Section 5 documents the data quality objectives (DQOs) and quality control (QC) procedures. Section 6 presents site-specific conclusions and recommendations. Field investigation data are presented in the appendices. Ground-penetrating

radar (GPR) profiles are contained in a separate volume (Appendix F), and are available upon request.

SECTION 1
INTRODUCTION

SECTION 1

INTRODUCTION

1.1 PROJECT OBJECTIVES

The objectives of this investigation are as follows:

- Perform site investigations to determine if contamination exists, and, if present, to evaluate the extent and degree of contamination at the 22 sites (presented in Figure 1.1-1). These sites were originally identified as potential hazardous waste sites in the Installation Assessment (IA) (USATHAMA, 1980).

- Evaluate the results of the investigation and compare with the following criteria:

  - New Jersey Soil Cleanup Guidance Criteria, 3 February 1994, and winter 1995.

  - NJDEP Groundwater Quality Standards, February 1993.

  - NJDEP Surface-Water Quality Standard, December 1993.

  - Cleanup Standard for Contaminated Sites, New Jersey Administrative Code 7:26D (proposed and withdrawn).

  - NJDEP Sediment Quality Standards, 1991, or marine/estuarine biological effects screening levels (Long et al., 1995).

- Recommend one of four alternatives for each site:

  1. No additional investigation or remediation is required.

  2. Additional field investigations are necessary.

  3. Conduct long-term groundwater and/or surface-water monitoring.

  4. Sufficient data exist to proceed with remedial design and interim or final remedial action.

Refer to the Executive Summary for background information regarding this effort.

WESTON performed the investigation activities as set forth in the U.S. Army Corps of Engineers (USACE) Scopes of Work dated 10 August 1994 for Charles Wood and 12 August 1994 for Main Post. Site investigation activities included:

- Planning documents preparation:
  - Chemical Data Acquisition Plan and Field Sampling Plan (CDAP/FSP).
  - Safety, Health and Emergency Response Plan (SHERP).
- Field investigations:
  - Geophysical investigation.
  - Sediment sampling.
  - Surface-water sampling.
  - Surface and subsurface soil sampling.
  - Transformer site sampling.
  - Groundwater well installation and sampling.
  - Tidal monitoring.
- Report preparation:
  - Draft and final site investigation reports.

1.2 FACILITY DESCRIPTION

1.2.1 Owner/Operator Information

Fort Monmouth is a government-owned, government-operated (GOGO) military installation that provides command, administrative, and logistical support for Headquarters, U.S. Army Communications and Electronics Command (CECOM).

1.2.2 Location of Fort Monmouth

Fort Monmouth is located in the central-eastern portion of New Jersey in Monmouth County (see Figure 1.1-1). The installation contains two subposts (Charles Wood Area and Evans Area), in addition to the Main Post, which are located within a 12-mile radius of the Main Post. Descriptions of the Main Post and Charles Wood are presented in the subsections that follow.

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The Evans Area will be handled under the Base Realignment and Closure (BRAC) Program and will not be discussed in this report.

1.2.2.1 Main Post

The Main Post (Figure 1.1-1) encompasses an area of approximately 630 acres and is bounded by State Highway 35 to the west, Parkers Creek and Lafetra Creek to the north, the New Jersey Transit Railroad to the east, and a residential neighborhood to the south. The Main Post provides supporting administrative, training, and housing functions as well as many of the community facilities for Fort Monmouth.

1.2.2.2 Charles Wood Area

The Charles Wood Area (Figure 1.1-1), is composed of approximately 511 acres, and is located 1 mile west of the Main Post and is bounded by Tinton Avenue to the north, residential development and Pine Brook Road to the south, and the Garden State Parkway to the west. This area is used primarily for research and development (R&D), and testing, and provides the greatest number of housing units available on-post.

1.2.3 Mission Statement

The primary mission of Fort Monmouth is to provide command, administrative, and logistical support for Headquarters, CECOM. CECOM is a major subordinate command of the U.S. Army Materiel Command (AMC) and is the host tenant. The support provided is used by tenant activities in the performance of R&D, procurement, and production of prototype electronic communication material for use by the U.S. Armed Forces.

The major tenant activities to which Headquarters, CECOM is the host tenant include:

- U.S. Army Laboratory Command (LABCOM)
- U.S. Army Aviation Research and Development Activity (AVRADA)

- U.S. Army Information System Management Agency (ISMA)
- Joint Tactical Communications Office (TRI-TAC)
- U.S. Army Chaplain Board
- U.S. Army Chaplain Center and School (USACHCS)
- U.S. Army Military Preparatory School (USAMPS)
- U.S. Army Medical Department Activities (MEDDAC)
- U.S. Army Dental Activity (DENTAC)
- U.S. Army Audit Agency
- Small Business Administration (SBA)
- U.S. Army Information Systems Command (ISC)
- U.S. Army Special Security Detachment
- 902nd Military Intelligence Group
- U.S. Army Criminal Investigation Command
- U.S. Army Commissary
- U.S. Army Newark District Recruiting Command
- U.S. Army Corps of Engineers (USACE), New York District
- Defense Contract Administration Services Management Area, Springfield District
- Defense Investigation Services (DIS)
- Defense Contract Audit Agency (DCAA)
- 513th Military Intelligence Brigade
- Joint Interface Test Force
- 535th Engineer Detachment
- 54th Ordnance Detachment

1.2.4 History of Fort Monmouth

This subsection presents a history of Fort Monmouth with emphasis on environmentally significant activities. The subsection is based primarily on the books, *A Concise History of Fort Monmouth, New Jersey,* and *Fort Monmouth History and Place Names, 1917-1959.*

The Main Post of Fort Monmouth was established on 17 June 1917 as Camp Little Silver. The site of the Main Post had formerly been a horse racetrack, but the track had not been used since 1890. The name of the Camp was changed after 3 months to Camp Alfred Vail. The initial mission of the Camp was to train Signal Corps operators for service in World War I. In the first 19 months of the Camp's existence, 129 semipermanent structures were built, a tent camp was established on the site of a former swamp, and a parade ground was established on the site of a former marsh. A radio laboratory and an airfield were developed in 1918. After the war, Camp Vail was designated as the site of the Signal Corps School, the only training area for Signal Corpsmen in the country. All but four of the World War I structures were demolished by 1924.

In 1925 the facility became a permanent post and its name was changed to Fort Monmouth. The primary mission of Fort Monmouth continued to be Signal Corps training and electronics research. In 1934 the laboratory was consolidated in a new building, Squier Laboratory (Building 283), and research on radios and radar continued. During World War II, the pace of training increased tremendously at Fort Monmouth. The expanded laboratory effort was accomplished by starting laboratories at other Army facilities. Squier Laboratory continued to be the principal laboratory on Main Post until 1954, after which laboratory operations moved to Charles Wood. In 1955 and 1956, 72 World War II wooden structures were demolished to accommodate permanent structures. These new buildings were used for residential, administration, commercial, and recreational purposes. A small number of additional administrative buildings were constructed during the 1970s and 1980s.

Camp Charles Wood was purchased in 1941 by the U.S. Army and opened in 1942. The eastern half of the property was formerly a golf course, and the western half was residential and

farmland. During World War II, the Camp was used for training Signal Corpsmen. Antenna shelters were constructed on 26.5 acres of land and used by the Signal Corps Laboratory for R&D purposes. This operation was placed under the command of the Army Air Force until 1951, when the operation moved to another post. Signal Corps training ceased after World War II.

A new R&D laboratory, the Hexagon (Building 2700), was completed in 1954. Research activities that had formerly been conducted at Squier Laboratory on the Main Post, and some activities from the Evans Area, were transferred to Charles Wood. The laboratory continued to develop electronic equipment. A large amount of residential housing was built from 1953 to 1970. In 1956, 90 World War II wooden structures were razed. The Pulse Power Laboratory was built in the early 1980s.

The document, *A Concise History of Fort Monmouth, New Jersey*, describes a number of R&D activities that were performed by the laboratories at Fort Monmouth. The document does not generally say where these activities were conducted. A partial list of research activities that were conducted in the Fort Monmouth laboratories includes:

- Radios, including vacuum tubes.
- Radar.
- Field TV cameras.
- Radiation dosimeters.
- Satellite instrumentation.
- Solar batteries.
- Laser communication, range-finding, and relay devices.
- Microelectronics.
- Night vision devices.
- Defibrillator pacemakers.
- Lithium batteries.

SECTION 2
ENVIRONMENTAL SETTING

SECTION 2

ENVIRONMENTAL SETTING

2.1 CLIMATE

The temperate-humid climate of Monmouth County, NJ, is characteristic of the temperate zone of the Mid-Atlantic states. The mean annual temperature for Monmouth County is 53 °F; the summers are generally warm, with an average temperature of 72 °F and a maximum temperature of 103 °F, recorded in July 1954. Winters are moderate, with an average temperature of 33 °F. The winter temperatures rarely drop below 0 °F, although the lowest recorded temperature was -8 °F, recorded at Freehold, NJ in February 1961 (Jablonski and Baumley, 1989).

Precipitation in Monmouth County averages 45.18 inches per year; slightly more than half the total annual precipitation falls between April and September (Jablonski and Baumley, 1989). Thunderstorms generally occur in the summer and may combine high winds with heavy rainfall. Heavy rains have occurred in connection with hurricanes or tropical storms that move northward along the Mid-Atlantic coast. Snow has fallen in Monmouth County in every month between October and April. The average seasonal snowfall is 25 inches, with the greatest amounts falling in December, January, and February (Jablonski and Baumley, 1989).

2.2 TOPOGRAPHY

2.2.1 Main Post

The land surface at the Main Post is relatively flat and ranges in elevation from 4 ft above mean sea level (msl) in the east at Oceanport Creek to 32 ft msl at the western end of the post, near Highway 35. The eastern half of the post is generally 10 ft msl in elevation. The greatest elevation is at Landfill 8, located on Parkers Creek, and along Lafetra Creek, Mill Creek, and Husky Brook.

2.2.2 Charles Wood

At Charles Wood the land surface slopes from 72 ft msl in the southwest, to 20 ft msl at the eastern end of the golf course. In general, the southwestern corner of Charles Wood is gently rolling and has the greatest relief.

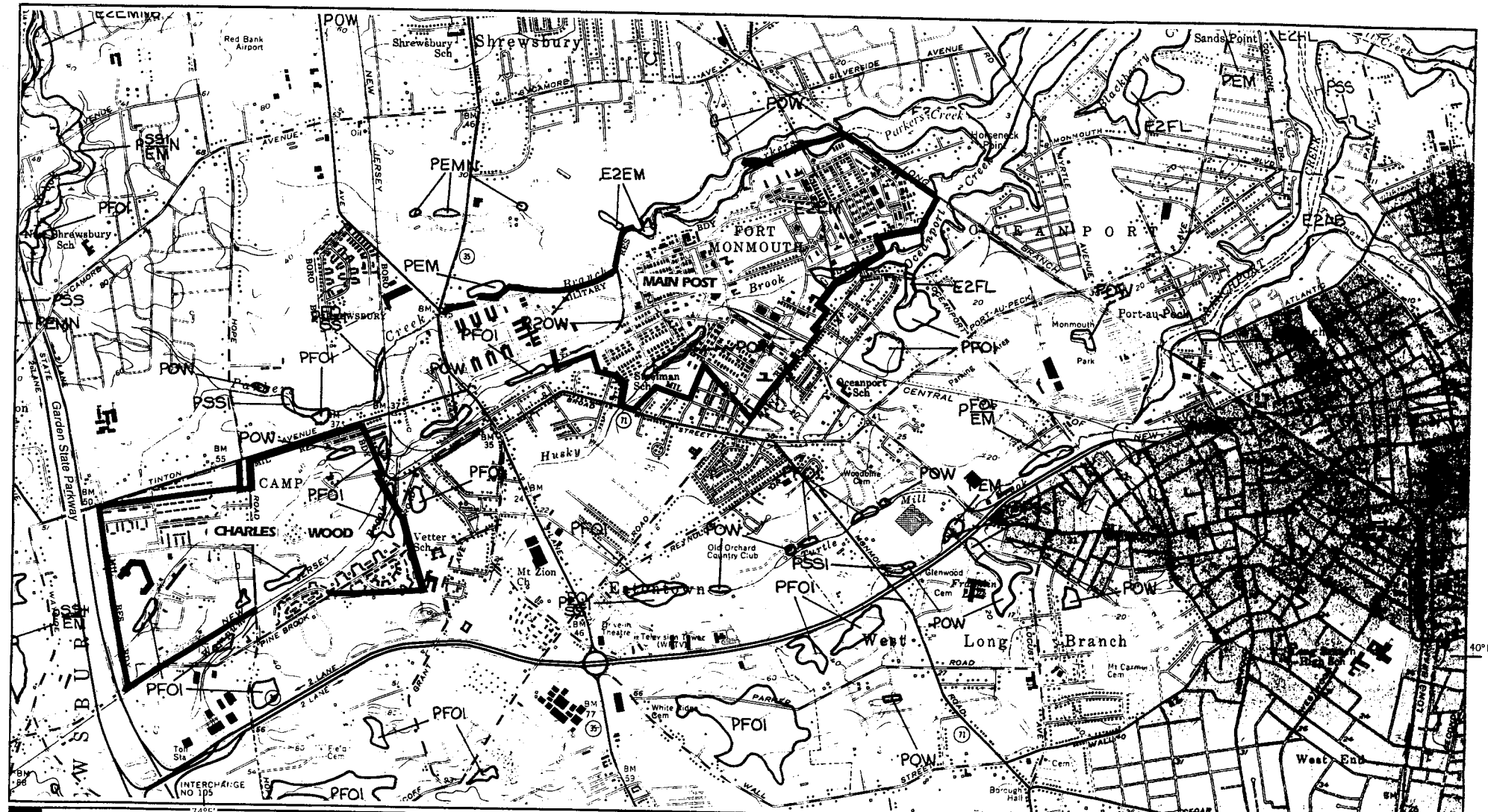
2.3 SURFACE-WATER DRAINAGE AND WETLANDS

2.3.1 Main Post

Surface-water runoff from the western part of the Main Post flows into Lafetra Creek to the north or into Mill Creek to the south. The names of streams indicated on U.S. Army site maps are used in this report. The USGS map (Figure 1.1-1) shows Lafetra Creek as Parkers Creek Branch and Mill Creek as Wampum Brook. Both Mill Creek and Lafetra Creek originate off-post. Mill Creek flows along the southern boundary of Main Post until it turns north just past the Auto Craft Shop. Mill Creek is channelized and flows past several landfills. Lafetra Creek forms the northern boundary of the Main Post and joins Mill Creek to form Parkers Creek. Parkers Creek flows eastward along the northern boundary and joins Oceanport Creek east of the post. Most of Parkers Creek, Lafetra Creek, and Mill Creek are tidally influenced.

Husky Brook originates off-post and, shortly after it flows onto the post, enters Husky Brook Lake. Surface-water drainage from the southern half of the post flows into Husky Brook and Husky Brook Lake through a series of drainage ditches and outfalls. Husky Brook exits Husky Brook Lake and flows into Oceanport Creek, which forms the southern boundary of the eastern post area. Oceanport Creek and Husky Brook are tidally influenced below Husky Brook Lake.

The U.S. Fish and Wildlife Service (FWS) National Wetland Inventory Long Branch quadrangle maps indicated the presence of wetlands at the Main Post (Figure 2.3-1). Parkers and Oceanport Creeks are classified as estuarine intertidal aquatic beds. The area of Parkers Creek northwest of Building 294 and the part of Oceanport Creek/Husky Brook west of Murray Drive and east of Building 551 are classified as estuarine intertidal emergent wetlands. Lafetra Creek and



LEGEND

E2AB	Estuarine Intertidal Aquatic Bed
E2EM	Estuarine Intertidal Emergent Wetland
R2OW	Riverine Lower Perennial Open Water/Unknown Bottom
POW	Palustrine Open Water/Unknown Bottom
PFO1	Palustrine Forested Wetland, Broad-leaved Deciduous

Source: USFWS National Wetlands Inventory
Long Branch, New Jersey Quadrangle Map, 1981

0 1000 2000 3000 4000
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Fort Monmouth, Main Post and Charles Wood

FIGURE 2.3-1
MAIN POST AND CHARLES WOOD WETLANDS

Mill Creek are classified as riverine lower perennial open water/unknown bottom. Husky Brook Lake is classified as palustrine open water/unknown bottom.

2.3.2 Charles Wood

The Charles Wood area is drained principally by two unnamed tributaries of Wampum Brook; one tributary flows eastward through the center of the camp, and the other flows along the southern boundary (Figure 1.1-1). East of Charles Wood, Wampum Brook is joined by several other unnamed tributaries before it becomes Wampum Lake. Wampum Lake discharges into Mill Creek, which flows through Main Post. Some runoff from the northwestern part of the golf course flows into Lafetra Creek, which is located just north of Tinton Avenue.

At Charles Wood, several wetland areas were identified on the FWS National Wetland Inventory Long Branch quadrangle map (Figure 2.3-1). The lake on the golf course is classified as palustrine open water/unknown bottom. Several areas along the unnamed tributaries to Wampum Brook are classified palustrine forested wetland, broad-leaved deciduous.

2.4 SOILS

2.4.1 Main Post

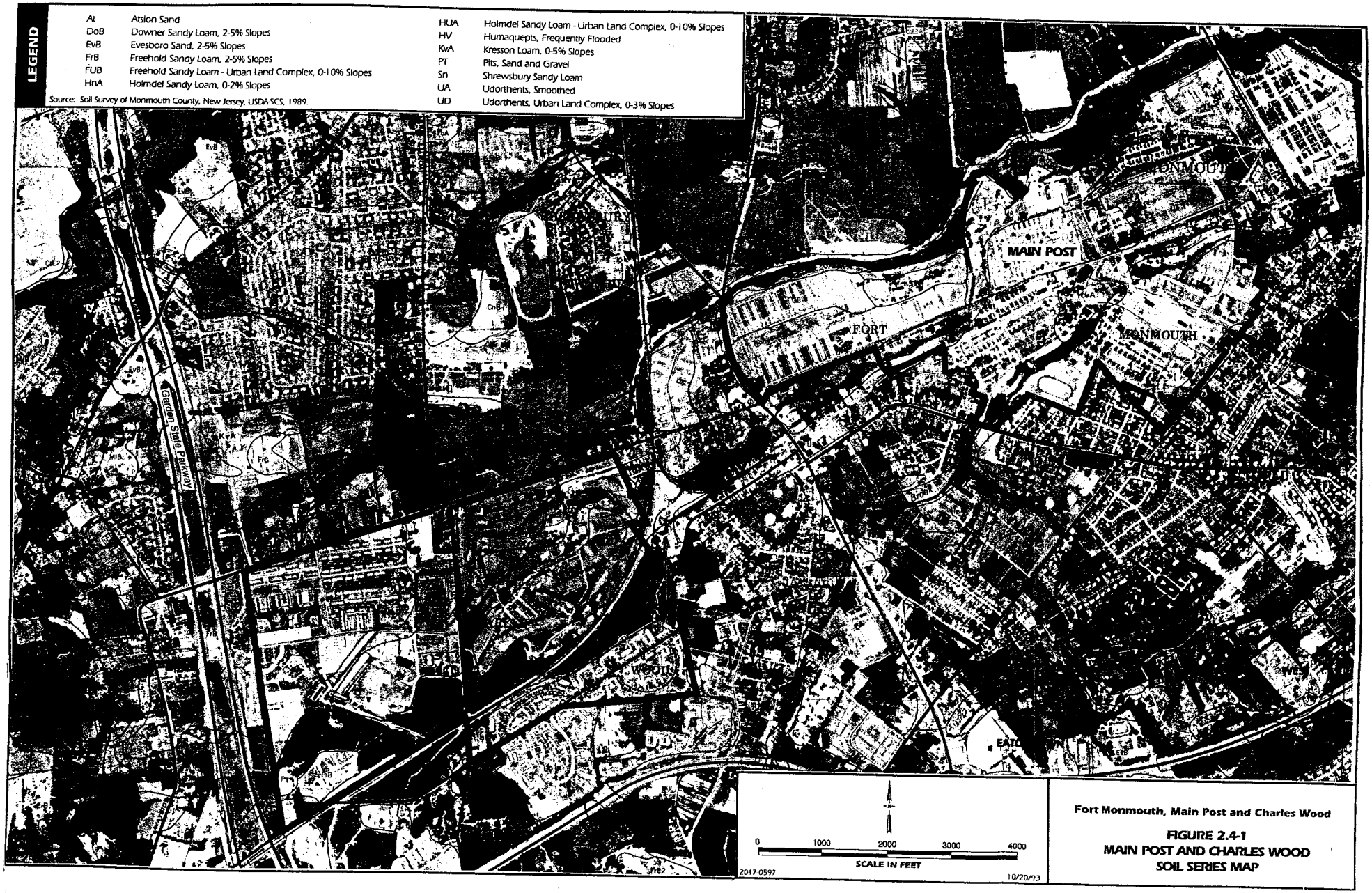
According to the Monmouth County Soil Survey (MCSS) (Jablonski and Baumley, 1989), much of the Main Post is covered by urban land (developed land with disturbed soils). The following soil series and classification units are mapped in the Main Post area:

- DoB Downer sandy loam, 2 to 5% slopes
- FrB Freehold sandy loam, 2 to 5% slopes
- FUB Freehold sandy loam — urban land complex, 0 to 10% slopes
- HV Humaquepts, frequently flooded
- KvA Kresson loam, 0 to 5% slopes
- UA Udorthents, smoothed
- UD Udorthents — urban land complex, 0 to 3% slopes

Figure 2.4-1 illustrates the distribution of these soil series. The Unified Soil Classification (USC) descriptors are shown in parentheses.

Downer series soils are well-drained soils found on uplands and terraces. These soils formed in acid, silty coastal plain sediments. The upper 10 inches are a very friable dark brown sandy loam, which has fine and medium roots and 2% pebbles (sandy silt: SM). The subsoil is 16 inches of strong brown sandy loam with faint clay in bridges between grains, fine and medium roots, and 10% pebbles (sandy silt to sandy clay: SM to SC). The substratum is a strong brown gravelly loamy sand with 35% pebbles, which is strongly acidic (sandy silt to sandy clay to poorly graded sand: SM, SC, SP). Permeability is moderate or moderately rapid in the subsoil and moderately rapid in the substratum, and as a result runoff is slow. The available water capacity is moderate. The seasonal high water table is at a depth of greater than 6 feet. The Downer series is represented on-site by the Downer sandy loam, 2 to 5% slopes (DoB). Downer soils are classified as nonhydric (Jablonski and Baumley, 1989).

Freehold soils are well-drained soils that formed in acid, loamy, coastal plain sediments that, by volume, are 1 to 10% glauconite and are found on uplands. The surface layer is a 9-in. thick, dark yellowish-brown sandy loam (sandy silt, sandy clay, silt, clay: SM, SC, ML, CL). The subsoil is 26 inches thick. The upper 16 inches of the subsoil are dark brown sandy loam and sandy clay loam with some glauconite. The lower 10 inches are brown sandy loam with glauconite. The substratum is yellowish-brown loamy sand with much glauconite to a depth of 70 inches (sandy silt: SM). Permeability is moderate in the subsoil and moderate or moderately rapid in the substratum and surface runoff is medium. The available water capacity is high. Two Freehold soils are found at Main Post: Freehold sandy loam, 2 to 5% slopes (FrB), and the Freehold sandy loam — urban land complex, with 0 to 10% slopes (FUB). Urban land consists of areas covered by impermeable surfaces, such as buildings, roads, and parking lots. The FUB soils were mapped as a complex because Freehold soils and urban land are found in an intricate pattern that made it impractical to map the Freehold soil separately. Freehold soils are classified as nonhydric (Jablonski and Baumley, 1989).



Fort Monmouth, Main Post and Charles Wood

FIGURE 2.4-1
MAIN POST AND CHARLES WOOD SOIL SERIES MAP

Humaquept soils are somewhat poorly to very poorly drained soils formed in stratified, sandy, or loamy sediments of fluvial origin. These soils are located on the flood plain and are subject to flooding several times a year. Humaquept soils are nearly always hydric. These soils differ in stratification from place-to-place. Typically, the surface layer and subsoil consist of stratified layers of sandy loam, loam, and silt loam (sandy silt, silt: SM, ML). The substratum consists of stratified layers of loamy sand, sandy loam, loam, and silt loam (sandy silt, silty clay, poorly graded sand: SM, SC, SP). In some areas, the stratified layers are gravelly or mucky. Permeability is moderate or moderately rapid in the subsoil and the substratum, and as a result runoff is slow. The available water capacity is high. The apparent seasonal high water table is between the surface and 1.5 feet. Organic matter varies from low to high. The soil is subject to frequent flooding in the early spring and during heavy rainfall (Jablonski and Baumley, 1989).

The Kresson loam is a nearly level to gently sloping, somewhat poorly drained, soil found on low divides and in depressions. The surface layer is dark brown loam, 9 inches thick (silty clay, sandy silt, sandy clay: CL, SM, SC). The first 22 inches of the subsoil are mottled olive-brown clay loam, and below that is a mottled olive-gray clay to a depth of 40 inches. The substratum is mottled, dark grayish-brown stratified sandy loam and sandy clay loam to a depth of 60 inches or more. The permeability of this soil is slow in the subsoil and the substratum. The available water capacity is high. The perched seasonal high water table is at a depth of 1 to 1.5 feet from December to May. Runoff is slow to medium. Organic content is moderate. The soil on-site is found in areas with 2 to 5% slopes (Jablonski and Baumley, 1989).

Udorthent soils have been altered by excavating or filling (Jablonski and Baumley, 1989). In filled areas, these soils consist of loamy material that is more than 20 in. thick. Filled areas include flood plains, tidal marshes, and areas with moderately well-drained to very poorly drained soils. Some Udorthent soils contain concrete, asphalt, metal, or glass. Two Udorthent soils are found at Main Post: Udorthents, smoothed (UA), which may also include old sand and gravel pits that have been smoothed or filled in, and Udorthents — urban land complex, with 0 to 3% slopes (UD).

2.4.2 Charles Wood

The Monmouth County Soil Survey (Jablonski and Baumley, 1989) identified nine soil types at Charles Wood (Figure 2.4-1) as follows:

- At Atsion sand
- EvB Evesboro sand, 2 to 5% slopes
- FrB Freehold sandy loam, 2 to 5% slopes
- FUB Freehold sandy loam — urban land complex, 0 to 10% slopes
- HnA Holmdel sandy loam, 0 to 2% slopes
- HUA Holmdel sandy loam — urban land complex, 0 to 5% slopes
- PT Pits, sand, and gravel
- Sn Shrewsbury sandy loam
- UD Udorthents — urban land complex, 0 to 3% slopes

Freehold and Udorthents soils were previously discussed in Subsection 2.4.1 and are not discussed in this subsection.

The Atsion sand is a nearly level, poorly drained, soil found in depressional areas and on broad flats. The uppermost 2 inches are matted, partly decomposed organic material and roots with 6 inches of black sand below. The subsurface layer is a 14-in. thick grayish-brown sand (sandy silt to poorly graded sand: SM, SP). The subsoil is a dark reddish-brown loamy sand, 18 in. thick, with approximately 10 inches of mottled brown sand in the lower layer (sandy silt, sandy clay to poorly graded sand: SM, SC, SP). The substratum is a mottled yellowish-brown fine sand to a depth of at least 60 inches. Permeability is moderately rapid or rapid in the subsoil and rapid in the substratum. The available water capacity is low. Between November and June the seasonal high water table ranges from the surface to 1 foot (Jablonski and Baumley, 1989).

Evesboro soils are excessively drained soils that developed in acid, sandy, coastal plain sediments located on uplands. These soils have a 4-in. surface layer where the upper 2 inches are matted decomposed organic matter with 2 inches of grayish-brown sand in the lower layer. The subsurface layer is 5 inches of yellowish-brown sand (poorly graded sand to silty sand: SP, SM). The subsoil and substratum are yellowish-brown sand (poorly to well graded sand: SP, SW). Permeability is rapid in the subsoil and substratum. The available water capacity is low. The

seasonal high water table is at a depth of more than 6 feet. Runoff is slow. At Charles Wood, Evesboro soils are represented by the Evesboro sand with 2 to 5% slopes (EvB) (Jablonski and Baumley, 1989).

Holmdel soils are level, moderately well-drained to somewhat poorly drained soils found in depressions and on low divides. The surface layer is a 12-in. thick dark grayish-brown sandy loam (silty sand, sandy silt, sandy clay, clay, silt: SM, SC, CL, ML). The subsoil has two layers: the upper is a yellowish-brown sandy loam, 12-in. thick, and the lower layer is mottled yellowish-brown sandy clay loam to a depth of 38 inches. The substratum is mottled, yellowish-brown and light olive-brown sand and sandy loam to a depth of at least 60 inches (poorly graded sand, clayey sand: SP, SC). Permeability is moderate in the subsoil and the substratum, and the available water capacity is high. The seasonal high water table ranges from 1.5 to 4 feet between December and May. Runoff is slow. Two Holmdel soils are found at Charles Wood: the Holmdel sandy loam, 0 to 2% slopes (HnA), and the Holmdel sandy loam — urban land complex, with 0 to 5% slopes (HUA) (Jablonski and Baumley, 1989).

Soils classified as Pits, sand and gravel, have been excavated for sand and gravel. These areas are sand with varying amounts of gravel. The properties of these soils vary from place-to-place (Jablonski and Baumley, 1989).

The Shrewsbury sandy loam is a level poorly drained soil found in depressions, along drainageways, and on broad flats. The first inch is dark reddish-brown matted, partly decomposed organic material and roots with 8 inches of black sandy loam below. The subsurface layer is a 4-in. thick dark gray sandy loam (sandy silt, sandy clay, silt, clay: SM, SC, ML, CL). The subsoil has a 9-in. thick mottled grayish-brown sandy clay loam and 9 inches of mottled olive-gray sandy clay loam. The substratum is a mottled dark greenish-gray loamy sand (poorly graded sand, silty sand: SP, SM). Permeability is moderately slow or moderate in the subsoil and moderately rapid or rapid in the substratum, and the available water capacity is high. The seasonal high water table is between the surface and a depth of 1 foot from October to June. Runoff is slow and water ponds on the surface (Jablonski and Baumley, 1989).

2.5 GEOLOGY

2.5.1 Regional Geology

Monmouth County lies within the New Jersey section of the Atlantic Coastal Plain physiographic province. Main Post and Charles Wood are located in the Outer Coastal Plain subprovince, or the Outer Lowlands.

In general, New Jersey Coastal Plain formations consist of a seaward-dipping wedge of unconsolidated deposits of clay, silt, sand, and gravel. These formations typically strike northeast-southwest with a dip ranging from 10 to 60 feet per mile and were deposited on Precambrian and lower Paleozoic rocks (Zapecza, 1989). Coastal Plain sediments, predominantly derived from deltaic, shallow marine, and continental shelf environments, date from the Cretaceous through the Quaternary Periods. The mineralogy ranges from quartz to glauconite.

The formations record several major transgressive/regressive cycles and contain units that are generally thicker to the southeast and reflect a deeper water environment. More than 20 regional geologic units are present within the sediments of the Coastal Plain (Table 2.5-1). Regressive, upward-coarsening deposits are usually aquifers (e.g., Englishtown and Kirkwood Formations, and the Cohansey Sand), while the transgressive deposits act as confining units (e.g., the Merchantville, Marshalltown, and Navesink Formations). The thicknesses of these units vary greatly (i.e., from several feet to several hundred feet). The Coastal Plain deposits thicken to the southeast from 0 foot at the Fall Line to greater than 6,500 feet in Cape May County (Brown and Zapecza, 1990).

2.5.2 Local Geology

Based on the regional geologic map (Jablonski, 1968), the Cretaceous Age Red Bank and Tinton Sands outcrop at the Main Post. The Red Bank sand conformably overlies the Navesink Formation and dips to the southeast at a slope of 35 feet per mile. The upper member of the Red Bank sand (Shrewsbury) is a yellowish-gray to reddish-brown clayey, medium- to coarse-grained sand that contains abundant rock fragments, minor mica, and glauconite (Jablonski, 1968). The

Table 2.5-1 *Geologic and Hydrogeologic Units in the New Jersey Coastal Plain*

System	Series	Geologic Unit	Lithology	Hydrogeologic Unit		Hydrologic Characteristics
Quaternary	*Holocene*	Alluvial deposits	Sand, silt, and black mud	Undifferentiated		Surficial material, often hydraulically connected to underlaying aquifers. Locally some units may act as confining beds. Thicker sands are capable of yielding large quantities of water.
		Beach sand and gravel	Sand, quartz, light-colored, medium- to coarse-grained, pebbly			
	Pleistocene	Cape May Formation	Sand, quartz, light-colored, heterogeneous, clayey, pebbly			
Tertiary	*Miocene*	Pensauken Formation				
		Bridgeton Formation		Kirkwood-Cohansey aquifer system		A major aquifer system. Groundwater occurs generally under water-table conditions.
		Beacon Hill Gravel	Gravel, quartz, light-colored, sandy			
		Cohansey Sand	Sand, quartz, light-colored, medium- to coarse-grained, pebbly; local clay beds			
		Kirkwood Formation	Sand, quartz, gray and tan, very fine to medium-grained, micaceous, and dark-colored diatomaceous clay	Confining bed		Thick diatomaceous clay bed occurs along coast and for a short distance inland. A thin water-bearing sand occurs within the middle of this unit.
				Rio Grande w-b		
				Confining bed		
				Atlantic City 800-foot sand		A major aquifer along the coast.
				Composite confining bed		Alloway Clay Member or equivalent.
	Eocene	Piney Point Formation	Sand, quartz, and glauconite, fine- to coarse-grained		Piney Point aquifer	Yields moderate quantities of water locally.
		Shark River Formation	Clay, silty and sandy, glauconitic, green, gray, and brown, fine-grained quartz sand			Poorly permeable sediments.
		Manasquan Formation				
	Paleocene	Vincentown Formation	Sand, quartz, gray and green, fine- to coarse-grained, glauconitic, and brown, clayey, very fossiliferous, glauconite and quartz calcarenite		Vincentown aquifer	Yields small to moderate quantities of water in and near its outcrop area.
		Hornerstown Sand	Sand, clayey, glauconitic, dark green, fine- to coarse-grained			Poorly permeable sediments.
Cretaceous	*Upper Cretaceous*	Tinton Sand	Sand, quartz, and glauconite, brown and gray, fine- to coarse-grained, clayey, micaceous		Red Bank Sand	Yields small quantities of water in and near its outcrop area.
		Red Bank Sand				
		Navesink Formation	Sand, clayey, silty, glauconitic, green and black, medium- to coarse-grained			Poorly permeable sediments.
		Mount Laurel Sand	Sand, quartz, brown and gray, fine- to coarse-grained, slightly glauconitic	Wenonah-Mount Laurel aquifer		A major aquifer.
		Wenonah Formation	Sand, very fine to fine-grained, gray and brown, silty, slightly glauconitic			
		Marshalltown Formation	Clay, silty, dark greenish-gray, glauconitic quartz sand	Marshalltown-Wenonah confining bed		A leaky confining bed.
		Englishtown Formation	Sand, quartz, tan and gray, fine- to medium-grained; local clay beds	Englishtown aquifer system		A major aquifer. Two sand units in Monmouth and Ocean Counties.
		Woodbury Clay	Clay, gray and black, micaceous silt	Merchantville-Woodbury confining bed		A major confining bed. Locally the Merchantville Formation may contain a thin water-bearing sand.
		Merchantville Formation	Clay, glauconitic, micaceous, gray and black; locally very fine-grained quartz and glauconitic sand			
		Magothy Formation	Sand, quartz, light-gray, fine- to coarse-grained; local beds of dark-gray lignitic clay	***Potomac-Raritan Magothy aquifer***	Upper aquifer	A major aquifer system. In the northern Coastal Plain, the upper aquifer is equivalent to the Old Bridge aquifer and the middle aquifer is the equivalent of the Farrington aquifer.
		Raritan Formation	Sand, quartz, light-gray, fine- to coarse-grained; pebbly, arkosic, red, white, and variegated clay		Confining bed	
	Lower Cretaceous	Potomac Group	Alternating clay, silt, sand, and gravel		Middle aquifer	
					Confining bed	
					Lower aquifer	
Pre-Cretaceous		Bedrock	Precambrian and lower Paleozoic crystalline rocks, metamorphic schist and gneiss; locally Triassic basalt, sandstone, and shale and Jurassic diabase	Bedrock confining bed		No wells obtain water from these consolidated rocks, except along the Fall Line.

95P-3382 9/26/95 Adapted from Zapecza, 1989.

lower member (Sandy Hook) is a dark gray to black medium- to fine-grained sand with abundant clay, mica, and glauconite.

The Tinton sand conformably overlies the Red Bank sand and ranges from a clayey medium- to very coarse-grained feldspathic quartz and glauconite sand to a glauconitic coarse sand. The color varies from dark yellowish-orange or light brown to moderate brown, and from light olive to grayish olive. Glauconite may constitute 60 to 80% of the sand fraction in the upper part of the unit (Minard, 1969). The upper part of the Tinton sand is often highly oxidized and iron-oxide encrusted (Minard, 1969).

Both the Tinton sand and the Hornerstown sand (or marl) crop out at Charles Wood. The Hornerstown unconformably overlies the Tinton sand and is a dusky-green to grayish-olive or grayish-olive-green clayey glauconitic sand that may oxidize to moderate reddish-brown and dusky red. The percentage of quartz sand ranges from a few percent to 30%. Approximately half of this formation is composed of silt and clay.

The Kirkwood Formation (part of the Kirkwood-Cohansey system) crops out southeast of the Main Post and dips to the southeast at a slope of 20 feet per mile (Jablonski, 1968). The Kirkwood Formation consists of alternating layers of sand and clay. The upper unit is a light gray to yellowish-brown fine-grained quartz sand with quartz nodules and small pebbles. The lower unit is a brown silt in Monmouth County (Jablonski, 1968).

2.6 HYDROGEOLOGY

Fort Monmouth lies in the Atlantic and Eastern Gulf Coastal Plain groundwater region (Meisler et al., 1988). This groundwater region is underlain by undeformed unconsolidated to semiconsolidated sedimentary deposits. The chemistry of the water near the surface is variable with low dissolved solids and high iron concentrations. The water chemistry in areas underlain by glauconitic sediments (such as the Red Bank and Tinton sands) is dominated by calcium, magnesium, and iron. The sediments in the area of Fort Monmouth were deposited in fluvial-deltaic to nearshore environments.

The water table aquifer at the Main Post area is identified as part of the "composite confining units," or minor aquifers. The minor aquifers include the Navesink Formation, the Red Bank sand, Tinton sand, Hornerstown sand, Vincentown Formation, the Manasquan Formation, Shark River Formation, Piney Point Formation, and the basal clay of the Kirkwood Formation.

According to Jablonski (1968), wells drilled in the Red Bank and Tinton sands produce from 2 to 25 gallons per minute (gpm). Water in these upper hydrogeologic units is typically encountered at shallow depths (2 to 9 ft bgs). However, domestic wells are generally screened deeper in these upper hydrogeologic units. The shallow water table conditions in the Tinton and Red Bank sands, and the similar composition of these sands within the Kirkwood Formation, suggest that the Tinton-Red Bank-Kirkwood sequence forms a single, laterally continuous aquifer. Some well owners have reported acidic water that requires treatment to remove iron. Water in this water table aquifer will flow east toward the Atlantic Ocean. Local topography (stream valleys, etc.) will tend to deflect the flow toward local depressions.

Because of the high silt and clay content, the Hornerstown sand most likely serves as an aquitard or aquiclude rather than as an aquifer. Jablonski (1968) reports that localized areas may yield enough water for domestic use.

2.7 VEGETATION AND WILDLIFE

The information in this subsection was originally reported in the Installation Assessment (IA) (USATHAMA, 1980). Information on vegetation and wildlife of the Evans Area is not discussed in this document, but is presented in the IA.

The Fort Monmouth complex (Main Post and Charles Wood areas) lies within the outer Atlantic Coastal Plain, a region characterized by salt marsh wetlands. Both areas of Fort Monmouth have flood plain salt marshes along or within their boundaries. The ecosystem includes marsh grasses (*Phragmites, Spartina, Distichlis,* and *Scerpus*), small mammals, reptiles, amphibians, and migratory waterfowl. Parkers Creek is an ecologically unique area proximal to Fort Monmouth and its subposts. It is designated as a wildlife habitat bordering the Main Post.

Tables 2.7-1 through 2.7-4 were adapted from Appendix B of the IA report. Appendix B of the IA report also contains a list of vegetation and wildlife found during a survey of the Naval Weapons Station Earle, located approximately 10 miles from Fort Monmouth. Table 2.7-1 lists trees and shrubs found in Monmouth County. Monmouth County mammals are listed in Table 2.7-2, and reptiles and amphibians found in Monmouth County are listed in Table 2.7-3. Table 2.7-4 lists endangered birds and very rare fish in Monmouth County.

The FWS of the U.S. Department of the Interior (DOI) stated in a letter (included as Appendix E of the IA) that there are no federally listed or proposed threatened or endangered flora or fauna on Fort Monmouth. The letter also contains a list of federally endangered and threatened or candidate species in New Jersey. The Office of Natural Lands Management of NJDEP stated in a letter that there was one observance of a New Jersey listed endangered plant, the clustered sedge, in 1992, but there have been no other observances of federal or state rare species. The letter contained a list of rare species in the general vicinity of each area and in Monmouth County.

Table 2.7-1

A Partial List of Trees and Shrubs Found in Monmouth County

Trees	
White ash	Green ash
Big-toothed aspen	Quaking aspen
Atlantic white cedar	Basswood
American beech	Black birch
Gray birch	Black gum
Box elder	Black cherry
American chestnut	Flowering dogwood
Eastern red cedar	American elm
Eastern hemlock	Pignut hickory
Shagbark hickory	American holly
Ironwood	Black locust
Honey locust	Norway maple
Red maple	Silver maple
Red mulberry	White mulberry
Black oak	Swamp white oak
Chestnut oak	White oak
Pin oak	Willow oak
Pitch pine	Red pine
White pine	Sassafras
Black spruce	Norway spruce
Tree-of-heaven	Water tupelo
Black walnut	Black willow
Crack willow	Weeping willow
Shrubs	
Pink azalea	Swamp azalea
Wild azalea	Southern bayberry
Blackberry	Blackhaw
Blueberry	Common buttonbush
Chokeberry	Sand cherry
Coralberry	Large cranberry
Red osier dogwood	Swamp dogwood
Common elderberry	Fetter bush
Hawthorn	Huckleberry
Inkberry	Mountain laurel
Sweet pepperbush	Raspberry
Shadbush	Spicebush
Staghorn sumac	Poison sumac
Winged sumac	Arrowwood viburnum
Winterberry	Witch hazel

Table 2.7-2

Mammals Found in Monmouth County

Mammals	
Opossum	Gray fox
Smokey shrew	Woodchuck
Least shrew	Eastern chipmunk
Short-tail shrew	Eastern gray squirrel
Starnose mole	Red squirrel
Eastern mole	Southern flying squirrel
Keen's myotis (bat)	Beaver
Little brown myotis	White-footed mouse
Small-footed myotis	House mouse
Silver-haired bat	Norway rat
Eastern pipistrel	Southern bog lemming
Red bat	Boreal redback vole
Big brown bat	Meadow vole
Hoary bat	Pine vole
Raccoon	Muskrat
Longtail weasel	Meadow jumping mouse
Mink	Eastern cottontail rabbit
River otter	New England cottontail*
Striped skunk	Virginia white-tailed deer
Red fox	European hare

*Candidate for Federal List of Endangered Species.

Table 2.7-3

Reptiles and Amphibians Found in Monmouth County

Reptiles	
<u>Lizards</u>	
Northern fence	Five-lined skink
	Mud salamander*
<u>Turtles</u>	
Common snapping	Bog*
Wood*	Spotted
Musk	Eastern mud
Diamond-backed terrapin	Eastern painted
Eastern box	Red-eared
<u>Snakes</u>	
Eastern smooth earth	Red-bellied
Northern brown	Northern water
Eastern garter	Eastern ribbon
Eastern hognose	Eastern worm
Northern ringneck	Rough green
Northern black racer	Northern pine*
Black rat	Corn
Scarlet	Eastern milk
Eastern king	Timber rattler*
Amphibians	
<u>Toads</u>	
Eastern spadefoot	Fowlers
<u>Tree Frogs</u>	
Spring peeper	Gray
Pine barrens*	New Jersey chorus
<u>True Frogs</u>	
Cricket	Carpenter
Pickerel	Green
Northern leopard	Wood
Bull	

*On list of endangered or threatened species or candidate for Federal List of Endangered Species.

Table 2.7-4

Endangered Birds and Very Rare Fish Found in Monmouth County

Birds	
Bald eagle[a,b]	Black skimmer[b]
Peregrine falcon[a]	Least tern[b]
Osprey — Fish hawk — Salt marsh[b]	Eskimo curlew — protected by U.S. Government
Coppershawk	
American bittern[b]	
Barred owl[b]	
Black call[b]	
Bobolink[b]	
Cooper's hawk[b]	
Grasshopper sparrow[b]	
Great blue heron[b]	
Loggerhead shrike[b]	
Merlin[b]	
Northern harrier[b]	
Pied-billed grebe[b]	
Piping plover[b]	
Red-shouldered hawk[b]	
Roseate tern[b]	
Savannah sparrow[b]	
Short-eared owl[b]	
Upland sand piper[b]	
Vesper sparrow	
Fish	
Short nose sturgeon	

[a]Federal endangered and threatened species.
[b]New Jersey endangered and threatened species.

SECTION 3
INVESTIGATION ACTIVITIES

SECTION 3

INVESTIGATION ACTIVITIES

The site investigation (SI) at Fort Monmouth was performed in accordance with the CDAP (WESTON, 1994). A description of procedures used during the field investigation is provided in the following subsections.

3.1 GEOPHYSICS

A geophysical investigation was performed as part of the site investigation at Fort Monmouth between 29 November 1994 and 15 December 1994. The investigation was performed at locations within the Main Post and Charles Wood areas using electromagnetic (EM) conductivity, magnetometry (MAG), and/or ground penetrating radar (GPR) surveying methods. The objective of the geophysical investigations was to evaluate the location and extent of the known or suspected waste disposal areas at sites M-3, M-12, M-14, M-18, and CW-3A. The geophysical survey data were used to confirm planned subsequent monitor well and soil boring locations at each area.

Prior to the start of the geophysical investigation, a reference grid was established by a licensed surveyor at 20-ft by 100-ft centers to provide surface control for data collected at each site. The survey grid was established based on a local relative coordinate system using existing monuments and was later surveyed to a state-plane coordinate system. All field data collected at the Main Post and Charles Wood sites were referenced to the established grid coordinates.

3.1.1 Electromagnetic (EM) Terrain Conductivity Surveying Methods

3.1.1.1 Description

An EM survey was conducted at sites M-18 and CW-3A on 1 and 8 December 1994, respectively, using a Geonics, Ltd. EM-31™ terrain conductivity meter. The EM-31 is battery-powered and operates at a frequency of 9.8 kiloHertz (kHz). This system consists of a transmitting coil (primary field source), receiving coil (sensor), phase-sensing circuits, and an

amplifier. A fixed 3.7-meter intercoil spacing is standard for the EM-31. The instrument measures apparent conductivity in units of milliSiemens per meter (mS/m) in materials with true conductivities ranging up to 1,000 mS/m.

The EM-31 was operated in both the quadrature and in-phase components. The quadrature component is sensitive to conductors with low induction numbers (i.e., low conductivity materials). Relative conductivity values associated with in-phase measurements have a greater sensitivity to buried metal objects.

3.1.1.2 Methodology

Prior to conducting each survey, the EM-31 was calibrated in accordance with the instrument operating manual. No anomalies were observed in the calibration data. After calibration was completed, both the quadrature and in-phase components of the EM field were measured at the sites. Conductivity measurements were obtained in the vertical dipole mode of operation for single layer mapping. The effective depth of exploration associated with this mode of operation is approximately 18 feet (McNeill, 1980b).

The EM-31 was operated in a "continuous" mode along pre-established survey grid lines. Measurements were recorded at 5-ft intervals as the operator traversed the line. These measurements were digitally recorded and stored in memory in an Omni Data Logger™. Random quality assurance/quality control (QA/QC) readings were obtained from the EM-31 analog meter and manually recorded in the field notebook. The data in memory were downloaded from the data logger to a field computer. The computer-generated output files were edited and formatted, then compared against the random QA/QC readings recorded in the field logbook. Based on the QA/QC review of the data, no deficiencies were observed in the digitally recorded data.

Conductivity data point postings and contour plots were prepared from the field data using Geosoft™ contour plotting software. These maps (presented in Section 4) were interpreted initially for cultural features on the surface, such as fences. If it was determined that anomalies could be attributed solely to surface features, the anomalies were disregarded. The contour plots

were interpreted with regard to site soil characteristics, site-specific geology, and the suspected presence of buried waste materials. The results of the EM survey are presented and discussed in Section 4.

3.1.2 Magnetic (MAG) Methods

3.1.2.1 Description

The MAG survey was conducted at sites M-3, M-12, M-14, and CW-3A on 6 through 8 December 1994, using a GSM-19 Walking Gradiometer/Magnetometer. The instrument operates on the principle that protons or nuclei of hydrogen atoms in a hydrocarbon fluid behave as spinning magnetic dipoles where the protons are aligned or polarized by an induced current. When the current is removed, the natural spin of the proton causes them to precess about the direction of the earth's ambient magnetic field. This precession generates a small signal with a frequency proportional to the intensity of the total magnetic field. Local perturbations (induced magnetization) generated by anthropogenic (i.e., buried ferrous drums) and natural (i.e., magnetic mineral deposits) features add to the intensity of the ambient magnetic field. The magnetometer measures the vector sum of the earth's magnetic field and the anomalous induced magnetic field in standard nanoTesla (nT) units.

3.1.2.2 Methodology

Prior to conducting the survey, a base station magnetometer was established at each site in an area suspected to be representative of background conditions. The purpose of the base station was to monitor diurnal variations in the regional or "ambient" magnetic field during the actual survey. Both the base station and field magnetometers were calibrated and synchronized in accordance with the manufacturer's operating manual. No anomalies were observed in the calibration data. When calibration was completed, both the total field and magnetic gradient were measured at each station point. Additional QA/QC checks included taking readings at several locations periodically over the survey period to verify the repeatability of field results along with a swing sensor test, which was conducted to identify whether any directional bias existed in the instrument.

Consistent with the EM-31 survey, the magnetometer was operated in a "continuous" mode along the same pre-established survey grid lines. In the continuous mode, MAG measurements were recorded on at least 3-ft spacing intervals as the operator traversed the line. The MAG measurements were digitally recorded and stored in memory in the instrument's data logger.

The data in memory were downloaded from both data loggers to a field computer. Diurnal effects were monitored throughout the survey period but were considered to be negligible relative to the overall range of magnetic data. Therefore, postings of the data points and contour plots of both the total magnetic field and magnetic gradients were prepared from the field data using Geosoft™ contour plotting software. Each magnetic anomaly, as defined by a relatively high vertical gradient, was analyzed with respect to cultural features present on the surface, and the potential for buried ferrous material in the subsurface.

3.1.3 Ground Penetrating Radar (GPR) Methods

3.1.3.1 Description

A GPR survey was conducted at site M-18 on 30 November 1994 and at sites M-3, M-12, M-14, and CW-3A on 9 through 15 December 1994 using a Subsurface Interface Radar™ (SIR) System 10 model. The System 10 is a computer-controlled, multichannel unit that automatically displays, processes, and records cross-sectional color profiles of the subsurface.

The GPR method uses high frequency radio waves to acquire relatively shallow subsurface information. Short pulses of EM energy are radiated downward into the subsurface from a transmitting antenna. A portion of the energy is then reflected back to a receiving antenna, where variations in the reflected signal are continuously processed by a control unit, graphically recorded, and digitally stored on magnetic tape. The amplitude and frequency of the reflected signal are caused by variations in the electrical properties of subsurface materials. These variations may be caused by natural geologic conditions, such as composition, moisture content, salinity, and structure, as well as manmade objects such as utilities, underground storage tanks (USTs), and other buried objects.

The ability of the GPR system to resolve buried targets depends on the physical size and relative electrical contrast of an object/feature with respect to the surrounding materials. Consequently, not every subsurface feature can be identified using the GPR method. Also, since the GPR investigation is a nonintrusive surface electronic testing method, it is not possible to determine the exact description of subsurface anomalies.

3.1.3.2 Methodology

The GPR system was calibrated to site-specific conditions prior to implementation of the survey. To calibrate the system, either the dielectric constant of the survey medium or the depth to a buried object or interface must be known. The GPR system was field calibrated using an averaged dielectric constant for the survey medium. Based on assumed geologic and site conditions a dielectric constant of approximately 5 for the unsaturated unconsolidated soils and 10 for saturated unconsolidated soils was calculated for the materials underlying the sites. QA/QC checks included collecting a duplicate profile at each site to field-verify the repeatability of results.

The GPR survey was referenced to the surface control grid that was previously established at each site. Surveying was accomplished by traversing each area with a 300-megaHertz (MHz) antenna along the same grid lines previously surveyed with the EM and MAG. The product of the GPR survey is a series of real-time subsurface field profiles. The GPR data profiles were processed and interpreted using the GSSI RADAN3 software package. Select color profiles were reproduced in the office from the data tape to enhance subtle features that were not easily recognized on the gray scale of the black-and-white field profiles. These results were integrated with the EM and MAG data and are discussed in Section 4.

3.2 SEDIMENT SAMPLING

Sediment samples were collected by WESTON personnel from seven locations on and in the vicinity of Fort Monmouth on 1 and 2 December 1994. Sediments were sampled from two locations in Parkers Creek on the Main Post and one location in a tributary to Wampum Brook

on the Charles Wood site. Sediments were also collected at two locations upstream from the Main Post, one in Parkers Creek, and one in Mill Creek for background comparisons. Two background samples for Charles Wood were taken in Wampum Brook.

Sediment was collected from the top 3 to 6 inches of the substrate, using either with a stainless-steel trowel or a hand corer, depending on the water depth and compaction of the sediments. A trowel was used in shallow water with loose sediments, whereas a corer was used in deep water with compacted sediments. Sampling was based in areas of fine-grained sediment because some potentially site-related contaminants preferentially adsorb onto fine-grained sediment particles (U.S. EPA, 1982).

At all but one location, sediment samples were submitted for laboratory analysis of the following parameters:

- Target Compound List volatile organic compounds (TCL VOCs).
- TCL semivolatile organic compounds (TCL SVOCs).
- Target Analyte List (TAL) metals.
- Pesticides/polychlorinated biphenyls (PCBs).
- Cyanide.

In accordance with the CDAP, the sediment sample collected at the downstream location in Parkers Creek on the Main Post was only analyzed for TAL metals. This site was a sewage treatment plant in the 1940s, and metals are the only suspected contaminants.

To minimize the potential for volatilizing sediment samples collected for VOC analysis, VOC samples were collected first at each location. The sediment was placed directly into precleaned, prelabeled bottles. Sediment samples collected for all other analyses were then put in a stainless-steel bowl and mixed thoroughly before being transferred to bottles.

Sediment was collected for an original sample, a duplicate sample, a matrix spike (MS) sample, and a matrix spike duplicate (MSD) sample at the location suspected to have the greatest potential for contamination originating from the site and where the full suite of parameters was being analyzed (MP08, near Landfill 8 in Parkers Creek). After all samples collected for VOC

analysis were prepared at that location, sufficient sediment was collected in the bowl and mixed thoroughly to provide for both the original sample and duplicate samples.

Stainless-steel bowls and trowels, and the hand corer were decontaminated prior to use at each location according to instructions in the *Chemical Data Acquisition Plan for Site Investigation at Fort Monmouth, New Jersey* (WESTON, 1994). A laboratory-prepared trip blank was carried throughout the collecting effort for TCL VOC analysis.

After filling, sample bottles were sealed with a signed and dated custody seal, and put into polyethylene bags. Prepared bottles were packed in vermiculite in coolers. Bagged ice was put in the coolers, which were custody sealed and shipped according to U.S. Army Sampling Protocols ER 1110-263 and International Air Transport Association (IATA) regulations for next morning delivery to the laboratory.

3.3 SURFACE-WATER SAMPLING

Surface-water samples were collected from 10 locations on and in the vicinity of Fort Monmouth on 1 December 1994. Table 3.3-1 presents a summary of the surface-water parameters collected at the selected locations prior to sampling.

Surface-water samples were collected from six locations on the Main Post: two from Oceanport Creek, two from Parkers Creek, and two from Mill Creek. Surface water was also collected from both Lafetra Creek and Mill Creek upstream from the Main Post for background comparisons. Both background locations were selected because they are upstream from the head-of-tide and, therefore, were thought to be isolated from releases on the Main Post. Two surface-water samples were also collected on the Charles Wood site from a tributary to Wampum Brook for background comparison.

Surface-water samples were collected directly by submersing laboratory-cleaned sample bottles to a depth of 3 to 6 inches below the surface until completely filled. At locations where surface

Table 3.3-1

Summary of Surface-Water Field Parameters

Location ID	Temperature (°C)	Dissolved Oxygen (mg/L)	pH	Conductivity (µmhos)	Water Depth (inches)	Channel Width (feet)	Sediment Type	Tidally Influenced
Main Post								
Background								
Lafetra Creek	6.5	9.8	7.6	260	12	15	Sand	No[a]
Wampum Creek	8.5	9.0	7.6	220	12	25	Large cobble	No[a]
Lafetra Creek								
MP10	6.5	9.6	7.7	270	3	25	Sand	Yes[a]
MP06	5.0	10.0	7.5	410	5	40	Sand	Yes[a]
Wampum Brook (MP02)								
SW01	9.0	9.2	8.0	230	12	20	Sand	No[a]
SW02	8.5	10.0	7.8	220	12	25	Sand	No[a]
Oceanport Creek (MP14)								
SW01	8.0	10.5	7.6	510	3	20	Sand	Yes[a]
SW02	8.0	9.4	7.7	980	36	20	Sand	Yes[a]
Charles Wood Background								
CW02	5.0	11.2	8.3	1,000	12	3	Sand, gravel, small cobble	No[b]
CW05	10.0	3.0	7.4	220	3	15	Silty sand, leaf choked	No[b]

[a]Results determined from conductivity and salinity measurements collected during tidal monitoring tests.
[b]Results based on field observations.

water was not sufficiently deep, a hole was made in the sediment to facilitate sample collection. Disturbed sediment was allowed to settle before water samples were collected. Clean surgical gloves were worn during surface-water sample collection and when handling sample bottles for shipping. Gloves were changed between sample locations.

Surface water was analyzed for the following parameters:

- TCL VOCs.
- TCL SVOCs.
- TAL total metals (unfiltered).
- TAL soluble metals (filtered).
- Pesticides/PCBs.
- Cyanide.

Samples for soluble metals were filtered with a peristaltic pump through a high capacity 0.45-micron filter.

Surface water was collected for an original sample, a duplicate sample, an MS sample, and an MSD sample at the location suspected to have the greatest potential for contamination originating from the site (sample MP06, near Landfill 6 in Parkers Creek). No equipment was used to collect surface water, so no rinsate blanks were collected.

Filled sample bottles were handled in the same manner as sediment sample bottles (see Subsection 3.2).

3.4 SURFACE SOIL SAMPLES

Surface soil samples were collected by WESTON personnel from 17 locations on and in the vicinity of Fort Monmouth, NJ on 29 and 30 November 1994. Of the surface soil locations, 6 were on the Main Post and 11 were on the Charles Wood site.

Surface soil was collected from within the upper 6 inches with a decontaminated stainless-steel trowel. To minimize the potential for volatilization, surface soil samples submitted for VOC

analysis were collected first at each location, placing the soil directly into laboratory-prepared bottles. Soil samples collected for all other analyses were then put in a decontaminated stainless-steel bowl and mixed thoroughly before being transferred to laboratory-prepared bottles.

At Main Post, the soil from all six sampling locations was analyzed for pesticides/PCBs and TCL SVOCs; the soil from the two locations at site M-15 was also analyzed for TAL metals and cyanide; and the soil from the four locations at site M-16 was also analyzed for TCL VOCs. Of those Charles Wood site locations where soil was analyzed for more than PCBs, all were analyzed for TAL metals and cyanide, and soil from location CW-6 was also analyzed for pesticides, TCL VOCs, and TCL SVOCs.

Rinse blanks submitted for TCL VOC analysis were collected or labeled at a Main Post location (MP-16) and a Charles Wood site location (CW-9). A duplicate soil sample for TAL metals and cyanide analysis was also collected at the Charles Wood site location (CW-9). Sufficient soil was collected at each duplicate sample location and mixed thoroughly in the bowl to provide for both the original and duplicate samples. Handling of soil samples was similar to that of sediment (Subsection 3.2).

3.5 PCB TRANSFORMER SITE SAMPLING

3.5.1 General

Two types of samples were collected (soil samples and concrete chip samples) to determine whether PCB contamination exists at any of the former PCB class transformer locations. Soil samples were taken under the former location of pole-mounted transformers and on each side of a pad-mounted transformer. Concrete chip samples were taken at stained areas on the concrete pads or vault floors. Table 3.5-1 summarizes PCB transformer sampling. All samples were analyzed for PCBs.

Table 3.5-1

Sampling at Former PCB Transformer Sites

Transformer Code	Location	Size (kVA)	Remarks	Description	Sampling
CW010	Building 2276-W side on Bataan Ave., pole	37	Replaced by CW261, CW262, and CW263.	Pole over grass-covered soil. No stain.	Collected soil sample (CWAE-TR01) at pole under former location of transformer.
CW035	Building 2000-NE side, pad	300	Replaced by CW268, CW269, and CW270.	On old approximately 4-ft by 6-ft concrete pad. Dark stains on pad.	Concrete pad had been removed. Collected four soil samples (CW07-TR01 to TR04) downgradient of former pad location (see Figure 3.5-2).
CW039, CW040	Building 2018-S side, pole	25	Replaced by CW265.	Pole over grass-covered soil. No visible stains.	Collected soil samples (CW07-TR05 and TR06) at poles. Because of uncertainty of exact location of former PCB transformers, sampled two pole sites (see Figure 3.5-2).
MP-007	Building 718, pole located approx. 75 ft east of Wilson.	37	Replaced by MP-495.	Pole located over grass-covered soil. No visible stain.	Collected soil sample (MPT4-TR01) at pole under former location of transformer.
MP-062	Building 292-NW side, pole	75	Removed, replaced.	Three on pole replaced by 3 on old pad that is directly under pole. No visible oil stain on pad.	Collected soil sample (MPT5-TR01) at pole under former location of transformer.
MP-104	Building 686-east, pole	37	Replaced by MP-489.	Located over grass-covered soil. No visible stain.	Collected soil sample (MPT6-TR01) at pole under former location of transformer.
MP-124	Building 1220-west side, pad	500	Replaced by MP-493.	On old approximately 8-ft by 10-ft concrete pad. Approximately 1-ft diameter brown stain on west side of pad.	Collected four soil samples and one concrete chip sample from pad (see Figure 3.5-1).
MP-280	Building 1002, indoor vault	750	Replaced by MP-494.	Concrete floor not refurbished; in good condition. Stains visible under front and back of new transformer. Stains may be connected, in which case stain would be about 5 ft in diameter.	Collected concrete sample from stained area under transformer (MPT7-CC01).

Table 3.5-1

Sampling at Former PCB Transformer Sites (Continued)

Transformer Code	Location	Size (kVA)	Remarks	Description	Sampling
MP-282, MP-283	Building 1004, pole located approx. 50 ft west of corner of Razor and Stephenson	10	Removed, no replacement.	Pole over pavement and grass-covered soil. No visible stain.	Collected soil sample (MPT8-TR01) at pole under former location of transformer.
MP-347, MP-348, MP-349	Building 1208, indoor vault	250	Replaced by MP-496.	Two small stains about 1 ft in diameter, one between MP-347 and MP-348 and one on NE side of MP-349.	Collected concrete sample from stained area (MPT2-CC01).
MP350, MP351, MP352	Building 1209, indoor vault	250	Replaced by MP-499.	Concrete was not refurbished; it is in good condition. Very slight stain, about 1 ft in diameter, between MP-352 and wall.	Collected concrete sample from stained area (MPT1-CC01).

Location:

CW — Charles Wood
MP — Main Post

3.5.2 Sample Collection Procedures

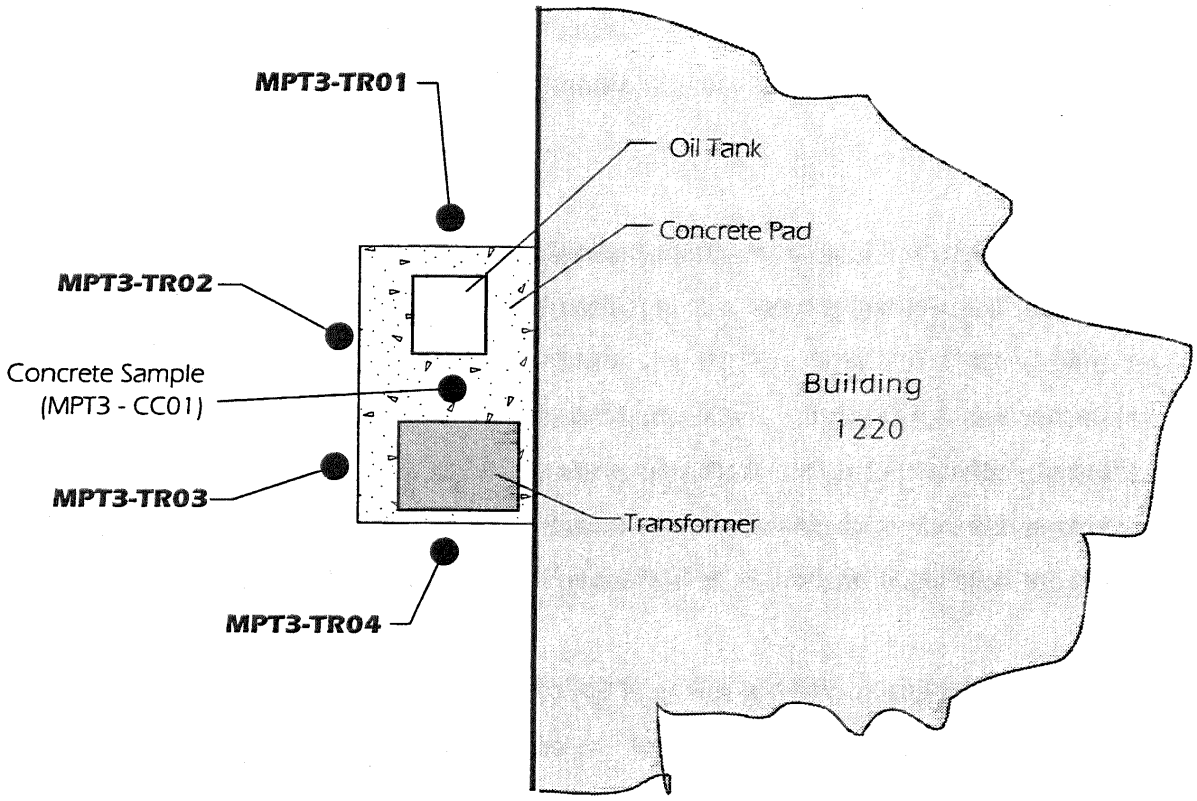
A soil sample was collected for PCB screening underneath each pole-mounted unit. Four discrete soil samples were taken at the sides of the concrete pad at Building 1220 (Figure 3.5-1). The pad at Building 2000 on Charles Wood had been removed prior to sampling, so four surface soil samples were taken along a natural drainage swale north and west of the former pad location (Figure 3.5-2).

Because a leak from a pole-mounted transformer could have occurred at any point on the transformer, a screening process was performed to detect soil contamination. Soil samples for screening were taken at three points immediately below the location of the pole-mounted transformer and were mixed. The samplers were directed to take a sample at any location with stressed vegetation, but no stressed areas were found. This process increases the likelihood of detecting small areas of contamination. Additional sampling will be conducted at locations where PCBs were detected in the soil at levels above or close to the NJDEP soil criteria.

At each soil sampling location a soil sample from 0 to 6 inches was collected with a stainless-steel scoop and placed in a mixing bowl. Stones and vegetation were removed from the soil matrix, and the remaining soil was mixed in a stainless-steel bowl. The sample was placed in a glass bottle with a Teflon-lined cap. A clean pair of disposable sample gloves was worn by the sampler during collection of each separate sample.

A concrete chip sample was taken in the middle of each stain on the concrete of a pad or vault. An electronic chipping hammer was used to chip the concrete to a depth of up to ½ inch and to pulverize the concrete for analysis. Chips were pulverized as fine as possible to facilitate laboratory extraction and analysis. A clean pair of disposable sample gloves was worn by the sampler during collection of each discrete sample.

Stainless-steel bowls and trowels were used and decontaminated prior to use in accordance with instructions in the CDAP (WESTON, 1994). Trip and field blanks and duplicate samples were prepared and submitted for analysis.



NOT TO SCALE

Legend

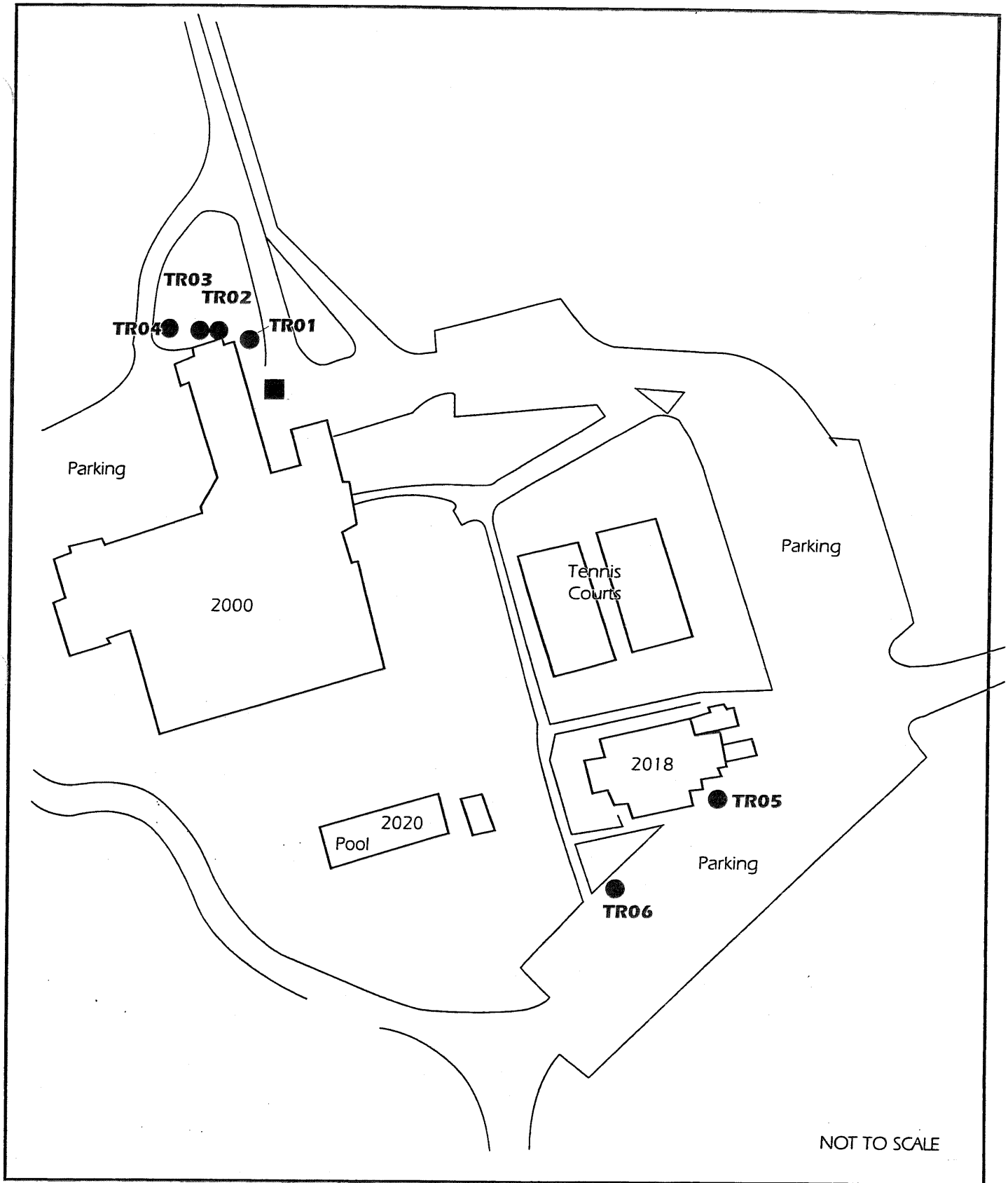
● Sampling Location

N

95P-3360 9/26/95

Fort Monmouth, Main Post

FIGURE 3.5-1
TRANSFORMER SITE SAMPLING LOCATIONS
AT BUILDING 1220, MAIN POST



Legend

- Sampling Location
- Former Transformer Pad

N

95P-3359 9/26/95

Fort Monmouth

FIGURE 3.5-2

TRANSFORMER SITE SAMPLING LOCATIONS AT BUILDING 2000 AND 2018, CHARLES WOOD

3.6 SOIL BORINGS

Soil borings were drilled at the following Main Post sites: M-16, M-18, and AOC-3; and Charles Wood sites: CW-1, CW-2, CW-4, CW-5, CW-6, CW-9, and AOC-7. The borings were completed to site-specific depths using hollow-stem auger drilling techniques to collect soil samples for laboratory analysis. Site-specific soil samples were analyzed for the parameters listed in Table 3.6-1. Lithologic logs are presented in Appendix A.

The borings were drilled using either 4.25-in. or 8-in. inside diameter (ID) hollow stem augers. Borings that were converted into monitor wells were drilled using the larger auger. Continuous split-spoon samples were collected according to the techniques specified in American Society for Testing and Materials (ASTM) Method 1586. All drilling was conducted by a New Jersey licensed driller.

Soil samples were collected from the soil borings using the following procedures:

1. Soil samples submitted for laboratory analysis were collected from borings using a 2-ft long, 2- or 3-in. diameter split spoon.

2. After retrieval, the split spoon was opened and immediately scanned with an organic vapor detector as a preliminary assessment of the amount of organic compounds present in the soils. Field screening for headspace was conducted according to the protocols outlined in the *NJDEP Field Sampling Procedures Manual*, May 1992.

3. If required by the site-specific sampling protocol, a portion of the soil sample was taken directly from the split spoon and placed in the sample bottle for VOC analysis to minimize volatilization of the sample. VOC samples were collected from discrete 6-in. intervals prior to organic vapor scanning of the soil samples.

4. Samples submitted for laboratory analysis were collected from intervals where high organic vapor monitor (OVM) readings were measured, visible staining was observed, or as specified in Section 4 of the CDAP.

5. The remaining sample was then homogenized in a stainless-steel bowl after a lithologic description of the soil sample and other pertinent drilling information was recorded according to the procedures outlined in the *NJDEP Field Sampling Procedures Manual*, May 1992.

Table 3.6-1
Fort Monmouth - Main Post and Charles Wood
Soil Sampling Analytical Parameters

SITE SAMPLE LOCATION	TCL VOC	TCL SVOC	TCL PEST/ PCB	TAL METALS	TPH	CYANIDE
Main Post						
M-15		X	X	X		
M-16	X	X	X			
M-18	X	X *	X	X	X	
AOC-3	X	X	X	X		
Background	X	X	X	X		X
Charles Wood						
CW-1	X	X	X	X		
CW-2	X	X	X	X		
CW-4	X	X	X	X		
CW-5	X	X	X			
CW-6	X	X	X	X**		
CW-9	X	X	X	X		
AOC-7	X	X	X	X		
Background	X	X	X	X		X

Notes:
* = Only sampled SVOCs at SB-06.
** = Only sampled at SS-01.
SVOC - Semi-Volatile Organic Compound
PEST - Pesticides
PCB - Polychlorinated biphenyls
TAL - Target Analyte List
TCL - Target Compound List
TPH - Total Petroleum Hydrocarbons
VOC - Volatile Organic Compound
See Table 5.1-1 for analytical methods.

6. The soil was then placed in the appropriate sample containers.

7. Field QA/QC samples were collected at a frequency of 1 set per 10 samples as specified in the CDAP.

A total of 16 trip blanks, 3 duplicates, and 3 equipment blanks were collected during the soil sampling program. Extra soil for laboratory MS/MSD analysis was also obtained as part of the QA/QC program. One split sample was collected and sent to the USACE New England Division Environmental Laboratory for analysis. Specific sampling protocols were in accordance with the procedures outlined in the CDAP.

After sampling was completed, the shallow borings were allowed to fill by the natural collapse of surrounding soil, and then further backfilled with a cement/bentonite mixture to ground surface. Split spoons and stainless-steel bowls were decontaminated prior to each use according to the procedures specified in the CDAP. Field blanks consisted of chromatography-grade distilled water rinsed over the inside of a decontaminated split spoon and bowl. Field blanks were collected once every 10 soil samples collected per analysis to verify the effectiveness of the decontamination process. All nonsampling, downhole drilling equipment was decontaminated between boring locations at each site, as described in the CDAP. Filled sample bottles were handled in the same manner as sediment sample bottles (Subsection 3.2).

3.7 GROUNDWATER MONITOR WELL INSTALLATION

A total of 45 shallow groundwater monitor wells were installed at both the Main Post and Charles Wood areas between 13 December 1994 and 23 January 1995 in accordance with the procedures and materials specified in the CDAP (December 1994). A total of 29 monitor wells were installed at the Main Post location and 16 monitor wells were installed at Charles Wood (these numbers include background wells). All monitor wells were drilled using an auger-type drilling rig equipped with 8-in. and 4.25-in. ID hollow-stem augers.

Continuous split-spoon samples were collected using ASTM Method 1586. A complete lithologic profile was recorded for each well by the WESTON site geologist from the split-spoon sample.

Monitor wells were installed within the shallow unconfined hydrogeologic water-bearing zone at depths ranging from 14 to 28 ft bgs. The shallow monitor wells were constructed with 4-in. diameter Schedule 40 polyvinyl chloride (PVC) casing and screen. Well screens were placed approximately 2 feet above the noted saturation depth to monitor seasonal fluctuations. However, where saturation was observed in boreholes immediately below ground surface (1 to 4 ft) screens were placed entirely in the saturation zone in order to get the proper sand pack and seal above the slotted screened interval. Screen lengths varied from 10 to 15 feet (screen slot size is 0.01 in.). The annular space around the well screen was filled with sand pack to approximately 1 to 2 feet above the top of the screen. A minimum 2.5- to 3-ft bentonite slurry was placed above the sand pack and a bentonite/cement grout mixture was used to seal the remaining annular space. All wells were secured with a locking steel protective casing. Summaries of well completion specifications for Main Post and Charles Wood are presented in Tables 3.7-1 and 3.7-2, respectively. Individual lithologic logs and well construction summaries are presented in Appendix A.

Well permit numbers and site identification numbers were stamped on the 6-in. diameter steel outer protective casing. The top of the PVC casing and ground surface was surveyed by a New Jersey-licensed surveyor and was referenced in feet above msl. Appendix B presents the survey data for site monitor and stilling wells. All well permit numbers and survey information are also included with each lithologic log and are summarized in Tables 3.7-1 and 3.7-2.

All drilling equipment was decontaminated in accordance with the decontamination procedures described in the CDAP prior to use at each well location. Drill cuttings were spread on the ground near the well location since no OVM readings above background were recorded. Holes, ruts, or divots developed during drilling were backfilled.

3.7.1 Well Development

Following installation, wells were developed according to the procedures described in the CDAP. The development procedures consisted of manually surging with a PVC surge block for 15 to 30 minutes. After surging, the wells were purged using a PVC bailer to remove any fine particles

Table 3.7-1
Fort Monmouth - Main Post
Well Completion Summary

Site and Location ID	Well Permit No.	Completion Date	Surveyed GS Elev. (Ft. MSL)	Surveyed PVC Elev. (Ft. MSL)	Total Depth (Ft. BGS)	Total Depth (Ft. TOIC)	Screened Interval (Ft. BGS)	Top of Sand Pack (Ft. BGS)	Top of Seal (Ft. BGS)
SITE M-2									
MW-01	2932584	14-Dec-94	19.44	21.04	22.75	24.35	7.00-22.29	5.75	3.75
MW-02	2932585	13-Dec-94	13.36	15.5	17.46	19.6	7.46-17.00	5.46	3.46
MW-03	2932586	13-Dec-94	10.98	12.63	15.6	17.25	5.60-15.14	4.6	2.6
SITE M-3									
MW-04	2932568	5-Jan-95	17.34	19.02	23.72	25.40	8.72-23.26	6.72	3.72
MW-05	2932569	9-Jan-95	11.28	13.30	16.43	18.45	6.43-15.97	4.43	2.43
MW-06	2932570	11-Jan-95	10.25	12.42	15.33	17.50	5.33-14.87	3.33	1.33
SITE M-4									
MW-07	2932571	14-Dec-94	14.83	16.75	16.01	17.93	6.01-15.55	4.01	1.51
MW-08	2932572	13-Dec-94	9.02	10.68	18.64	20.30	3.64-18.18	1.64	0.20
MW-09	2932573	13-Dec-94	7.77	9.69	22.69	24.61	7.69-22.23	5.69	3.19
SITE M-5									
MW-10	2932574	14-Dec-94	5.13	6.91	15.00	16.78	5.00-14.54	3.00	0.80
MW-11	2932575	15-Dec-94	9.77	11.70	15.00	16.93	5.00-14.54	3.00	0.80
SITE M-8									
MW-12	2932560	20-Dec-94	13.47	15.20	15.00	16.73	5.00-14.54	3.00	0.50
MW-13	2932560	17-Jan-95	6.02	7.80	15.00	16.78	5.00-14.54	3.50	1.00
MW-14	2932562	16-Jan-95	12.88	14.91	15.00	17.03	5.00-14.54	3.00	0.50
MW-15	2932563	17-Jan-95	5.01	7.01	15.00	17.00	5.00-14.54	3.50	1.00
SITE M-12									
MW-16	2932576	4-Jan-95	6.33	8.35	14.50	16.52	4.50-14.01	3.00	0.50
MW-17	2932577	11-Jan-95	5.90	7.87	14.50	16.47	4.50-14.04	3.00	0.50
MW-18	2932578	11-Jan-95	4.78	6.62	14.50	16.34	4.50-14.04	3.00	0.50
SITE M-14									
MW-19	2932579	4-Jan-95	7.98	9.68	15.00	16.70	5.00-14.54	3.50	0.50
MW-20	2932580	4-Jan-95	7.43	9.29	14.50	16.36	4.50-14.04	3.00	1.00
MW-21	2932581	4-Jan-95	7.50	9.57	16.00	18.07	6.00-15.54	4.00	1.00
SITE M-16									
MW-22	2932582	15-Dec-94	5.5	7.25	14.50	16.25	4.50-14.04	3.00	1.00
SITE M-18									
MW-24	2932565	12-Jan-95	6.78	8.16	15.00	16.38	5.00-14.54	3.50	1.00
MW-25	2932566	13-Jan-95	6.35	8.28	15.00	16.93	5.00-14.54	3.00	0.50
BACKGROUND									
MW1B	2932587	9-Jan-95	22.48	24.59	14.00	16.11	4.00-13.54	3.00	0.50
MW2B	2932588	6-Jan-95	19.44	20.23	20.00	20.79	19.54-20.00	8.00	5.00
MW3B	2932589	9-Jan-95	19.2	21.09	26.00	27.89	16.00-25.54	14.00	11.00
MW4B	2932567	9-Jan-95	9.78	12.08	15.00	17.30	5.00-14.54	3.00	1.00
MW5B	2932583	11-Jan-95	13.4	15.4	14.50	16.50	4.50-14.04	3.00	1.00

Notes:

All wells were completed as 4 inch PVC single cased wells with 10-slot screen (0.010 -inches) and have a 6-inch diameter outer steel protective casing.

GS - Ground surface
TOIC - Top of Inner Casing
Elev. - Elevation
MSL - Mean Sea Level
Ft - Feet
BGS - Below Ground Surface

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Table 3.7-2
Fort Monmouth - Charles Wood
Well Completion Summary

Site and Location ID	Well Permit No.	Completion Date	Surveyed GS Elev. (Ft. MSL)	Surveyed PVC Elev. (Ft. MSL)	Total Depth (Ft. BGS)	Total Depth (Ft. TOIC)	Screened Interval (Ft. BGS)	Top of Sand Pack (Ft. BGS)	Top of Seal (Ft. BGS)
SITE CW-1									
MW-26	2932591	19-Dec-94	60.54	62.46	15.00	17.01	5.00-14.54	4.00	2.00
MW-27	2932592	19-Dec-94	60.81	62.56	15.00	16.75	5.00-14.54	4.00	2.00
MW-28	2932593	19-Dec-94	60.73	62.89	15.00	17.16	5.00-14.54	5.00	0.50
MW-29	2932590	19-Dec-94	60.41	62.44	15.00	17.03	5.00-14.54	3.00	0.50
SITE CW-2									
MW-30	2932594	16-Dec-94	49.47	51.71	16.00	18.24	6.00-15.54	4.00	2.00
MW-31	2932595	16-Dec-94	49.67	51.58	15.00	16.91	5.00-14.54	3.00	1.00
MW-32	2932596	16-Dec-94	49.47	51.38	15.00	16.91	5.00-14.54	3.00	0.80
MW-33	2932597	15-Dec-94	49.18	51.09	15.00	16.91	5.00-14.54	3.00	0.50
SITE CW-6									
MW-34	2932599	3-Jan-95	31.97	33.76	14.50	16.29	4.50-14.04	3.00	1.00
SITE CW-9									
MW-35	2932600	4-Jan-95	29.27	31.43	14.50	16.66	4.50-14.01	3.00	0.50
MW-36	2932601	4-Jan-95	31.22	33.21	14.00	15.99	4.00-13.54	3.00	1.00
BACKGROUND									
MW-6B	2932602	10-Jan-95	35.19	37.37	14.00	16.18	4.00-13.54	3.00	1.00
MW-7B	2932604	10-Jan-95	64.27	66.31	15.00	17.04	5.00-14.54	3.00	1.00
MW-8B	2932598	10-Jan-95	47.04	48.9	15.00	16.86	5.00-14.54	3.00	0.50
MW-9B	2932603	23-Jan-95	43.13	45.31	15.00	17.18	5.00-14.54	3.00	1.00
MW-10B	2932605	10-Jan-95	51.36	53.14	14.50	16.28	4.50-14.04	3.00	0.50

All wells were completed as 4-inch PVC single cased wells with 10-slot screen (0.010-inches) and have a 6-inch diameter outer steel protective casing.

Notes:

GS - Ground surface
Elev. - Elevation
Ft - Feet
TOIC - Top of Inner Casing
MSL - Mean Sea Level
BGS - Below Ground Surface

that may have accumulated in the well column and were then purged by bailing or pumping with a submersible pump to remove the fine particles from the sand pack. Monitor wells MW-1, MW-24, MW-25, MW-30 through MW-33, MW-03B, MW-05B, and MW-09B were developed by bailing; all other wells had sufficient yield to sustain pumping. Throughout the development process, the temperature, pH, and specific conductance of the purge water were measured and recorded in the field at a minimum of once per well volume of water removed. The well development sheets are included in Appendix C. Well development continued until moderately low turbidity was visually observed or where well turbidity was believed to be a result of natural conditions after a maximum of 2 hours of purging. However, well development continued after 2 hours of purging at several locations where high turbidity was believed to be a result of inadequate well yields. Consequently, low volumes of water were removed. After a sufficient volume of water was removed and ample time was applied toward well development, development ceased (see Appendix C).

All development equipment was decontaminated prior to use in each well in accordance with the procedures described in the CDAP. Since no OVM readings above background were recorded during development, the purge water was discharged to the ground, as directed in the CDAP.

3.7.2 Well Abandonment

All existing monitor wells and piezometers at Landfill 8 were abandoned in accordance with the requirements specified in the CDAP. Several site reconnaissance efforts were conducted in an effort to locate all of the previously installed monitor wells and piezometers, in or around Landfill 8. A total of 11 wells, six 4-in. monitor wells and five 2-in. piezometers, were identified for abandonment (Figure 4.2-12). Access to the locations was made with the use of an all terrain vehicle (ATV) rig. The wells were abandoned by a New Jersey licensed driller in accordance with the NJDEP procedures for wells screened across an aquifer (unconfined). Abandonment procedures consisted of:

1. Recording field observations of well construction details, if available.
2. Pulling the outer protective casing out of the ground.

3. Cutting the inner PVC casing stick-up off to ground surface.

4. Tremie-grouting the well from the bottom of the PVC screen to the ground surface with a cement/bentonite mixture.

3.8 GROUNDWATER SAMPLING

Two groundwater sampling rounds were conducted at the Main Post and Charles Wood areas between 13 through 22 February 1995 and 7 through 15 March 1995. A complete set of depth to water readings at all well locations on the Main Post and Charles Wood areas were collected prior to start of the groundwater sampling round. The full set of depth to water readings and elevations, which are provided in the discussion of site groundwater flow, are presented in Appendix C, Tables C-1 and C-2. The groundwater sampling was conducted in accordance with the *NJDEP Field Sampling Procedures Manual* (May 1992), as indicated in the CDAP, to ensure that water samples were representative of subsurface conditions. Groundwater samples were collected from the 45 newly installed monitor wells after a minimum of 2 to 3 weeks following well development. Site-specific groundwater samples were analyzed for the constituents presented in Table 3.8-1. Two existing monitor wells were also sampled; one at site M-18 on the Main Post, and one at site CW-6 on Charles Wood.

Prior to sampling, all monitor wells were purged with a variable rate stainless-steel submersible pump at rates between 0.5 and 1.0 gpm. Well yield data collected during well development were used to estimate the purge rate for each well. Prior to well purging, pH, temperature, and specific conductance measurements were recorded to compare to subsequent measurements taken during purging as each well volume was evacuated. Purging was continued until parameters stabilized and a minimum of three well volumes were evacuated. Monitor wells that purged dry were allowed to recover and purged again to remove a minimum of 1.5 well volumes before sampling. Groundwater samples from all wells were collected from the monitor wells using dedicated, disposable Teflon bailers. Groundwater was transferred from the bailers directly into the appropriate sample containers. Sample portions designated for soluble metals analyses were field-filtered. Field QA/QC samples were collected at a frequency of 1 set per 10 samples. A total of seven trip blanks, three duplicates, and seven equipment blanks were collected during

Table 3.8-1
Fort Monmouth - Main Post and Charles Wood
Sampling Parameters Table for
February & March 1995 Sampling Rounds

SITE SAMPLE LOCATION	TCL VOC (8240)	TCL SVOC	TCL PEST/ PCB	TAL Metals Total	TAL Metals Dissolved	TPH	Cyanide	Sulfate	Ammonia
Main Post									
M-2	X	X	X	X	X		X		
M-3	X	X	X	X	X		X		
M-4	X	X	X	X	X		X		
M-5	X	X	X	X	X		X	X	
M-8	X	X	X	X	X		X	X	X
M-12	X	X	X	X	X		X		
M-14	X	X	X	X	X		X		
M-16	X	X	X						
M-18	X	X	X	X	X	X			
Background	X	X	X	X	X		X		
Charles Wood									
CW-1	X	X	X	X	X				
CW-2	X	X	X	X	X				
CW-6	X	X	X						
CW-9	X	X	X	X	X				
Background	X	X	X	X	X		X		

Notes:

PCB - Polychlorinated biphenyls
PEST - Pesticides
SVOC - Semi-Volatile Organic Compounds
TAL - Target Analyte List
TCL - Target Compound List
TPH - Total Petroleum Hydrocarbons
VOC - Volatile Organic Compound
See table 5.1-1 for analytical methods.

each sampling round. Extra groundwater for laboratory MS/MSD analysis was also obtained as part of the QA/QC program. One split sample per sampling round was collected and sent to the USACE New England Division Environmental Laboratory for analysis. Specific sampling protocols were in accordance with the procedures outlined in the CDAP. Filled sample bottles were handled in the same manner as sediment sample bottles (Subsection 3.2). Appendix D presents the analytical results of the field sampling activities at both the Main Post and Charles Wood areas.

3.9 TIDAL MONITORING

Two 72-hr tidal monitoring tests were conducted in three areas at the Main Post: Landfill 2, Landfill 8, and Landfills 12 and 14. The tests were conducted the week of 30 January through 3 February 1995, prior to the February 1995 groundwater sampling round, and the week of 20 through 24 March following the March 1995 groundwater sampling round in an effort to evaluate the effect of tidal fluctuations on water levels in the monitor wells. A total of four stilling wells were installed; one at Landfill 2, one at Landfill 8, and two at the Landfill 12 and 14 areas.

The stilling wells at Fort Monmouth are temporarily installed measuring points that are used to monitor water-level fluctuations in surface-water bodies (creeks). The stilling wells were installed using a 2-in. diameter, 5-ft long stainless-steel slotted screen with a conical drive shoe. The drive shoe was used to insert the screen approximately 2 to 3 feet into the surface-water sediments. Once the steel screen was secured, a 2-in. diameter, 5-ft long PVC slotted screen was added to the steel screen to ensure that the top of the stilling well was above creek water levels during high tides. The top of the PVC casing was surveyed by a New Jersey-licensed surveyor. The data collected are presented in Appendix B, along with the stream bed elevations. The data were collected from the stilling wells using pressure transducers with an electronic data logger (In-Situ Model SE-1000C) and were then compared to the subsequent site monitor wells to gauge the influence of the tides on water levels in the monitor wells. Water-level fluctuations in the monitor wells were collected using pressure transducers (In-Situ Model SE 1000C) and well sentinels (Model LTM 3000). Appendix E presents the results (hydrographs) and conductivity

and salinity measurements collected during the individual tidal monitoring tests. The stilling wells were located in accordance with the CDAP.

SECTION 4
RESULTS OF INVESTIGATION

SECTION 4

RESULTS OF INVESTIGATION

4.1 COMPARISON WITH NEW JERSEY STANDARDS AND BACKGROUND

The results of the sampling effort were evaluated by comparing them with the results of background samples and with NJDEP regulatory standards. In general, for each compound of each environmental sample, the analytical results were compared against the NJDEP regulatory criteria. If the analytical result exceeded the regulatory criteria, then it was compared against the maximum background concentration. Those compounds that exceeded the regulatory standard and established background at a particular site were classified as a compound of concern.

The concentration of each compound was first compared with NJDEP standards. The New Jersey regulatory standards used for this evaluation are summarized in the following paragraphs:

- Groundwater — NJAC 7:9-6, *Groundwater Quality Standards*, establishes groundwater criteria for different classes of groundwater. Class II-A, which is defined as all groundwater that is not classified as one of the other special classes, is the class for groundwater at Fort Monmouth. Table 1 of this regulation presents the regulatory limit as the higher of the groundwater quality criteria and the practical quantitation levels (PQL). The PQL is the lowest concentration that can be reliably measured in a laboratory analysis. These values are presented in Table 4.1-1.

- Soil — NJDEP currently uses the Soil Cleanup Criteria (SCC) that have been published as an interim regulation and in the NJDEP publication, *Site Remediation News*. Criteria have been developed for future residential and nonresidential uses, and potential impacts to groundwater. The residential direct contact soil criteria were used to evaluate soil analytical results. Although soil criteria exist that are based on potential impacts to groundwater, it is more appropriate to use actual groundwater monitoring results, which exist for most of the sites in this investigation. The criteria for residential direct contact and impact to groundwater are presented in Table 4.1-2. They were published in March 1994, except for lead, which was revised in the winter 1995 *Site Remediation News*.

Table 4.1-1
Ft. Monmouth - Main Post and Charles Wood
NJDEP Groundwater Quality Criteria - Class II - A and Practical Quantitation Levels
February 1993

ANALYSIS	STANDARD		
	GROUND WATER QUALITY CRITERIA (µg/L)	PRACTICAL QUANTITATION LEVELS (PQLs) (µg/L)	HIGHER OF PQL AND GW CRITERIA (µg/L)
1,1,1-Trichloroethane	30	1	30
1,1,2,2-Tetrachloroethane	2	1	2
1,1,2-Trichloroethane	3	2	3
1,1-Dichloroethane	70	NA	70
1,1-Dichloroethene	-	-	-
1,2,4-Trichlorobenzene	9	1	9
1,2-Dichlorobenzene	600	5	600
1,2-Dichloroethane	0.3	2	2
1,2-Dichloroethene (total)	-	-	-
1,2-Dichloropropane	0.5	1	1
1,3-Dichlorobenzene	600	5	600
1,4-Dichlorobenzene	75	5	75
2,2'-oxybis(1-Chloropropane)	-	-	-
2,4,5-Trichlorophenol	700	10	700
2,4,6-Trichlorophenol	-	-	-
2,4-Dichlorophenol	20	10	20
2,4-Dimethylphenol	100	20	100
2,4-Dinitrophenol	10	40	40
2,4-Dinitrotoluene	0.05	10	10
2,6-Dinitrotoluene	NA	10	10
2-Butanone	-	-	-
2-Chloronaphthalene	-	-	-
2-Chlorophenol	40	20	40
2-Hexanone	-	-	-
2-Methylnaphthalene	-	-	-
2-Methylphenol	-	-	-
2-Nitroaniline	-	-	-
2-Nitrophenol	-	-	-
3,3'-Dichlorobenzidine	0.08	60	60
3-Nitroaniline	-	-	-
4,4'-DDD	0.1	0.04	0.1
4,4'-DDE	0.1	0.04	0.1
4,4'-DDT	0.1	0.06	0.1
4,6-Dinitro-2-methylphenol	-	-	-
4-Bromophenyl-phenylether	-	-	-
4-Chloro-3-methylphenol	NA	20	20
4-Chloroaniline	-	-	-
4-Chlorophenyl-phenylether	-	-	-
4-Methyl-2-pentanone	400	NA	400
4-Methylphenol	-	-	-
4-Nitroaniline	-	-	-
4-Nitrophenol	-	-	-
Acenaphthene	400	10	400
Acenapthylene	NA	10	10
Acetone	700	NA	700
Aldrin	0.002	0.04	0.04
alpha-BHC	0.006	0.02	0.02
alpha-Chlordane	-	-	-

Table 4.1-1
Ft. Monmouth - Main Post and Charles Wood
NJDEP Groundwater Quality Criteria - Class II - A and Practical Quantitation Levels
February 1993

ANALYSIS	STANDARD		
	GROUND WATER QUALITY CRITERIA (µg/L)	PRACTICAL QUANTITATION LEVELS (PQLs) (µg/L)	HIGHER OF PQL AND GW CRITERIA (µg/L)
Aluminum	200	200	200
Anthracene	2000	10	2000
Antimony	2	20	20
Aroclor-1016	0.43	2	2
Aroclor-1221	0.43	2	2
Aroclor-1232	0.43	2	2
Aroclor-1242	0.43	2	2
Aroclor-1248	0.43	2	2
Aroclor-1254	0.43	2	2
Aroclor-1260	0.43	2	2
Arsenic	0.02	8	8
Barium	2000	200	2000
Benzene	0.2	1	1
Benzo(a)anthracene	0.03	10	10
Benzo(a)pyrene	0.003	20	20
Benzo(b)fluoranthene	0.03	2	2
Benzo(g,h,i)perylene	NA	20	20
Benzo(k)fluoranthene	0.03	2	2
Beryllium	0.008	20	20
beta-BHC	0.2	0.04	0.2
bis(2-Chloroethoxy) methane	-	-	-
bis(2-Chloroethyl) ether	0.03	10	10
bis(2-Ethylhexyl)phthalate	3	30	30
Bromodichloromethane	0.3	1	1
Bromoform	4	0.8	4
Bromomethane	-	-	-
Butylbenzylphthalate	100	20	100
Cadmium	4	2	4
Calcium	-	-	-
Carbazole	-	-	-
Carbon Disulfide	-	-	-
Carbon Tetrachloride	0.4	2	2
Chlordane	0.01	0.5	0.5
Chlorobenzene	4	2	4
Chloroethane	-	-	-
Chloroform	6	1	6
Chloromethane	-	-	-
Chromium (total)	100	10	100
Chrysene	0.03	20	20
cis-1,3-Dichloropropene	0.2	NA	0.2
Cobalt	-	-	-
Copper	1000	1000	1000
Cyanide	200	40	200
delta-BHC	-	-	-
Di-n-butylphthalate	900	20	900
Di-n-octyl phthalate	100	NA	100
Dibenzo(a,h)anthracene	0.003	20	20
Dibenzofuran	-	-	-

Table 4.1-1
Ft. Monmouth - Main Post and Charles Wood
NJDEP Groundwater Quality Criteria - Class II - A and Practical Quantitation Levels
February 1993

ANALYSIS	STANDARD		
	GROUND WATER QUALITY CRITERIA (µg/L)	PRACTICAL QUANTITATION LEVELS (PQLs) (µg/L)	HIGHER OF PQL AND GW CRITERIA (µg/L)
Dibromochloromethane	10	1	10
Dieldrin	0.002	0.03	0.03
Diethylphthalate	5000	10	5000
Dimethylphthalate	7000	10	7000
Endosulfan I	0.4	0.02	0.4
Endosulfan II	0.4	0.04	0.4
Endosulfan sulfate	0.4	0.08	0.4
Endrin	2	0.04	2
Endrin aldehyde	-	-	-
Endrin ketone	-	-	-
Ethylbenzene	700	5	700
Fluoranthene	300	10	300
Fluorene	300	10	300
gamma-BHC (Lindane)	0.2	0.2	0.2
gamma-Chlordane	0.01	0.5	0.5
Heptachlor	0.008	0.4	0.4
Heptachlor epoxide	0.004	0.2	0.2
Hexachlorobenzene	0.02	10	10
Hexachlorobutadiene	1	1	1
Hexachlorocyclopentadiene	50	10	50
Hexachloroethane	0.7	10	10
Indeno(1,2,3-cd)pyrene	0.03	20	20
Iron	300	100	300
Isophorone	100	10	100
Lead (total)	5	10	10
Magnesium	-	-	-
Manganese	50	6	50
Mercury	2	0.5	2
Methoxychlor	40	10	40
Methylene Chloride	2	2	2
N-Nitrosodi-n-propylamine	0.005	20	20
N-Nitrosodiphenylamine (1)	7	20	20
Naphthalene	-	-	-
Nickel (soluble salts)	100	10	100
Nitrobenzene	3	10	10
Pentachlorophenol	0.3	1	1
Phenanthrene	NA	10	10
Phenol	4000	10	4000
Potassium	-	-	-
Pyrene	200	20	200
Selenium (total)	50	10	50
Silver	20	2	20
Sodium	50000	400	50000
Styrene	100	5	100
Tetrachloroethene	0.4	1	1
Thallium	0.5	10	10
Toluene	1000	5	1000
Toxaphene	0.03	3	3

Table 4.1-1
Ft. Monmouth - Main Post and Charles Wood
NJDEP Groundwater Quality Criteria - Class II - A and Practical Quantitation Levels
February 1993

ANALYSIS	STANDARD		
	GROUND WATER QUALITY CRITERIA (µg/L)	PRACTICAL QUANTITATION LEVELS (PQLs) (µg/L)	HIGHER OF PQL AND GW CRITERIA (µg/L)
trans-1,3-Dichloropropene	0.2	NA	0.2
Trichloroethene	1	1	1
Vanadium	-	-	-
Vinyl Chloride	0.08	5	5
Xylene (total)	40	2	40
Zinc	5000	30	5000

- = No level established

Table 4.1-2

Forth Monmouth - Main Post and Charles Wood
NJDEP Soil Cleanup Criteria
February 1994

ANALYSIS	STANDARD	
	RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	IMPACT TO GROUND WATER SOIL CLEANUP CRITERIA (mg/kg)
1,1,1-Trichloroethane	210	50
1,1,2,2-Tetrachloroethane	34	1
1,1,2-Trichloroethane	22	1
1,1-Dichloroethane	570	10(i)
1,1-Dichloroethene	8	10
1,2,4-Trichlorobenzene	68	100
1,2-Dichlorobenzene	5100	50
1,2-Dichloroethane	6	1
1,2-Dichloroethene (trans)	1000(d)	50
1,2-Dichloroethene (cis)	79	1(i)
1,2-Dichloropropane	10	(r)
1,3-Dichlorobenzene	5100	100
1,4-Dichlorobenzene	570	100
2,2'-oxybis(1-Chloropropane)	-	-
2,4,5-Trichlorophenol	5600	50
2,4,6-Trichlorophenol	62	10(i)
2,4-Dichlorophenol	170	10
2,4-Dimethylphenol	1100	10
2,4-Dinitrophenol	110	10
2,4-Dinitrotoluene	1(l)	10(l)
2,6-Dinitrotoluene	1(l)	10(l)
2-Butanone (MEK)	1000 (d)	50
2-Chloronaphthalene	-	-
2-Chlorophenol	280	10 (j)
2-Hexanone	-	-
2-Methylnaphthalene	-	-
2-Methylphenol	2800	(r)
2-Nitroaniline	-	-
2-Nitrophenol	-	-
3,3'-Dichlorobenzidine	2	100
3-Nitroaniline	-	-
4,4'-DDD	3	50(i)
4,4'-DDE	2	50(i)
4,4'-DDT	2	500(i)
4,6-Dinitro-2-methylphenol	-	-
4-Bromophenyl-phenylether	-	-
4-Chloro-3-methylphenol	10000(c)	100
4-Chloroaniline	230	(r)
4-Chlorophenyl-phenylether	-	-
4-Methyl-2-pentanone	1000(d)	50
4-Methylphenol	2800	(r)
4-Nitroaniline	-	-
4-Nitrophenol	-	-
Acenaphthene	3400	100
Acenaphthylene	-	-
Acetone	1000(d)	100(i)

Table 4.1-2 (continued)

Forth Monmouth - Main Post and Charles Wood
NJDEP Soil Cleanup Criteria
February 1994

ANALYSIS	STANDARD	
	RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	IMPACT TO GROUND WATER SOIL CLEANUP CRITERIA (mg/kg)
Aldrin	0.040	50
alpha-BHC	-	-
alpha-Chlordane	-	-
Aluminum	-	-
Anthracene	10000(c)	100(i)
Antimony	14	(h)
Aroclor-1016	0.49	50(i)
Aroclor-1221	0.49	50(i)
Aroclor-1232	0.49	50(i)
Aroclor-1242	0.49	50(i)
Aroclor-1248	0.49	50(i)
Aroclor-1254	0.49	50(i)
Aroclor-1260	0.49	50(i)
Arsenic	20(e)	(h)
Barium	700	(h)
Benzene	3	1
Benzo(a)anthracene	0.9	500
Benzo(a)pyrene	0.66(f)	100
Benzo(b)fluoranthene	0.9	50(i)
Benzo(g,h,i)perylene	-	-
Benzo(k)fluoranthene	0.9	500
Beryllium	1(f)	(h)
beta-BHC	-	-
bis(2-Chloroethoxy) methane	-	-
bis(2-Chloroethyl) ether	0.66(f)	10(j)
bis(2-Ethylhexyl)phthalate	49	100
Bromodichloromethane	11(g)	1
Bromoform	86	1
Bromomethane	79	1
Butylbenzylphthalate	1100	100
Cadmium	1	(h)
Calcium	-	-
Carbazole	-	-
Carbon Disulfide	-	-
Carbon Tetrachloride	2(k)	1
Chlorobenzene	37	1
Chloroethane	-	-
Chloroform	19(k)	1
Chloromethane	520	10
Chromium	-	-
Chrysene	9	500
cis-1,3-Dichloropropene	4	1
Cobalt	-	-
Copper	600(m)	(h)
Cyanide	1100	(h)
delta-BHC	-	-

Table 4.1-2 (continued)

Forth Monmouth - Main Post and Charles Wood
NJDEP Soil Cleanup Criteria
February 1994

ANALYSIS	STANDARD	
	RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	IMPACT TO GROUND WATER SOIL CLEANUP CRITERIA (mg/kg)
Di-n-butylphthalate	5700	100
Di-n-octyl phthalate	1100	100
Dibenzo(a,h)anthracene	0.66(f)	100(j)
Dibenzofuran	-	-
Dibromochloromethane	110	1
Dieldrin	0.042	50
Diethylphthalate	10000(c)	50
Dimethylphthalate	10000(c)	50
Endosulfan	340(g)	50
Endosulfan sulfate	-	-
Endrin	17	50
Endrin aldehyde	-	-
Endrin ketone	-	-
Ethylbenzene	1000(d)	100
Fluoranthene	2300	100(i)
Fluorene	2300	100
gamma-BHC (Lindane)	0.52	50(j)
gamma-Chlordane	-	-
Heptachlor	0.15	50(j)
Heptachlor epoxide	-	-
Hexachlorobenzene	0.66(f)	100(i)
Hexachlorobutadiene	1(g)	100(g)
Hexachlorocyclopentadiene	400	100
Hexachloroethane	6	100
Indeno(1,2,3-cd)pyrene	0.9	500
Iron	-	-
Isophorone	1100	50(j)
Lead	400 [1]	(h)
Magnesium	-	-
Manganese	-	-
Mercury	14	(h)
Methoxychlor	280	50(j)
Methylene Chloride	49	1(j)
N-Nitroso-di-n-propylamine	0.66(f)	10(j)
N-Nitrosodiphenylamine (1)	140	100
Naphthalene	230	100
Nickel	250	(h)
Nitrobenzene	28	10(i)
Pentachlorophenol	6	100
Phenanthrene	-	-
Phenol	10000(c)	50
Potassium	-	-
Pyrene	1700	100(j)
Selenium	63	(h)
Silver	110	(h)
Sodium	-	-

Table 4.1-2 (continued)

Forth Monmouth - Main Post and Charles Wood
NJDEP Soil Cleanup Criteria
February 1994

ANALYSIS	STANDARD	
	RESIDENTIAL DIRECT CONTACT SOIL CLEANUP CRITERIA (mg/kg)	IMPACT TO GROUND WATER SOIL CLEANUP CRITERIA (mg/kg)
Trichloroethene	23	1
Vanadium	370	(h)
Vinyl Chloride	2	10(i)
Xylene (total)	410	10
Zinc	1500(m)	(h)

(c) Health based criterion exceeds the 10000 mg/kg maximum for total organic contaminants.
(d) Health based criterion exceeds the 1000 mg/kg maximum for total volatile organic contaminants.
(e) Cleanup standard proposal was based on natural background.
(f) Health based criterion is lower than analytical limits; cleanup criterion based on practical quantitation level.
(g) Criterion has been recalculated based on new toxicological data.
(h) The impact to ground water values for inorganics will be developed based upon site specific chemical and physical parameters.
(i) Original criterion was incorrectly calculated and has been recalculated.
(j) Typographical error.
(k) Criterion based on inhalation exposure pathway which yielded a more stringent criterion than the incidental ingestion exposure pathway.
(l) New criterion derived using methodology in the basis and background document.
(m) Criterion based on ecological (phytotoxicity) effects.
(p) criterion based on the goal that children should be exposed to the minimal amount of lead that is practicable and is reflective of natural background as altered by diffuse anthropogenic pollution. Criterion corresponds to both a median value for urban land which has not been impacted by any local point source of lead and a 90th percentile value for similar suburban land.
- = No level established.
[1] = NJDEP criteria as referenced in Site Remediation News, Winter 1995.
NJDEP criteria for Total Volatile Organics and Total Organics is 1,000 mg/kg and 10,000 mg/kg, respectively.

- Surface water — NJAC 7:9-1, *Surface Water Quality Standards,* contains surface-water quality criteria for chemicals detected at the Main Post and Charles Wood. Surface water is classified based on the designated uses of the surface water, the biota present, and the type of aquatic system (e.g., freshwater or saltwater). Generally, separate criteria were established for freshwater and saltwater. Although the classifications of some surface waters are defined in the regulation, the surface water at Fort Monmouth has not been classified. Based on observations by field personnel during this investigation, the on-site surface water has been designated as either freshwater or saltwater. The sample-specific designation is discussed in Subsections 4.2 and 4.3. Surface-water criteria are presented in Table 4.1-3.

- Sediment — The NJDEP *Guidance for Sediment Quality Evaluations* (1991), which references National Oceanic and Atmospheric Administration (NOAA) biological effects screening criteria, and ERL guideline values from Long et al. (1995), were used to evaluate sediment concentrations at the Main Post and Charles Wood. The use of these criteria is discussed in Subsection 4.1.2. The sediment quality criteria are presented in Table 4.1-4.

- PCB transformers — The proposed NJDEP rule NJAC 7:26D, *Cleanup Standards for Contaminated Sites,* was used for PCB cleanup criteria in soil and interior surfaces. These criteria are presented in Table 4.1-5.

Two groundwater sampling rounds were conducted at the Main Post and Charles Wood areas. As specified in the NJDEP regulation *Technical Requirements for Site Remediation* (NJAC 7:26E), the results of the two groundwater sampling rounds were averaged since the samples were collected within a 30-day period. The averaged concentrations were compared with the NJDEP criteria and then with the maximum background concentrations. If the concentration in only one of the samples was above the detection limit, then that result was averaged with half of the quantitation limit.

Analytical results that were reported as a "J," i.e., below the quantitation limit but above the method detection limit, were still compared against NJDEP criteria to determine if the criteria were exceeded. The laboratory quantitation limit is the lowest concentration of an analyte determined by a given method in a given matrix that the laboratory feels can be reported with acceptable quantitative error. The method detection limit is the lowest concentration that can be seen for a given analytical method and sample matrix with 99% confidence that the analyte is present. Laboratory quantitation limits are typically about three times the value of the method

Table 4.1-3
Fort Monmouth - Main Post and Charles Wood
Surface Water Quality Standards for Fresh and Saline Waters

ANALYSIS	STANDARD	
	FRESH WATER (µg/L)	SALT WATER (µg/L)
1,1,1-Trichloroethane	127(h)	-
1,1,2,2-Tetrachloroethane	1.72(hcc)	-
1,1,2-Trichloroethane	13.5(h)	-
1,1-Dichloroethane	-	-
1,1-Dichloroethene	4.81(h)	-
1,2,4-Trichlorobenzene	30.6(h)	113(h)
1,2-Dichlorobenzene	2,520(h)	16,500(h)
1,2-Dichloroethane	0.291(hc)	99(hc)
1,2-Dichloroethene (total)	-	-
1,2-Dichloropropane	-	-
1,3-Dichlorobenzene	2,620(h)	22,200(h)
1,4-Dichlorobenzene	343(h)	3,159(h)
2,2'-oxybis(1-Chloropropane)	-	-
2,4,5-Trichlorophenol	2,580(h)	9,790(h)
2,4,6-Trichlorophenol	2.14(hc)	6.53(hc)
2,4-Dichlorophenol	92.7(h)	794(h)
2,4-Dimethylphenol	-	-
2,4-Dinitrophenol	69.7(h)	14,000(h)
2,4-Dinitrotoluene	0.11(hc)	9.1(hc)
2,6-Dinitrotoluene	-	-
2-Butanone	-	-
2-Chloronaphthalene	-	-
2-Chlorophenol	122(h)	402(h)
2-Hexanone	-	-
2-Methylnaphthalene	-	-
2-Methylphenol	-	-
2-Nitroaniline	-	-
2-Nitrophenol	-	-
3,3'-Dichlorobenzidine	0.0386(hc)	0.0767(hc)
3-Nitroaniline	-	-
4,4'-DDD	0.000832(hc)	0.000837(hc)
4,4'-DDE	0.000588(hc)	0.000591(hc)
4,4'-DDT	1.1(a); 0.0010(c); 0.000588(hc)	0.13(a); 0.0010(c); 0.000591(hc)
4,6-Dinitro-2-methylphenol	-	-
4-Bromophenyl-phenylether	-	-
4-Chloro-3-methylphenol	-	-
4-Chloroaniline	-	-
4-Chlorophenyl-phenylether	-	-
4-Methyl-2-pentanone	-	-
4-Methylphenol	-	-
4-Nitroaniline	-	-
4-Nitrophenol	-	-
Acenaphthene	-	-
Acenaphthylene	-	*Reserved*

Table 4.1-3 (continued)
Fort Monmouth - Main Post and Charles Wood
Surface Water Quality Standards for Fresh and Saline Waters

ANALYSIS	STANDARD	
	FRESH WATER (µg/L)	SALT WATER (µg/L)
Acetone	-	-
Aldrin	3.0(a); 0.000135(hc)	1.3(a) 0.000144(hc)
alpha-BHC	0.00391(hc)	0.0131(hc)
alpha-Chlordane	2.4(a); 0.0043(c); 0.000277(hc)	0.09(a); 0.0040(c); 0.000283(hc)
Aluminum	-	*Reserved*
Anthracene	9,570(h)	108,000(h)
Antimony	12.2(h)	4,300(h)
Aroclor-1016	.014(c); .000244(hc)	.30(c); .000247(hc)
Aroclor-1221	.014(c); .000244(hc)	.30(c); .000247(hc)
Aroclor-1232	.014(c); .000244(hc)	.30(c); .000247(hc)
Aroclor-1242	.014(c); .000244(hc)	.30(c); .000247(hc)
Aroclor-1248	.014(c); .000244(hc)	.30(c); .000247(hc)
Aroclor-1254	.014(c); .000244(hc)	.30(c); .000247(hc)
Aroclor-1260	.014(c); .000244(hc)	.30(c); .000247(hc)
Arsenic	0.0170(hc)	0.136(hc)
Barium	2,000(h)	-
Benzene	0.150(hc)	71(hc)
Benzo(a)anthracene	0.0028(hc)	0.031(hc)
Benzo(a)pyrene	0.0028(hc)	0.031(hc)
Benzo(b)fluoranthene	0.0028(hc)	0.031(hc)
Benzo(g,h,i)perylene	-	*Reserved*
Benzo(k)fluoranthene	0.0028(hc)	0.031(hc)
Beryllium	-	*Reserved*
beta-BHC	0.137(hcc)	0.460(hcc)
bis(2-Chloroethoxy) methane	-	-
bis(2-Chloroethyl) ether	.0311(hc)	1.4(hc)
bis(2-Ethylhexyl)phthalate	1.76(hc)	5.92(hc)
Bromodichloromethane	.266(hc)	22(hc)
Bromoform	4.38(hc)	360(hc)
Bromomethane	48.4(h)	4,000(h)
Butylbenzylphthalate	239(h)	416(h)
Cadmium	10(h)	-
Calcium	-	-
Carbazole	-	-
Carbon Disulfide	-	-
Carbon Tetrachloride	0.363(hc)	6.31(hc)
Chlorobenzene	22.0(h)	21,000(h)
Chloroethane	-	-
Chloroform	5.67(hc)	470(hc)
Chloromethane	5.7(hc); 470(hc)	*Reserved*
Chromium	160(h)	3,230(h)
Chrysene	0.0028(hc)	0.031(hc)
cis-1,3-Dichloropropene	-	-
Cobalt	-	-

Table 4.1-3 (continued)
Fort Monmouth - Main Post and Charles Wood
Surface Water Quality Standards for Fresh and Saline Waters

ANALYSIS	STANDARD	
	FRESH WATER (µg/L)	SALT WATER (µg/L)
Copper	-	*Reserved*
Cyanide	22(a); 5.2(c) 768(h)	1.0(a); 1.0(c); 220,000(h)
delta-BHC	-	-
Di-n-butylphthalate	3,530(h)	15,700(h)
Di-n-octyl phthalate	-	-
Dibenzo(a,h)anthracene	0.0028(hc)	0.031(hc)
Dibenzofuran	-	-
Dibromochloromethane	72.6(h)	-
Dieldrin	2.5(a) 0.0019(c); 0.000135(hc)	0.71(a); 0.0019(c); 0.000144(hc)
Diethylphthalate	21,200(h)	111,000(h)
Dimethylphthalate	313,000(h)	2,900,000(h)
Endosulfan I	-	-
Endosulfan II	-	-
Endosulfan sulfate	0.93(h)	2.0(h)
Endrin	0.18(a); 0.0023(c); 0.629(h)	0.037(a); 0.0023(c) 0.678(h)
Endrin aldehyde	0.76(h)	0.081(h)
Endrin ketone	-	-
Ethylbenzene	3,030(h)	27,900(h)
Fluoranthene	310(h)	393(h)
Fluorene	1,340(h)	
gamma-BHC (Lindane)	2.0(a); 0.080(c)	0.16(a)
gamma-Chlordane	-	-
Heptachlor	0.52(a); 0.0038(c); 0.000208(hc)	0.053(a); 0.0036(c); 0.000214(hc)
Heptachlor epoxide	0.52(a); 0.0038(c); 0.000103(hc)	0.053(a); 0.0036(c); 0.000106(hc)
Hexachlorobenzene	0.000748(hc)	0.000775(hc)
Hexachlorobutadiene	6.94(h)	
Hexachlorocyclopentadiene	245(h)	17,000(h)
Hexachloroethane	2.73(h)	12.4(h)
Indeno(1,2,3-cd)pyrene	0.0028(hc)	0.031(hc)
Iron	-	*Reserved*
Isophorone	552(h)	-
Lead	5(h)	-
Magnesium	-	-
Manganese	100(h)	-
Mercury	0.144(h)	0.146(h)
Methoxychlor	0.03(c); 40(h)	0.03(c)
Methylene Chloride	2.49(hc)	1,600(hc)
N-Nitroso-di-n-propylamine	-	-
N-Nitrosodiphenylamine (1)	-	-
Naphthalene	-	-
Nickel	516(h)	3,900(h)

Table 4.1-3 (continued)
Fort Monmouth - Main Post and Charles Wood
Surface Water Quality Standards for Fresh and Saline Waters

ANALYSIS	STANDARD	
	FRESH WATER (µg/L)	SALT WATER (µg/L)
Nitrobenzene	16.0(h)	1,900(h)
Pentachlorophenol	e(1.005(pH)-4.830)(a); e(1.005(pH)-5.290)(c); 0.282(c)	13(a); 7.9(c); 8.2(hc)
Phenanthrene	-	*Reserved*
Phenol	20,900(h)	4,600,000(h)
Potassium	-	-
Pyrene	797(h)	8,970(h)
Selenium	10(h)	300(a); 71(c); 6,800(h)
Silver	164(h)	-
Sodium	-	-
Styrene	-	-
Tetrachloroethene	0.388(hc)	4.29(hc)
Thallium	1.70(h)	6.22(h)
Toluene	7,440(h)	200,000(h)
Toxaphene	0.73(a); 0.0002(c); 0.000730(hc)	0.21(a); 0.0002(c); 0.000747(hc)
trans-1,3-Dichloropropene	.193(hc)	1,700(h)
Trichloroethene	1.09(hc)	81(hc)
Vanadium	-	-
Vinyl Chloride	0.0830(hc)	525(hc)
Xylene (total)	-	-
Zinc	-	*Reserved*

NOTE: Except as noted, aquatic life criteria followed by an (a) represent acute aquatic life protection criteria as a one-hour average and aquatic life criteria followed by (C) represent chronic aquatic life protection criteria as a four-day average. No exceedance of aquatic life criteria shall be permitted at or above the design flows specified in section N.J.A.C. 7:9B-1.5(c) 2. Criteria followed by an (h) are noncarcinogenic effect-based human health criteria as a 30-day average with no frequency of exceedance at or above the design flows specified in section N.J.A.C. 7:9B-1.5(c)2. Criteria followed by an (hc) are carcinogenic effect-based human health criteria as a 70-year average with no frequency of exceedance at or above the design flows specified in section N.J.A.C. 7:9B-1.5(c)2 and are based on a risk level of one-in-one-million. Criteria followed by an (hcc) are for toxic substances considered to be possible human carcinogens as a 70-year average with no frequency of exceedance at or above the design flows specified in section N.J.A.C. 7:9B-1.5(c)2 and are based on a risk level of one-in-one hundred thousand Criteria followed by and (OL) are organoleptic effect-based criteria and are maximum concentrations.

- = No level established

Table 4.1-4
Fort Monmouth - Main Post and Charles Wood
Sediment Guidance Values for Detected Contaminants

COMPOUND	NJDEP SEDIMENT GUIDANCE [a] (mg/kg)	MARINE/ESTUARINE BIOLOGICAL EFFECTS LEVEL (ERL)[b] (mg/kg)
VOC's (mg/kg)		
Acetone	NLE	NLE
2-Butanone	NLE	NLE
1,2-Dichloroethene (total)	NLE	NLE
Vinyl Chloride	NLE	NLE
SVOCs (mg/kg)		
bis-(2-Ethylhexyl)phthalate	NLE	NLE
Dimethylphthalate	NLE	NLE
Di-n-butylphthalate	NLE	NLE
Di-n-octyl phthalate	NLE	NLE
2,2'-oxybis(1-Chloropropane)	NLE	NLE
PAHs (mg/kg)		
Benzo (a)anthracene	0.23	0.261
Benzo(a)pyrene	0.4	0.43
Benzo (b)fluoranthene	NLE	NLE
Chrysene	0.4	0.984
Fluoranthene	0.6	0.6
Phenanthrene *	0.225, 0.326	0.74
Pyrene	0.35	0.665
PESTICIDES/PCBs (mg/kg)		
4,4'-DDD	0.002	NLE
4,4'-DDE	0.002	0.0022
4,4'-DDT *	0.003, 0.00183	0.00158
Heptachlor epoxide	NLE	NLE
METALS TOTAL (mg/kg)		
Aluminum	NLE	NLE
Arsenic	33	8.2
Barium	NLE	NLE
Beryllium	NLE	NLE
Cadmium	5	1.2
Calcium	NLE	NLE
Chromium	80	81
Cobalt	NLE	NLE
Copper	70	34
Iron	NLE	NLE
Lead	35	46.7
Magnesium	NLE	NLE
Manganese	NLE	NLE
Mercury	0.15	0.15
Nickel	30	20.9
Potassium	NLE	NLE
Selenium	NLE	NLE
Silver	1	1
Sodium	NLE	NLE
Vanadium	NLE	NLE
Zinc	120	150

a NJDEP Sediment Guidance (1991), based on NOAA (1990) ER-L guidance. Values provided are for freshwater sediments. Criteria for DDE and DDD are not presented in NJDEP Sediment Quality Evaluations (1991).

b Long et. al (1995).

* - Standards developed using equilibrium partioning approach in accordance with NJDEP Guidance for Sediment Quality Evaluation (1991). Total organic carbon concentrations of 1% assumed based on organic carbon content detected in adjacent sample.

NLE - No Level Established

Table 4.1-5

Potentially Applicable PCB Cleanup Levels

New Jersey (Proposed 7:26D)

- Building interior:
  - Porous surface (from floor to 6 feet): chip sample < 0.055 µg/g
  - Porous surface (higher than 6 feet): chip sample < 0.11 mg/g
  - Nonporous surface (from floor to 6 feet): wipe sample < 0.27 mg/m^2 (2.7 mg/100 cm^2)
  - Nonporous surface (higher than 6 feet): wipe sample < 0.54 mg/m^2 (5.4 µg/100 cm^2)
- Soil:
  - Surface soil*: Soil sample < 0.49 mg/kg (ppm)
  - Subsurface soil: Soil sample < 100 mg/kg (ppm)

*Surface soil is top 2 feet of soil.

detection limit to ensure the confidence of the value reported. When a concentration is detected below the laboratory quantitation limit but above the method detection limit, the letter "J" is assigned to that concentration. The J indicates that the concentration is estimated due to detection at or below the laboratory quantitation limit (but above the method detection limit). The method detection limits are reported in the summary tables in Section 4 and Appendix D, but the quantitation limits are reported only in Appendix D.

Many of the inorganic compounds in soil and groundwater that were analyzed for occur in nature or commonly exist because of human activities. For example, naturally occurring inorganic compounds are always present in groundwater and soil samples. Lead is generally found at elevated levels near heavily traveled roads because it was formerly used in gasoline. Pesticides and herbicides are commonly found in suburban settings because of past applications of these substances.

The background concentration, therefore, is the concentration of a compound in the environment that occurs naturally or as the result of unrelated base activities. The estimate of background is based on analytical results of sampling at background locations and a review of published material.

There is no generally accepted method for determining the background concentration. For this investigation, a total of 10 groundwater and soil background samples and 2 sediment and surface-water background samples were taken on both Charles Wood and Main Post. Background sampling locations were selected as specified in the document *Investigations of Suspected Hazardous Waste Sites at Fort Monmouth, New Jersey* (WESTON, 1993), which was approved by NJDEP. The U.S. Environmental Protection Agency (EPA) has provided some guidance in its document *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities.* It provides a number of scenarios for comparing groundwater analytical data against background well data. In discussing the tolerance interval method, the document suggests that the groundwater data be compared with the 95% confidence limit for the 95th percentile of the background data; however, the method specified can be strictly applied only when the data have a normal distribution or a log normal distribution. Neither of these is true for the background

data collected at Fort Monmouth. Nonparametric methods that are similar to the tolerance interval method involve simply selecting the data value that is at the 95th percentile of the data set. Since there are 10 data points, the equivalent method for the background samples at Fort Monmouth is to use the maximum background value. Each environmental sample concentration was compared against the maximum value that was measured in the background samples. If a compound was not detected in the background samples, then any measurement above the detection limit for that compound in an environmental sample was considered to be above background. This practice was followed at other New Jersey sites.

An outlier screening was conducted to identify background concentrations that were not consistent with other background concentrations. Based on the screening, outliers were rejected for beryllium, chromium, cobalt, lead, vanadium, and zinc in groundwater on the Main Post, and manganese in soil on Charles Wood.

The Monmouth County and site-specific background concentrations for total metals at Fort Monmouth were determined using literature values and on-site background data. The values in Tables 4.1-6 and 4.1-7 are based on the maximum concentrations of inorganic analytes in background wells and soil borings at Main Post and Charles Wood. These data are compared with the maximum Monmouth County background values, based on published data. The Monmouth County values for soil are from Fields et al., 1992, and the Monmouth County background values for groundwater are from Harriman and Sargent, 1985.

The Monmouth County background concentrations for soils are based on the analyses of samples from the vicinity of Fort Monmouth (see Table 9 and the locations of samples 35 and 36 in Figure 1 in Fields et al., 1992). Sample 36 (Fields et al., 1992) was collected near Charles Wood and sample 35 (Fields et al., 1992) was collected northeast of the Main Post. The site-specific background concentrations are based on samples from the two areas collected during this investigation. Most of the soil samples were from landscaping fill and natural deposits in Fort Monmouth. The screened intervals in the background monitor wells are also in landscaping fill

Table 4.1-6

Fort Monmouth - Main Post

Summary of Site-Specific and Monmouth County

Soil and Groundwater Maximum Background Concentrations

COMPOUNDS	SOILS		GROUNDWATER	
	Site Specific (maximum)	Monmouth County[1] (maximum)	Site Specific (maximum)	Monmouth County[2] (maximum)
SVOC'S	(mg/kg)	(mg/kg)	(µg/L)	(µg/L)
Phenol	0.420 J	-	ND	-
Acenaphthylene	0.041 J	-	ND	-
Acenaphthene	0.100 J	-	ND	-
Dibenzofuran	0.060 J	-	ND	-
Diethylphthalate	ND	-	ND	-
Fluorene	0.074 J	-	ND	-
Phenanthrene	0.39	-	ND	-
Anthracene	0.100 J	-	ND	-
Di-n-butylphthalate	2.2 B	-	ND	-
Fluoranthene	0.46	-	ND	-
Pyrene	1.5	-	ND	-
Benzo(a)anthracene	0.65	-	ND	-
Chrysene	0.65	-	3 J	-
bis(2-Ethylhexyl)phthalate	.19 J	-	5 J	-
Benzo(b)fluoranthene	0.9	-	ND	-
Benzo(k)fluoranthene	0.43	-	ND	-
Benzo(a)pyrene	0.6	-	ND	-
Indeno(1,2,3-cd)pyrene	0.46	-	ND	-
Dibenzo(a,h)anthracene	0.079 JB	-	ND	-
Benzo(g,h,i)perylene	0.64 B	-	ND	-
PESTICIDE / PCB	(mg/kg)	(mg/kg)	(µg/L)	(µg/L)
Heptachlor epoxide	ND	-	0.041 J	-
4,4-DDD	0.0096 P	-	ND	-
4,4'-DDE	0.0096 P	-	ND	-
4,4'-DDT	0.11	-	ND	-
METALS TOTAL	(mg/kg)	(mg/kg)	(µg/L)	(µg/L)
Aluminum	15200	NLE	121000	NLE
Antimony	ND	NLE	20.7	NLE
Arsenic	22.9	4.56	89.3	NLE
Barium	32.3	NLE	699	400
Beryllium	2	0.09	2.1	7
Calcium	921	NLE	45400	7300
Cadmium	ND	0.116	9.5	6
Cobalt	2.5	NLE	18.3	NLE
Chromium	269	0.104	191	< 50
Copper	8	6.05	65.6	730
Cyanide	ND	NLE	ND	NLE
Iron	55800	11	431000	27000
Lead	19.5	25.9	22.7	< 100
Magnesium	7230	NLE	62700	25000
Mercury	ND	NLE	0.26	NLE
Manganese	90.7	59	331	480
Nickel	8.4	3.2	187	NLE
Potassium	15400	NLE	137000	10000
Silver	1.1	0.21	ND	< 10
Sodium	51.6	NLE	21500	197000
Selenium	1.9	0.11	29.6	NLE
Thallium	ND	NLE	5.5	NLE
Vanadium	94.1	1.3	108	NLE
Zinc	81.4	44.6	233	60

ND - Not detected at the quantification limits

NLE - No level established

[1] - Sample 35 in Fields et al., 1992

[2] - From Table 9 in Harriman and Sargent, 1985

- Literature search was not completed for SVOC and Pest/PCB compounds.

Table 4.1-7

Fort Monmouth - Charles Wood

Summary of Site Specific and Monmouth County

Soil and Groundwater Maximum Background Concentrations

COMPOUNDS	SOILS		GROUNDWATER	
	Site Specific (maximum)	Monmouth County[1] (maximum)	Site Specific (maximum)	Monmouth County[2] (maximum)
SVOC'S	(mg/kg)	(mg/kg)	(µg/L)	(µg/L)
Phenol	ND	-	ND	-
Acenaphthylene	ND	-	ND	-
Acenaphthene	ND	-	ND	-
Dibenzofuran	ND	-	ND	-
Diethylphthalate	ND	-	1 J	-
Fluorene	ND	-	ND	-
Phenanthrene	ND	-	ND	-
Anthracene	ND	-	ND	-
Di-n-butylphthalate	2 B	-	ND	-
Fluoranthene	0.042 J	-	ND	-
Pyrene	0.048 J	-	ND	-
Benzo(a)anthracene	0.046 J	-	ND	-
Chrysene	0.083 J	-	ND	-
bis(2-Ethylhexyl)phthalate	0.170 J	-	600	-
Benzo(b)fluoranthene	0.078 J	-	ND	-
Benzo(k)fluoranthene	0.041 J	-	ND	-
Benzo(a)pyrene	0.047 J	-	ND	-
Indeno(1,2,3-cd)pyrene	ND	-	ND	-
Dibenzo(a,h)anthracene	ND	-	ND	-
Benzo(g,h,i)perylene	0.042 J	-	ND	-
PESTICIDE / PCB	(mg/kg)	(mg/kg)	(µg/L)	(µg/L)
Heptachlor epoxide	ND	-	ND	-
4,4-DDD	ND	-	ND	-
4,4'-DDE	0.071	-	ND	-
4,4'-DDT	0.053	-	ND	-
METALS TOTAL	(mg/kg)	(mg/kg)	(µg/L)	(µg/L)
Aluminum	15700	NLE	8210	NLE
Antimony	ND	NLE	ND	NLE
Arsenic	31.6	10.7	25.1	NLE
Barium	26	NLE	192	400
Beryllium	1.7	0.88	2.8	7
Calcium	653	NLE	8700	7300
Cadmium	ND	0.135	3.7	6
Cobalt	4.5	NLE	30.6	NLE
Chromium	128	0.14	49.6	< 50
Copper	6.6	7.27	9.8	730
Cyanide	0.41	NLE	ND	NLE
Iron	45500	23.7	19600	27000
Lead	11.1	15.1	7.3	< 100
Magnesium	3960	NLE	7160	25000
Mercury	ND	NLE	ND	NLE
Manganese	48.7	120	232	480
Nickel	8.3	8.3	48.3	NLE
Potassium	10600	NLE	4630	10000
Silver	ND	0.26	ND	< 10
Sodium	56.8	NLE	36400	197000
Selenium	0.85	0.17	3.8	NLE
Thallium	ND	NLE	ND	NLE
Vanadium	59.6	14	28.9	NLE
Zinc	55.6	28.1	133	60

ND - Not detected at the quantification limits

NLE - No level established

[1] - Sample 36 in Fields et al., 1992

[2] - From Table 9 in Harriman and Sargent, 1985

- Literature search was not completed for SVOC and Pest/PCB compounds.

and natural deposits. The Monmouth County and site-specific background concentrations are provided in Tables 4.1-6 and 4.1-7.

Table 4.1-6 summarizes the Monmouth County and site-specific background concentrations for the Main Post area. The background concentrations of metals in soils at the Main Post site are generally below regional concentrations, except for arsenic, chromium, beryllium, selenium, iron, manganese, nickel, zinc, silver, and vanadium.

Nine analytes exceeded maximum Monmouth County values for groundwater in the Main Post area: barium, beryllium, calcium, cadmium, chromium, iron, magnesium, potassium, and zinc (Table 4.1-6).

Table 4.1-7 summarizes the Monmouth County and site-specific background concentrations for the Charles Wood area. The background concentrations in soils at Charles Wood are generally below Monmouth County concentrations, except for arsenic, beryllium, chromium, iron, selenium, vanadium, and zinc.

For the background groundwater concentration established for this investigation, two analytes exceeded the maximum values established for Monmouth County: calcium and zinc (Table 4.1-7). Calcium concentrations in groundwater at Charles Wood are 12% higher than the Monmouth County concentrations. Zinc concentrations are twice as high as the Monmouth County concentrations.

Several factors, both natural and anthropogenic, contribute to the wide range in the concentrations of metals in the soils at the Main Post and Charles Wood areas. The primary natural influence on the chemical characteristics of the overburden at Fort Monmouth is parent material. The parent material is glauconitic quartzose sands of the Tinton and Red Bank sands and their fluvially- and tidally-reworked equivalents. The mineral glauconite is a potassium-, sodium-, calcium-, iron-, aluminum-, magnesium-rich hydrosilicate (Klein et al., 1985). Soils derived from the glauconitic sands contain abundant iron, aluminum, calcium, magnesium, manganese, and potassium (Tedrow, 1986). The tidal sediments probably contained iron and manganese concretions. As

noted by Fields et al. (1992, p. 19), manganese is a highly variable soil constituent. Groundwater flowing through glauconitic formations contains calcium and magnesium (Meisler et al., 1988, p. 215).

An additional natural influence on background groundwater chemistry is saltwater intrusion. As noted in Section 2, the Main Post and Charles Wood areas are underlain by dissected unconsolidated Coastal Plain sediments. The Coastal Plain aquifers are susceptible to saltwater encroachment, particularly near the coast and along tidal rivers and streams (Gill, 1962; Harriman et al., 1989; Harriman and Sargent, 1985).

Saltwater encroaches several miles inland on tidal streams, particularly during periods of low flow (Gill, 1962). Saltwater encroachment will lead to saltwater intrusion into the adjacent aquifers. Husky Brook and Lafetra Creek are tributary estuaries to the estuaries of Oceanport and Parkers Creeks. Saltwater will encroach several miles up these estuaries.

The area of Monmouth County where Fort Monmouth is located is underlain by groundwater with relatively high manganese and iron concentrations. The manganese and iron concentrations reported for eastern Monmouth County in Harriman et al. (1989) range from 110 to 200 µg/L for manganese and 7,900 to 14,000 µg/L for iron. These concentrations are reported for the Upper Potomac Raritan-Magothy aquifer, but the concentrations are expected to be comparable in the shallower, lithologically similar Tinton and Red Bank sands.

Anthropogenic influences on the background metals include deposition of airborne dust, and fertilizers, pesticides, and herbicides (Fields et al., 1992). The Fort Monmouth area is located downwind from farms (Jablonski, 1989). Vanadium can be a result of oil burning (Fields et al., 1992, p. 20). Arsenic was a common constituent of herbicides and pesticides in the past.

Concentrations detected in surface-water samples collected at Fort Monmouth (Main Post and Charles Wood) in December 1994 were compared to fresh and saltwater NJDEP Surface Water Standards (NJDEP, 1993). Based on observations by field personnel, sample locations were designated as saltwater if the area was tidally influenced. All surface-water and sediment

sampling locations at the Main Post were determined to be saltwater, with the exception of site M-2 (M2SW-1 and M2SW-2) and background locations (SS-B1 and SS-B2). However, all sampling locations at Charles Wood were designated as freshwater. Detected concentrations were also compared to maximum background concentrations for surface water collected at each site. Because many contaminants are readily sorbed to sediment and particles suspended in the water column, and may significantly augment concentrations of contaminants detected in surface water, total (unfiltered) as well as soluble (filtered) surface-water concentrations were compared to criteria and background. Note, however, that the criteria are developed based on the total concentration in surface-water. Surface-water locations sampled at the Main Post were M-2, M-3, and M-14: background surface-water samples were collected at two areas (SS-B1 and SS-B2). Only background surface-water samples were collected at Charles Wood (CW-2 and CW-5). Surface-water criteria are presented in Table 4.1-4. Maximum background concentrations are presented in Table 4.1-8 for the Main Post and in Table 4.1-9 for Charles Wood.

Concentrations of chemicals detected in freshwater and saltwater sediment samples collected at Fort Monmouth, NJ (Main Post and Charles Wood) in December 1994 were compared to NJDEP freshwater sediment guidance values (NJDEP, 1991), or marine/estuarine biological effects screening levels for saltwater (Long et al., 1995), as well as maximum detected background concentrations detected from each site. Concentrations from two sediment sample locations at the Main Post, AOC-3 and the pre-1941 STP, and one location at Charles Wood, CW-5, were compared to the appropriate sediment criteria and background. Sediment criteria are presented in Table 4.1-4. No background sediment samples were collected at saltwater locations on the Main Post. Maximum background concentrations are presented in Tables 4.1-8 and 4.1-9.

NJDEP sediment guidance values incorporate National Oceanic and Atmospheric Administration (NOAA) sediment guidance values (NOAA, 1990) and NJDEP's equilibrium partitioning (EqP) approach for evaluating toxicity and bioavailability of sediment-bound, nonionic organic chemicals. For this screening evaluation, concentrations in sediment were compared to sediment NOAA Effects Range-Low (ER-L) levels (i.e., the lower 10th percentile of the chemical concentration associated with toxicity) and EqP-based criteria, which are adjusted to reflect site-specific total organic carbon (TOC) content (Table 4.1-4).

Background sediment samples were collected from two areas at the Main Post (SS-B1 and SS-B2), and two areas at Charles Wood (CW-2 and CW-5).

Table 4.1-8
Fort Monmouth - Main Post
Surface Water and Sediment Maximum Background Concentrations

COMPOUND	SEDIMENTS (mg/kg)	SURFACE WATER	
		Total	Soluable
VOCs			
Acetone	0.47 B	ND	ND
2-Butanone	0.1	ND	ND
SVOCs			
Phenanthrene	0.39 J	ND	ND
Anthracene	0.061 J	ND	ND
Carbazole	0.051 J	ND	ND
Di-n-butylphthalate	0.26 JB	ND	ND
Fluoranthene	1.5	ND	ND
Pyrene	2	ND	ND
Benzo(a)anthracene	1.3	ND	ND
Chrysene	0.37 J	ND	ND
bis(2-Ethylhexyl)phthalate	0.43 J	ND	ND
Benzo(b)fluoranthene	1.8	ND	ND
Benzo(k)fluoranthene	0.58	ND	ND
Benzo(a)pyrene	1.2	ND	ND
Indeno(1,2,3-cd)pyrene	0.7	ND	ND
Dibenzo(a,h)anthracene	0.12 J	ND	ND
Benzo(g,h,i)perylene	0.67	ND	ND
Total Organic Carbon	5.7	ND	ND
PESTICIDES/PCBs			
Heptachlor epoxide	0.014 P	ND	ND
Endosulfan I	0.0024 J	ND	ND
4,4'-DDE	0.0092 J	ND	ND
4,4'-DDD	0.013	ND	ND
4,4'-DDT	0.0057 JP	ND	ND
alpha-Chlordane	0.011 P	ND	ND
gamma-Chlordane	0.0092 P	ND	ND
METALS			
Aluminum	9060	748	ND
Arsenic	14.5	2.6	ND
Barium	87.6	44.7	39.4
Beryllium	3.2	ND	ND
Calcium	3180	31600	30900
Cobalt	119	8.1	4.1
Chromium	88.1	7.5	ND
Copper	48.4	3.2	4
Iron	61900	6210	405
Mercury	1.7	ND	ND
Potassium	10200	5060	4280
Magnesium	3280	5440	5120
Manganese	70.2	113	98.6
Sodium	189	26700	26200
Nickel	131	22.9	16.1
Lead	64.1	10	ND
Selenium	1.7	ND	ND
Vanadium	49.1	5.8	ND
Zinc	162	35.1	23.8
Cyanide	3.1	ND	ND

Table 4.1-9
Fort Monmouth - Charles Wood
Surface Water and Sediment Maximum Background Concentrations

COMPOUND	SEDIMENT	SURFACE WATER	
		(Total)	(Soluble)
SVOCs (mg/kg)			
bis-(2-Ethylhexy)phthalate	0.23 J	1 J	ND
Di-n-butylphthalate	0.12 J	ND	ND
PAHs (mg/kg)			
Benzo (a)anthracene	0.09 J	ND	ND
Benzo (a)pyrene	0.1 J	ND	ND
Benzo (b)fluoranthene	0.16 J	ND	ND
Benzo (g,h,i)perylene	0.21 J	ND	ND
Chrysene	0.14 J	ND	ND
Fluoranthene	0.12 J	ND	ND
Indeno (1,2,3-cd)perylene	0.19 J	ND	ND
Phenanthrene	0.079 J	ND	ND
Pyrene	0.41 J	ND	ND
PESTICIDES/PCBs (mg/kg)			
4,4'-DDD	0.015 PD	ND	ND
4,4'-DDE	0.096	ND	ND
4,4'-DDT	0.11	ND	ND
METALS TOTAL (mg/kg)			
Aluminum	6660	265	160
Antimony	ND	26.8	ND
Arsenic	5.8	ND	ND
Barium	45.7	77.1	78.2
Calcium	2960	22900	24000
Chromium	36.9	ND	ND
Cobalt	4.2	2.8	ND
Copper	24.5	8	10.2
Iron	19600	715	435
Lead	142	5.3	65.9
Magnesium	2560	7050	7390
Manganese	65.1	97.4	100
Nickel	11.3	ND	ND
Potassium	1700	3590	4040
Selenium	0.68	ND	ND
Sodium	271	156000	164000
Vanadium	39.5	ND	ND
Zinc	126	204	215

J - Estimated Concentrations

D - Diluted Analysis

P - Percent difference between two columns, the smaller of two is reported

ND - Compound was not detected at or above the quantification limit.

Main Post
Background Samples

4.2 MAIN POST

Subsection 4.2 presents a description of each Main Post site, the sampling rationale, and the results of sampling activities. The sites and the sampling effort are summarized in Table 4.2-1. Additional historical information on each site may be obtained from the *Investigation of Suspected Waste Sites at Fort Monmouth, New Jersey*, 1993.

This subsection also summarizes the results of the sediment, surface-water, soil, and groundwater sampling program that was implemented to characterize site conditions on the Main Post, as identified in the WESTON report titled *Site Investigation, Chemical Data Acquisition Plan* (CDAP). A total of 4 sediment and 8 surface-water samples were taken on the Main Post. In addition, a total of 15 soil borings and 29 monitor wells were installed on Main Post sites. Soil and groundwater samples were collected from the borings and monitor wells and were analyzed for compounds determined to be characteristic of the wastes associated with each area, i.e., TCL and TAL analytes (Tables 3.6-1 and 3.8-1).

The field effort was conducted in accordance with the scope and procedures outlined in the CDAP. However, there were slight differences, which are summarized in Table 4.2-2. Appendix D presents the analytical results of the Main Post sampling activities. Detailed information regarding the specific sampling protocols for each site is provided in the subsections that follow. In addition to the results of groundwater and soil analyses, the lithologic descriptions and water-level information are used to provide a hydrogeologic interpretation of the site, where appropriate.

Figure 4.2-1 shows the location of the 13 Main Post sites discussed in this subsection.

4.2.1 Background Samples

The background sample locations were selected prior to the initiation of field activities in areas believed to be unaffected by base activities. These locations were as specified in the

Table 4.2-1

Site Investigation Summary — Main Post

Site Number	Site Type	Description	Potential Waste/ Contaminants	Previous Sampling Activities[a]	Investigation Activities
M-2	Landfill	Operated 1964-1968. Currently used for leaf composting and to store wood chips. Debris protrudes from bank of Mill Creek. Was unfenced — covered with soil and gravel from Earle.	Domestic and industrial waste, oil in cans, filters, soot, and building rubble.	NJPDES sampling upstream (SW-1) and downstream (SW-2) on Mill Creek. Detected VOCs, metals, and inorganics.	Installed and sampled 3 monitor wells. Sampled surface water at the NJPDES locations (M2SW-1 and M2SW-2) and a new upstream surface-water location (SS-B1). Analyzed for TCL +30[b]/TAL/CN. Tidal water-level monitoring.
M-3	Landfill	Operated 1959-1964. Was fenced; had skeet shooting range. Burned wood debris. Had tear gas training in tent. Currently grass-covered; no visible debris.	Domestic and industrial waste. Wood and coal ash from stoves, boiler.	NJPDES sampling locations SS-3, SS-4. Detected VOCs, metals, and inorganics.	Sampled surface water at the NJPDES locations (M10SW-1 and M6SW-1) and upstream surface-water sampling location (SS-B2). Used GPR and magnetics to define extent of landfill. Installed and sampled 3 monitor wells. Analyzed for TCL +30/TAL/CN.
M-4	Landfill	Operated 1956 only. Currently grass-covered; no visible debris.	Building rubble.	None.	Installed and sampled 3 monitor wells. Analyzed for TCL +30/TAL/CN.
M-5	Landfill	Operated 1952-1959. Currently grass-covered; no visible debris.	Domestic and industrial waste.	NJPDES sampling locations SS-5, SS-6. Detected VOCs, metals, and inorganics.	Installed and sampled 2 monitor wells. Analyzed for TCL +30/TAL/CN/sulfate.
M-6	Burning area	Located on Landfill M-3. Operated until 1970s. Burned general trash. Currently no visible contamination.	General trash.	None.	See M-3.
M-8	Landfill	Operated 1962-1981. Currently has leaf-composting operation. Was fenced and controlled during operation.	Domestic and industrial waste including pesticide/herbicide cans, batteries, asbestos, sludge from STP, and miscellaneous chemicals.	Four monitor wells, NJPDES sampling location SS-7.	Abandoned existing wells and piezometers; installed 4 new monitor wells. Analyzed for TCL +30/TAL/CN/NH_3/sulfate. Tidal water-level monitoring.
M-12	Landfill	Date of operation unknown. Located across Husky Brook from M-14.	Domestic and industrial waste, automobiles, oil, and building rubble.	NJPDES sampling locations SS-8, SS-9, and SS-10.	Used GPR and magnetics to locate landfill and define boundaries. Installed 3 monitor wells. Analyzed for TCL +30/TAL/CN. Tidal monitoring with M-14.
M-14	Landfill	Operated from 1965-1966. Has NJPDES permit.	Building rubble and dredgings from Husky Brook Lake.	NJPDES sampling upstream and downstream on Husky Brook Creek, SS-8, SS-9, and SS-10.	Used GPR and magnetics in western area. Installed and sampled 3 monitor wells for TCL +30/TAL/CN. Tidal monitoring with M-12. Sampled M14SW-8 and M14SW-9 surface-water locations.

Table 4.2-1

Site Investigation Summary — Main Post (Continued)

Site Number	Site Type	Description	Potential Waste/ Contaminants	Previous Sampling Activities[a]	Investigation Activities
M-15	Water tank	Used for fire-fighting water. Built in 1940s. Paint chips on ground surrounding tank. Stressed vegetation around base of tank.	Lead.	None.	Collected 2 surface soil samples. Analyzed for TCL SVOCs, TAL, and pesticides.
M-16	Former Pesticide Storage Bldg. 498	Misidentified as Bldg. 167 in 1980 report. Building 498 used for pesticide control shop in the 1940s and 1950s: disposal to sink, which discharged to sanitary sewer. No apparent outside disposal.	Pesticides and herbicides.	None.	Collected 4 soil samples from 0 to 6 inches bgs. Installed soil boring and 1 monitor well. Analyzed for TCL +30. Analyzed for TAL in SB-01.
M-18	Former training area	Army Signal School. Diesel and gasoline generators.	Diesel and oil spilled on ground. PAHs, VOCs, TPHs, lead.	None.	Conducted geophysical surveys, completed 9 soil borings, sampled 6 to 12 inches or 12 to 18 inches, stained areas, and/or just above water table. Installed 2 monitor wells in soil borings. Sampled soil for VOCs and TPHs. In addition, sampled for SVOCs and TAL at SB-06 only. Sampled groundwater for TCL +30/TAL/TPHs.
AOC-3	Former sewage treatment plant	Operated 1941-1975. Sludge drying bed located on concrete base. Sludge transported to golf course and landfills. 1935 map shows pistol range on this location.	Heavy metals, cyanide, and pesticides.	Monitor wells installed west of site. Sludge sampled in 1981; no heavy metals detected.	Sampled outfall sediments and 2 soil borings in sludge bed area for TCL + 30/TAL/CN.
New Site, Not Noted in IA Report	Former treatment plant	Operated until 1941. Located approximately where Bldg. 250 is today. Labeled on 1935 map.	Heavy metals.	None.	Sampled outfall sediment for metals.
PCB Trans-formers	Buildings (see Table 4.2-22)	Several transformers in this area were tested for PCBs in 1990. Those with PCBs >500 ppm were removed or remediated.	PCBs	Transformers sampled — several > 500 ppm. See Table 4.2-22.	Sampled PCB transformer locations.

[a]Results of previous investigation were presented on the report titled *Investigation of Suspected Waste Sites at Fort Monmouth, New Jersey* (1993).
[b]TCL +30 = Target Compound List; includes volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides, and polychlorinated biphenyls (PCBs).

Table 4.2-2

Differences Between the Proposed and Actual Work at Main Post

Site	Differences
M-15	Soil samples from SS-01 and SS-02 were collected and analyzed for TCL SVOCs; however, TCL SVOC analyses were not proposed in the CDAP.
M-16	Soil samples from SB-01 were collected and analyzed for TAL metals; however, TAL metals analyses were not proposed in the CDAP.
M-18	Installed 9 soil borings instead of 12, and 2 monitor wells instead of 3 because marshy conditions made some of the planned sampling locations inaccessible. Sampled one existing monitor well in addition to the 2 newly installed wells. In eight of nine soil borings, no soil staining was observed so no SVOC analysis was performed as per the CDAP.

Investigation of Suspected Waste Sites at Fort Monmouth, New Jersey, 1993, which was approved by NJDEP. Background characterization data were collected to evaluate soil, groundwater, surface water, and sediment in areas of the base considered to be representative of natural materials or upgradient conditions.

Sediment and surface-water samples were taken upgradient of the Main Post on Lafetra Creek and Mill Creek. Five background soil borings, which were converted into monitor wells, were installed and two discrete soil intervals were sampled from each boring. Two rounds of groundwater samples were collected from each location. Soil and groundwater samples were analyzed for the parameters listed in Section 3, Tables 3.6-1 and 3.8-1. Background monitor wells were labeled as "B" wells, i.e., MW-01B. Main Post background locations are shown in Figure 4.2-2 and labeled B-1, B-2, etc. Monitor well MW-01B was installed at background location B-1 and a similar practice was followed at the other background locations.

4.2.1.1 Hydrogeologic Interpretation

The five monitor wells installed at the Main Post were installed to depths ranging from 14 ft below ground surface (bgs) to 26 ft bgs. Total depths were determined during drilling and were based on the depth at which water was encountered. The lithology and depth to water varied between background locations, as presented on the lithologic logs in Appendix A. Monitor wells were screened across the water table.

4.2.1.2 Soil Sampling Results

As outlined in the CDAP, soil samples were collected from two discrete intervals: 0 to 2 ft bgs and between 2 and 10 ft bgs or to groundwater. Soil-boring depths varied among the background locations, depending on the depth to groundwater. The compounds detected in background soil samples at the specific sampling intervals, with the corresponding sample identifications, are presented in Appendix D. Table 4.1-6 summarizes the maximum concentrations detected in background soil at the Main Post and presents published maximum concentrations for Monmouth County.

VOCs

VOCs were analyzed for but were not detected in Main Post background soil samples.

SVOCs

A total of 19 SVOCs were detected in Main Post background soil samples (Table 4.1-6).

Pesticides/PCBs

Three pesticides (4,4'-DDE, 4,4-DDD, and 4,4'-DDT) were detected above the laboratory quantitation limit in Main Post background soils.

Metals

A total of 19 metals were detected above laboratory quantitation limits in Main Post background soils.

Cyanide

Cyanide was not detected in any of the Main Post background soil samples.

4.2.1.3 Groundwater Sampling Results

Two rounds of groundwater samples were collected at the Main Post. The compounds detected in groundwater samples from the individual sampling rounds, with the corresponding sample identifications, are listed in Appendix D. Table 4.1-6 summarizes the maximum background concentrations detected in groundwater at the Main Post.

VOCs

VOCs were not detected in any of the background samples from the Main Post.

SVOCs

Two SVOCs [bis(2-ethylhexyl) phthalate and chrysene] were detected in concentrations above or below the laboratory quantitation limits. However, bis(2-ethylhexyl) phthalate is a common laboratory contaminant.

Pesticides/PCBs

One pesticide (heptachlor epoxide) was detected in the background groundwater samples in a concentration below the laboratory quantitation limit. PCBs were not detected at the background locations.

Metals

As indicated in Table 4.1-6, 22 metals (total) were detected in concentrations above laboratory quantitation limits in background groundwater at the Main Post.

Cyanide

Cyanide was not detected in the background groundwater at the Main Post.

4.2.1.4 Surface-Water Sampling Results

Two surface-water samples collected at locations upgradient from on-site drainage (SS-B1 and SS-B2) were selected as background samples (Figure 4.2-2). The analytes detected in background surface water and corresponding sample identifications are presented in Appendix D.

Table 4.1-8 summarizes the maximum detected concentrations in total and soluble background surface water at the Main Post.

VOCs

VOCs were analyzed for but not detected in background surface water (total) at the Main Post. VOC analysis was not performed for the soluble background surface-water samples.

SVOCs

SVOCs were analyzed for but not detected in background surface water (total) at the Main Post. SVOC analysis was not performed for the soluble background surface-water samples.

Metals

A total of 13 metals were detected above laboratory quantitation limits at the Main Post. Similarly, 11 metals were detected above laboratory quantitation limits in the filtered (soluble) background surface-water samples (Table 4.1-8).

4.2.1.5 Sediment Sampling Results

Two sediment sampling locations at the Main Post, SS-B1 and SS-B2, were selected as background because they are located upgradient of on-site drainage (Figure 4.2-2). Analytes detected in background sediment and corresponding sample identifications are presented in Appendix D. Table 4.1-8 summarizes the maximum detected concentrations in background sediment at the Main Post.

VOCs

Four VOCs (acetone, 2-butanone, 1,2-dichloroethene, and vinyl chloride) were detected above the laboratory quantitation limits in Main Post background sediments. However, acetone and 2-butanone are common laboratory contaminants.

SVOCs

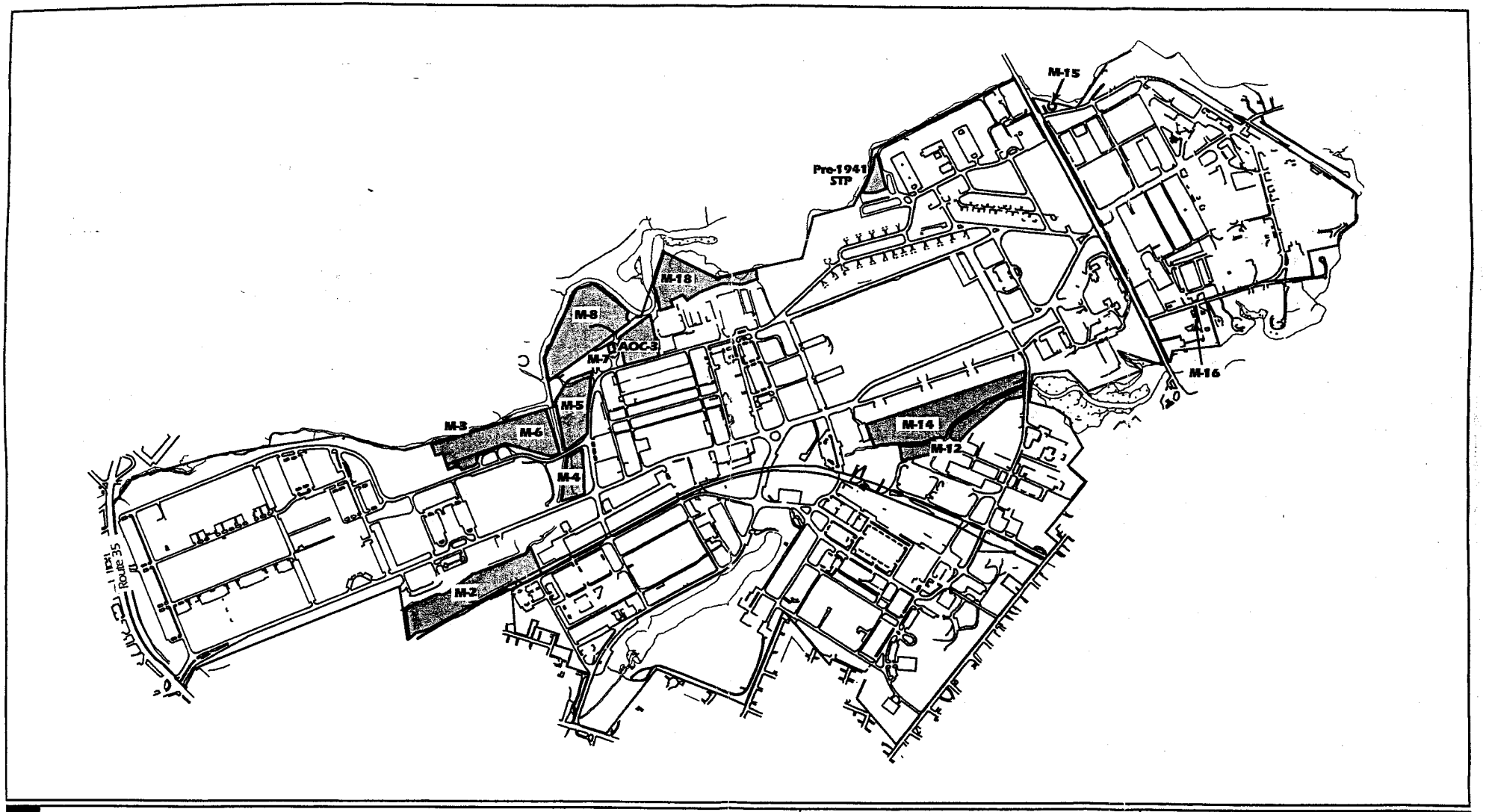
One SVOC, di-n-butyl phthalate, was detected in concentrations above the laboratory quantitation limits in Main Post background sediment. Benzo(a)pyrene was the only polyaromatic hydrocarbon (PAH) compound detected in concentrations above the laboratory quantitation limits in Main Post background sediment.

Pesticides

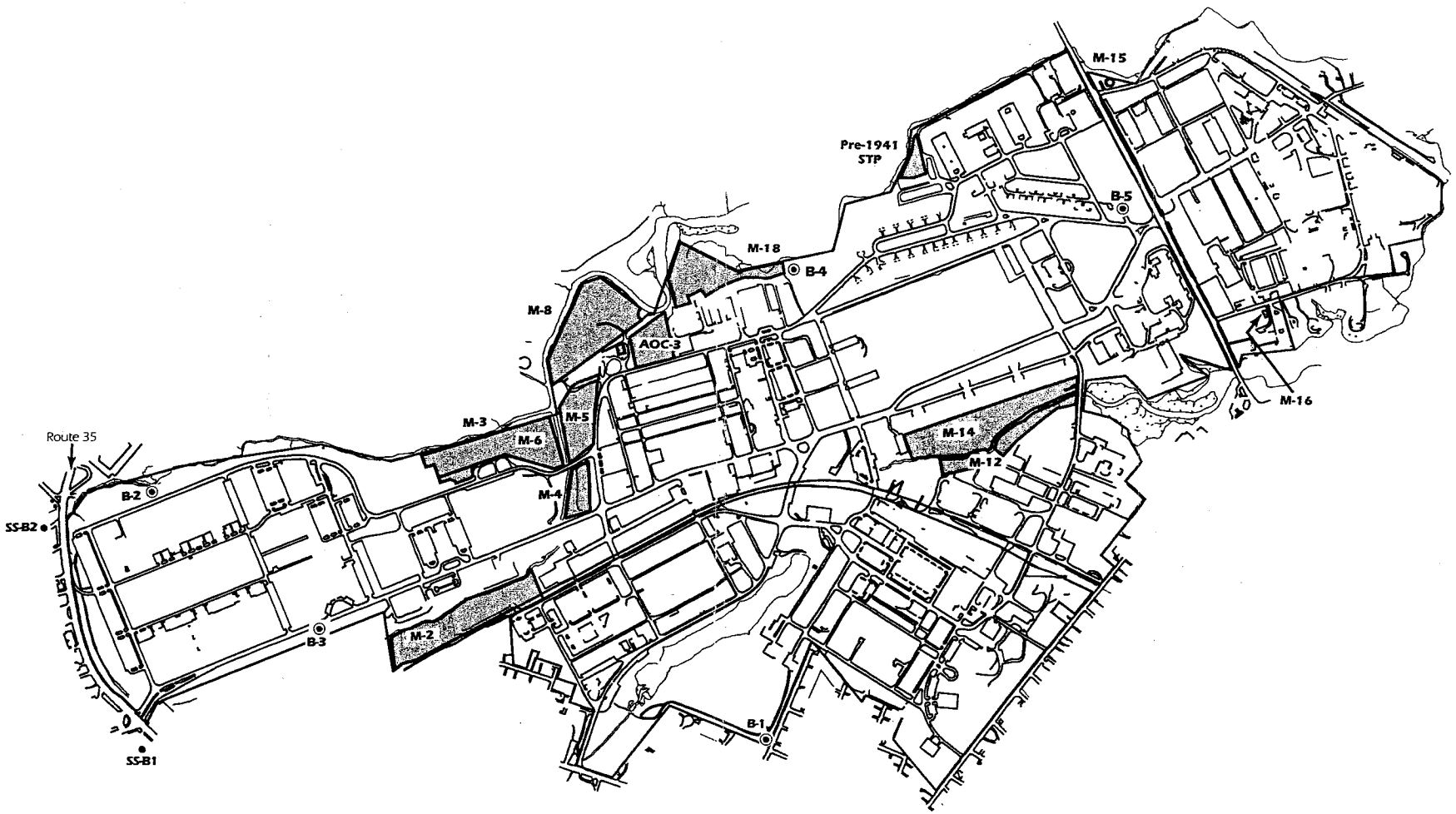
Pesticides were analyzed for but not detected in background sediments at the Main Post.

Metals

A total of 19 metals in background sediment at the Main Post were detected above laboratory quantitation limits (see Table 4.1-8).


M-15
Pre-1941 STP
M-18
M-8
DAOC-3
M-7
M-16
M-5
M-3
M-6
M-14
M-12
M-4
M-2
Route 35
LEGEND
Road (paved)
Building
Site
Lake
Marshy Area
usrd/fort/main/newmain.dgn Sep. 26, 1995 10:07:01
0
800
1600
SCALE IN FEET
95P-3194
9/28.95
Fort Monmouth, Main Post
FIGURE 4.2-1
MAIN POST SITE LOCATION MAP

/FORT/MAIN/MAINSITE.DGN



LEGEND

Road (paved)
Building
Site
Lake
Marshy Area
Background Soil Boring/Monitor Well
Upgradient Surface Water and Sediment

0 800 1600
SCALE IN FEET

95P.3194 5/23/94

Fort Monmouth, Main Post

FIGURE 4.2-2
MAIN POST BACKGROUND SAMPLE LOCATIONS

Site M-2

4.2.2 Landfill 2 (M-2)

4.2.2.1 Site Location

Landfill 2 (M-2) is located in the southwestern corner of the Main Post, on the south bank of Mill Creek (Figures 4.2-1 and 4.2-3). The approximate area of Landfill 2 is 280,400 ft^2 (6.5 acres).

4.2.2.2 Site History

According to the Installation Assessment (IA) (USATHAMA, 1980), Landfill 2 was in use between 1964 and 1968. A review of aerial photographs suggests that the landfill was still in use in 1969. The 1969 aerial photograph shows that the western three-quarters of the site is mostly bare ground with abundant wheel tracks; a 50- by 300-ft area in the center of this western area is covered with small piles of debris; vegetation is visible between some of the piles, suggesting that the piles had been there for some time. The eastern quarter of the site is vegetated; a small square building and a steel storage igloo were located near the entrance to the landfill. At present, the Landfill 2 area is used for storage of wood chips.

Materials generally found in Main Post landfills include unwashed pesticide/herbicide cans, batteries, fluorescent tubes, electronic components, garbage, asbestos wrappings from pipes, soot and boiler scale, sludge from sanitary treatment plants (STPs), small quantities of outdated drugs, outdated photographic chemicals in glass bottles, building rubble [including asbestos-containing materials (ACM)], incinerator ash, sand from oil spill cleanups, and other debris (IA). According to the IA, specific wastes known to have been put in Landfill 2 include oil in cans, oil burner filters (with approximately 0.5 liter of oil in each), and soot. The banks along Mill Creek near the west end of Landfill 2 were reportedly covered with building rubble (concrete, cinder blocks, etc.) to stabilize the bank. Metal and concrete protrude from the banks of Mill Creek.

As part of a New Jersey Pollutant Discharge Elimination System (NJPDES) permit (permit No. 0057274), surface-water samples have been taken at two locations in Mill Creek since February 1986. The results are summarized in the recent report (WESTON, 1993). Two VOCs

(tetrachloroethene and trichloroethene) were detected in concentrations above the NJDEP surface-water criteria.

4.2.2.3 Sampling Effort

To identify the source of the halogenated hydrocarbons (HHCs) detected in surface-water samples collected from a previous investigation (WESTON, 1993), two new surface-water samples (M2SW-1 and M2SW-2) were collected (Figures 4.2-2 and 4.2-3). In addition, three shallow monitor wells (MW-1, MW-2, and MW-3) were installed. Monitor well locations (MW-1 through MW-3) and surface-water locations are presented in Figure 4.2-3. Tidal water-level monitoring was conducted for a minimum of 72 hours in the three monitor wells and at stilling well-1 and stilling well-2 prior to the collection of analytical samples. Two rounds of groundwater samples and one round of surface-water samples were analyzed for TCL +30 parameters (which include VOCs, SVOCs, pesticides, and PCBs), TAL metals, and cyanide.

4.2.2.4 Hydrogeologic Interpretation

Lithologic logs from MW-2 and MW-3 indicate that the lithology consists of a thin soil cover (0.2 ft) underlain by fill material. The components of the filled materials observed in both borings consist of coal and wood fragments, roof shingles, paper, and miscellaneous debris. Natural quartz sand, silt, and clays were intermixed with the manmade materials. Monitor well MW-1, located upgradient of the landfill boundary, indicates a lithology consisting primarily of silty medium-fine-grained sand that overlies a fine-medium-grained sandy silt.

Groundwater saturation was observed at approximately 8 ft bgs at all of the well locations. The three monitor wells were screened across the water table, with total depths of 23, 18, and 16 feet bgs in MW-1, MW-2, and MW-3, respectively. Water-level elevation data, measured on 6 March 1995, indicate that local groundwater flow is north toward Mill Creek (Figure 4.2-4). Based on groundwater elevation measurements, monitor wells MW-2 and MW-3 are downgradient of the M-2 area.

4.2.2.5 Groundwater Sampling Results

Monitor wells at site M-2 were sampled for the analytical parameters listed in Table 3.8-1. The analytical results in groundwater samples from the individual sampling rounds are listed in Appendix D. Table 4.2-3 compares the average concentrations of the detected compounds from the February and March sampling rounds with the NJDEP Groundwater Quality Criteria (GWQC), and then compares the results to the subsequent site-specific maximum background and/or Monmouth County background concentrations, where appropriate. Figure 4.2-5 presents the locations and averaged concentrations of compounds detected above both the NJDEP GWQC and the background concentrations established for the Main Post.

VOCs

Chlorobenzene was the only VOC detected in site M-2 groundwater (Figure 4.2-5). However, chlorobenzene was detected in concentrations exceeding the NJDEP GWQC from both sampling rounds in MW-2 and MW-3. Chlorobenzene was not detected in the February sampling round in MW-1, but was detected in the March sampling round in exceedance of the NJDEP GWQC.

SVOCs

SVOCs were not detected in site monitor wells above laboratory quantitation limits from either sampling round.

Pesticides/PCBs

Pesticides/PCBs were not detected in site monitor wells from either sampling round.

Metals

As indicated in Table 4.2-3, of the 20 metals detected in site groundwater, only 5 (aluminum, arsenic, iron, manganese, and lead) were found in concentrations exceeding the NJDEP GWQC.

Table 4.2-3
Fort Monmouth - Main Post
Summary of Average Concentrations of Detected Compounds in Groundwater - Site M-2

COMPOUND	METHOD DETECTION LIMIT (µg/L)	NJDEP GROUNDWATER QUALITY CRITERIA (µg/L)	MAXIMUM BACKGROUND CONCENTRATIONS (µg/L)	ANALYTICAL RESULTS (µg/L) SAMPLING DATE		
				MW1 2/15/95, 3/8/95 (avg.)	MW2 2/15/95, 3/8/95 (avg.)	MW3 2/15/95, 3/8/95 (avg.)
VOC's (µg/L)						
Chlorobenzene	2.7	4	ND	**17.5**	**29**	**10**
SVOCs (µg/L)						
1,4-Dichlorobenzene	4.8	75	ND	ND	3J	ND
4-Methylphenol	12.9	NLE	ND	ND	4J	ND
Naphthalene	8.4	NLE	ND	ND	3J	ND
2-Methylnaphthalene	8.7	NLE	ND	ND	2J	ND
METALS TOTAL (µg/L)						
Aluminum	24	200	121000	**5355 R**	**2061.5**	**1616.5**
Arsenic	1.9	8*	89.3	**8.95**	4.325	3.4
Barium	1.7	2000	699	135	440.5	105.55
Beryllium	0.9	20*	7[1]	0.775	ND	ND
Calcium	10.4	NLE	45400	14150	89350	64550
Cadmium	2.8	4	9.5	ND	2.7	ND
Cobalt	2.3	NLE	18.3	6.75	3.85	2.5
Chromium	2.9	100	191	66 R	22.5	15.25
Copper	1.9	1000	730[1]	5.3	6.575	5.85
Iron	6.4	300	431000	**15900 R**	**61250**	**20450**
Mercury	0.2	2	0.26	ND	0.25	0.195
Potassium	685	NLE	137000	7195	12000	11150
Magnesium	18.3	NLE	62700	8315	11400	5570
Manganese	1.8	50	480[1]	**78.55**	**286.5**	**483.5**
Sodium	30.5	50000	197000[1]	13100	10390	9170
Nickel	10.8	100	187	19.8	ND	ND
Lead	1.1	10*	22.7	4.4	**11.55**	**14.8**
Selenium	1.5	50	29.6	1.9	ND	ND
Vanadium	2.3	NLE	108	21.25	13.65	9.7
Zinc	3.8	5000	233	472	47.35	79.3

Compounds exceeding NJDEP groundwater quality criteria are noted by bold numbers.
NJDEP groundwater quality criteria consist of the higher number between the PQL or STANDARD
*PQL -Practical Quantitation Limit was used as the NJDEP groundwater quality criteria
NLE - No Level Established
ND - Indicates that the compound was not detected at the noted quantification limit
J - Indicates that the concentration value was estimated due to detection at or near the quantification limits

[1] - Monmouth County maximum background concentration.

R - Data rejected , URS the Data Validator

However, all five metals, with the exception of iron in MW-2 and manganese in MW-3, were found in concentrations below those determined for both site-specific and Monmouth County background at the Main Post. Although iron was found in samples collected from MW-2 in concentrations greater than the range established in the Monmouth County study, the concentrations were well below the site-specific maximum background concentration established at Main Post. Manganese was found in MW-3 in a concentration only slightly greater than the site-specific and Monmouth County background concentrations. As discussed in Subsection 4.1, groundwater flowing through glauconitic formations contains abundant manganese. In addition, manganese is a common metal found in tidally influenced environments. Therefore, manganese is not identified as a compound of concern.

Cyanide

Cyanide was not detected in site monitor wells from either sampling round.

4.2.2.6 Surface-Water Sampling Results

Figure 4.2-6 presents the Main Post surface-water and sediment sampling locations. Surface-water samples were collected from two locations at M-2: M2SW-1 and M2SW-2 (Figures 4.2-3 and 4.2-6). M2SW-1 is upgradient of M2SW-2. Both samples were determined to be freshwater, based on conductivity data, salinity data, and field observations. Total (unfiltered) and soluble (filtered) concentrations were compared to NJDEP freshwater criteria and background and are presented in Table 4.2-4.

VOCs

Two VOCs (tetrachloroethene and trichloroethene) were found in concentrations in the unfiltered samples greater than the NJDEP freshwater criteria and background at locations SW-1 and SW-2. Figure 4.2-5 presents the locations of the compounds detected above the established criteria and maximum background.

Table 4.2-4
Fort Monmouth - Main Post
Summary of Detected Compounds in Site Surface Water
Total and Soluble - Site M-2

COMPOUND	METHOD DETECTION LIMIT	NJDEP SURFACE WATER CRITERIA* FRESH WATER	MAXIMUM BACKGROUND CONCENTRATION (TOTAL)	MAXIMUM BACKGROUND CONCENTRATION (SOLUBLE)	ANALYTICAL RESULTS (µg/L) SAMPLING DATE - 12/1/1994			
					M2 (Total)		M2 (Soluble)	
					SW-1	SW-2	SW-1	SW-2
VOC's (µg/L)								
1,2-Dichloroethene (total)	4.4	592 (h)	ND	ND	3 J	2 J	NA	NA
Tetrachloroethene (PCE)	4.0	0.388 (hc)	ND	ND	**5 J**	**5 J**	NA	NA
Trichloroethene[1]	2.0	1.09 (hc)	ND	ND	**2 J**	**2 J**	NA	NA
SVOCs (µg/L)								
bis-(2-Ethylhexyl)phthalate	9.7	1.76 (hc)	ND	ND	ND	**4 J**	NA	NA
METALS TOTAL (µg/L)								
Aluminum	26.7	NLE	748	ND	258	263	ND	ND
Barium	2.1	2000 (h)	44.7	39.4	42.7	47	38.2	41.8
Calcium	12	NLE	31600	30900	18000	19400	17700	19000
Cobalt	2.4	NLE	8.1	4.1	4.5	4.8	4.1	ND
Copper	2.4	NLE	3.2	4	3.1	2.9	4.2	4.9
Iron	4.7	NLE	6210	405	2760	3020	493	681
Lead	1.6	5 (h)	10	ND	3.1	2.3	**7.6**	ND
Magnesium	38.2	NLE	5440	5120	2930	2860	2860	3070
Manganese	2.0	NLE	113	98.6	89.9	97.6	86.1	92.8
Nickel	12.8	516 (h)	22.9	16.1	ND	ND	14.7	ND
Potassium	821	NLE	5060	4280	2840	2860	2860	3180
Sodium	15.4	NLE	26700	26200	25400	27500	25200	26900
Zinc	2.8	NLE	35.1	23.8	29.1	19.4	19.4	21.1

[1] - Same compound as listed by NJDEP tetrachloroethylene.

* - NJDEP Surface Water Quality Standards (1993).

h -Non carcinogen effect-based human health criteria as a 30 day average.

hc - Carcinogen effect-based human health criteria as 70 year average.

ND - Indicates that the compound was not detected at the noted quantification limit.

J - Indicates that the concentration value was estimated due to detection at or near the quantification limit.

NLE - No Level Established.

NA - Not Analyzed.

Compounds detected above NJDEP Surface Water Criteria are noted by bold numbers.

SVOCs

Bis(2-ethylhexyl) phthalate was the only SVOC detected in site M-2 surface water. In addition, the compound was found in a concentration greater than the NJDEP freshwater criteria and background at location SW-2. Bis(2-ethylhexyl) phthalate is a common laboratory contaminant and can be attributed to sampling or laboratory contamination.

Pesticides/PCBs

Pesticides/PCBs were analyzed for but were not detected in site surface water.

Metals

Of the 13 metals detected in site surface water, only one (lead) was found in a concentration greater than the NJDEP freshwater criteria and maximum background. The compound exceeded the criteria in the filtered sample, but was not detected above criteria in the unfiltered sample (Figure 4.2-5).

4.2.2.7 Tidal Monitoring

Appendix E presents hydrographs of the comparisons between the monitor wells (MW-1 though MW-3) and the stilling wells (1 and 2) during the tidal monitoring tests.

Tidal fluctuations in Mill Creek and in site monitor wells were monitored at upstream tidal monitoring station (stilling well-2), downstream tidal monitoring station (stilling well-1), and site monitor wells (MW-1 through MW-3) (Figure 4.2-3). (Hydrographs are presented in Appendix E.) The tidal monitoring stations are approximately 2,400 ft apart. Changes in creek levels at the upstream location were compared to changes in water levels measured at well MW-2, and changes in creek levels at the downstream location were compared to changes in water levels measured at well MW-3. Wells MW-2 and MW-3 are approximately 150 feet from the creek.

Tidal fluctuations in the creek were also compared to water levels measured at well MW-1, approximately 1,100 feet from the creek. Monitor wells were screened below sea level.

The tidal monitoring data collected at Landfill 2 (M-2) suggest that the stream is influenced by incoming tides. Peaks representing the high tides at stilling well-1 and stilling well-2 are observed, but low tide peaks are not apparent because the elevation of the stream bed at Landfill 2 (M-2) is higher than the elevation of sea level at low tide. The streambed elevation is 1.37 feet above mean sea level (ft msl) at stilling well-1 and 1.28 ft msl at stilling well-2. The maximum change in creek stage at Landfill 2 (M-2) was 1.2 feet, and the maximum change in water level in the monitor wells was 0.2 foot.

Data collected from well MW-1 were useful as baseline data during the tidal monitoring study at Landfill 2 (M-2). The data suggest that there is no apparent tidal effect on the water levels at well MW-1 and creek levels measured at stilling well-1 or -2. Well MW-1 is approximately 1,100 feet from the creek and is too distant to be influenced by changing creek stage. Water levels in the water-bearing unit and creek levels declined by about 0.1 foot over the course of the monitoring study in March 1995.

The water levels recorded at MW-2 and MW-3 appear to be tidally influenced (see Appendix E). Water levels measured at both wells respond almost instantaneously to rising creek levels. The peak in water levels measured at both wells occurs approximately 20 to 40 minutes after the peak in creek stage. At both monitoring locations (stilling well-1, MW-2 and stilling well-2, MW-3) water-level peaks at each well are approximately 15% to 20% of the tidal peak in creek levels.

4.2.2.7.1 Conductivity and Salinity Results

Conductivity and salinity were measured in surface-water and groundwater samples at Landfill 2 (M-2) in January and March 1995, and are presented in tables in Appendix E. Measurements were collected at low tide and high tide each month to evaluate the extent of saltwater intrusion at each site. High conductivity and salinity readings indicate salty or brackish water, whereas low readings indicate freshwater.

The data indicate the presence of freshwater in the creek at Landfill 2 (M-2). Specific conductance measured in the creek at Landfill 2 (M-2) is consistently less than 240 μmhos. In addition, salinity measured in the creek at Landfill 2 (M-2) is consistently less than 0.2 parts per thousand (ppth). The results are consistent with the higher streambed elevation at Landfill 2 (M-2) when compared to Landfill 8 (M-8) and Landfills 12 and 14 (M-12, M-14).

Groundwater sampled from monitor wells MW-1 and MW-3 generally exhibits low conductivity and zero salinity, except well MW-2 at Landfill 2 (M-2). The moderate to high specific conductance at well MW-2 at Landfill 2 (M-2) is unexplained, but is likely caused by saltwater intrusion from Parkers Creek.

4.2.2.8 Recommendations

The surface-water sampling results indicate that two VOCs were detected at the two surface-water locations at concentrations greater than NJDEP surface-water criteria, and above maximum background concentrations. In addition, soluble lead was detected at a concentration greater than NJDEP criteria and the maximum background concentrations. Because the site formerly had an NJPDES permit (permit No. 0057274), surface water has been sampled since 1986. The results from the current round of surface-water sampling for VOCs are less than the maximum results from previous rounds.

Chlorobenzene was detected in the groundwater at concentrations exceeding the NJDEP GWQC and background in both downgradient monitor wells from both sampling rounds and in the upgradient well during one sampling round.

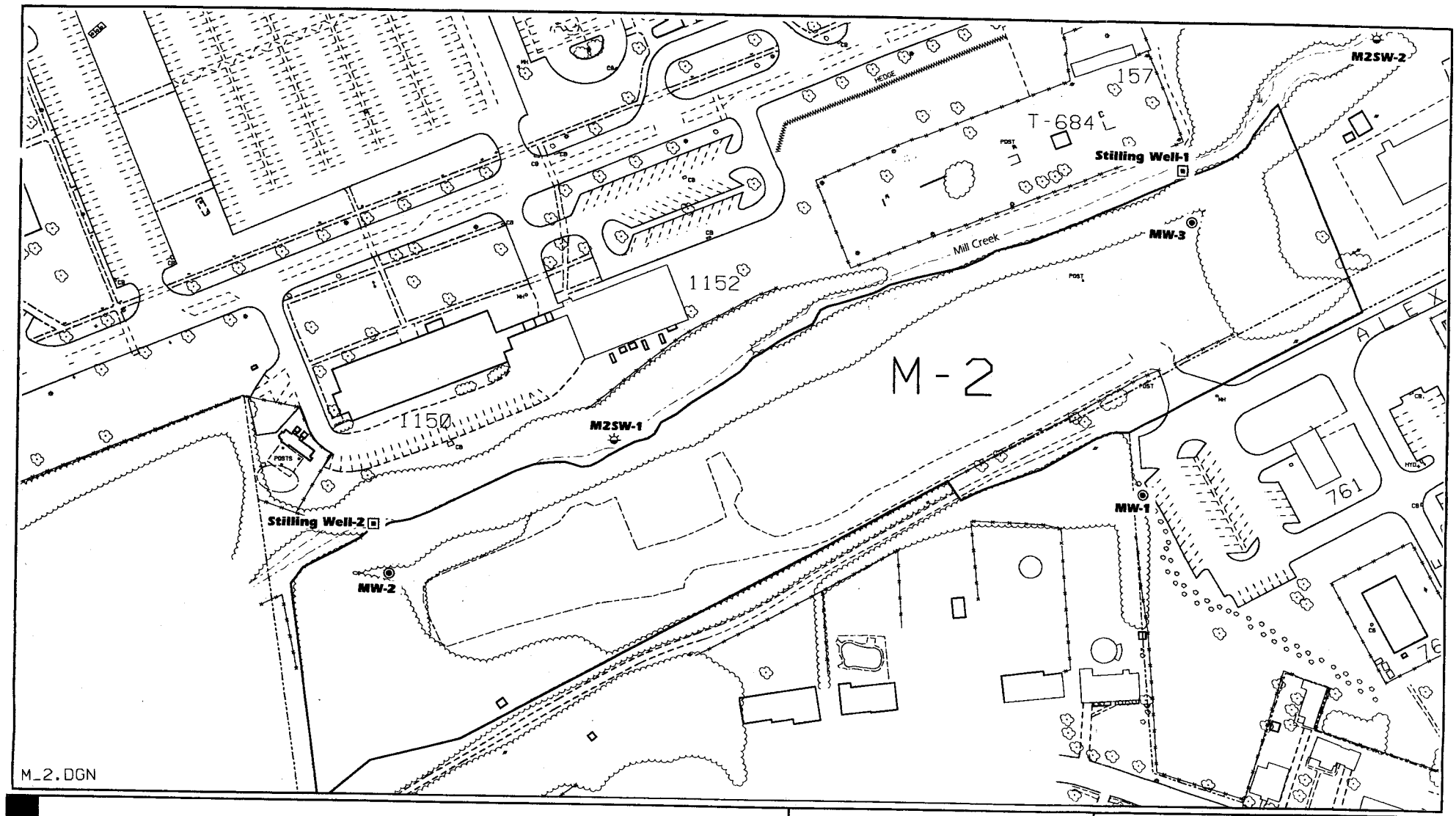
The results of the tidal monitoring indicate that there is no apparent relationship between the changing creek levels and the water levels in upgradient monitor well MW-1; however, a direct relationship was observed between changing creek levels and the water levels in downgradient monitor wells MW-2 and MW-3. Conductivity and salinity results indicate the presence of freshwater in the creek at site M-2. Freshwater was indicated at monitor wells MW-1 and

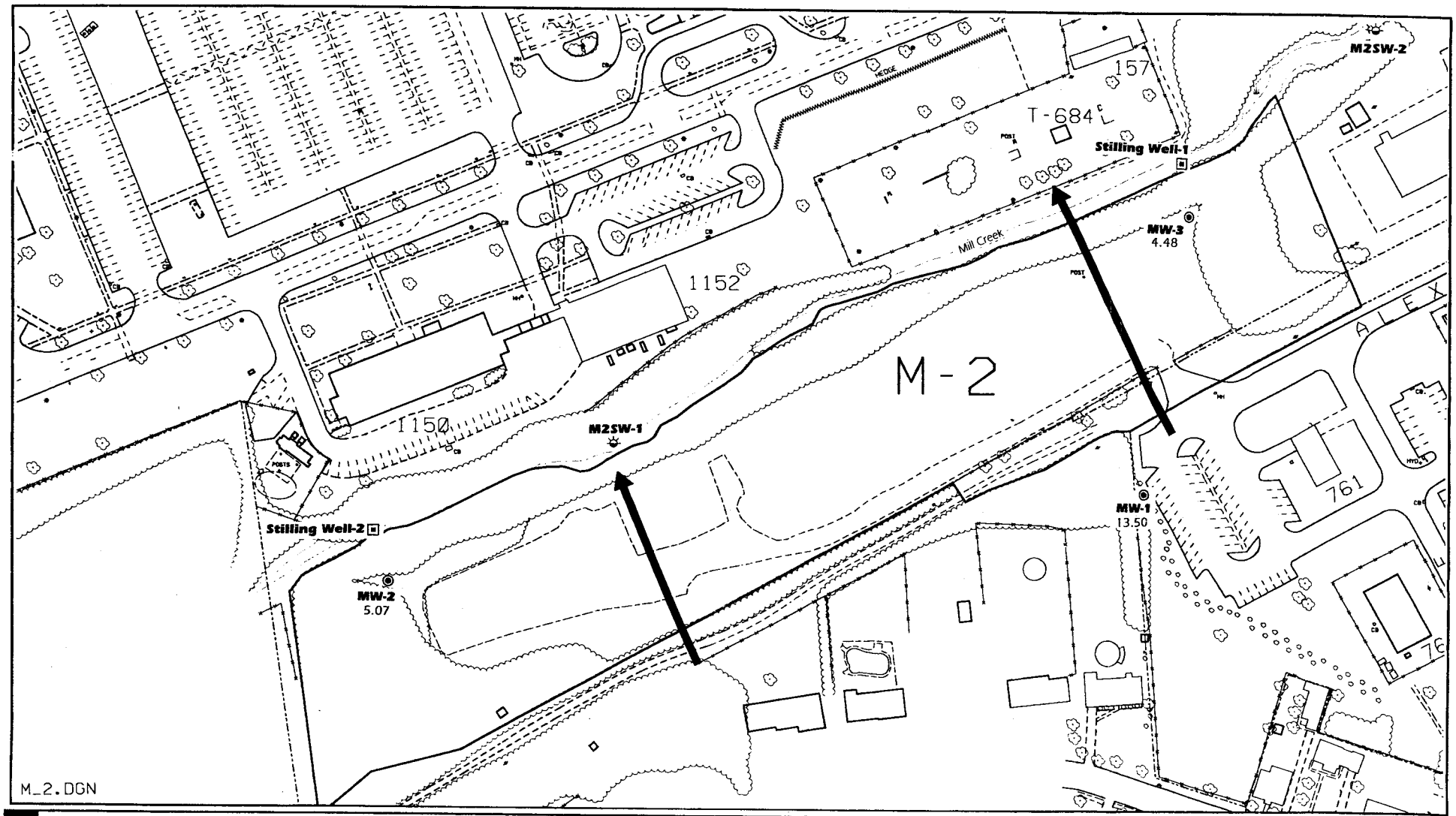
MW-3. A moderate to high specific conductance was measured at monitor well MW-2, which is unexplained.

Although groundwater sample results at site M-2 exceeded NJDEP criteria for one VOC, and surface-water results were slightly exceeded by two VOCs, immediate remedial action is not required for several reasons. Immediate remedial action is usually based on an immediate threat to human health. At this site, shallow groundwater flows toward and discharges to Mill Creek, as indicated by water-level measurements in site monitor wells. Also, there are no known uses of groundwater at or downgradient of the site. Although there is slight VOC contamination in Mill Creek, there is no use of this water for human consumption. In fact, Mill Creek becomes saline immediately downgradient of site M-2. Therefore, the groundwater and surface waters are not used for drinking water.

In addition, surface-water sampling has been performed at this site since 1986, and since the landfill has not been used for decades, the concentrations of VOCs seem, at worst, to be stable and possibly decreasing. Presumably, since no material is being added to the source (the landfill), natural degradation will decrease groundwater and surface-water contamination levels in the future. Although downgradient surface-water samples were not taken during this round, previous sampling at site M-8 indicated that NJDEP surface-water criteria were not exceeded for VOCs. Therefore, the only portion of Mill Creek for which NJDEP surface-water criteria are exceeded is the portion between sites M-2 and M-8. All of this portion is on Fort Monmouth property and, therefore, access to it is restricted.

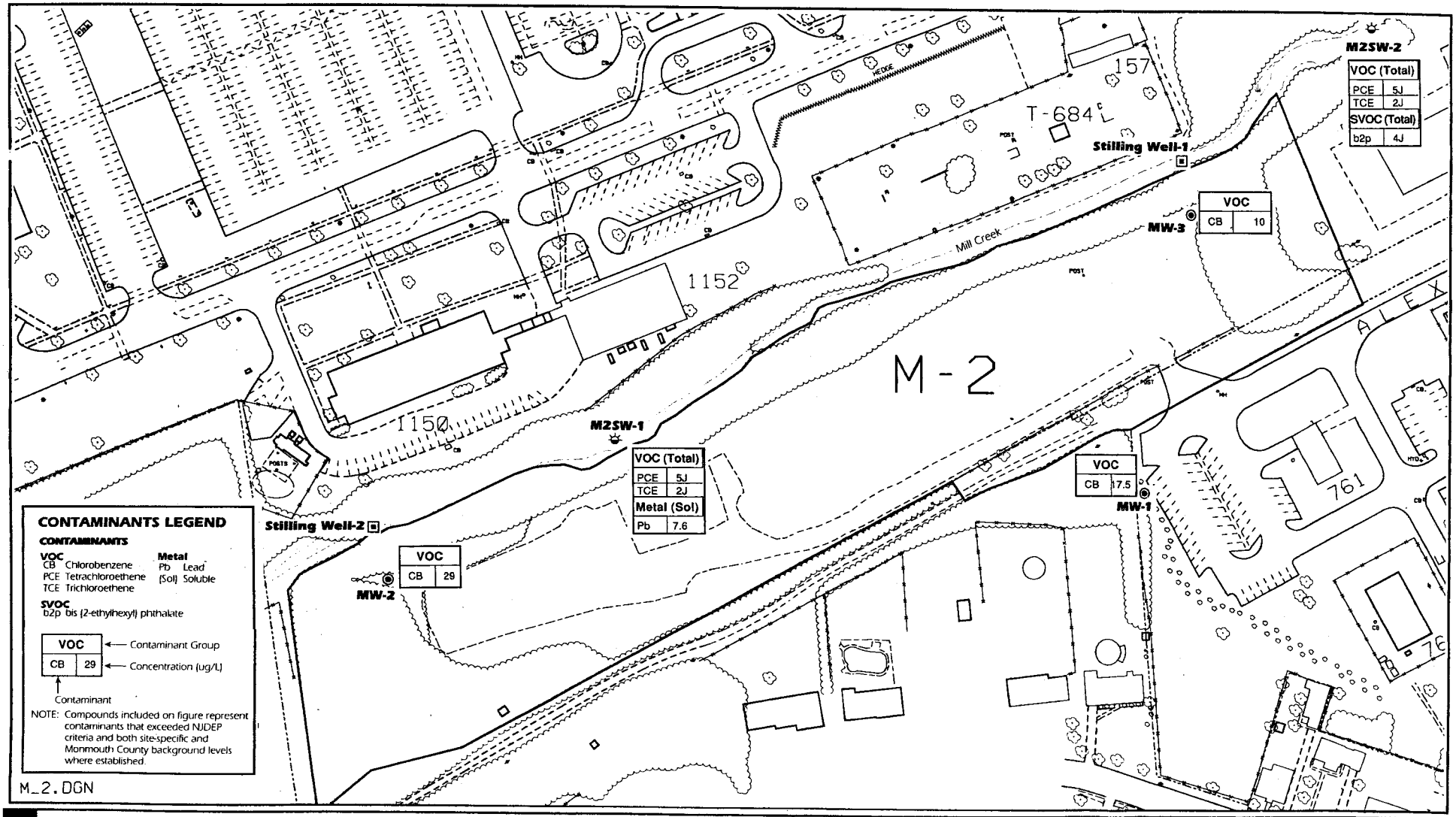
Since the existing monitor wells and surface-water sampling locations are adequately placed to monitor downgradient groundwater and surface water, the Fort Monmouth Directorate of Public Works (DPW) proposes that a long-term surface-water and groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells, and surface-water samples would be collected from points yet to be determined. Compounds of concern identified in the first two rounds of sampling would be targeted for the monitoring program.


M2SW-2
Stilling Well-1
MW-3
Mill Creek
M-2
M2SW-1
MW-1
Stilling Well-2
MW-2
M_2.DGN
LEGEND
Monitor Well
Existing Surface Water Sampling Location
Stilling Well
Road (paved)
Road/Trails (unpaved)
Fence
Building
Wooded Area
Tree/Bush
Light Pole
Utility Pole
Site
Brook/Creek
Base Boundary
Marshy Area
Approximate Boundary
0
100
200
SCALE IN FEET
95P-3183
6/23/95
Fort Monmouth, Main Post
FIGURE 4.2-3
LANDFILL 2 (M-2)
SAMPLING LOCATIONS



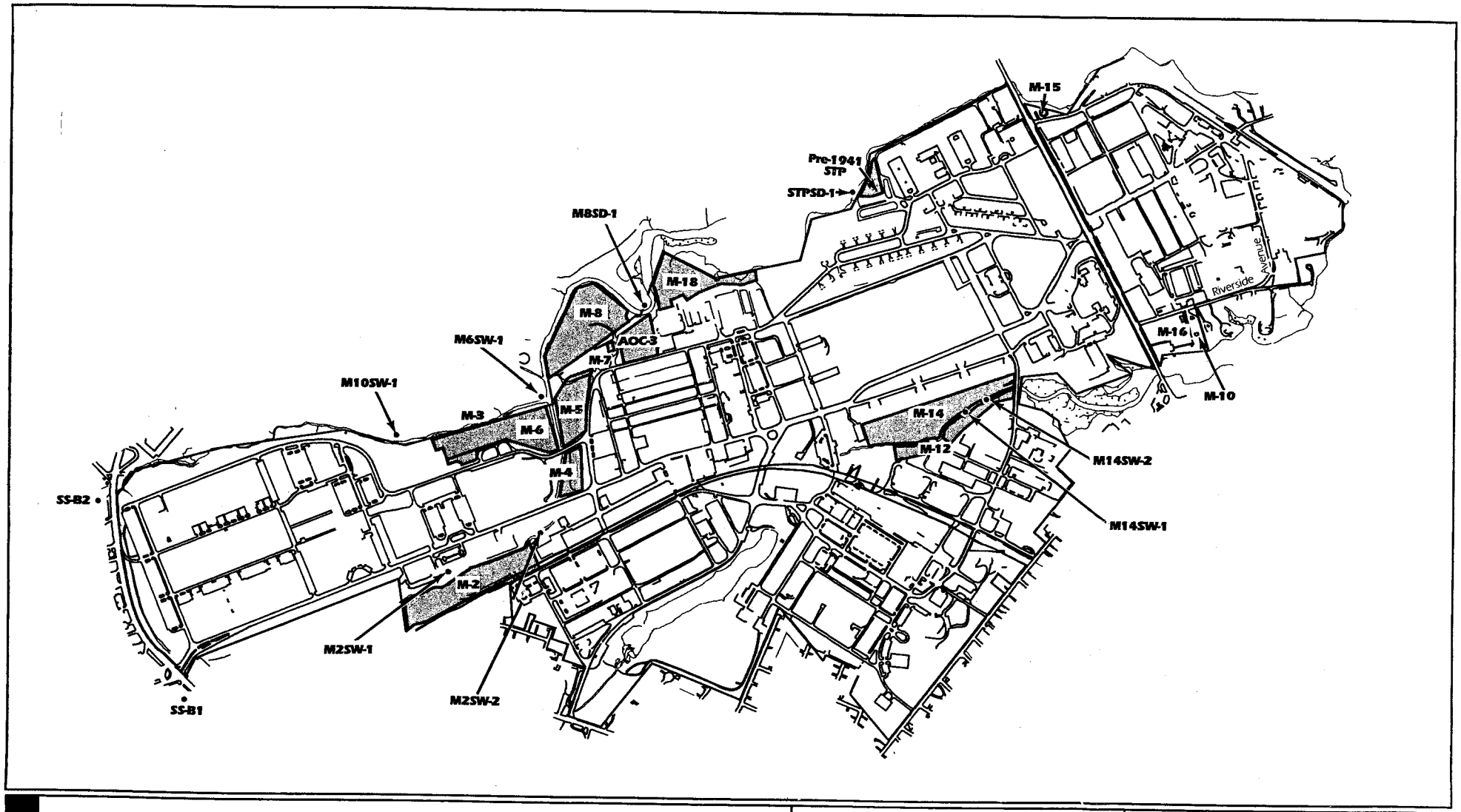
Fort Monmouth, Main Post

FIGURE 4.2-4
LANDFILL 2 (M-2)
APPROXIMATE GROUNDWATER FLOW DIRECTIONS
(Groundwater Elevations Recorded from March 1995 Sampling Round)



Fort Monmouth, Main Post

FIGURE 4.2-5
DISTRIBUTION OF CONTAMINANTS IN SITE GROUNDWATER AND SURFACE WATER SAMPLES


M-15
Pre-1941 STP
STPSD-1
M8SD-1
M-18
M-8
AOC-3
M-7
M6SW-1
M10SW-1
M-3
M-5
M-6
M-4
SS-B2
SS-B1
M-2
M2SW-1
M2SW-2
Riverside Avenue
M-16
M-10
M-14
M-12
M14SW-2
M14SW-1
LEGEND
Road (paved)
Building
Site
Lake
Marshy Area
Surface Water and/or Sediment Location
SW = Surface Water
SD = Sediment
Note: SS-B1 and SS-B2 are background locations. Samples for both surface water and sediment were collected.
0
800
1600
SCALE IN FEET
95P3194
9/28/95
Fort Monmouth, Main Post
FIGURE 4.2-6
MAIN POST SURFACE WATER AND SEDIMENT SAMPLING LOCATIONS

4.2.3 Landfill 3 (M-3)

4.2.3.1 Site Location

Landfill 3 (M-3) is located between North Drive and Lafetra Creek in the west-central part of the Main Post. The actual boundaries of the landfill are not clear, but have been approximated in Figure 4.2-7. The approximate area of site M-3 is 257,890 ft^2 (5.9 acres). Burning Area M-6, which is discussed later, is located within Landfill 3.

4.2.3.2 Site History

According to the IA, Landfill 3 was in use between 1959 and 1964, and was used for general purpose disposal of domestic and industrial wastes. The 1969 aerial photograph shows that, with the exception of a few areas with vehicle tracks, this area was covered with vegetation. At present, the surface is hummocky and covered with grass.

Landfill 3 (M-3) most likely contained materials similar to those generally found in other Main Post landfills. According to long-term Fort Monmouth employees, this landfill also contains wood and coal ash from furnaces and boilers.

As part of an NJPDES permit (permit No. 0057274), surface-water samples have been taken at two locations in Lafetra Creek since February 1986. The results are summarized in the recent report (WESTON, 1993). One VOC (tetrachloroethene) was detected in concentrations above the NJDEP surface-water criteria.

4.2.3.3 Sampling Effort

Surface geophysics surveys were conducted to confirm the location and investigate the extent of the former landfill. First, a magnetometer survey, including both vertical magnetic gradient and total magnetic field, was conducted. After completion of the magnetometer survey, GPR was used in accessible areas to provide additional definition of landfill boundaries.

The source of the HHCs detected in surface-water samples from a previous investigation could not be determined (WESTON, 1993). Therefore, surface-water locations M6SW-1 and M10SW-1 on Lafetra Creek were sampled (Figure 4.2-6). In addition, three monitor well locations (MW-4 through MW-6), as shown in Figure 4.2-7, were installed. The location of monitor well M-6 was slightly adjusted based on the geophysical interpretations. The well was repositioned to monitor groundwater quality downgradient of the exposed drum area. The monitor wells were sampled twice and surface-water locations were sampled once for TCL +30 parameters, TAL metals, and cyanide.

4.2.3.4 Geophysical Results

The magnetometer survey performed at M-3 indicated buried ferrous material, as depicted in Figures 4.2-8 and 4.2-9, within the suspected boundary of the landfill. The total magnetic field contour plot (Figure 4.2-8) shows background readings of approximately 54,000 nT and is represented by the green contour interval. High and low excursions from this value, represented by the violet and blue contour intervals, respectively, reveal anomalous magnetic signatures indicative of buried ferrous objects. The boundary between the background and anomalous magnetic readings is interpreted as the landfill boundary. Cultural features along the north side of the site include buried and overhead power lines and a chainlink fence. These features limited the magnetic data acquisition and anomalous magnetic influences that could be seen on the magnetic gradient plot (shown in Figure 4.2-9). The northern edge of the plot shows these cultural anomalies as a "low" reading from background, and is represented by the blue contour interval.

The GPR survey performed at M-3 confirmed the potential landfill boundary and expanded the geophysical survey underneath the overhead power lines and up to the northern fenceline. The GPR system is not heavily influenced by these types of cultural features like magnetometer methods. A typical radar profile, such as along the 600E traverse, reveals "normal" horizontal reflectors, indicative of nonfill areas, from 100S to approximately 100N (Figure 4.2-9A). Continuing from 65N to 160N the radar waveform becomes very chaotic in nature. This chaotic waveform is typical of buried waste material.

Hyperbolic radar signatures, typical of buried drums, were observed in the vicinity of grid coordinate 160N/800E. This was confirmed visually by observing a partially exposed drum at the surface at approximately 160N/800E. As shown on the radar profile in Figure 4.2-9B, the hyperbolic waveforms are found within chaotic radar reflectors. With the exception of these hyperbolic radar signatures, the geophysical surveys indicate that the waste material is within the suspected landfill boundary. Monitor wells have been installed in appropriate locations to monitor groundwater quality upgradient and downgradient of the site.

4.2.3.5 Hydrogeologic Interpretation

Lithologic logs from MW-5 and MW-6 indicate that the lithology consists of a thin soil cover (0.3 ft) underlain by fill material. The components of the filled materials observed in both borings consisted of a black slag material with camera film, rebar, and paper debris. Natural quartz sand, gravel, silt, and clay were intermixed with the manmade materials. MW-4 is located upgradient of the fill locations and consists of tight olive-green silty fine-grained sand with a clay matrix.

Groundwater saturation was observed in the borehole during drilling activities between 8 and 10 ft bgs. Monitor wells were screened across the water table, and total depths varied from approximately 23, 16, and 15 ft bgs in MW-4, MW-5, and MW-6, respectively. Water-level elevation data measured on 6 March 1995, indicate that local groundwater flow is to the north in the direction of Lafetra Creek (Figure 4.2-10). Based on groundwater elevation measurements, monitor wells MW-5 and MW-6 are downgradient of the site M-3 area.

4.2.3.6 Groundwater Sampling Results

Monitor wells at site M-3 were sampled for the analytical parameters listed in Table 3.8-1. The analytical results for groundwater samples from the individual sampling rounds are listed in Appendix D. Table 4.2-5 compares the average concentrations of the detected compounds from the February and March sampling rounds with the NJDEP GWQC, and then compares the results to subsequent site-specific maximum background and/or Monmouth County background

Table 4.2-5
Fort Monmouth - Main Post
Summary of Average Concentrations of Detected Compounds in Groundwater - Site M-3

COMPOUND	METHOD DETECTION LIMIT (µg/L)	NJDEP GROUNDWATER QUALITY CRITERIA (µg/L)	MAXIMUM BACKGROUND CONCENTRATION (µg/L)	ANALYTICAL RESULTS (µg/L) SAMPLING DATE		
				MW4 2/16/95, 3/8/95 (avg.)	MW5 2/16/95, 3/9/95 (avg.)	MW6 2/16/95, 3/9/95 (avg.)
VOC's (µg/L)						
Chlorobenzene	2.7	4	ND	ND	**5 J**	ND
Toluene	2.7	1000	ND	ND	4.5 J	4 J
SVOCs (µg/L)						
4-Methylphenol	12.9	NLE	ND	ND	4 J	ND
Naphthalene	8.4	NLE	ND	ND	3 J	ND
2-Methylnaphthalene	8.7	NLE	ND	ND	1.5 J	ND
Acenaphthene	6.0	400	ND	ND	2 J	ND
Fluorene	6.3	300	ND	ND	1.5 J	ND
Phenanthrene	5.0	NLE	ND	ND	3 J	ND
Anthracene	4.6	2000	ND	ND	3 J	ND
Pyrene	5.4	200	ND	ND	3 J	ND
bis-(2-Ethylhexyl)phthalate	9.7	30*	100B	ND	ND	4 J
Carbazol	4.4	NLE	ND	ND	3 J	ND
METALS TOTAL (µg/L)						
Aluminum	24.0	200	121000	**705**	**2494**	**474**
Arsenic	1.9	8*	89.3	1.425	2.625	ND
Barium	1.7	2000	699	47.4	584	124
Calcium	10.4	NLE	45400	33750	95600	122500
Cadmium	2.8	4	9.5	ND	2.825	ND
Cobalt	3.0	NLE	18.3	ND	2.075	ND
Chromium	2.9	100	191	9.05	20.1	7.75
Copper	1.9	1000	730[1]	2	22.7	ND
Iron	6.4	300	431000	**2965**	**89850**	**20500**
Mercury	0.2	2	0.26	ND	0.365	ND
Potassium	685	NLE	137000	7825	13300	10300
Magnesium	18.3	NLE	62700	4590	17950	28800
Manganese	1.8	50	480[1]	34.3	**1115**	**686**
Sodium	30.5	50000	197000[1]	13150	15800	34300
Nickel	10.8	100	187	4	ND	ND
Lead	1.6	10*	22.7	ND	**78.3**	**21.2**
Vanadium	2.3	NLE	108	3.3	12	3.625
Zinc	3.8	5000	233	17.85	234.05	62.05

Compounds exceeding NJDEP groundwater quality criteria are noted by bold numbers
NJDEP groundwater quality criteria consist of the higher number between the PQL or STANDARD
*PQL - Practical Quantitation Limit was used as the NJDEP groundwater quality criteria.
NLE - No Level Established
ND - Indicates that the compound was not detected at the noted quantification limit
J - Indicates that the concentration value was estimated due to detection at or near the quantification limits
[1] - Monmouth County maximum background concentration.

concentrations, where appropriate. Figure 4.2-11 presents the locations and average concentrations of compounds detected above the NJDEP GWQC, and above both site-specific and Monmouth County background concentrations established at the Main Post.

VOCs

Although chlorobenzene was detected below the laboratory quantitation limit but above the method detection limit in a sample collected at MW-5 from the March sampling round, the value slightly exceeds the NJDEP GWQC. As discussed in Subsection 4.1, the analytical results that are reported with a "J" are estimated values that are below the quantitation limit but above the method detection limit.

SVOCs

SVOCs were not detected above laboratory quantitation limits in the site monitor wells from either sampling round. The levels of compounds that could be estimated (below the laboratory quantitation limit) were well below the NJDEP GWQC, where established.

Pesticides/PCBs

Pesticides/PCBs were not detected in the site monitor wells from either sampling round.

Metals

As indicated in Table 4.2-5, of the 18 metals detected in site groundwater, 4 metals (aluminum, iron, manganese, and lead) were found in concentrations exceeding the NJDEP GWQC. However, aluminum and iron were found in concentrations below those determined for site-specific and/or Monmouth County background. Manganese was detected (at MW-5 and MW-6) in concentrations greater than the site-specific and Monmouth County background levels. In addition, lead was found in concentrations greater than those determined for maximum background in MW-5 (Figure 4.2-11), but below background in MW-6. However, lead was not

detected in the filtered sample above NJDEP GWQC. As discussed in Subsection 4.1, groundwater flowing through glauconitic formations contains abundant manganese. In addition, manganese is a common metal found in tidally influenced environments. Therefore, manganese is not identified as a compound of concern. The relatively high sodium concentrations in groundwater samples from site M-3 are from saltwater intrusion from the Parkers Creek estuary via Lafetra Creek.

Cyanide

Cyanide was analyzed for but not detected in the site monitor wells from either sampling round.

4.2.3.7 Surface-Water Sampling Results

Two surface-water samples were collected at M-3: M10SW-1 and M6SW-1 (Figures 4.2-6 and 4.2-7). M10SW-1 is upgradient of M-3 and M6SW-1 is downgradient. Both samples were determined to be saltwater, based on conductivity results and field observations. Total (unfiltered) and soluble (filtered) concentrations were compared to NJDEP saltwater criteria and background and are presented in Table 4.2-6.

VOCs

VOCs were analyzed for but were not detected in site surface-water samples.

SVOCs

SVOCs were analyzed for but were not detected in site surface-water samples.

Pesticides/PCBs

Pesticides/PCBs were analyzed for but were not detected in site surface-water samples.

Table 4.2-6
Summary of Detected Compounds in Site Surface Water
Total and Soluble - Site M-3

COMPOUND	METHOD DETECTION LIMIT	NJDEP SURFACE WATER CRITERIA[a] SALINE WATER	MAXIMUM BACKGROUND CONCENTRATION (TOTAL)	MAXIMUM BACKGROUND CONCENTRATION (SOLUBLE)	ANALYTICAL RESULTS (µg/L) 12/1/94			
					MP6SW-1 (Total)	MP6SW-1 (Soluble)	M10SW-1 (Total)	M10SW-1 (Soluble)
METALS TOTAL (µg/L)								
Aluminum	26.7	NLE	748	ND	179	ND	69	ND
Barium	2.1	NLE	44.7	39.4	33.3	27.7	34.6	29.1
Calcium	12	NLE	31600	30900	32100	30400	30000	29400
Copper	2.4	NLE	32	4	ND	4.3	ND	3.9
Iron	4.7	NLE	6210	405	2940	465	2180	355
Lead	1.6	NLE	10	ND	4.8	ND	1.6	ND
Magnesium	38.2	NLE	5440	5120	9790	9030	5340	5160
Manganese	2.0	100 (h)	113	98.6	**102**	94.3	98.7	96.2
Potassium	821	NLE	5060	4280	6260	5840	4320	4280
Selenium	0.9	NLE	ND	ND	1.1	ND	ND	ND
Sodium	15.4	NLE	26700	26200	56500	52300	18200	17700
Zinc	2.8	NLE	35.1	23.8	12.2	7.8	16	7.9

[a] - NJDEP Surface Water Quality Standards (1993).

h -Non carcinogen effect-based human health criteria as a 30 day average.

ND - Indicates that the compound was not detected at the noted quantification limit.

NLE - No Level Established

Compounds dectected above NJDEP Surface Water Criteria are bolded.

Metals

As indicated in Table 4.2-6, of the 12 metals detected in site surface water, only one (manganese, unfiltered) was found in a concentration slightly exceeding the NJDEP surface-water criteria (saline) in sample MP6SW1. However, the concentration of manganese was detected below the maximum background levels established at the Main Post for total metals. In addition, manganese was found in a concentration below the established criteria and background in the filtered sample.

As presented in Table 4.2-6 (soluble), no soluble concentrations of contaminants detected in M6SW-1 surface-water were greater than NJDEP surface-water criteria.

None of the total or soluble concentrations of chemicals detected in M10SW-1 surface water exceeded NJDEP surface-water guidance (Table 4.2-6 total and soluble).

4.2.3.8 Recommendations

The geophysical surveys indicate that the extent of the identified waste material is within the suspected boundaries of the landfill and the monitor wells have been installed in appropriate locations to monitor shallow groundwater quality upgradient and downgradient of the site. In an isolated area of the site the GPR results indicated hyperbolic radar signatures typical of a buried drum or drums. A partially exposed drum was also observed at this location.

Groundwater quality results indicate that chlorobenzene was detected in one downgradient well below laboratory quantitation limits, but just above NJDEP GWQC and background from one sampling round. Lead was also detected at levels above NJDEP GWQC and background.

The surface-water quality results indicate that no organic or inorganic concentrations exceeded both NJDEP surface-water criteria and the maximum background concentration. Because the site formerly had an NJPDES permit, surface water has been sampled since 1986. The results from

the current round of surface-water sampling for VOCs are less than the maximum results from previous rounds.

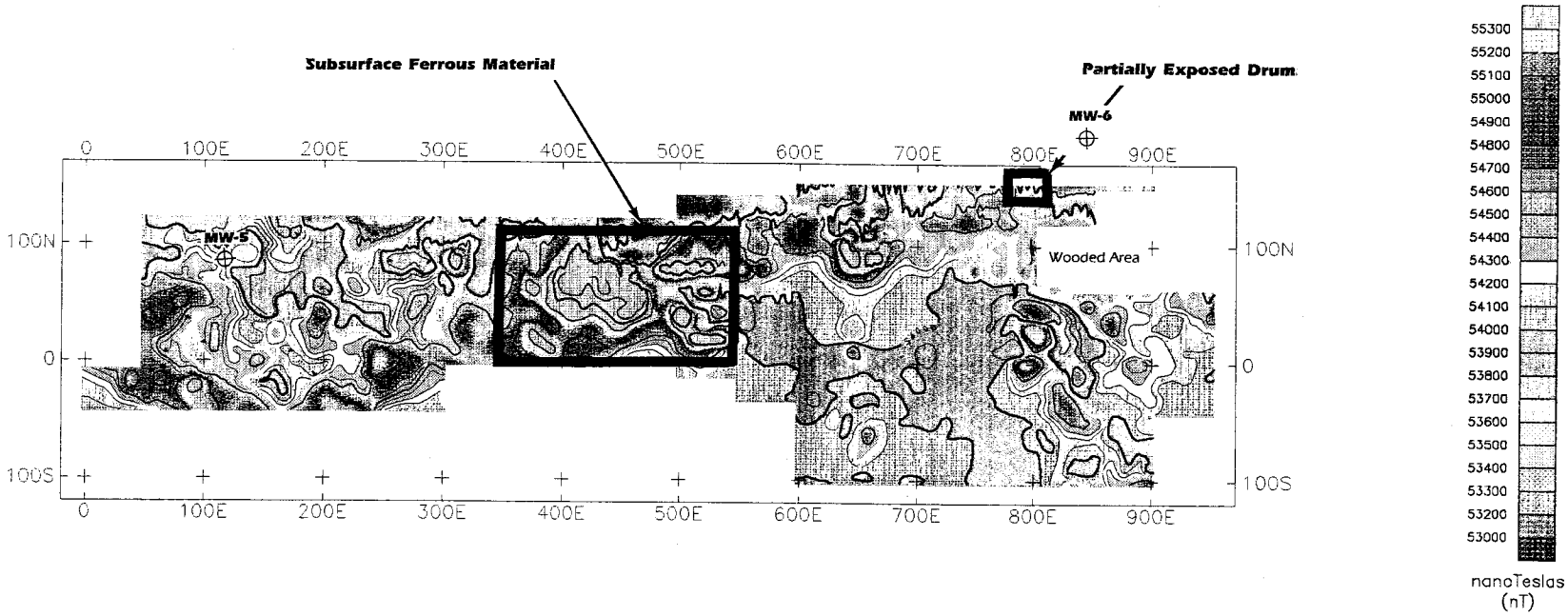
Although NJDEP groundwater criteria were exceeded for one VOC, immediate remedial action is not required for several reasons. First, the measured value for the VOC was below the quantitation limit and just slightly above the GWQC. In addition, the groundwater flows toward Lafetra Creek, and since the water table is higher than the creek bed and groundwater flow tends to follow surface topography, the shallow groundwater probably flows into Lafetra Creek. There are no uses of groundwater between the source and Lafetra Creek. Surface-water samples did not exceed NJDEP surface-water criteria. Therefore, there is no immediate threat to human health.

In addition, because surface-water sampling has been performed at this site since 1986, and the landfill has not been used for decades, the concentrations of VOCs seem, at worst, to be stable and possibly decreasing. Presumably, since no material is being added to the source (the landfill), natural degradation will decrease groundwater and surface-water contamination levels in the future.

Since the existing monitor wells and surface-water sampling locations are adequately placed to monitor downgradient groundwater and surface water, DPW proposes that a long-term surface-water and groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells, and surface-water samples would be collected from points yet to be determined. Compounds of concern identified in the first two rounds of sampling would be the targeted for the monitoring program.

The partially exposed drum will be excavated. The area immediately around and under the drum will be investigated for additional drums. Any excavated drums will be examined to determine if hazardous materials were present or still exist. The drum and the excavation will be monitored with a photoionization detector (PID). NJDEP will be requested to send a representative to

monitor the excavation. If there is no indication that the drum contained, or still contains, hazardous materials and if elevated readings are not observed on the PID, the excavation will be backfilled and no further action will be taken. If contamination is identified, additional sampling will be conducted in accordance with the *Technical Requirements for Site Remediation* (NJDEP, 1993).



LEGEND

Monitor Well

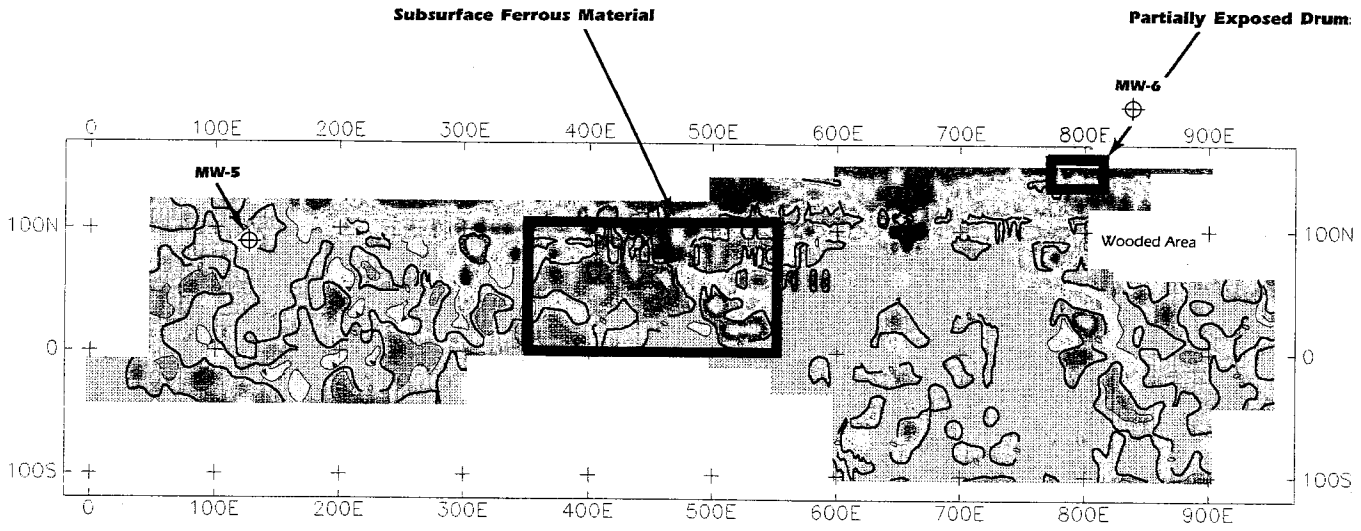
0 50 100 150 200

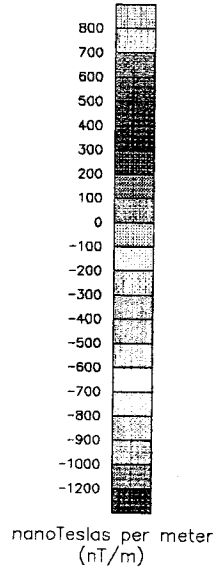
SCALE IN FEET

Fort Monmouth, Main Post Site M-3

FIGURE 4.2-8
MAGNETOMETER SURVEY
TOTAL MAGNETIC FIELD – SITE M-3

95P-3233 6/26/95





LEGEND

Monitor Well

0 50 100 150 200
SCALE IN FEET

Fort Monmouth, Main Post Site M-3

FIGURE 4.2-9
MAGNETOMETER SURVEY
MAGNETIC GRADIENT – SITE M-3

95P-3234 6/27/95

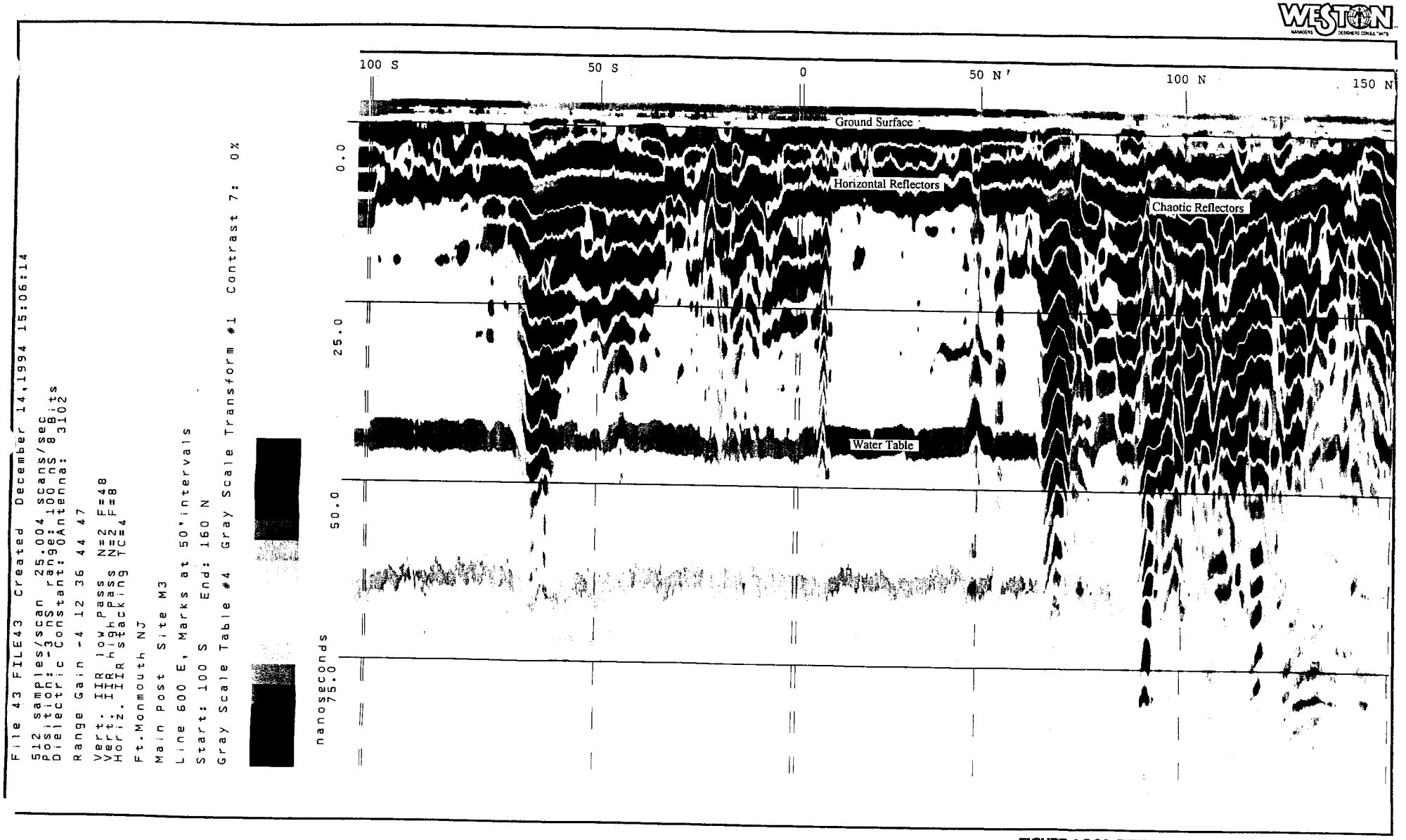
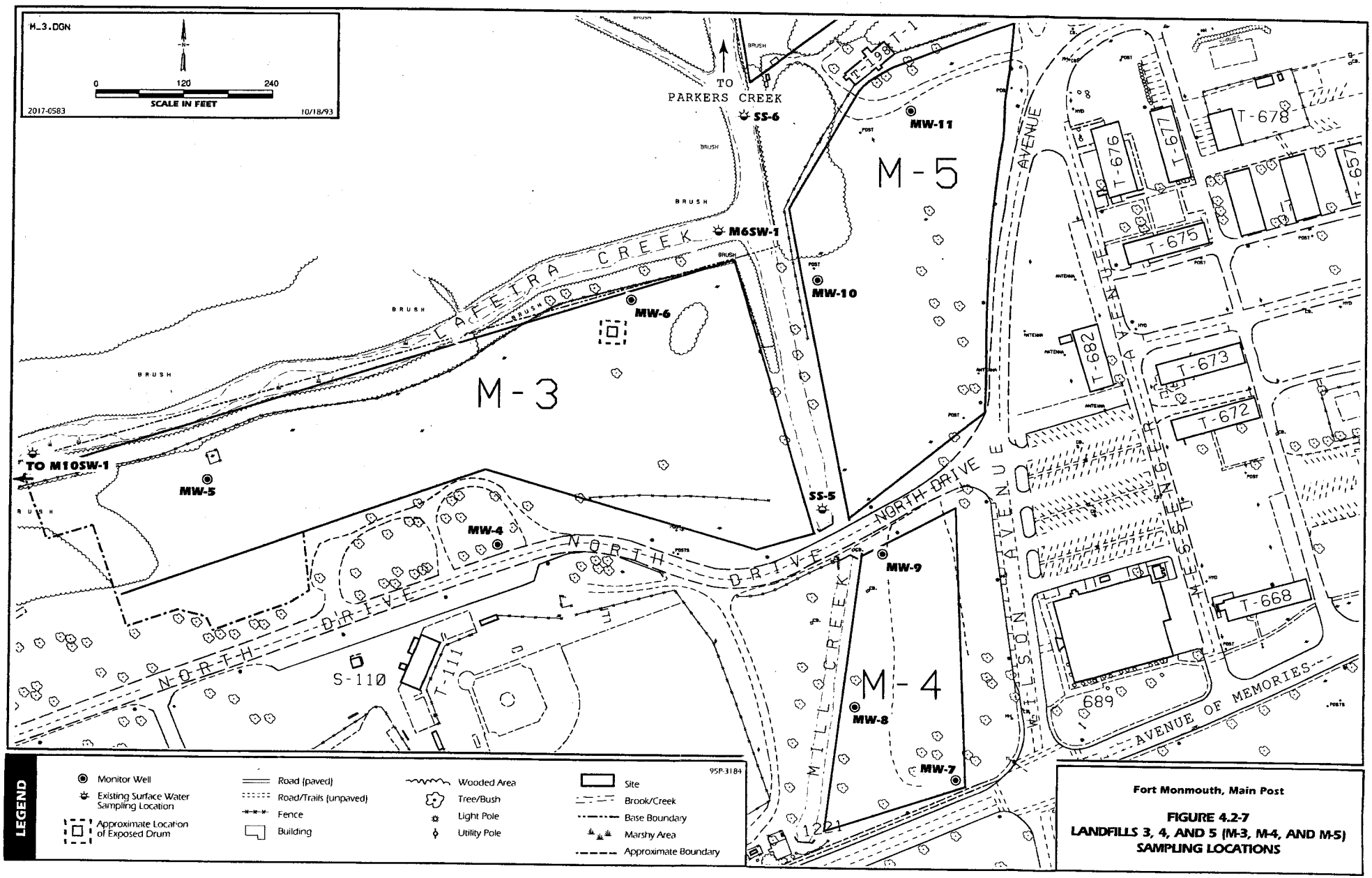


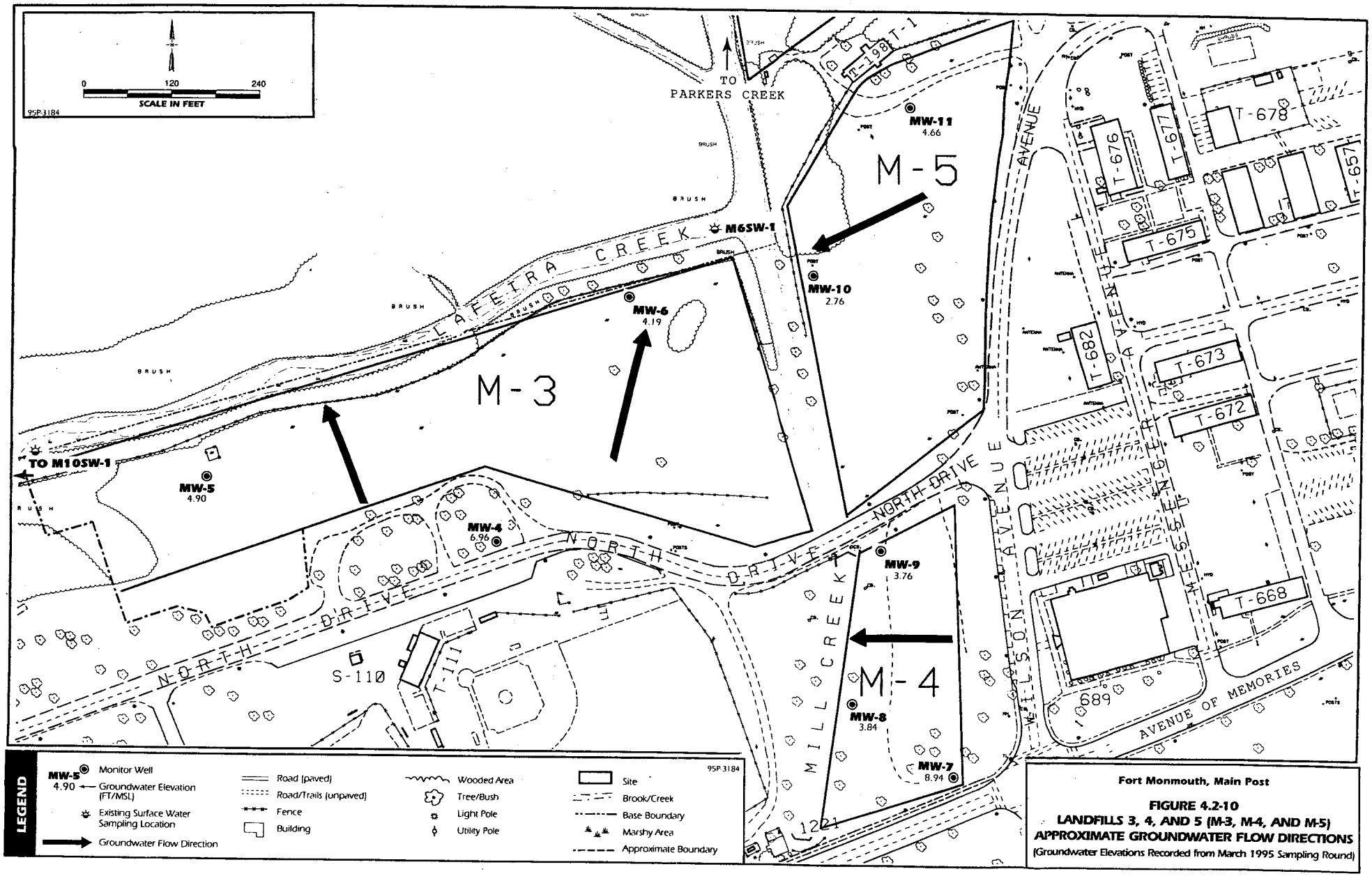
FIGURE 4.2-9A REPRESENTATIVE RADAR PROFILE DEPICTING LANDFILL BOUNDARY AT SITE M-3

FIGURE 4.2-9B RADAR PROFILE SHOWING SURFACE DRUM AND HYPERBOLIC RADAR SIGNATURES AT SITE M-3



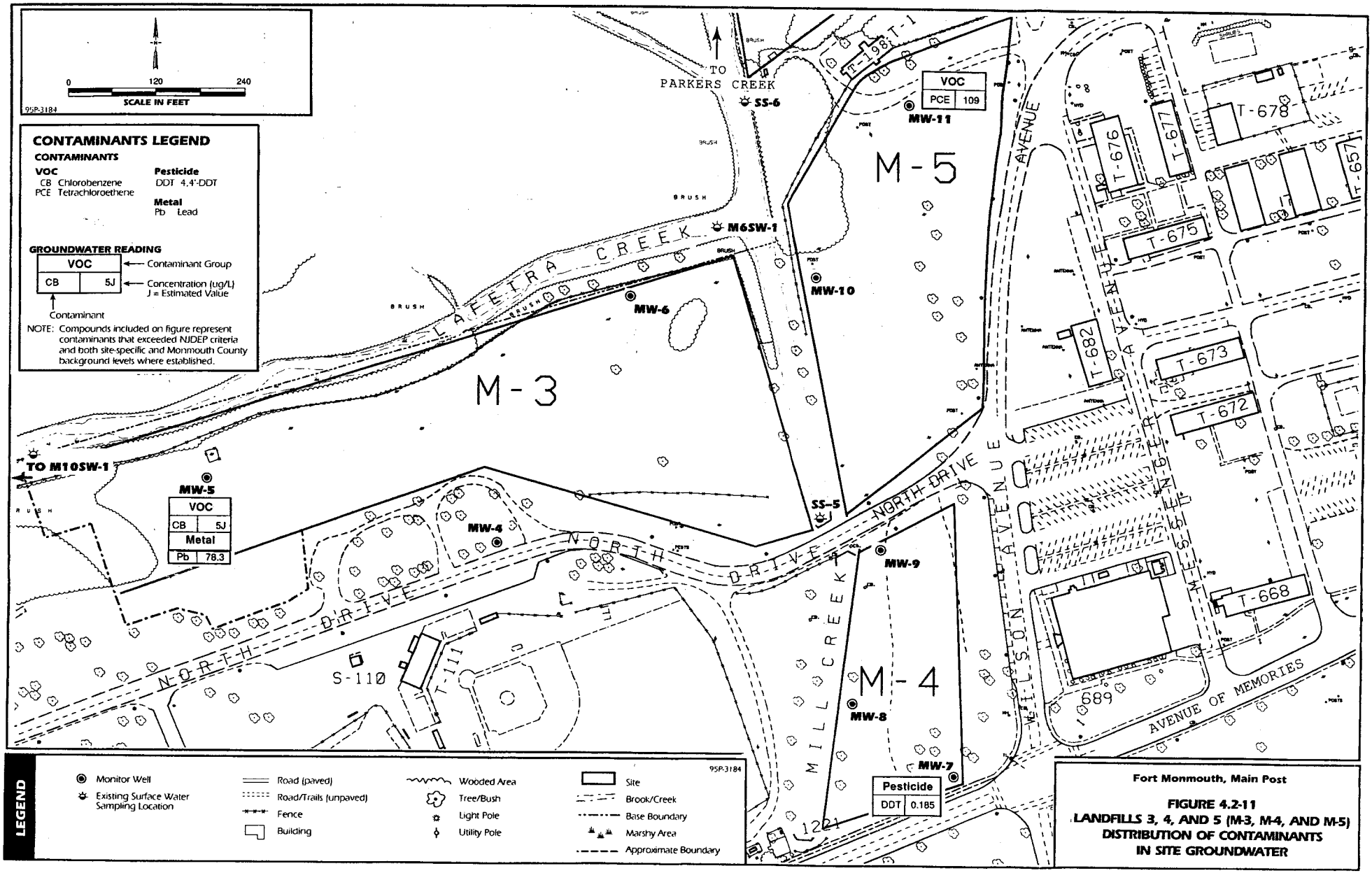
Fort Monmouth, Main Post

FIGURE 4.2-7
LANDFILLS 3, 4, AND 5 (M-3, M-4, AND M-5)
SAMPLING LOCATIONS



Fort Monmouth, Main Post

FIGURE 4.2-10
LANDFILLS 3, 4, AND 5 (M-3, M-4, AND M-5)
APPROXIMATE GROUNDWATER FLOW DIRECTIONS
(Groundwater Elevations Recorded from March 1995 Sampling Round)



Fort Monmouth, Main Post

FIGURE 4.2-11
LANDFILLS 3, 4, AND 5 (M-3, M-4, AND M-5)
DISTRIBUTION OF CONTAMINANTS IN SITE GROUNDWATER

Site M-4

4.2.4 Landfill 4 (M-4)

4.2.4.1 Site Location

Landfill 4 (M-4) is located in the area bounded by the Avenue of Memories to the south, North Drive to the north, Mill Creek to the west, and Wilson Avenue to the east (Figure 4.2-7). The approximate area of site M-4 is 61,800 ft^2 (1.4 acres).

4.2.4.2 Site History

Landfill 4 was used in 1956 for the disposal of building demolition debris. The 1940 aerial photograph shows a swamp at this location. In the latter part of 1955 and during 1956, 72 World War II buildings were demolished on Main Post (*Concise History; History and Place Names*). Potential contaminants associated with demolition debris include lead from paints and piping and asbestos. At present, the surface is flat and grass covered. There are trees in the southeast corner.

As part of an NJPDES permit, surface-water samples have been taken upstream and downstream of this site on Mill Creek. The results are discussed in Subsection 4.2.2 (site M-2) and 4.2.5 (site M-5).

4.2.4.3 Sampling Effort

Three shallow monitor wells (MW-7 through MW-9) were installed around the landfill, and two rounds of groundwater sampling were conducted to evaluate groundwater quality. Monitor well MW-7 is an upgradient well and monitor wells MW-8 and MW-9 are downgradient wells. The monitor wells were sampled twice for TCL +30 parameters, TAL metals, and cyanide.

4.2.4.4 Hydrogeologic Interpretation

Lithologic logs from MW-8 and MW-9 indicate that the lithology consists of a thin soil cover (0.4 ft) underlain by alternating layers of reworked sand, silt, and broken concrete gravel pieces,

with interbeds of plant-root fragments. Borehole logs from MW-7 indicate a lithology consisting of an orange-olive-brown fine-coarse sand with little silt.

Groundwater saturation was observed at approximately 7 ft bgs at each well location. The three monitor wells were screened across the unconfined water table, at total depths of 16, 18, and 22 ft bgs in MW-7, MW-8, and MW-9, respectively. Water elevation data, measured on 6 March 1995, indicate that local groundwater flow is west toward Mill Creek (Figure 4.2-10). Based on groundwater elevation measurements, monitor wells MW-8 and MW-9 are downgradient of the M-4 area.

4.2.4.5 Groundwater Sampling Results

Monitor wells at site M-4 were sampled for the analytical parameters listed in Table 3.8-1. The analytical results for groundwater samples from the individual sampling rounds are listed in Appendix D. Table 4.2-7 compares the average concentrations of the detected compounds from the February and March sampling rounds with the NJDEP GWQC, and then compares the results to the subsequent site-specific background and/or Monmouth County background concentrations, where appropriate. Figure 4.2-11 presents the locations and average concentrations of compounds detected above the NJDEP GWQC and the established maximum background concentrations at the Main Post.

VOCs

VOCs were not detected in the site monitor wells from either sampling round.

SVOCs

SVOCs were not detected above laboratory quantitation limits in the site monitor wells from either sampling round. The levels of compounds that could be estimated (below the laboratory quantitation limit) were well below the NJDEP GWQC.

Table 4.2-7
Fort Monmouth - Main Post
Summary of Average Concentrations of Detected Compounds in Groundwater - Site M-4

COMPOUND	METHOD DETECTION LIMIT (µg/L)	NJDEP GROUNDWATER QUALITY CRITERIA (µg/L)	MAXIMUM BACKGROUND CONCENTRATION (µg/L)	ANALYTICAL RESULTS (µg/L) SAMPLING DATE		
				MW7 2/16/95, 3/9/95 (avg.)	MW8 2/16/95, 3/8/95 (avg.)	MW9 2/16/95, 3/9/95 (avg.)
SVOC's (µg/L)						
bis-(2-Ethylhexyl)phthalate	9.7	30*	5 J	ND	4J	ND
Pesticides/PCBs (µg/L)						
4,4'-DDT	0.1**	0.1	ND	**0.185**	ND	ND
METALS TOTAL (µg/L)						
Aluminum	24.0	200	121000	**6550**	**1605**	129.1
Arsenic	1.9	8*	89.3	5.1	1.525	ND
Barium	1.7	2000	699	80.95	39.9	57.9
Beryllium	0.9	20*	7[1]	0.84	ND	ND
Calcium	10.4	NLE	45400	18800	33100	46500
Cobalt	3.0	NLE	18.3	4.7	3.3	ND
Chromium	2.9	100	191	62.55	17.25	4.175
Copper	1.9	1000	730[1]	5.75	2.5	ND
Iron	6.4	300	431000	**18435**	**17900**	**21700**
Potassium	685	NLE	137000	5020	7585	8925
Magnesium	18.3	NLE	62700	8400	6145	6245
Manganese	1.8	50	480[1]	**61.9**	**110.5**	**85**
Sodium	30.5	50000	197000[1]	**50950**	9500	10280
Nickel	10.8	100	187	7.9	ND	ND
Lead	1.6	10*	22.7	9	7.05	ND
Vanadium	2.3	NLE	108	34.95	6.95	ND
Zinc	3.8	5000	233	49.65	31.75	2.43

Compounds exceeding NJDEP groundwater quality criteria are noted by bold numbers.
NJDEP groundwater quality criteria consist of the higher number between the PQL or STANDARD
*PQL -Practical Quantitation Limit was used as the NJDEP groundwater quality criteria
NLE - No Level Established
ND - Indicates that the compound was not detected at the noted quantification limit
J - Indicates that the concentration value was estimated due to detection at or near the quantification limits
** - Method detection limit equals or exceeds NJDEP groundwater quality criteria.
[1] - Monmouth County maximum background concentration.

Pesticides/PCBs

One pesticide (4-4'-DDT) was detected in a concentration slightly exceeding the NJDEP GWQC in the upgradient well MW-7 from the February sampling round only (Table 4.2-7). This concentration was confirmed in a duplicate sample collected in MW-7 during the same sampling round. However, pesticides were not detected in a downstream surface-water location (SS-5) collected from a previous investigation (Figures 4.2-7 and 4.2-11). The results of that investigation are presented in WESTON, 1993. PCBs were not detected in the site monitor wells from either sampling round.

Metals

As indicated in Table 4.2-7, of the 17 metals detected in site groundwater, 4 metals (aluminum, iron, manganese, and sodium) were found in concentrations exceeding the NJDEP GWQC. However, aluminum, iron, and manganese were found in concentrations below those determined for site-specific and Monmouth County maximum background levels. Although sodium in MW-7 was detected in a concentration greater than the level established as site-specific background, the concentration was well below the Monmouth County maximum background level.

Cyanide

Cyanide was not detected in the site monitor wells from either sampling round.

4.2.4.6 Recommendations

One pesticide compound was detected at a concentration just above the NJDEP GWQC and background in the upgradient well in both the routine and duplicate samples. The pesticide was not detected in downgradient monitor wells, and also was not detected during previous sampling at downgradient location SS-5 (WESTON, 1993).

Although NJDEP groundwater criteria were exceeded for one pesticide, no immediate remedial action is required. The measured value of the pesticide was just slightly above the GWQC. Shallow groundwater flows toward and discharges into Mill Creek, as indicated by water-level measurements in site monitor wells. Also, there are no known uses of groundwater at or downgradient of the site. No surface-water sampling was performed at this site during this project. The surface water was previously sampled downstream but was not analyzed for pesticides. Since Mill Creek flows on Fort Monmouth property between sites M-4 and M-8, access to this stream is restricted. Presumably, since no material is being added to the source (the landfill), natural degradation will decrease groundwater and surface-water contamination levels in the future.

Since the existing monitor well locations are adequately placed to monitor downgradient groundwater, DPW proposes that a long-term groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells. Compounds of concern (including pesticides) identified in the first two rounds of sampling would be targeted for the groundwater and surface-water monitoring program.

Site M-5

4.2.5 Landfill 5 (M-5)

4.2.5.1 Site Location

Landfill 5 (M-5) is located just north of Landfill 4 in the area bounded by North Drive to the south, an unpaved road south of Building T-198 to the north, Wilson Avenue to the east, and Mill and Parkers Creeks to the west (Figure 4.2-7). The approximate area of site M-5 is 138,200 ft^2 (3.2 acres).

4.2.5.2 Site History

According to the IA, Landfill 5 was in use between 1952 and 1959, and was reportedly used for the disposal of automobiles as well as for domestic and industrial wastes similar to those mentioned in Subsection 4.2.2.2. Like Landfill 4, this landfill was also constructed in a former swamp and is presently flat and grass covered.

As part of an NJPDES permit, surface-water samples have been taken at two locations (one upstream on Mill Creek and one downstream on Lafetra Creek) since February 1986. The results are summarized in the recent report (WESTON, 1993). One VOC (tetrachloroethene) was detected in concentrations above the NJDEP surface-water criteria.

4.2.5.3 Sampling Effort

Two shallow monitor wells (MW-10 and MW-11) were installed (Figure 4.2-7), and two rounds of groundwater sampling were conducted in an effort to further evaluate the presence of VOCs, metals, and inorganics detected from samples collected during a previous investigation. Monitor wells MW-10 and MW-11 were sampled twice for TCL +30 parameters, TAL metals, sulfate, and cyanide.

4.2.5.4 Hydrogeologic Interpretation

Borehole logs from MW-10 and MW-11 indicate that the lithology consists of a thin soil cover (0.5 ft) partially underlain by fill and interbedded sand with silt and clay laminae. The components of the fill materials observed in both borings consist of coal, glass, and plastic fragments found interspersed within a silty sand and clay matrix and overlie a dark-green-brown silty/clayey medium-coarse-grained sand with silt and clay laminae.

Groundwater saturation was encountered at approximately 4 ft bgs at both well locations. The two monitor wells were screened across the water table, with total depths of 15 ft bgs. Water-level elevation data, measured on 6 March 1995, indicate that approximate local groundwater flow is west toward Mill Creek (Figure 4.2-10). Based on groundwater elevation measurements, monitor well MW-10 is downgradient of the area under investigation.

4.2.5.5 Groundwater Sampling Results

Monitor wells at site M-5 were sampled for the analytical parameters listed in Table 3.8-1. The compounds detected in groundwater samples from the individual sampling rounds, with the corresponding sample identifications, are listed in Appendix D. Table 4.2-8 compares the average concentrations of the detected compounds from the February and March sampling rounds with the NJDEP GWQC, and then compares the results to the site-specific and Monmouth County maximum background concentrations, where appropriate. Figure 4.2-11 presents the locations and average concentrations of compounds detected above the NJDEP GWQC and the established maximum background concentrations.

VOCs

Tetrachloroethene (PCE) was the only VOC detected in site groundwater. However, the PCE concentrations exceeded the NJDEP GWQC and background from both sampling rounds in MW-11, the upgradient well (Figure 4.2-11). In addition, tetrachloroethene was detected in

Table 4.2-8
Fort Monmouth - Main Post
Summary of Average Concentration of Detected Compounds in Groundwater - Site M-5

COMPOUND	METHOD DETECTION LIMIT (µg/L)	NJDEP GROUNDWATER QUALITY CRITERIA (µg/L)	MAXIMUM BACKGROUND CONCENTRATION (µg/L)	ANALYTICAL RESULTS (µg/L) SAMPLING DATE	
				MW10 2/17/95, 3/9/95 (avg.)	MW11 2/17/95, 3/9/95 (avg.)
VOC's (µg/L)					
Tetrachloroethene (PCE)[1]	4.0**	1*	ND	ND	**109**
SVOCs (µg/L)					
bis-(2-Ethylhexyl)phthalate	9.7	30*	ND	ND	3.5J
METALS TOTAL (µg/L)					
Aluminum	24	200	121000	155.8	**1052.5**
Barium	1.7	2000	699	116	16.05
Calcium	10.4	NLE	45400	16500	11100
Chromium	2.9	100	191	3.925	12.9
Copper	1.9	1000	730[2]	7.05	2.9
Iron	6.4	300	431000	**9205**	**4685**
Potassium	685	NLE	137000	8850	3305
Magnesium	18.3	NLE	62700	13550	4220
Manganese	1.8	50	480[2]	**146.5**	14.5
Sodium	30.5	50000	197000[2]	**82800**	17950
Lead	1.6	10*	22.7	5.65	2.2
Vanadium	2.1	NLE	108	1.825	5.85
Zinc	3.8	5000	233	7.75	173
OTHER INORGANICS (µg/L)					
Sulfate	5.0	250000	NA	14.8	43.75

[1] - same compound as listed by NJDEP tetrachloroethylene

Compounds exceeding NJDEP groundwater quality criteria are noted by bold numbers.

NJDEP groundwater quality criteria consist of the higher number between the PQL or STANDARD

*PQL - Practical Quantitation Limit -was used as the NJDEP groundwater quality criteria

NLE - No Level Established

ND - Indicates that the compound was not detected above quantification limits

J - Indicates that the concentration value was estimated due to detection at or near the quantification limits

NA - Not Analyzed

** - Method detection limit exceeds NJDEP groundwater quality criteria

[2] - Monmouth County maximum background concentration.

exceedance of the established surface-water criteria in a surface-water sample (SS-6) collected downgradient of site M-5 from a previous investigation.

SVOCs

SVOCs were not detected above laboratory quantitation limits in the site monitor wells from either sampling round. The level of bis(2-ethylhexyl) phthalate that could be estimated below the laboratory quantitation limit was well below the NJDEP GWQC.

Pesticides/PCBs

Pesticides/PCBs were not detected in the site monitor wells from either sampling round.

Metals

As indicated in Table 4.2-8, of the 13 metals detected in site groundwater, 4 metals (aluminum, iron, manganese, and sodium) were found in concentrations exceeding the NJDEP GWQC. However, aluminum, iron, and manganese were found in concentrations below those determined for site-specific and Monmouth County maximum background levels. Although sodium was detected in a concentration in MW-10 greater than the level established as site-specific background, the concentration was well below the Monmouth County maximum background level.

Cyanide and Sulfate

Cyanide and sulfate were analyzed in site groundwater samples. Cyanide was not detected in the site monitor wells from either sampling round. Sulfate was detected at low levels in MW-10 and MW-11 from both sampling rounds, well below the NJDEP GWQC.

4.2.5.6 Recommendations

PCE was detected in the upgradient well in concentrations exceeding NJDEP GWQC and background from both sampling rounds. Because the site formerly had an NJPDES permit, surface water has been sampled since 1986. During previous investigations, PCE was also detected at downgradient surface-water sampling location SS-6 (WESTON, 1993). Surface water was not sampled at site M-5 during this investigation because the maximum VOC concentrations at this site during previous rounds of sampling were less than the maximum concentrations at site M-2, which is upgradient. For site M-2, the results of the current round of surface-water sampling for VOCs are less than the maximum results from previous rounds.

Although groundwater sample results exceeded NJDEP criteria for one VOC, immediate remedial action is not required. Groundwater flows toward and discharges into Mill Creek and Lafetra Creek, as indicated by water-level measurements in site monitor wells. Also, there are no known uses of groundwater between the source and the streams. No surface-water sampling was performed at this site during this project. Previous sampling rounds have indicated that some VOC concentrations exceed NJDEP surface-water criteria in Mill Creek adjacent to site M-5. However, previous rounds of sampling have indicated that VOC concentrations do not exceed surface-water criteria at site M-8, which is downgradient of site M-5. Therefore, there is little immediate threat to human health.

In addition, since the landfill has not been used for decades, the concentrations of VOCs seem, at worst, to be stable and possibly decreasing. Presumably, since no material is being added to the source (the landfill), natural degradation will decrease groundwater and surface-water contamination levels in the future.

Since the existing monitor wells and surface-water sampling locations are adequately placed to monitor downgradient groundwater and surface water, DPW proposes that a long-term surface-water and groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells and

surface-water samples would be collected from points yet to be determined. Compounds of concern identified in the first two rounds of sampling would be targeted for the monitoring program.

Site M-6

4.2.6 Burning Area (M-6)

4.2.6.1 Site Location

According to interviews with Fort Monmouth personnel, Burning Area M-6 consisted of open-air wood burning in small pits located on Landfill 3. Specific pit locations could not be discerned from aerial photograph review and site reconnaissance.

4.2.6.2 Site History

It is likely that the burning areas on Landfill 3 were used throughout the period when the landfill was in operation, 1959 through 1964. Specific burn areas have not been identified. At present, the surface in the eastern part of Landfill 3 is hummocky and grass covered.

4.2.6.3 Sampling Effort

This site was included in the Landfill 3 (M-3) investigation (see Subsection 4.3.3).

Site M-8

4.2.7 Landfill 8 (M-8)

4.2.7.1 Site Location

Landfill 8 (M-8) is located north of Buildings T-692 and S-697 in a bend of Parkers Creek (Figure 4.2-12). According to the *Phase I Engineering Study and Compliance Plan, Fort Monmouth Solid Waste Landfill* (Cosulich, 1981), a masonry dike was constructed around the landfill perimeter adjacent to Parkers Creek. The area within the dike is 9.5 acres, of which approximately 7.2 acres contain waste material. The approximate area of site M-8 is 315,000 ft^2 (7.2 acres).

4.2.7.2 Site History

Landfill 8 was operated from 1962 through 1981. In preparation for landfill operations, as mentioned previously, a masonry dike was constructed around the perimeter. According to Cosulich (1981), in the southern part of the landfill area, an approximately 0.9-acre area was excavated to 12 feet below grade prior to filling with solid waste. Waste material was deposited directly on the existing surface over the rest of the site. Cosulich found the bottom of fill to be 3 feet below sea level. The 1969 aerial photographs show an uneven surface with both pit-type disposal and piled-up debris. A number of drums stacked near the entrance just west of the STP are visible in the 1969 photos. The area just west of the stacked drums appears to have randomly strewn drums. In the western half of the site, there were two separate piles of telephone poles. One area in the south-central part of the landfill was used for the disposal of trees and brush.

The photos also show that soil was used to cover the trash. In 1969 part of the area was covered with vegetation.

At present, the landfill is covered with heavy brush and small trees. There is no visible evidence of the drums observed in the 1969 aerial photographs. Four monitor wells and several piezometers of unknown construction were found during the site walkover in 1993.

According to the IA in 1979, materials observed in Landfill 8 and determined from interviews, included unwashed pesticide/herbicide cans, batteries, fluorescent tubes, electronic components, garbage, asbestos wrappings from pipes, soot and boiler scale, sludge from STPs, small quantities of outdated drugs, outdated photographic chemicals in glass bottles, building rubble (including ACM), incinerator ash, sand from oil spill cleanups, and other debris. Cosulich reported that incinerator ash from the classified document incinerator (site M-7) ranging in thickness from 2.5 to 6.5 feet was found along the southern boundary of the landfill. Cosulich also reports that leaves and brush were placed in this landfill. From 1992 through the present, an adjacent area to the southeast of Landfill M-8 has been used for a leaf-composting operation. This operation has an NJDEP permit.

As part of an NJPDES permit, surface-water samples have been taken at two locations in Lafetra Creek since February 1986. The results are summarized in the recent report (WESTON, 1993). No compounds were detected in concentrations above the NJDEP surface-water criteria.

4.2.7.3 Sampling Effort

Because of the poor recovery of the original Landfill 8 monitor wells and the highly turbid conditions in the wells, all existing wells and piezometers were abandoned. Four new monitor wells (MW-12 through MW-15), shown in Figure 4.2-12, were installed and sampled twice for TCL +30 parameters, TAL metals, sulfate, ammonia, and cyanide in an effort to evaluate the impacts of previous site activities on groundwater quality. The new wells were surveyed and tidal water-elevation monitoring was conducted in the four new monitor wells and at stilling well-7 (Figure 4.2-12).

4.2.7.4 Hydrogeologic Interpretation

Lithologic logs from downgradient wells MW-13, MW-14, and MW-15 indicate that the lithology consists of a thin soil cover (0.4 ft) underlain by fill material. The components of the filled materials observed in the borings consisted of large wood chip fragments, amber glass chips, and traces of wires. Natural sandy silt with trace amounts of clay were intermixed with the manmade

materials. Monitor well MW-12, located upgradient of the landfill boundary, indicates a lithology consisting of an orange-brown medium-fine-grained sand with trace amounts of silt and clay.

Groundwater saturation observed during drilling operations ranged from 2 to 8 ft bgs, depending on the proximity to Parkers Creek. Monitor wells were screened across the water table and were drilled to 15 ft bgs at all well locations. Water-level elevation data, measured on 6 March 1995, indicate that local groundwater flow is generally north toward Parkers Creek (Figure 4.2-13). Based on groundwater elevation measurements, monitor wells MW-13, MW-14, and MW-15 are downgradient and MW-12 is upgradient of the area under investigation.

4.2.7.5 Groundwater Sampling Results

Monitor wells at site M-8 were sampled for the analytical parameters listed in Table 3.8-1. The analytical results for groundwater samples from the individual sampling rounds are listed in Appendix D. Table 4.2-9 compares the average concentrations of the detected compounds from the February and March sampling rounds with the NJDEP GWQC, and then compares the results with the subsequent site-specific and Monmouth County maximum background concentrations, where appropriate. Figure 4.2-14 presents the locations and average concentrations of compounds detected above the NJDEP GWQC and established maximum background at the Main Post.

VOCs

Three VOCs (tetrachloroethene, benzene, and chlorobenzene) were detected in site groundwater in one or both sampling rounds in concentrations exceeding the NJDEP GWQC. Tetrachloroethene was detected in MW-12, the upgradient well, from both sampling rounds. Benzene was detected below the laboratory quantitation limit in MW-15 from both sampling rounds; however, the level is estimated to be above the NJDEP GWQC of 1 µg/L. Chlorobenzene was detected in MW-15 from both sampling rounds and in MW-14 below laboratory quantitation limits, from the March sampling round only. VOC compounds were not detected in MW-13.

Table 4.2-9
Fort Monmouth - Main Post
Summary of Average Concentrations of Detected Compounds in Groundwater - Site M-8

COMPOUND	METHOD DETECTION LIMIT (µg/L)	NJDEP GROUNDWATER QUALITY CRITERIA (µg/L)	MAXIMUM BACKGROUND CONCENTRATION (µg/L)	ANALYTICAL RESULTS (µg/L) SAMPLING DATE			
				MW12 2/17/95, 3/15/95 (avg.)	MW13 2/22/95, 3/15/95 (avg.)	MW14 2/16/95, 3/15/95 (avg.)	MW15 2/22/95, 3/15/95 (avg.)
VOC's (µg/L)							
Tetrachloroethene (PCE)[1]	4.0**	1*	ND	**47**	ND	ND	ND
Benzene	3.3**	1*	ND	ND	ND	ND	**4.5J**
Chlorobenzene	2.7	4	ND	ND	ND	**6.5J**	**37.5**
Toluene	2.7	1000	ND	ND	ND	4.5J	ND
SVOCs (µg/L)							
1,4-Dichlorobenzene	4.8	75	ND	ND	ND	3J	4.5J
1,3-Dichlorobenzene	5.3	600	ND	ND	ND	ND	3.5J
1,2-Dichlorobenzene	5.7	600	ND	ND	ND	ND	3J
Naphthalene	8.4	NLE	ND	ND	ND	3J	3J
2-Methylnaphthalene	8.7	NLE	ND	ND	ND	1J	1.5J
Acenaphthene	6.7	400	ND	ND	ND	2J	15.5
Dibenzofuran	6.5	NLE	ND	ND	ND	ND	6J
Fluorene	6.3	300	ND	ND	ND	ND	8J
Carbazol	4.4	NLE	ND	ND	ND	ND	3J
METALS TOTAL (µg/L)							
Aluminum	24.0	200	121000	**738**	**512**	**2350**	**568**
Arsenic	1.9	8*	89.3	ND	ND	3.75	ND
Barium	1.7	2000	699	8.8	232	410	269
Beryllium	0.9	20*	7[1]	ND	ND	0.7	ND
Calcium	10.4	NLE	45400	8980	157500	159500	336000
Cadmium	2.8	4	9.5	ND	ND	2.95	ND
Cobalt	3.0	NLE	18.3	ND	ND	4.3	ND
Chromium	2.9	100	191	8.425	4.2	24	4.25
Copper	1.9	1000	730[2]	2.6	6.5	5.2	ND
Iron	6.4	300	431000	**2979.5**	**40000**	**57350**	**25800**
Mercury	0.2	2	0.26	ND	0.36	ND	ND
Potassium	685	NLE	137000	2815	19950	65150	35450
Magnesium	18.3	NLE	62700	2485	63950	77050	74000
Manganese	1.8	50	480[2]	10.25	**655**	**276**	**381**
Sodium	30.5	50000	197000[2]	21550	**156050**	**383500**	**229000**
Nickel	10.8	100	187	ND	ND	3.5	ND
Lead	1.6	10*	22.7	0.9	3.25	9.75	2.1
Vanadium	2.3	NLE	108	6.225	4.7	14.15	7.7
Zinc	3.8	5000	233	6.55	19.6	53.4	21.1
OTHER INORGANICS (µg/L)							
Ammonia as Nitrogen	0.2	500	NA	ND	2.75	36.3	30.25
Sulfate	5.0	250000	NA	40.9	24.15	11.4	81.35

[1] - same compound as listed by NJDEP tetrachloroethylene
Compounds exceeding NJDEP groundwater quality criteria are noted by bold numbers.
NJDEP groundwater quality criteria consist of the higher number between the PQL or STANDARD
*PQL - Practical Quantitation Limit -was used as the NJDEP groundwater quality criteria
NLE - No Level Established
ND - Indicates that the compound was not detected at the noted quantification limit
J - Indicates that the concentration value was estimated due to detection at or near the quantification limits
** - Method detection limit exceeds NJDEP groundwater quality criteria.
NA - Not Analyzed
[2] - Monmouth County maximum background concentrations.

SVOCs

One SVOC (acenaphthene) was detected above the laboratory quantitation limit in monitor well MW-15. Acenaphthene was detected in a concentration well below the NJDEP GWQC.

Pesticides/PCBs

Pesticides/PCBs were not detected in the site monitor wells from either sampling round.

Metals

As indicated in Table 4.2-9, of the 19 metals detected in site groundwater, 4 metals (aluminum, iron, manganese, and sodium) were found in concentrations exceeding the NJDEP GWQC. However, aluminum was found in concentrations below those determined for site-specific and Monmouth County maximum background levels. Although iron was found in concentrations well below site-specific maximum background levels, iron was detected in concentrations in MW-13 and MW-14 above Monmouth County maximum background levels. The presence of iron in exceedance of the criteria may be attributable to the high concentrations found in site background soils and is not a compound of concern. Manganese in MW-13 and sodium in MW-14 and MW-15 were detected in concentrations greater than both established background levels (Figure 4.2-14). Elevated sodium concentrations may be the result of saline water intrusion into the groundwater. These wells are near the Parkers Creek estuary. Saltwater has invaded the estuary (see Subsection 4.2.7.6.1) and intruded the aquifer monitored by these wells. Sodium is not a compound of concern. As discussed in Subsection 4.1, groundwater flowing through glauconitic formations contains abundant manganese. In addition, manganese is a common metal found in tidally influenced environments. Therefore, manganese is not identified as a compound of concern.

Cyanide, Sulfate, and Ammonia

Cyanide, sulfate, and ammonia as nitrogen were analyzed for in site M-8 groundwater. Cyanide was not detected in the site monitor wells from either sampling round. Sulfate was detected above the laboratory quantitation limit in both sampling rounds in MW-12, MW-13, MW-14, and MW-15. Ammonia as nitrogen was detected above the laboratory quantitation limit in both sampling rounds in MW-13 and MW-15. Ammonia, not detected from the February sampling round in MW-14, was detected in the March sampling round. Sulfate and ammonia were detected well below the NJDEP GWQC.

4.2.7.6 Tidal Monitoring

Tidal fluctuations in Parkers Creek were monitored at one station (stilling well-7) at Landfill 8 (M-8) (Figure 4.2-12). (Hydrographs are presented in Appendix E.) Changes in creek stage were compared to changes in water levels measured at the following monitor wells: MW-12, MW-13, MW-14, and MW-15. Wells MW-13, MW-14, and MW-15 are located within 100 feet of Parkers Creek, and well MW-12 is approximately 1,300 feet from Parkers Creek. The tidal monitoring station at Landfill 8 (M-8) records incoming and outgoing tides, but the lowest tidal effects are subdued. Peaks in creek levels corresponding to high tides are sharp, but peaks in creek levels corresponding to low tides are rounded because the elevation of the stream bed is higher than the elevation of sea level at low tide. The elevation of the stream bed is -1.02 ft msl at stilling well-7. The maximum change in creek levels at Landfill 8 (M-8) was 3.3 feet, and the maximum change in water level in the monitor well was 1.4 feet during the time of study. All site monitor wells were screened below sea level.

Data collected from well MW-12 are useful as baseline data during the tidal monitoring study conducted at Landfill 8 (M-8). There is no apparent relationship between water levels measured at well MW-12 and creek levels measured at stilling well-7. Well MW-12 is approximately 1,300 feet from the creek and is too distant to be influenced by changing creek levels. Water levels in the water-bearing unit and creek levels were slowly declining by about 0.1 foot during the tidal monitoring study in March 1995.

The response of water levels measured at well MW-14 is dampened, indicating a poor to moderate hydraulic connection between the water-bearing unit at MW-14 and the creek levels. The peak in water levels measured at well MW-14 occurs from 60 to 200 minutes after the peak in creek level at stilling well-7, and the water-level peaks at MW-14 are only about 10% of the tidal peak in creek levels.

There is an apparent hydraulic influence between the water-bearing unit at MW-13 and creek levels. Water levels measured at MW-13 respond quickly to high tides recorded in the creek. The response of water levels at MW-13 to low tides in the creek is subdued probably because low tides have less effect on Parkers Creek in the area of MW-13. This is expected because MW-13 is approximately 2,400 feet upstream from stilling well-7, and tidal changes in the creek diminish in the upstream direction, as documented at Landfill 2 (M-2). The ratio of change in water level in the water-bearing unit to change in creek levels was not calculated for this location because of the distance between the well and the tidal monitoring station.

There is an apparent hydraulic connection between the water-bearing unit at MW-15 and creek levels. Water levels measured at well MW-15 respond quickly to rising and falling creek levels. The peak in water levels measured at well MW-15 occurs at approximately the same time as the peak in creek levels at stilling well-7. The response of water levels at MW-15 to low tides in the creek is slightly subdued. At this location (stilling well-7, MW-15) water-level peaks at MW-15 are approximately 30 to 40% of the tidal peak in creek levels.

4.2.7.6.1 Conductivity and Salinity Results

Conductivity and salinity were measured at Parkers Creek and monitor wells (MW-12 through MW-15) at Landfill 8 (M-8) in January and March 1995. Measurements were collected at low tide and high tide each month to evaluate the extent of saltwater intrusion at each site (see Tables E-1 through E-3 in Appendix E).

The results indicate the presence of brackish to salty water in Parkers Creek at Landfill 8 (M-8). Specific conductance measured in Parkers Creek at Landfill 8 (M-8) is consistently greater than

2,000 µmhos. In addition, salinity measured in Parkers Creek at Landfill 8 (M-8) is consistently greater than 1.5 ppth.

Groundwater sampled from monitor well MW-12 exhibited low conductivity and zero salinity. Monitor wells MW-13, MW-14, and MW-15 indicate possible brackish to saltwater intrusion in an area of the water-bearing unit close to Parkers Creek.

4.2.7.7 Recommendations

Due to highly turbid conditions and poor water-level recovery of the original monitor wells, all original monitor wells and piezometers were abandoned.

Groundwater sampling results indicate low concentrations of benzene and chlorobenzene were detected in two downgradient monitor wells, and PCE concentrations were detected in the upgradient well (MW-12) exceeding NJDEP GWQC. Additionally, PCE and other VOCs were previously detected in surface-water samples at location SS-7, downstream of site M-8.

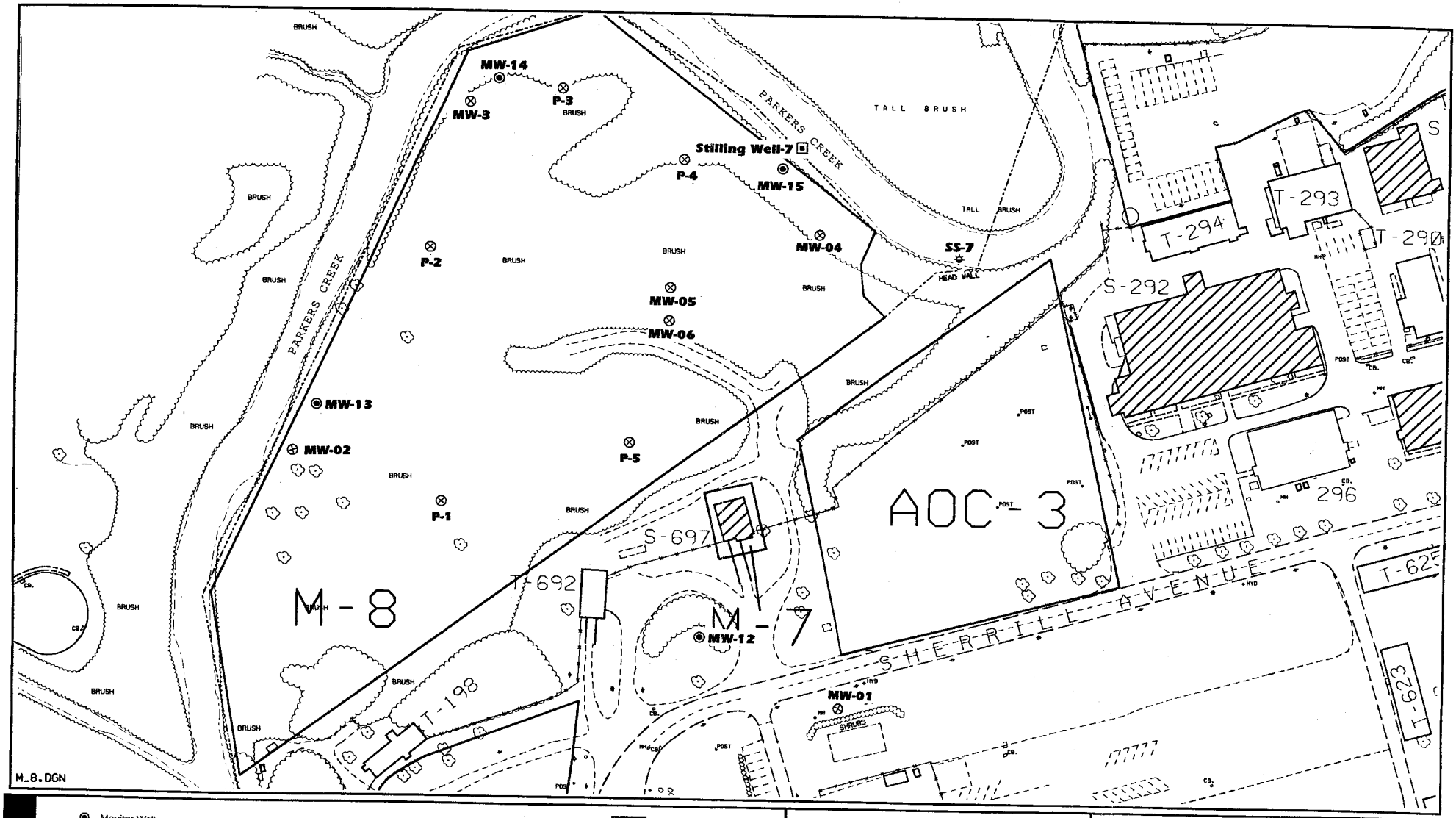
Because the site formerly had an NJPDES permit, surface water has been sampled since 1986. However, surface water was not sampled at site M-8 during this investigation because the maximum VOC concentrations at this site during previous rounds of sampling were less than the maximum concentrations at sites M-2 and M-3, which are upstream. The concentrations of VOCs at site M-8 for previous rounds were less than the NJDEP surface-water criteria.

The results of the tidal monitoring indicate that there is no apparent relationship between creek levels and water levels in MW-12 because of its distance from the creek. A poor to moderate relationship was measured between MW-14 and creek levels. A direct relationship was observed between creek levels and MW-13 and MW-15. The conductivity and salinity measurements in Parkers Creek indicate the presence of brackish to salty water at site M-8. Groundwater sampled from MW-12 indicates freshwater. Monitor wells MW-13, MW-14, and MW-15 indicate brackish to salty water in an area of the water-bearing unit close to Parkers Creek.

Although groundwater sample results exceeded NJDEP criteria for three VOCs, immediate remedial action is not required. Shallow groundwater flows toward and discharges to Lafetra Creek, as indicated by water-level measurements in site monitor wells. There are no known uses of groundwater at or downgradient of the site. In fact, groundwater at three of the four monitor wells is brackish and unsuitable for drinking. No surface-water sampling was performed at this site during this project. Previous sampling rounds have indicated that VOC concentrations did not exceed NJDEP surface-water criteria in the stream. Therefore, there is little immediate threat to human health.

In addition, since the landfill has not been used for decades, the concentrations of VOCs seem, at worst, to be stable and possibly decreasing. Presumably, since no material is being added to the source (the landfill), natural degradation will decrease groundwater and surface-water contamination levels in the future.

Since the existing monitor wells and surface-water sampling locations are adequately placed to monitor downgradient groundwater and surface water, DPW proposes that a long-term surface-water and groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells and surface-water samples would be collected from points yet to be determined. Compounds of concern identified in the first two rounds of sampling would be targeted for the monitoring program.



LEGEND

- Monitor Well
- Existing Surface Water Sampling Location
- Abandoned Monitor Well/ Piezometer
- Stilling Well
- Road (paved)
- Road/Trails (unpaved)
- Fence
- Building
- Wooded Area
- Tree/Bush
- Light Pole
- Utility Pole
- Site
- Brook/Creek
- Base Boundary
- Marshy Area
- Approximate Boundary

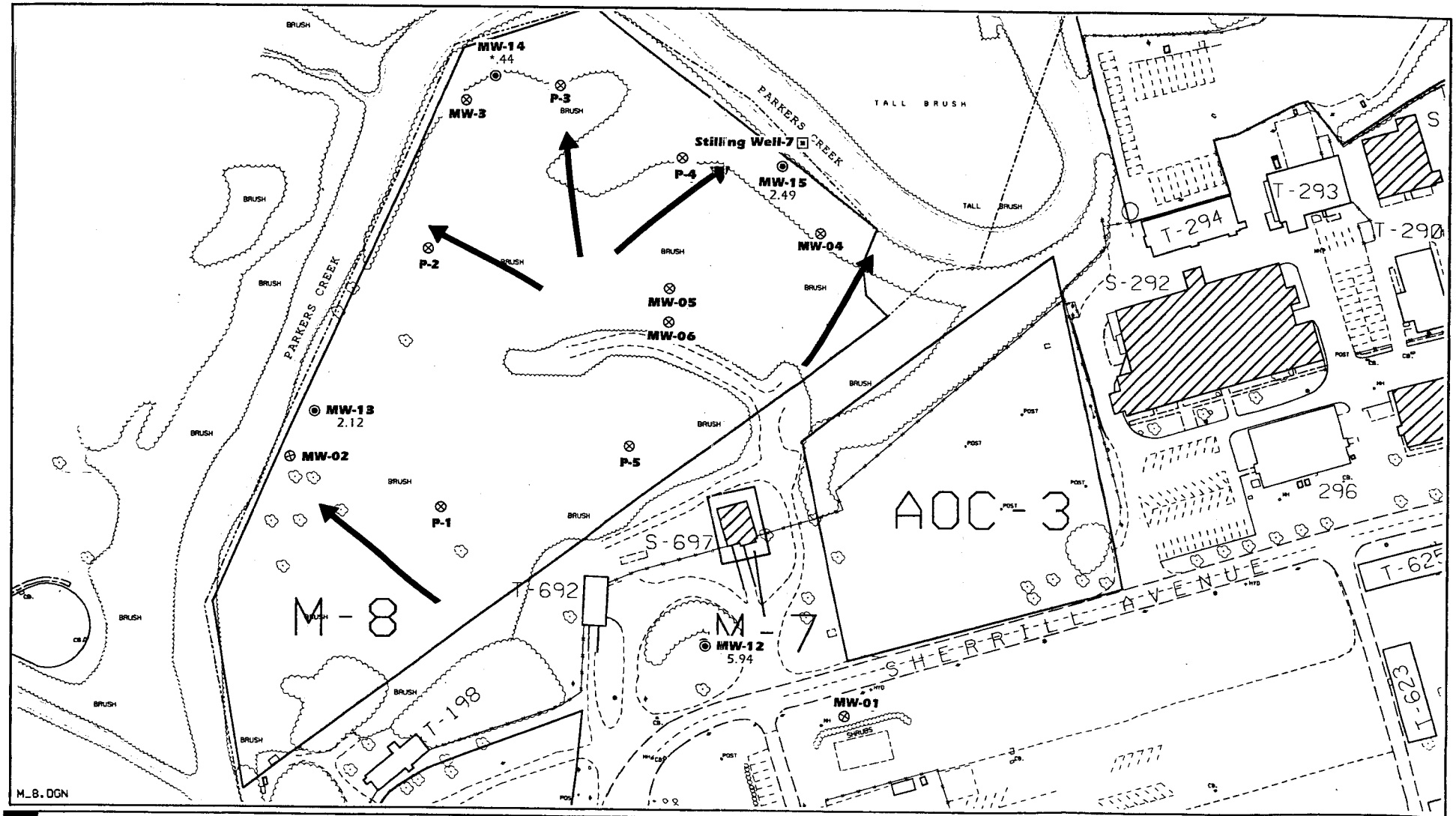
0 100 200
SCALE IN FEET

95P-3185 6/23/95

Fort Monmouth, Main Post

FIGURE 4.2-12

INCINERATOR (M-7) AND LANDFILL 8 (M-8) SAMPLING LOCATIONS



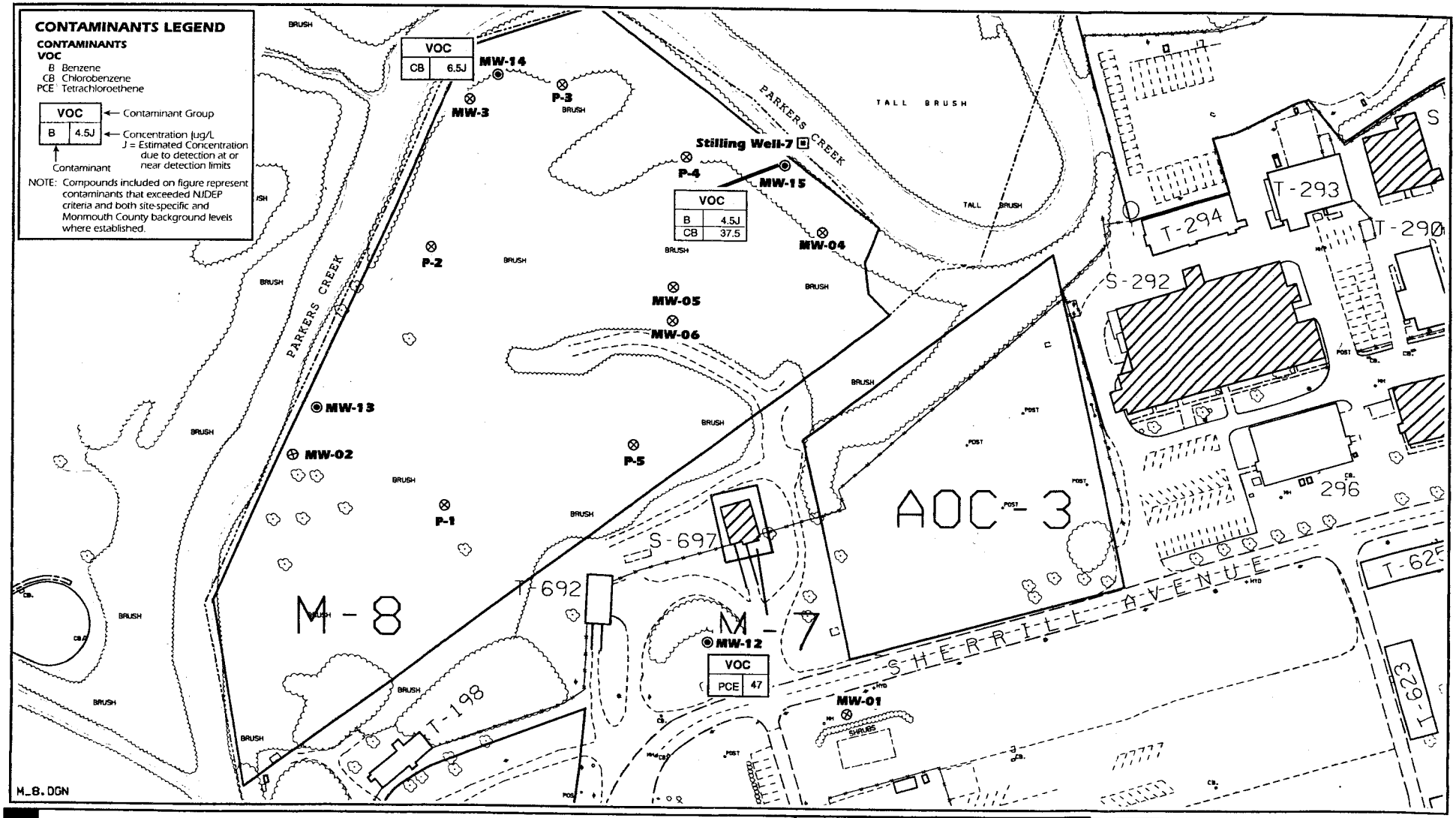
Fort Monmouth, Main Post

FIGURE 4.2-13

INCINERATOR (M-7) AND LANDFILL 8 (M-8)

APPROXIMATE GROUNDWATER FLOW DIRECTIONS

(Groundwater Elevations Recorded from March 1995 Sampling Round)



Fort Monmouth, Main Post

FIGURE 4.2-14
INCINERATOR (M-7) AND LANDFILL 8 (M-8)
DISTRIBUTION OF CONTAMINANTS
IN SITE GROUNDWATER

Site M-12

4.2.8 Landfill 12 (M-12)

4.2.8.1 Site Location

Landfill 12 (M-12) is located on the south side of Husky Brook, west of Murphy Drive (Figure 4.2-15). The approximate northwest area of site M-12 is 60,100 ft^2 (1.4 acres) and the approximate southwest area is 29,200 ft^2 (0.7 acre).

4.2.8.2 Site History

The period of operation of Landfill 12 is unknown. Landfill 12 most likely contains domestic and industrial wastes similar to that found in other Main Post landfills. This landfill may also have been used for automobile disposal. At present, the southern bank of Husky Brook is flat and grass covered.

4.2.8.3 Sampling Effort

GPR and magnetometer surveys were conducted to locate the landfill boundaries. Three monitor wells, MW-16, MW-17, and MW-18, were installed at the locations shown in Figure 4.2-15. The original locations of monitor wells MW-16 and MW-18 were repositioned during the field investigation activities. Monitor well MW-16 was moved because of possible accessibility problems (the proposed location of the well was inside the locked boat yard parking lot). Monitor well MW-18 was moved based on geophysical interpretations.

These wells were sampled twice for TCL +30 parameters, TAL metals, and cyanide. Tidal monitoring was conducted at the same time as tidal monitoring for Landfill 14.

4.2.8.4 Geophysical Results

The magnetometer survey conducted at the northeast portion of site M-12, i.e., M-12NE, revealed elevated total magnetic field readings located at relative grid coordinates 40N to 70N/335E to 400E and 70N to 80N/175E to 225E. As shown in Figure 4.2-16, the high magnetometer

readings are represented by the violet contour interval and are indicative of buried ferrous material. Another anomalous area indicating ferrous material was revealed at the southwest corner of site M12NE and is located at approximate grid coordinates 0N to 60S/50W to 100E. Cultural features affecting the magnetometer survey are the tower and guy wires centered about coordinate 60N/100E and the chainlink fence to the south of the survey area. As shown in Figure 4.2-17, the magnetic gradient anomalies coincide with the total magnetic field results, also suggesting the presence of buried ferrous material within the suspected landfill boundary.

The GPR survey at M-12NE revealed chaotic radar reflectors throughout the area. These radar waveforms may be indicative of coarse-grained fill material or naturally occurring sands and gravel. However, the radar data collected collaborates the existing magnetometer anomalies at grid coordinates 30N to 70N/335E to 350E and 30N to 70N/390E to 400E, suggesting buried ferrous material within the suspected landfill boundary.

Hyperbolic radar signatures appear traversing the site from approximately 280E to 300E at a depth of 3 ft bgs. These hyperbolic waveforms are interpreted to be an 18-in. diameter drainage pipe that was observed discharging to the stream.

Site M-12SW contained many cultural features scattered throughout the site, including overhead power lines and metallic surface debris, prohibiting total site coverage and producing anomalous magnetic signatures. The magnetometer survey revealed anomalous total magnetic field and gradient anomalies at the northwest portion of the survey area. Located within grid coordinates 0N to 50N and 50E to 120E, the anomalies are probably due to metallic debris observed on the surface. As shown in Figure 4.2-18, total magnetic field anomalies exist at grid coordinates 0N to 20N/140E to 180E and centered about coordinate 10S/200E. The magnetic gradient contour plot (Figure 4.2-19) confirms these anomalous magnetic signatures and reveals smaller discrete high and low gradient readings indicative of buried ferrous material from 10N to 10S and 120E to 240E.

The GPR survey revealed hyperbolic diffraction patterns at 10N/160E and 10S/200E, confirming the presence of the magnetometer anomalies at a depth of approximately 2 ft bgs. These

hyperbolic radar signatures are typical of buried manmade metallic cyclindrical objects such as pipe, utilities, and other metallic objects, as well as naturally occurring cobbles and large gravel. Chaotic radar reflectors were also found at the northeast quadrant of the site within grid coordinates 10N to 50N/250E to 300E. These chaotic waveforms are indicative of coarse-grained materials such as sand and gravel or disturbed subsurface conditions.

The results of the geophysical survey at M-12NE and M-12SW indicate that fill and buried ferrous material are present within the suspected boundaries of the landfill. Monitor wells and surface-water sample locations are positioned to adequately monitor groundwater downgradient of these areas.

4.2.8.5 Hydrogeologic Interpretation

Lithologic logs from the wells installed at M-12 indicate that the lithology consists of a thin soil cover (0.3 ft) underlain by fill material. The components of the filled materials observed in the borings consisted of organic debris and coal fragments intermixed with a moderate to poorly sorted olive-green-brown silty medium-fine-grained sand with little clay.

Saturation was observed at approximately 2 ft bgs across the site. The three monitor wells were screened across the water table and set at 14.5 ft bgs. Water-level elevation data, measured on 6 March 1995, prior to the March sampling round, indicate that local groundwater flows north toward Husky Brook (Figure 4.2-20). Based on groundwater elevation measurements, monitor wells MW-17 and MW-18 are located downgradient of the M-12 area.

4.2.8.6 Groundwater Sampling Results

Monitor wells at site M-12 were sampled for the analytical parameters listed in Table 3.8-1. The analytical results for groundwater samples from the individual sampling rounds are listed in Appendix D. Table 4.2-10 compares the average concentrations of the detected compounds from the February and March sampling rounds with the NJDEP GWQC, and then compares the results

Table 4.2-10
Fort Monmouth - Main Post
Summary of Average Concentrations of Detected Compounds in Groundwater - Site M-12

COMPOUND	METHOD DETECTION LIMIT (µg/L)	NJDEP GROUNDWATER QUALITY CRITERIA (µg/L)	MAXIMUM BACKGROUND CONCENTRATION (µg/L)	ANALYTICAL RESULTS (µg/L) SAMPLING DATE		
				MW16 2/20/95, 3/10/95 (avg.)	MW17 2/20/95, 3/10/95 (avg.)	MW18 2/20/95, 3/10/95 (avg.)
SVOCs (µg/L)						
bis-(2-Ethylhexyl)phthalate	9.7	30*	ND	3 J	2J	4 J
METALS TOTAL (µg/L)						
Aluminum	24.0	200	121000	**961**	173.5	**733**
Arsenic	1.9	8*	89.3	4.05	ND	1.475
Barium	1.7	2000	699	47.1	184	133.5
Calcium	10.4	NLE	45400	7860	50200	6235
Cadmium	2.8	4	9.5	2.475	ND	3.4
Cobalt	3.0	NLE	18.3	2.025	ND	2.675
Chromium	2.9	100	191	12.025	4.425	7.675
Copper	1.9	1000	730[1]	ND	14.1	5.1
Iron	6.4	300	431000	**19650**	**31250**	**1795**
Mercury	0.2	2	0.26	0.205	ND	ND
Potassium	685	NLE	137000	3040	4380	5115
Magnesium	18.3	NLE	62700	6120	4405	3935
Manganese	1.8	50	480[1]	46.05	**256**	16.8
Sodium	30.5	50000	197000[1]	17150	10285	21050
Nickel	10.8	100	187	3.75	ND	7.8
Lead	1.6	10*	22.7	1.1	1.3	3.1
Vanadium	2.3	NLE	108	6.35	ND	2.775
Zinc	3.8	5000	233	20.75	9.6	45.3

Compounds exceeding NJDEP groundwater quality criteria are noted by bold numbers.

NJDEP groundwater quality criteria consist of the higher number between the PQL or STANDARD

*PQL - Practical Quantitation Limit -was used as the NJDEP groundwater criteria

NLE - No Level Established

ND - Indicates that the compound was not detected at noted quantification limit

J - Indicates that the concentration value was estimated due to detection at or near the quantification limits

[1] - Monmouth County maximum background concentration.

with the subsequent site-specific and Monmouth County maximum background concentrations, where appropriate.

VOCs

VOCs were not detected in the site monitor wells from either sampling round.

SVOCs

SVOCs were not detected in the site monitor wells above laboratory quantitation limits from either sampling round. The estimated value for bis(2-ethylhexyl) phthalate is below NJDEP GWQC.

Pesticides/PCBs

Pesticides/PCBs were not detected in the site monitor wells from either sampling round.

Metals

As indicated in Table 4.2-10, of the 18 metals detected in site groundwater, 3 (aluminum, iron, and manganese) were found in concentrations exceeding the NJDEP GWQC. However, all metals were found in concentrations below those determined for site-specific or Monmouth County maximum background levels. Although the concentration of aluminum exceeded the Monmouth County background level in MW-17, the concentration was well below the site-specific background level established at the Main Post.

Cyanide

Cyanide was not detected in the site monitor wells from either sampling round.

4.2.8.7 Tidal Monitoring — Landfill 12 and Landfill 14 (M-12 and M-14)

Tidal fluctuations in Husky Brook were monitored at an upstream tidal monitoring station (stilling well-8) and at a downstream tidal monitoring station (stilling well-9) at Landfills 12 and 14 (Figure 4.2-15). The tidal monitoring stations are approximately 400 feet apart and tidal changes at both stations are similar. Changes in creek levels measured at station stilling well-8 were compared to changes in water levels measured at monitor wells MW-16 through MW-21 (see Appendix E).

Monitor wells MW-17, MW-18, MW-19, and MW-21 are located within 150 feet of the creek, and wells MW-16 and MW-20 are located 150 feet or more from the creek. The tidal monitoring station at Landfills 12 and 14 records high and low tides, but the lowest tidal peaks are slightly subdued. The stream bed elevation at Landfills 12 and 14 is the lowest of the three areas studied and is more affected by low tides. Stream bed elevation is -1.71 ft msl at stilling well-8 and -1.63 ft msl at stilling well-9. The maximum change in creek levels during the study was 3.3 feet. The maximum change in water level in the monitor well was approximately 1.6 feet during the time of study.

Data collected from wells MW-19 and MW-20 are useful as baseline data during the tidal monitoring study conducted at Landfills 12 and 14. There is no apparent relationship between water levels measured at wells MW-19 and MW-20 and creek levels measured at stilling well-8. Well MW-19 is approximately 150 feet from the creek, but is about 1,600 feet upgradient from stilling well-8. Well MW-20 is approximately 700 feet from the creek and is too distant to be influenced by changing creek levels. Water levels in the water-bearing unit and creek levels were fluctuating by less than 0.1 foot during the tidal monitoring study in March 1995.

The response of water levels measured at wells MW-16, MW-17, and MW-18 indicates a poor to moderate degree of hydraulic connection between the water-bearing unit in the area around these wells and the creek levels. There is a small lag time between tidal peaks in the creek and water-level peaks in each of the three wells. The magnitude of water-level changes in these three wells is small, between 5% and 15% of the magnitude of tidal changes in the creek.

There is an apparent hydraulic influence between the water-bearing unit at MW-21 and creek levels. Water-level data from monitor well MW-21 were compared with creek level data from station stilling well-8. The peak in water levels measured at well MW-1 occurs approximately 70 to 120 minutes after the peak in creek levels at stilling well-8, but the ratio of change in water level in the water-bearing unit to change in creek levels at this location (stilling well-8, MW-21) is approximately 40% to 50%. This high ratio indicates a high degree of hydraulic influence.

4.2.8.7.1 Conductivity and Salinity Results

Conductivity and salinity were measured in Husky Brook and in the monitor wells at Landfill 12 (M-12) and Landfill 14 (M-14) in January and March 1995 and are presented in Appendix E. Measurements were collected at low tide and high tide each month to evaluate the extent of saltwater intrusion at each site.

The results indicate the presence of brackish to salty water in Husky Brook at Landfills 12 and 14 (M-12, M-14).

Specific conductance measured in Husky Brook at Landfills 12 and 14 (M-12, M-14) is consistently greater than 2,000 µmhos. In addition, salinity measured in Husky Brook at Landfills 12 and 14 (M-12, M-14) is consistently greater than 1.5 ppth. The results are consistent with the higher streambed elevation at Landfill 2 (M-2) compared to Landfill 8 (M-8) and Landfills 12 and 14 (M-12, M-14).

Groundwater sampled from monitor wells at each location generally exhibit low conductivity and zero salinity.

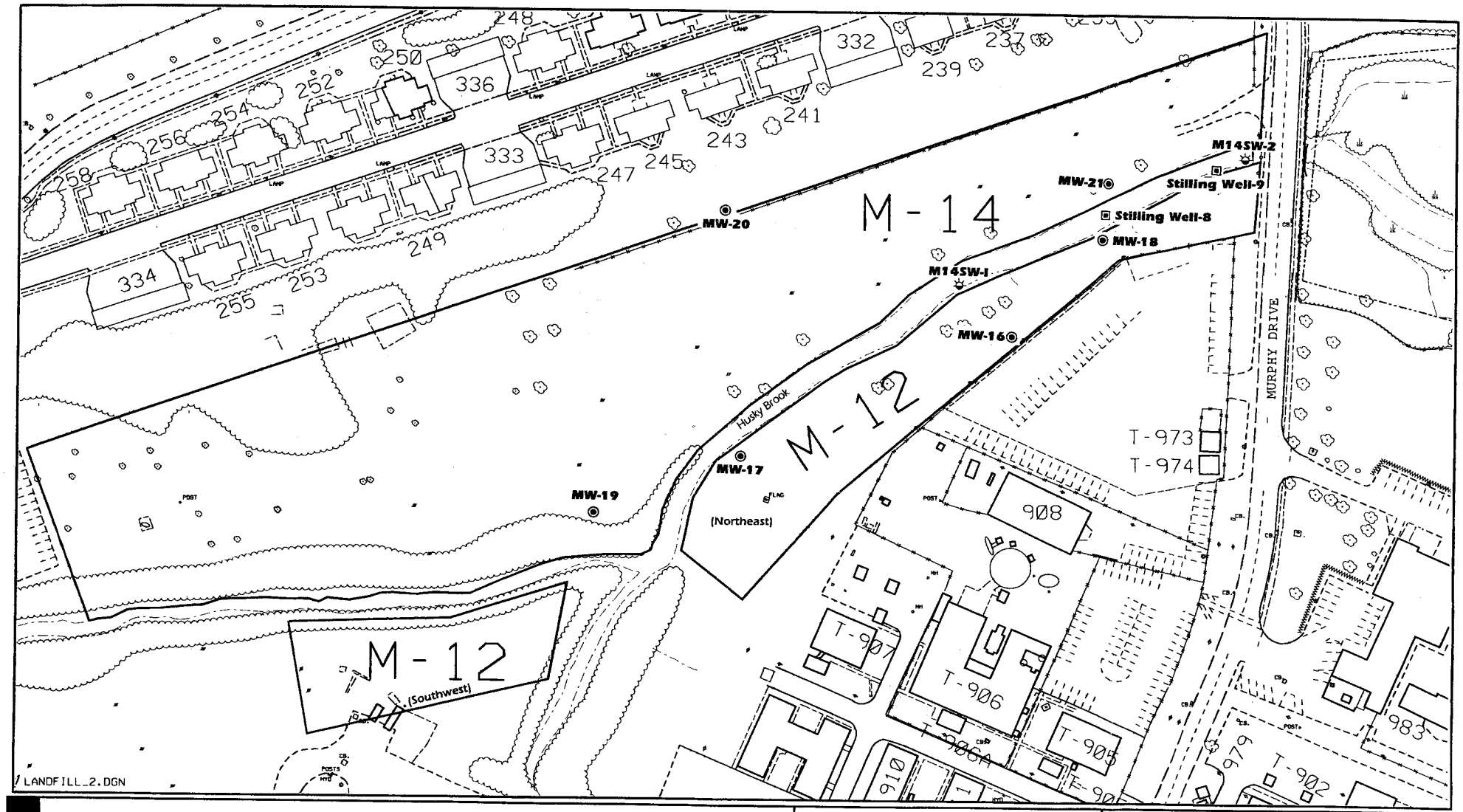
4.2.8.8 Recommendations

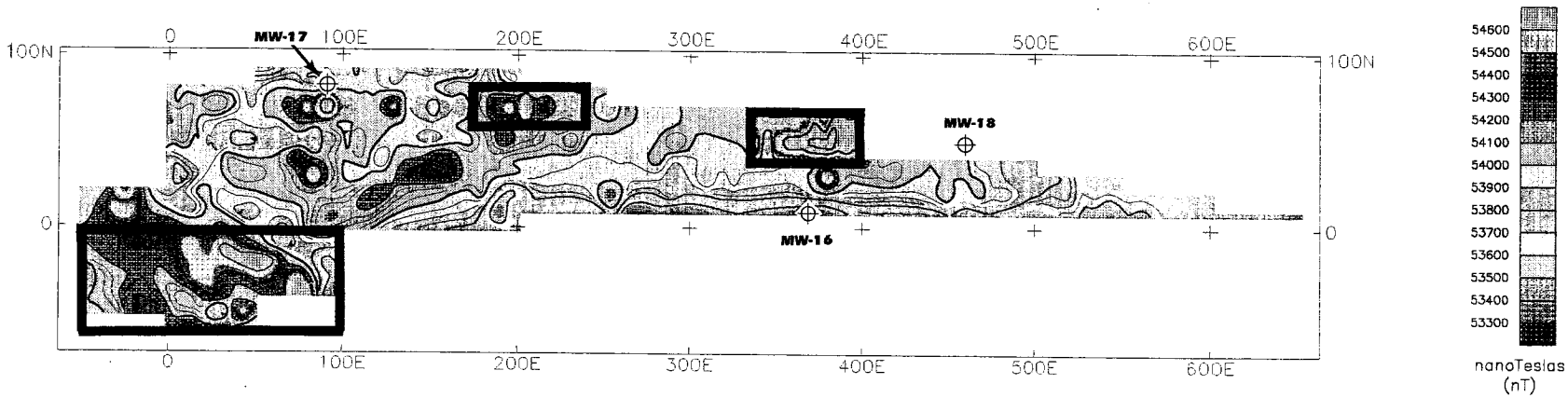
The results of the geophysical surveys indicate that the identified fill and buried ferrous material are present within the suspected boundaries of the landfill. Monitor wells are positioned to adequately monitor groundwater downgradient of these areas.

Groundwater sampling results indicate that no compounds of concern exceeded NJDEP GWQC from upgradient and downgradient wells.

The results of the tidal monitoring relate to both sites M-12 and M-14. The data indicate that there is no apparent relationship between creek levels and water levels in MW-19 and MW-20. A poor to moderate relationship was measured between MW-16, MW-17, and MW-18 and creek levels. A direct relationship was observed between creek levels and MW-21. The conductivity and salinity measurements in Husky Brook indicate the presence of brackish to salty water at sites M-12 and M-14. Groundwater sampled from monitor wells at each location indicates freshwater.

Although no compounds of concern were identified at site M-12, because of the site's history of being used as a landfill, DPW proposes that a long-term groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells. Contaminants identified in the first two rounds of sampling would be targeted for the monitoring program.


M-14
M-12
M-12
(Northeast)
(Southwest)
MW-20
MW-21
MW-18
MW-16
MW-17
MW-19
M14SW-1
M14SW-2
Stilling Well-8
Stilling Well-9
Husky Brook
MURPHY DRIVE
T-973
T-974
T-907
T-906
T-906A
T-905
T-902
908
910
976
983
LANDFILL_2.DGN
LEGEND
Monitor Well
Existing Surface Water Sampling Location
Stilling Well
Road (paved)
Road/Trails (unpaved)
Fence
Building
Wooded Area
Tree/Bush
Light Pole
Utility Pole
Site
Brook/Creek
Base Boundary
Marshy Area
Approximate Boundary
0
100
200
SCALE IN FEET
95P-3186
6/23/95
Fort Monmouth, Main Post
FIGURE 4.2-15
LANDFILLS 12 (M-12) AND 14 (M-14)
SAMPLING LOCATIONS



LEGEND

Monitor Well

Buried Ferrous Material

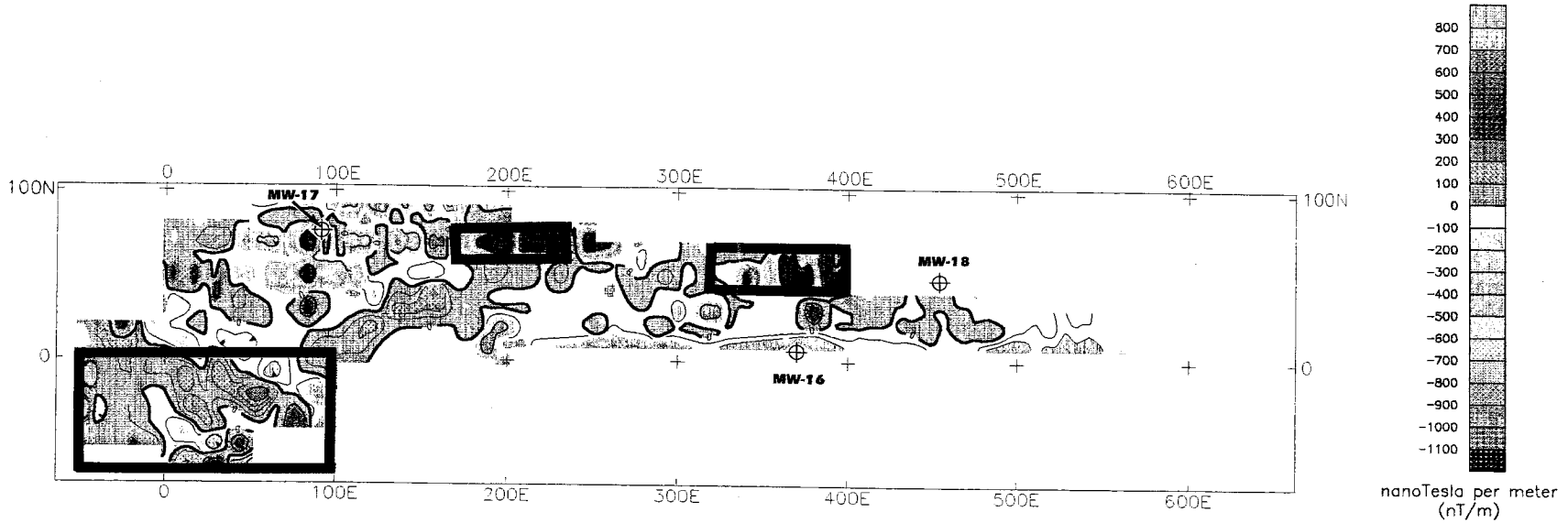
0 50 100 150

SCALE IN FEET

Fort Monmouth, Main Post Site M-12 NE

FIGURE 4.2-16
MAGNETOMETER SURVEY
TOTAL MAGNETIC FIELD – SITE M-12 NE

95P-3235 6/27/95



LEGEND

Monitor Well

Buried Ferrous Material

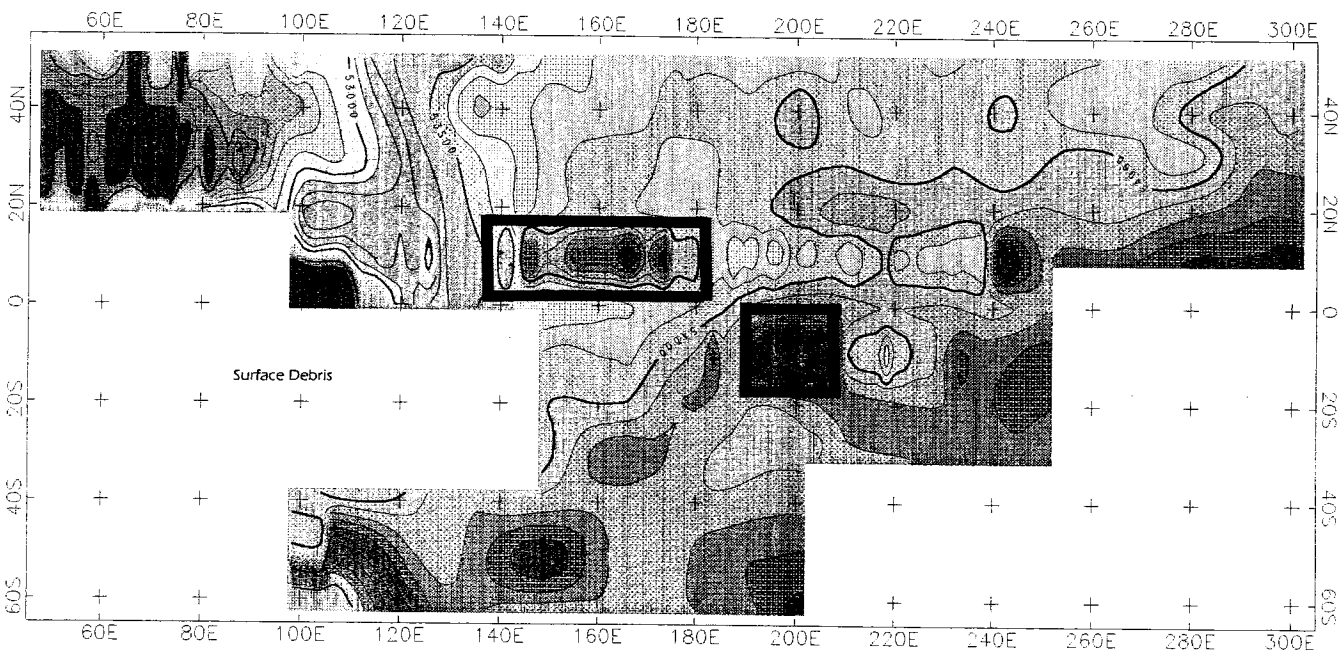
0 50 100 150

SCALE IN FEET

Fort Monmouth, Main Post Site M-12 NE

FIGURE 4.2-17
MAGNETOMETER SURVEY
MAGNETIC GRADIENT – SITE M-12 NE

95P-3236 6/27/95



LEGEND

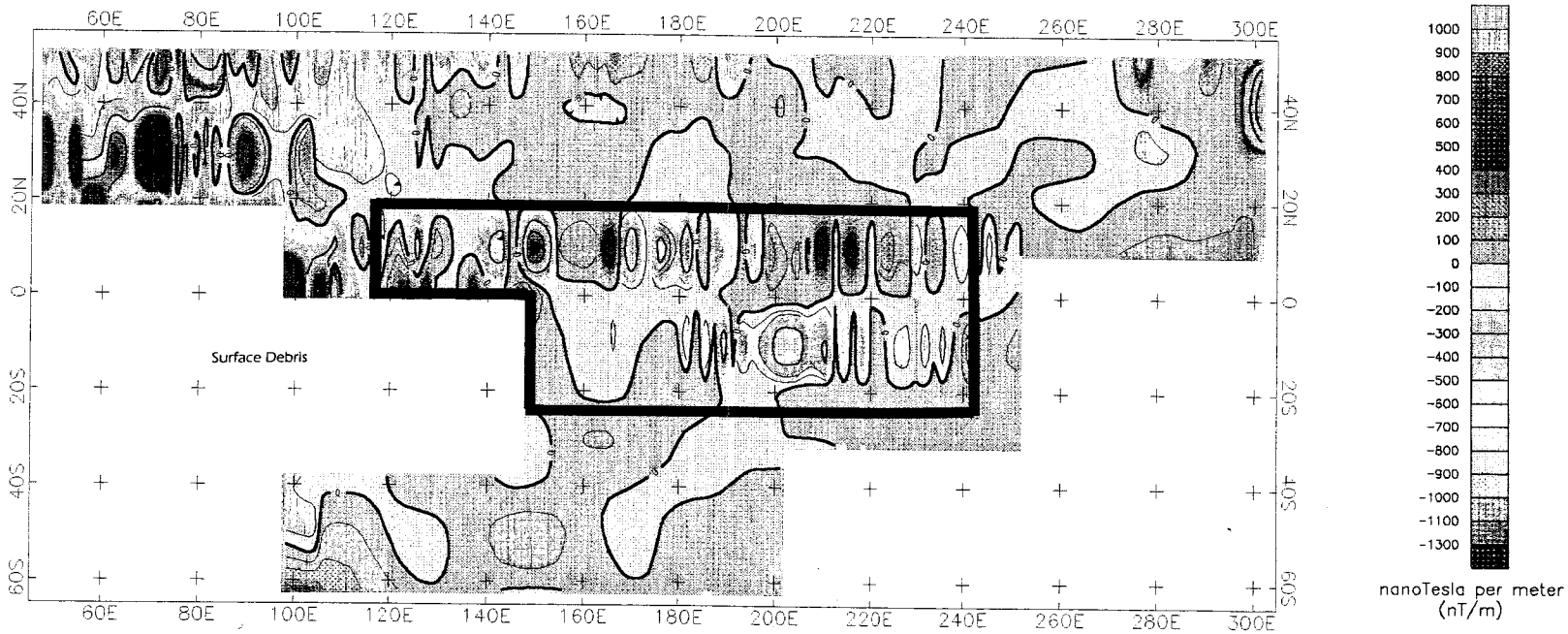
Possible Fill Area Boundary

0 10 20 30 40 50
SCALE IN FEET

Fort Monmouth, Main Post Site M-12 SW

FIGURE 4.2-18
MAGNETOMETER SURVEY
TOTAL MAGNETIC FIELD – SITE M-12 SW

95P3737 6/27/95



LEGEND

Possible Fill Area Boundary

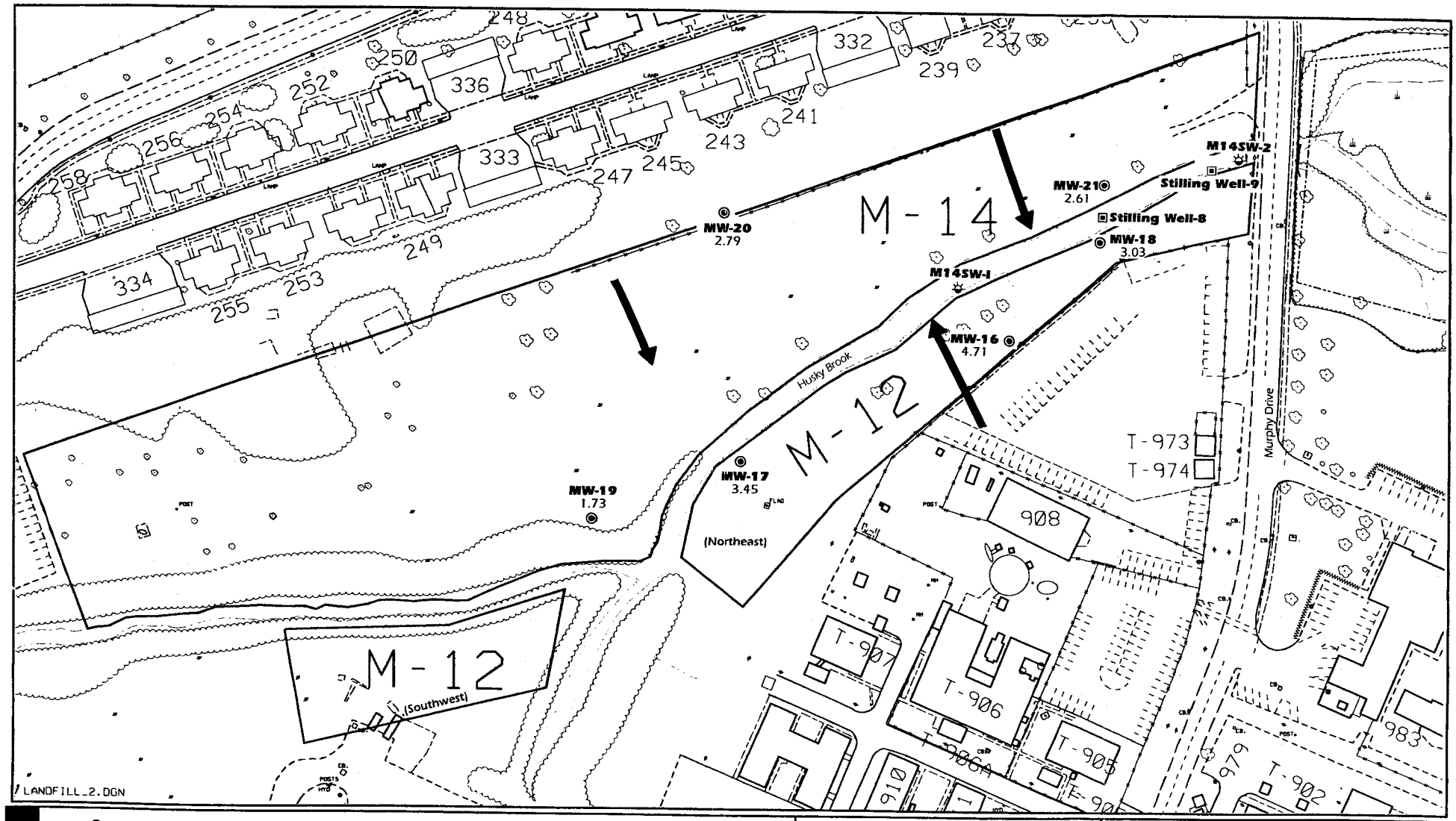
0 10 20 30 40 50

SCALE IN FEET

Fort Monmouth, Main Post Site M-12 SW

FIGURE 4.2-19
MAGNETOMETER SURVEY
MAGNETIC GRADIENT – SITE M-12 SW

95P-323B 6/27/95



Fort Monmouth, Main Post

FIGURE 4.2-20
LANDFILLS 12 (M-12) AND 14 (M-14)
APPROXIMATE GROUNDWATER FLOW DIRECTIONS
(Groundwater Elevations Recorded from March 1995 Sampling Round)

Site M-14

4.2.9 Landfill 14 (M-14)

4.2.9 1 Site Location

Landfill 14 (M-14) is located on the north bank of Husky Brook in the area west of Murphy Drive (Figure 4.2-15). This area is north of the suspected location of Landfill 12. The approximate area of site M-14 is 300,000 ft^2 (6.9 acres).

4.2.9.2 Site History

Both a 1935 Fort Monmouth map and the 1940s aerial photograph show a marshy area in this location. According to the IA, Landfill 14 was used in 1965 and 1966 for the disposal of building rubble that was covered by dredgings from Husky Brook Lake. A figure in Cosulich shows a 1940s-era landfill in the western part of the area. This 1940s landfill may have contained general domestic and industrial wastes similar to that found in other Main Post landfills.

As part of an NJPDES permit, surface-water samples have been taken at two locations in Husky Brook since February 1986. The results are summarized in the recent report (WESTON, 1993). No compounds were detected in concentrations above the NJDEP surface-water criteria.

4.2.9.3 Sampling Effort

GPR and magnetometer surveys were conducted in the western half of this site to ascertain whether the landfill extends into this area. Three monitor wells (MW-19 through MW-21), shown in Figure 4.2-15, were installed and sampled twice for TCL +30 parameters, TAL metals, and cyanide. Tidal monitoring was conducted at the same time as the tidal monitoring at Landfill 12. Surface-water samples were taken at M14SW-1 and M14SW-2.

4.2.9.4 Geophysical Results

The magnetometer survey at site M-14 shows the majority of the site to have background total magnetic field readings of approximately 54,000 nT, as shown on the total magnetic field contour plot in Figure 4.2-21. However, anomalous readings exist at grid coordinates along the 100N traverse from 0E to 700E, 20N/100E, 40N/760E, 40N/810E, and 0 to 90S/300E to 700E. These anomalies, mostly represented by the blue contour interval or approximately 48,000 nT, can be attributed to cultural features such as a buried gas main, a fence, playground apparatus, and overhead power lines, respectively. The magnetic gradient component confirms the total field anomalies as shown in Figure 4.2-22. A smaller discrete anomaly exists at grid coordinate 40N from 420E to 470E, which is indicative of buried ferrous material.

The overhead power lines could be masking the magnetic response that any potential buried ferrous material may have, however, the GPR survey was conducted to identify any subsurface "disturbances" such as metallic fill material. Chaotic radar reflectors, indicative of fill material, coarse-grained soils, or disturbed soils, were found mainly along the treeline at grid coordinates 0 to 60S/150E to 250E, and 75S to 120S/400E to 475E. Chaotic radar reflectors, corresponding to a magnetic gradient anomaly, exist at 0 to 20N/450E to 575E, and are indicative of ferrous material. Hyperbolic radar signatures, identified as the gas main, were revealed along the 100N traverse at a depth of approximately 3 ft bgs.

While magnetometer and GPR anomalies exist throughout the site, a discrete landfill boundary was not identified at site M-14. This may be due in part to the composition of the fill material, as described in the lithologic logs, and the lack of metallic material.

4.2.9.5 Hydrogeologic Interpretation

Lithologic logs from site monitor wells indicate that the lithology consists of a thin soil cover (0.4 ft) underlain by fill material. The components of the filled materials observed in the borings consisted of concrete rubble, charcoal, wood, and glass fragments intermixed with a gray-green silty fine-coarse-grained sand with little clay and gravel.

Groundwater saturation was observed in the boreholes during activities between 4 and 6 ft bgs. The three monitor wells were screened across the water table, with total depths of 14, 15, and 16 ft bgs in MW-19, MW-20, and MW-21, respectively. Water-level elevation data, measured on 6 March 1995, indicate that local groundwater flow is south toward Husky Brook (Figure 4.2-20). Based on groundwater elevation measurements, monitor wells MW-19 and MW-21 are downgradient of the M-14 area.

4.2.9.6 Groundwater Sampling Results

Monitor wells at site M-14 were sampled for the analytical parameters listed in Table 3.8-1. The compounds detected in groundwater samples from the individual sampling rounds, with the corresponding sample identifications, are listed in Appendix D. Table 4.2-11 compares the average concentrations of the detected compounds from the February and March sampling rounds with the NJDEP GWQC, and then compares the results to the subsequent site-specific and Monmouth County maximum background concentration, where appropriate.

VOCs

VOCs were not detected in the site monitor wells from either sampling round.

SVOCs

SVOCs were not detected in the site monitor wells from either sampling round.

Pesticides/PCBs

Pesticides/PCBs were not detected in the site monitor wells in either sampling round.

Table 4.2-11
Fort Monmouth - Main Post
Summary of Average Concentrations of Detected Compounds in Groundwater - Site M-14

COMPOUND	METHOD DETECTION LIMIT (µg/L)	NJDEP GROUNDWATER QUALITY CRITERIA (µg/L)	MAXIMUM BACKGROUND CONCENTRATION (µg/L)	ANALYTICAL RESULTS (µg/L) SAMPLING DATE		
				MW19 2/20/95, 3/10/95 (avg.)	MW20 2/22/95, 3/13/95 (avg.)	MW21 2/22/95, 3/9/95 (avg.)
METALS TOTAL (µg/L)						
Aluminum	24.0	200	121000	**393**	**903.5**	**1380**
Arsenic	1.9	8*	89.3	ND	6.3	2.33
Barium	1.7	2000	699	214.5	48.7	35.2
Beryllium	0.9	20*	7[1]	ND	0.245	ND
Calcium	10.4	NLE	45400	38700	31850	32800
Cobalt	3.0	NLE	18.3	2.03	ND	ND
Chromium	2.9	100	191	4.925	9.625	12.65
Copper	1.9	1000	730[1]	8.15	8.3	2.35
Iron	6.4	300	431000	**41400**	**7960**	**5685**
Potassium	685	NLE	137000	4660	5316	7490
Magnesium	18.3	NLE	62700	5185	4270	4060
Manganese	1.8	50	480[1]	**550.5**	**199.5**	**64.45**
Sodium	30.5	50000	197000[1]	8815	22600	6700
Nickel	10.8	100	187	3.35	5.65	ND
Lead	1.6	10*	22.7	**18.75**	4.65	3.45
Vanadium	2.3	NLE	108	ND	6.25	8.75
Zinc	3.8	5000	233	89.5	14.5	13.5

Compounds exceding NJDEP groundwater quality criteria are noted by bold numbers.

NJDEP groundwater quality criteria consist of the higher number between the PQL or STANDARD

*PQL - Practical Quantitation Limit -was used as the NJDEP groundwater quality criteria

ND - Indicates that the compound was not detected at the noted quantification limits

NLE - No Level Established

[1] - Monmouth County maximum background concentration.

Metals

As indicated in Table 4.2-11, of the 17 metals detected in site groundwater, 4 (aluminum, iron, manganese, and lead) were found in concentrations exceeding the NJDEP GWQC. In addition, manganese was found in a concentration greater than both the site-specific and the Monmouth County maximum background level in MW-19 only. As discussed in Subsection 4.1, groundwater flowing through glauconitic formations contains abundant manganese. In addition, manganese is a common metal found in tidally influenced environments. Therefore, manganese is not identified as a compound of concern. Aluminum and lead were found in concentrations below those determined for site-specific and Monmouth County maximum background levels.

Although the concentration of iron exceeded the Monmouth County background level in MW-19, the concentration was well below the site-specific background level established at the Main Post.

The lower reaches of Husky Brook are tidal. The sodium content of surface water is saline (Subsection 4.2.9.7), suggesting that saltwater has encroached upon this section of Husky Brook. The relatively high sodium content of the monitor wells in the vicinity of Husky Brook is caused by the saltwater encroachment.

Cyanide

Cyanide was not detected in the site monitor wells from either sampling round.

4.2.9.7 Surface-Water Sampling Results

Two surface-water samples, M14SW-1 and M14SW-2 were collected at M-14 (Figure 4.2-15). Both samples were determined to be saltwater based on conductivity and salinity results, and total (unfiltered) and soluble (filtered) concentrations were compared to NJDEP saltwater criteria and background (Table 4.2-12).

Table 4.2-12
Fort Monmouth - Main Post
Summary of Detected Compounds in Surface Water
Total and Soluble - Site M-14

COMPOUND	METHOD DETECTION LIMIT	NJDEP SURFACE WATER CRITERIA[a] SALINE WATER	MAXIMUM BACKGROUND CONCENTRATION (TOTAL)	MAXIMUM BACKGROUND CONCENTRATION (SOLUBLE)	ANALYTICAL RESULTS SAMPLING DATE - 12/1/1994			
					M14 (Total)		M14 (Soluble)	
					SW-1	SW-2	SW-1	SW-2
VOC's (µg/L)								
1,2-Dichloroethene (total)	4.4	NLE	ND	ND	4 J	5 J	NA	NA
SVOCs (µg/L)								
bis-(2-Ethylhexyl)phthalate	9.7	5.92 (hc)	ND	ND	ND	2 J	NA	NA
METALS TOTAL (µg/L)								
Aluminum	26.7	NLE	748	ND	188	205	ND	26.7
Barium	2.1	NLE	44.7	39.4	30	33.1	27.2	31.2
Calcium	12	NLE	31600	30900	16200	20400	16300	20300
Cobalt	2.4	NLE	8.1	4.1	ND	ND	ND	ND
Copper	2.4	NLE	3.2	4	2.9	5.3	5.6	4.9
Iron	4.7	NLE	6210	405	1920	2070	839	999
Lead	1.6	NLE	10	ND	3.4	2.8	3.1	3.2
Magnesium	38.2	NLE	5440	5120	9770	21400	9540	21600
Manganese	2.0	100 (h)	113	98.6	65.6	68.4	63.6	66.1
Nickel	12.8	NLE	22.9	16.1	14.2	ND	ND	ND
Potassium	821	NLE	5060	4280	4840	8320	4240	8220
Sodium	15.4	NLE	26700	26200	70100	168000	69100	171000
Zinc	2.8	NLE	35.1	23.8	23.7	23.4	14.4	13.2

[a] - NJDEP Surface Water Quality Standards (1993).
h -Non carcinogen effect-based human health criteria as a 30 day average.
hc - Carcinogen effect-based human health criteria as 70 year average.
ND - Indicates that the compound was not detected at the noted quantification limit.
J - Indicates that the concentration value was estimated due to detection at or near the quantification limit.
NLE - No Level Established
NA - Not Analyzed.
Compounds dectected above NJDEP Surface Water Criteria are noted by bold numbers.

VOCs

VOCs were analyzed for but were not detected above the laboratory quantitation limit in site surface-water samples.

SVOCs

SVOCs were analyzed for but were not detected above the laboratory quantitation limit in site surface-water samples.

Pesticides/PCBs

Pesticides/PCBs were analyzed for but were not detected in site surface-water samples.

Metals

As indicated in Table 4.2-12, no metals were found in concentrations exceeding the NJDEP surface-water criteria (saline).

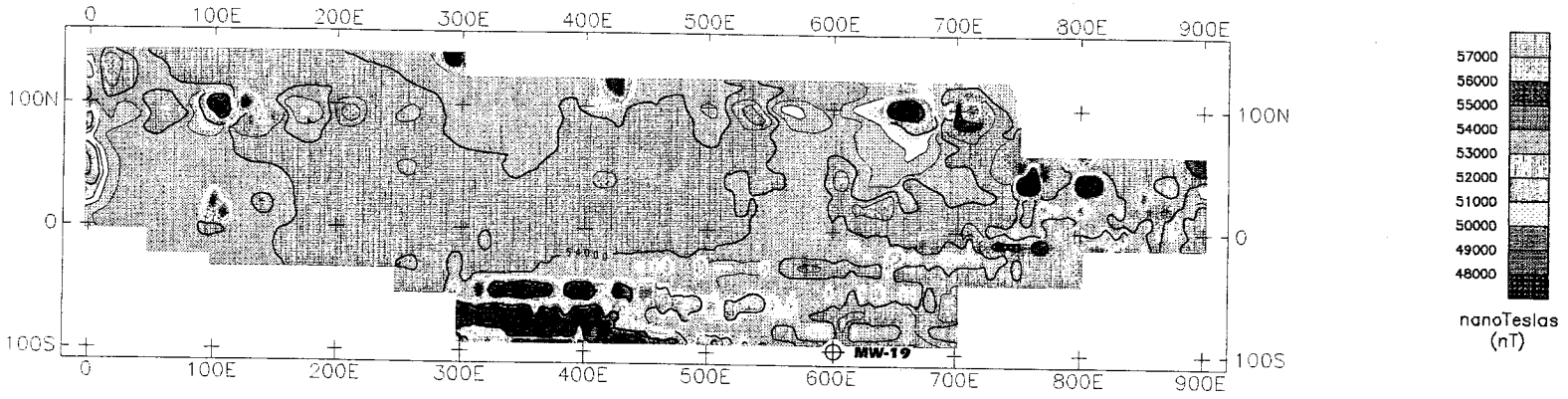
4.2.9.8 Recommendations

The results of the geophysical surveys indicate that fill and some metallic debris exist throughout the site; however, a discrete landfill boundary was not identified at site M-14. This may be due in part to the composition of the fill material and the small amount of subsurface metallic material present at the site.

The groundwater and surface-water sampling results indicate that no compounds of concern were detected above NJDEP GWQC and surface-water criteria.

Tidal monitoring was conducted at site M-12 and site M-14 simultaneously. The results of the tidal monitoring are discussed in Subsection 6.1.6.

Although no compounds of concern were identified at site M-14, because of the site's history of being used as a landfill, DPW proposes that a long-term surface-water and groundwater monitoring program be developed and implemented for the site. Aqueous samples would be collected and analyzed on a quarterly basis to further evaluate water quality conditions at the site. Groundwater samples would be collected from existing monitor wells and surface-water samples would be collected from points yet to be determined. Contaminants identified in the first two rounds of sampling would be targeted for the monitoring program.



LEGEND

Monitor Well

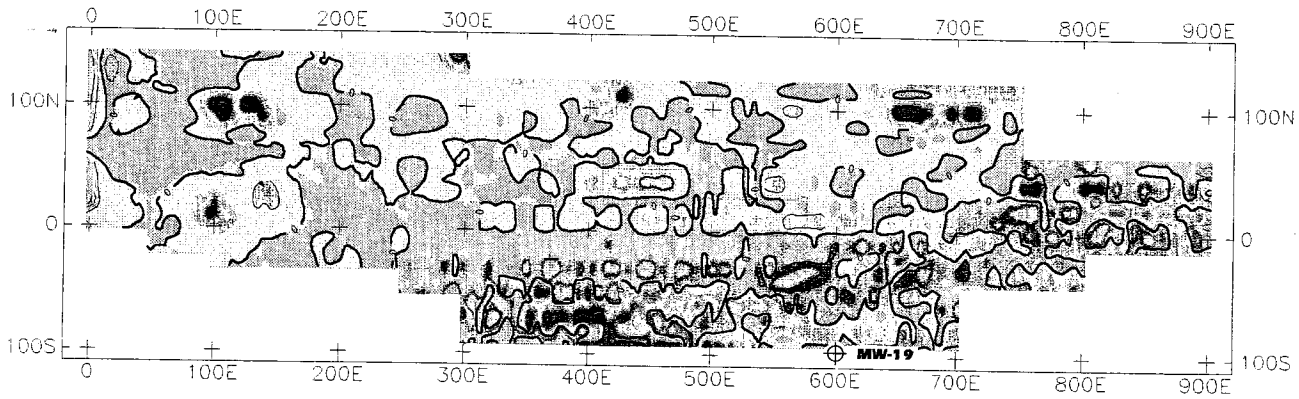
0 50 100 150 200

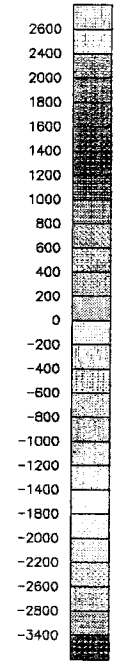
SCALE IN FEET

Fort Monmouth, Main Post Site M-14

FIGURE 4.2-21
MAGNETOMETER SURVEY
TOTAL MAGNETIC FIELD – SITE M-14

95P-3239 6/27/95





nanoTeslas per meter
(nT/m)

LEGEND

Monitor Well

0 50 100 150 200
SCALE IN FEET

Fort Monmouth, Main Post Site M-14

FIGURE 4.2-22
MAGNETOMETER SURVEY
MAGNETIC GRADIENT – SITE M-14

95P-3240 6/27/95

Site M-15

4.2.10 Water Tank (M-15)

4.2.10.1 Site Location

The water tank is located on the eastern portion of the Main Post (Figure 4.2-23). The tank is a vertical aboveground tank mounted on a concrete pad. The approximate area of site M-15 is 3,000 ft^2 (0.07 acre). There are soil patches without vegetation along the eastern circumference of the tank and visible paint chips.

4.2.10.2 Site History

Interviews with site personnel indicate that the tank was constructed in the 1940s and was always used as a water tank. The IA described the site as the "Water Tank," but did not discuss why the tank was identified as a hazardous waste site.

4.2.10.3 Sampling Effort

There is no evidence that the water tank or its contents are potential sources of contamination; however, the stressed vegetation may have been caused by the use of herbicides and the paint chips may contain lead. Therefore, two surface soil samples (0 to 6 inches) were collected, one at the bottom of the grade and one halfway up the grade, and were analyzed for TCL SVOCs, TAL metals, and pesticides (Figure 4.2-23). The SVOCs were analyzed for even though this was not proposed in the original scope of work (CDAP).

4.2.10.4 Soil Sampling Results

Two surface soil samples were collected (0 to 0.5 ft bgs), one at the bottom of the grade and one halfway up the grade, and were analyzed for the parameters listed in Table 3.6-1. The analytical results are listed in Appendix D. Table 4.2-13 compares the detected compounds in site soil with the NJDEP Residential Direct Contact Soil Cleanup Criteria (SCC), and then compares the results to the subsequent site-specific and Monmouth County background levels, where appropriate. In

APPENDIX B

UTILITY WORKER AND RECREATIONAL USER EXPOSURE PARAMETERS; UTILITY WORKER AND RECREATIONAL USER SCREENING LEVEL CALCULATIONS; PROUCL OUTPUT

The equations used to calculate screening values for utility workers are shown below.

The following abbreviations are used:

- SL = Screening Level
- nc = noncarcinogenic
- ing = ingestion
- der = dermal
- inh = inhalation
- ca = carcinogenic

Units definitions:

- mg = milligrams
- kg = kilograms
- cm = centimeters
- cm^2 = square centimeters
- cm^3 = cubic centimeters
- m^3 = cubic meters
- m^2 = square meter
- s = seconds
- g = gram
- L = liter
- µg = microgram

SOIL:

Utility Worker. The utility workers would be exposed to surface soil and subsurface soil (e.g. during trenching activities) through incidental ingestion of soil, dermal contact with soil, and inhalation of volatiles and particulates from soil.

The default parameters for the utility worker are shown in Table 1. The inhalation default parameters are shown in Table 2. The soil screening levels for the utility worker, in mg/kg, are calculated as:

Noncarcinogenic - adult

Ingestion

$$SL_{nc-ing} = \frac{(THQ)\ (AT_{nc})\ (BW_{adult})}{(EF_{adult})\ (ED_{adult})\ \left(\frac{1}{RfD_O}\right)\ (IRS_{adult})\ (CF_{soil})}$$

Dermal

$$SL_{nc-der} = \frac{(THQ)\ (AT_{nc})\ (BW_{adult})}{(EF_{adult})\ (ED_{adult})\ \left(\frac{1}{(RfD_O)\ (GIABS)}\right)\ (SA_{adult})\ (AF_{adult})\ (ABS_d)\ (CF_{soil})}$$

Inhalation

$$SL_{nc-inh} = \frac{(THQ)\,(AT_{nc})}{(EF_{adult})\,(ED_{adult})\,(ET)\left(\frac{1}{RfC}\right)\left(\frac{1}{VF_s} + \frac{1}{PEF}\right)}$$

Total

$$SL_{nc-total} = \frac{1}{\left(\frac{1}{SL_{nc-ing}} + \frac{1}{SL_{nc-der}} + \frac{1}{SL_{nc-inh}}\right)}$$

Carcinogenic - adult

Ingestion

$$SL_{ca-ing} = \frac{(TR)\,(AT_c)\,(BW_{adult})}{(EF_{adult})\,(ED_{adult})\,(CSF_o)\,(IRS_{adult})\,(CF_{soil})}$$

Dermal

$$SL_{ca-der} = \frac{(TR)\,(AT_c)\,(BW_{adult})}{(EF_{adult})\,(ED_{adult})\left(\frac{CSF_O}{GIABS}\right)(SA_{adult})\,(AF_{adult})\,(ABS_d)\,(CF_{soil})}$$

Inhalation

$$SL_{ca-inh} = \frac{(TR)\,(AT_c)}{(EF_{adult})\,(ED_{adult})\,(ET)\;\;(IUR)\,(CF_{air})\left(\frac{1}{VF_s} + \frac{1}{PEF}\right)}$$

Total

$$SL_{ca-total} = \frac{1}{\left(\frac{1}{SL_{ca-ing}} + \frac{1}{SL_{ca-der}} + \frac{1}{SL_{ca-inh}}\right)}$$

Supporting Equations

Particulate Emission Factor, in m^3 air / kg soil

$$PEF = \left({}^{Q}/_{C}\right)\left(\frac{3{,}600\ {}^{seconds}/_{hour}}{(0.036)\ (1-V)\ \left(\left(\frac{U_m}{U_t}\right)^3\right)[F(x)]}\right)$$

Volatilization Factor, in m^3 air / kg soil

$$VF_s = \left({}^{Q}/_{C}\right)\left(\frac{\left((3.14)\ (D_A)\ (T)\right)^{1/2}\ (CF_{vol})}{\left((2\ )\ (\rho_b)\ \ (D_A)\right)}\right)$$

Where:

$$D_A = \frac{\left(\left(\theta_a^{\,10/3}\right)\ (D_i)\ \left(H'\right)\right) + \left(\left(\theta_w^{\,10/3}\right)\ (D_w)\right)}{(n^2)\ \left(\left((\rho_b)\ (K_d)\right) +\ \theta_w +\ \left((\theta_a)\ (H')\right)\right)}$$

GROUNDWATER:

Utility Worker. The utility worker would be exposed to groundwater encountered during trenching activities through incidental ingestion of water, dermal contact with water, and inhalation of volatiles from water.

The default exposure parameters for groundwater are shown in Table 3. The groundwater screening levels for the utility worker, in µg/L, are calculated as:

Noncarcinogenic – adult

Ingestion

$$SL_{nc-ing} = \frac{(THQ)\,(AT_{nc})\,(BW_{adult})\left(\frac{1000\mu g}{mg}\right)}{(EF_{adult})\,(ED_{adult})\,\left(\frac{1}{RfD_O}\right)\,(IRW_{adult})}$$

Dermal

For Inorganics:

$$SL_{nc-der} = \frac{(DA_{event})\,\left(\frac{1000cm^3}{L}\right)}{(K_p)\,(t_{event})}$$

For Organics:

$$If\ t_{event} \le t^*, then\ SL_{nc-der} = \frac{(DA_{event})\,\left(\frac{1000cm^3}{L}\right)}{(2)\,(FA)\,(K_p)\sqrt{\frac{((6)\,(\tau_{event})\,(t_{event}))}{\pi}}}$$

$$If\ t_{event} > t^*, then\ SL_{nc-der} = \frac{(DA_{event})\,\left(\frac{1000cm^3}{L}\right)}{(FA)\,(K_p)\left[\frac{t_{event}}{(1+B)} + \left((2)\,(\tau_{event})\left(\frac{1+3B+3B^2}{(1+B)^2}\right)\right)\right]}$$

Where DA_{event}, in µg/cm^2-event

$$DA_{event} = \frac{(THQ)\,(AT_{nc})\,(BW_{adult})\,\left(\frac{1000\mu g}{mg}\right)}{\left(\frac{1}{(RfD_O)\,(GIABS)}\right)\,(ED_{adult})\,(EV)\,(EF_{adult})\,(SA_{adult})}$$

Inhalation

$$SL_{nc-inh} = \frac{(THQ)\,(AT_{nc})\left(\frac{1000\mu g}{mg}\right)}{(EF_{adult})\,(ED_{adult})\,(t_{event})\left(\frac{1}{RfC}\right)\,(K)}$$

Total

$$SL_{nc-total} = \frac{1}{\left(\frac{1}{SL_{nc-ing}} + \frac{1}{SL_{nc-der}} + \frac{1}{SL_{nc-inh}}\right)}$$

Carcinogenic – adult

Ingestion

$$SL_{ca-ing} = \frac{(TR)\,(AT_c)\,(BW_{adult})\left(\frac{1000\mu g}{mg}\right)}{(IRW_{adult})\,(EF_{adult})\,(ED_{adult})\,(CSF_O)}$$

Dermal

For Inorganics:

$$SL_{ca-der} = \frac{(DA_{event})\left(\frac{1000cm^3}{L}\right)}{(K_p)\,(t_{event})}$$

For Organics:

$$If\ t_{event} \leq t^*, then\ SL_{ca-der} = \frac{(DA_{event})\left(\frac{1000cm^3}{L}\right)}{(2)\,(FA)\,(K_p)\sqrt{\frac{((6)\,(\tau_{event})\,(t_{event}))}{\pi}}}$$

$$If\ t_{event} > t^*, then\ SL_{ca-der} = \frac{(DA_{event})\left(\frac{1000cm^3}{L}\right)}{(FA)\left(K_p\right)\left[\frac{t_{event}}{(1+B)} + \left((2)\left(\tau_{event}\right)\left(\frac{1+3B+3B^2}{(1+B)^2}\right)\right)\right]}$$

Where DA_{event} is µg/cm^2-event:

$$DA_{event} = \frac{(TR)\,(AT_c)\,(BW_{adult})\left(\frac{1000\mu g}{mg}\right)}{\left(\frac{CSF_o}{GIABS}\right)\,(EF_{adult})\,(EV)\,(ED_{adult})\,(SA_{adult})}$$

Inhalation

$$SL_{ca-inh} = \frac{(TR)\,(AT_c)}{(EF_{adult})\,(ED_{adult})\,(t_{event})\left(\frac{1\ day}{24\ hours}\right)(IUR)\,(K)}$$

Total

$$SL_{ca-total} = \frac{1}{\left(\frac{1}{SL_{ca-ing}} + \frac{1}{SL_{ca-der}} + \frac{1}{SL_{ca-inh}}\right)}$$

The equations to calculate screening values for recreational users are shown below.

The following abbreviations are used:

- nc = non-carcinogenic
- ing = ingestion
- der = dermal
- inh = inhalation
- ca = carcinogenic
- mu = mutagenic
- adl = adolescent
- adjust = adjusted

SOIL

Non-carcinogenic adolescent

Ingestion

$$SL_{nc-ing} = \frac{(THQ)\,(AT)\,(ED_{adl})\,(BW_{adl})}{(EF)\,(ED)\left(\frac{1}{RfD_O}\right)\,(IR_{adl})\left(\frac{10^{-6}kg}{1\,mg}\right)}$$

Dermal

$$SL_{nc-der} = \frac{(THQ)\,(AT)(ED_{adl})\,(BW_{adl})}{(EF)\,(ED)\left(\frac{1}{RfD_O\,\times GIABS}\right)\,(SA_{adl})\,(AF_{adl})\,(\,ABS_d\,)\left(\frac{10^{-6}kg}{1\,mg}\right)}$$

Inhalation

$$SL_{nc-inh} = \frac{(THQ)\,(AT)\,(ED_{adl})}{(EF)\,(ED_{adl})\,(ET_{adl})\left(\frac{1}{RfC}\right)\left(\frac{1}{VF_s} + \frac{1}{PEF_w}\right)}$$

Total

$$SL_{nc-total} = \frac{1}{\frac{1}{SL_{nc-ing}} + \frac{1}{SL_{nc-der}} + \frac{1}{SL_{nc-inh}}}$$

Non-carcinogenic adult

Ingestion

$$SL_{nc-ing} = \frac{(THQ)\,(AT)\,(ED_{adult})\,(BW_{adult})}{(EF)\,(ED)\left(\frac{1}{RfD_O}\right)(IR_{adult})\left(\frac{10^{-6}kg}{1\,mg}\right)}$$

Dermal

$$SL_{nc-der} = \frac{(THQ\,)\,(AT)\,(ED_{adult})\,(BW_{adult})}{(EF)\,(ED)\left(\frac{1}{RfD_O \times GIABS}\right)(SA_{adult})\,(AF_{adult})\,(ABS_d\,)\left(\frac{10^{-6}kg}{1\,mg}\right)}$$

Inhalation

$$SL_{nc-inh} = \frac{(THQ)\,(AT)\,(ED_{adult})}{(EF)\,(ED_{adult})\,(ET_{adult})\left(\frac{1}{RfC}\right)\left(\frac{1}{VF_s} + \frac{1}{PEF_w}\right)}$$

Total

$$SL_{nc-total} = \frac{1}{\frac{1}{SL_{nc-ing}} + \frac{1}{SL_{nc-der}} + \frac{1}{SL_{nc-inh}}}$$

Carcinogenic

Ingestion

$$SL_{ca-ing} = \frac{(TR)\,(AT)\,(LT)}{(CfS_O)\,(IFS_{adj})\left(\frac{10^{-6}kg}{1\,mg}\right)}$$

Where:

$$IFS_{adjust} = \frac{(ED_{adl}\,)\,(EF_{adl}\,)\,(IRS_{adl})}{BW_{adl}} + \frac{(ED_{adult}\,)\,(EF_{adult}\,)\,(IRS_{adult})}{BW_{adult}}$$

Dermal

$$SL_{ca-der} = \frac{(TR)\,(AT)\,(LT)}{\left(\frac{CsF_O}{GIABS}\right)(DFS_{adj})\,(ABS_d)\left(\frac{10^{-6}kg}{1\,mg}\right)}$$

Where:

$$DFS_{adjust} = \frac{(ED_{adl})(EF_{adl})(SA_{adl})(AF_{adl})}{BW_{adl}} + \frac{(ED_{adult})(EF_{adult})(SA_{adult})(AF_{adult})}{BW_{adult}}$$

Inhalation

$$SL_{ca-inh} = \frac{(TR)(AT)(LT)}{(EF_{rec})(ED_{rec})(ET_{rec})\left(\frac{1\ day}{24\ hours}\right)(IUR)\left(\frac{1000\mu g}{mg}\right)\left(\frac{1}{VF_s} + \frac{1}{PEF}\right)}$$

Total

$$SL_{ca-total} = \frac{1}{\frac{1}{SL_{ca-ing}} + \frac{1}{SL_{ca-der}} + \frac{1}{SL_{ca-inh}}}$$

Supporting Equations

Particulate Emission Factor

$$PEF = \left(\frac{Q}{C}\right)\left(\frac{3{,}600\ {seconds}/{hour}}{(0.036)(1-V)\left(\frac{U_m}{U_t}\right)^3[F(x)]}\right)$$

Volatilization Factor

$$VF = \left(\frac{Q}{C}\right)\left(\frac{\left((3.14)(D_A)(T)\right)^{1/2}(CF_{vol})}{\left((2)(\rho_b)(D_A)\right)}\right)$$

Where:

$$\left(\left(\left(\theta_a^{10/3}\right)(D_i)(H')\right) + \left(\left(\theta_w^{10/3}\right)(D_w)\right)\right) \Big/ n^2$$

$$D_A = \frac{}{\left((\rho_b)(K_d)\right) + \theta_w + \left((\theta_a)(H')\right)}$$

Summary of Exposure Assumptions for Soil for each Potential Receptor

Abbreviation	Parameter	Units	Outdoor Worker	Sources	Rationale	Utility Worker	Sources	Rationale	Recreational User	Sources	Rationale
THQ	Target Hazard Quotient	unitless	1	USEPA, 2014b	USEPA RSL Users Guide, Table 1	1	USEPA, 2014b	USEPA RSL Users Guide, Table 1	1	USEPA, 2014b	USEPA RSL Users Guide, Table 1
AT_{nc}	Averaging Time – noncarcinogens	days	9,125	USEPA, 1989	Exhibit 6-9; Period over which exposure is averaged; ED expressed in days (25 years x 365 days)	365	USEPA, 2014c	Source references USEPA, 1989, page 6-23; ED expressed in days (1 year x 365 days)	5,110 (adult) 3,650 (adl)	USEPA, 1989	Exhibit 6-9; Period over which exposure is averaged; ED expressed in days (14 years adult x 365 days or 10 years adl x 365 days)
AT_c	Averaging Time – carcinogens	days	25,550	USEPA, 2014c as "lifetime"	70-year lifetime expressed in days (70 years x 365 days)	25,550	USEPA, 2014c as "lifetime"	70-year lifetime expressed in days (70 years x 365 days)	25,550	USEPA, 2014c as "lifetime"	70-year lifetime expressed in days (70 years x 365 days)
ED	Exposure Duration	years	25	USEPA, 2014c	Source references USEPA, 1991a, Page 15; RME scenario for industrial worker	1	USEPA, 2002	Exhibit 5-1; USEPA, default value for construction workers	14 (adult) 10 (adl)	Professional judgment	Adult: Represents the number of years returning to the same location as an adult, assumes 16 to <30 years of age Adl: Represents the number of years returning to the same location as an adolescent; assumes 6 to <16 years of age
BW	Body Weight	kg	80	USEPA, 2014c	Source references USEPA, 2011, Table 8-3; weighted mean values for adults 21 – 78	80	USEPA, 2014c	Source references USEPA, 2011, Table 8-3; weighted mean values for adults 21 – 78	80 (adult) 44 (adl)	Adult: USEPA, 2014c Adl: USEPA, 2011	Adult: Source references USEPA, 2011, Table 8-3; weighted mean values for adults 21 to 78 years of age Adl: Table 8-3, mean of body weights for 6 to <11 and 11 to <16 years
EF	Exposure Frequency	days/year	225	USEPA, 2014c	Source references USEPA, 1991, page 15, outdoor worker RME scenario	30	Professional judgment	Assumes project of one month duration	50	Professional judgment	Assumes recreational user on site once per week every week of the year, except for 2 weeks vacation
IRS	Soil Ingestion Rate	mg/day	100	USEPA, 2014c	Source references USEPA, 1991, page 15, same as adult resident	330	USEPA, 2014b	Source references USEPA, 2002, Exhibit 5-1, USEPA recommended value for construction worker	50 (adult) 100 (adl)	USEPA, 2011	Adult: Table 5-1, General Population Central Tendency, Adult soil and dust ingestion Adl: Table 5-1, General Population Central Tendency, soil and dust ingestion for 6 to <21 years of age
EV	Event Frequency	events/day	1	USEPA, 2004a	Exhibit 3-5, industrial RME scenario	1	USEPA, 2004a	Exhibit 3-5, industrial RME scenario	1	Professional judgment	Recreational users are expected to be onsite one event per day
FI	Fraction Ingested	unitless	1	USEPA, 1989, page 6-39	Assumes that all of contaminated soil contacted is from the site	1	USEPA, 1989, page 6-39	Assumes that all of contaminated soil contacted is from the site	1	USEPA, 1989, page 6-39	Assumes that all of contaminated soil contacted is from the site
CF_s	Conversion Factor-soil	kg/mg	1E-06	USEPA, 1989	Exhibit 6-14	1E-06	USEPA, 1989	Exhibit 6-14	1E-06	USEPA, 1989	Exhibit 6-14

Summary of Exposure Assumptions for Soil for each Potential Receptor (Continued)

Abbreviation	Parameter	Units	Outdoor Worker	Sources	Rationale	Utility Worker	Sources	Rationale	Recreational User	Sources	Rationale
GIABS	Gastrointestinal Absorption Factor (also, OAF = Oral Absorption Factor)	unitless	Chemical-specific	USEPA, 2015b	Fraction of contaminant absorbed in gastrointestinal tract	Chemical-specific	USEPA, 2015b	Fraction of contaminant absorbed in gastrointestinal tract	Chemical-specific	USEPA, 2015b	Fraction of contaminant absorbed in gastrointestinal tract
SA	Exposed Skin Surface Area	cm^2	3,470	USEPA, 2014c	Source references USEPA, 2011, Table 7-2; weighted average of mean values for head, hands, and forearms (male and female adults); assumes wearing shoes and long pants	3,470	USEPA, 2014c	Source references USEPA, 2011, Table 7-2; weighted average of mean values for head, hands, and forearms (male and female adults); assumes wearing shoes and long pants	3,470 (adult) 2,160 (adl)	USEPA, 2014c; USEPA, 2011	Adult: Source references USEPA, 2011, Table 7-2; weighted average of mean values for head, hands, and forearms (male and female adults); assume wearing shoes and long pants Adl: Table 7-2, weighted average of mean values for head, hands, and arms (mean value for arm times 45% to account for forearm) (Age 6 to <16 years of age); assume wearing shoes and long pants
AF	Adherence Factor	mg/cm^2	0.12 (1)	USEPA, 2014c	Source references USEPA, 2011, Table 7-2, Table 7-20 and Section 7.2.2; arithmetic mean of weighted average of body part-specific (hands, forearms, and face) mean adherence factors for adult commercial/ industrial activities	0.20	USEPA, 2011	Table 7-2, Table 7-20 and Section 7.2.2; arithmetic mean of weighted average of body part-specific (hands, forearms, and face) mean adherence factors for adult utility worker number 1	0.09 (adult) 0.04 (adl) (1)	USEPA, 2011	Adult: Table 7-2, Table 7-20 and Section 7.2.2; arithmetic mean of weighted average of body part-specific (hands, forearms, and face) mean adherence factors for adult Gardener number 1 Adl: Table 7-2, Table 7-4, and Section 7.2.2; arithmetic mean of weighted average of body part-specific (hands, forearms, face, mean adherence factors for child playing outdoor sports
ABS_d	Dermal Absorption Factor	unitless	Chemical-specific	USEPA, 2015b	Fraction of contaminant absorbed dermally; USPEA RSL Summary Table-	Chemical-specific	USEPA, 2015b	Fraction of contaminant absorbed dermally; USPEA RSL Summary Table -	Chemical-specific	USEPA, 2015b	Fraction of contaminant absorbed dermally; USPEA RSL Summary Table -
ET	Exposure Time	hour/day	8	USEPA, 2014c	The work day	8	USEPA, 2014c	The work day	2	Professional judgment	Assumes recreational users on site for two hours each event
VF	Volatilization Factor-soil	m^3/kg	Chemical Specific	USEPA, 2002, 2014b	Calculated using inputs in Table 4 of this document	Chemical Specific	USEPA, 2002, 2014b	Calculated using inputs in Table 4 of this document	Chemical specific	USEPA, 2002, 2014b	Calculated using inputs in Table 4 of this document
PEF	Particulate Emission Factor	m^3/kg	3.23E+09	USEPA, 2002, 2014b	Calculated using inputs in Table 4 of this document	3.23E+09	USEPA, 2002, 2014b	Calculated using inputs in Table 4 of this document	3.23E+09	USEPA, 2002, 2014b	Calculated using inputs in Table 4 of this document

Summary of Exposure Parameters for VF / PEF

Abbreviation	Parameter	Units	All Receptors	Sources	Rationale
Q/C	Inverse of mean concentration at center of square source area for Philadelphia, Pennsylvania	g/m^2-s per kg/m^3	87.36898	USEPA, 2014b	Source references USEPA, 2002, Exhibit D-2
V	Fraction of vegetative cover	unitless	0.5 (50%)	USEPA, 2014b	Source references USEPA, 2002, Equation 4-5
U_m	Mean annual wind speed	m/s	4.69	USEPA, 2014b	Source references USEPA, 2002, Equation 4-5
U_t	Equivalent threshold value of wind speed at 7m	m/s	11.32	USEPA, 2014b	Source references USEPA, 2002, Equation 4-5
F(x)	Function Dependent on U_m /U_t	unitless	0.194	USEPA, 2014b, Cowherd et. al. 1985	Source references USEPA, 2002, Equation 4-5

Summary of Exposure Parameters for VF / PEF (Continued)

Abbreviation	Parameter	Units	All Receptors	Sources	Rationale
D_A	Apparent diffusivity	cm^2/s	Chemical-specific	USEPA, 2014b	Source references USEPA, 2002, Equation 4-8
C_{sat}	Soil saturation concentration	mg/kg	Chemical-specific	USEPA, 2014b	Source references USEPA, 2002, Equation 4-8
T	Exposure interval	seconds	9.5E+08	USEPA, 2002	USEPA, 2002, Equation 4-8
ρ_b	Dry soil bulk density	g/cm^3	1.5	USEPA, 2014b	Source references USEPA, 2002, Equation 4-8
θ_a	Air-filled Soil Porosity	L_{air}/L_{soil}, calculated as $n - \theta_w$	0.28	USEPA, 2014b	Source references USEPA, 2002, Equation 4-8
n	Total Soil Porosity	L_{pore}/L_{soil}	0.43	USEPA, 2014b	Source references USEPA, 2002, Equation 4-8
θ_w	Water-filled Soil Porosity	L_{water}/L_{soil}	0.15	USEPA, 2014b	Source references USEPA, 2002, Equation 4-8

Summary of Exposure Parameters for VF / PEF (Continued)

Abbreviation	Parameter	Units	All Receptors	Sources	Rationale
ρ_s	Soil particle density	g/cm^3	2.65	USEPA, 2014b	Source references USEPA, 2002, Equation 4-8
D_i	Diffusivity in Air	cm^2/second	Chemical-specific	USEPA, 2015c	--
H'	Henry's law constant	Dimensionless	Chemical-specific	USEPA, 2015c	--
D_w	Diffusivity in Water	cm^2/second	Chemical-specific	USEPA, 2015c	--
K_d	Soil-water Partition Coefficient	L/kg	Chemical-specific	USEPA, 2015c	Calculated as K_{OC} X f_{OC}
K_{OC}	Soil organic carbon-water Partition Coefficient	L/kg	Chemical-specific	USEPA, 2015c	--
f_{OC}	Organic Carbon Content of Soil	g/g	0.006 (0.006%)	USEPA, 2014b	Source references USEPA, 2002, Equation 5-14
S	Water Solubility	mg/L	Chemical-specific	USEPA, 2015c	--

Summary of Exposure Parameters for Groundwater or Surface Water

Abbreviation	Parameter	Units	Outdoor Worker	Sources	Rationale	Utility Worker	Sources	Rational	Recreational User	Sources	Rationale
IRW	Groundwater or Surface Water Ingestion	L/day	0.02	USEPA, 2014d	Section 4.5; During wading activities, water ingestion of 10 ml/hour for adults, converted to L/day assuming the outdoor worker is in contact with surface water for 2 hours per day	0.02	USEPA, 2014d	Section 4.5; During wading activities, water ingestion of 10 ml/hour for adults, converted to L/day assuming the utility worker is in contact with groundwater in a trench for 2 hours per day	0.02 (adult) 0.02(adl)	USEPA, 2014d	Section 4-5; During wading activities, water ingestion of 10 ml/hour for adolescents and adults, converted to L/day assuming the recreational user is in contact with surface water for 2 hours per day
K_p	Permeability Constant	cm/hour	Chemical-specific	USEPA, 2015c	Dermal permeability coefficient of compound in water	Chemical-specific	USEPA, 2015c	Dermal permeability coefficient of compound in water	Chemical-specific	USEPA, 2015c	Dermal permeability coefficient of compound in water
SA	Skin Surface Area	cm^2	4,835	USEPA, 2011	Table 7-2; weighted average of mean values for hands, feet, and lower legs (mean value for legs times 40% to account for lower leg) (male and female, 21+years)	4,840	USEPA, 2011	Table 7-2; weighted average of mean values for hands, feet, and lower legs (mean value for legs times 40% to account for lower leg) (male and female, 21+years)	4,835 (adult) 3093 (adl)	USEPA, 2011	Adult: Table 7-2; weighted average of mean values for hands, feet, and lower legs (mean value for legs times 40% to account for lower leg) (male and female, 21+years). Adl: Table 7-2; weighted average of mean values for hands, feet, and lower legs (mean value for legs times 40% to account for lower leg) (6 to <16 years of age)
VF_{air}	Volatilization Factor	L/m^3	0.5	USEPA, 2014b	Source references USEPA, 1991b, page 20	0.5	USEPA, 2014b	Source references USEPA, 1991b, page 20	0.5	USEPA, 2014b	Source references USEPA, 1991b, page 20
EV	Event Frequency	events/day	1	Professional judgment	Assumes an outdoor worker may come into contact with surface water during routine maintenance activities, for one event per day.	1	USEPA, 2002	Exhibit 1-2. Assumes a worker may come into contact with groundwater during excavation or trenching activities, for one event per day.	1	Professional judgment	Assumes a recreational user may come into contact with surface water during wading activities, for one event per day.
ET	Exposure time as a fraction of the day spent at the site	unitless	0.083 (2 hours/day)	Professional judgment	Assumes an outdoor worker may come into contact with surface water during work activities, for one event per day, 2 hours per event.	0.083 (2 hours/day)	Professional judgment	Assumes an utility worker may come into contact with groundwater during work activities, for one event per day, 2 hours per event.	0.083 (2 hours/day)	Professional judgment	Assumes a recreational user may come into contact with surface water during wading activities, for one event per day, 2 hours per event.

Summary of Exposure Parameters for Groundwater or Surface Water (Continued)

Abbreviation	Parameter	Units	Outdoor Worker	Sources	Rationale	Utility Worker	Sources	Rational	Recreational User	Sources	Rationale
t_{event}	Event Duration	hours/event	2	Professional judgment	Assumes an outdoor worker may come into contact with surface water during work activities, for one event per day, 2 hours per event.	2	Professional judgment	Assumes an utility worker may come into contact with groundwater during work activities, for one event per day, 2 hours per event.	2	Professional judgment	Assumes a recreational user may come into contact with surface water during wading activities, for one event per day, 2 hours per event.
EF	Exposure Frequency	days/year	225	USEPA, 2014c	Source references USEPA, 1991aa, page 15, outdoor worker RME scenario	30	Professional judgment	Assumes project of one month duration	50	Professional judgment	Assumes recreational user on site once per week every week of the year, except for 2 weeks vacation
ED	Exposure Duration	year	25	USEPA, 2014c	Source references USEPA, 1991a, Page 15; RME scenario for industrial worker	1	USEPA, 2002	Exhibit 5-1; USEPA, default value for construction workers	14 (adult) 10 (adl)	Professional judgment	Adult: Represents the number of years returning to the same location as an adult, age 16 to <30 years of age Adl: Represents the number of years returning to the same location as an adolescent; assumes adolescent recreational user 6 to <16 years of age
ED	Exposure Duration-for inhalation	year	--	--	--	--	--	--	23	Professional judgment	Combined 10 years as adolescent and 14 years as adult
BW	Body Weight	kg	80	USEPA, 2014c	Source references USEPA, 2011, Table 8-3; weighted mean values for adults 21 – 78	80	USEPA, 2014c	Source references USEPA, 2011, Table 8-3; weighted mean values for adults 21 – 78	80 (adult) 44 (adl)	USEPA, 2014c, USEPA, 2011	Adult: Source references USEPA, 2011, Table 8-3; weighted mean values for adults 21 – 78 Adl: Table 8-3, weighted mean value for adolescent age 6 to <16 years of age
AT_{nc}	Averaging Time – noncarcinogens	days	9,125	USEPA, 1989	Exhibit 6-9; Period over which exposure is averaged; ED expressed in days (25 years x 365 days)	365	USEPA, 2014c	Source references USEPA, 1989, page 6-23; ED expressed in days (1 year x 365 days)	5,110 (adult) 3,650 (adl)	USEPA, 1989	Exhibit 6-9; Period over which exposure is averaged; ED expressed in days (14 years adult x 365 days or 10 years adl x 365 days)
AT_c	Averaging Time – carcinogens	days	25,550	USEPA, 2014c as “lifetime”	70-year lifetime expressed in days (70 years x 365 days)	25,550	USEPA, 2014c as “lifetime”	70-year lifetime expressed in days (70 years x 365 days)	25,550	USEPA, 2014c as “lifetime”	70-year lifetime expressed in days (70 years x 365 days)

Summary of Exposure Parameters for Groundwater or Surface Water (Continued)

Abbreviation	Parameter	Units	Outdoor Worker	Sources	Rationale	Utility Worker	Sources	Rational	Recreational User	Sources	Rationale
FA	Fraction absorbed	unitless	Chemical-specific	USEPA, 2004	Exhibit B-3	Chemical-specific	USEPA, 2004	Exhibit B-3	Chemical-specific	USEPA, 2004	Exhibit B-3
B	Relative contribution of permeability coefficient	unitless	Chemical-specific	USEPA, 2015c	--	Chemical-specific	USEPA, 2015c	--	Chemical-specific	USEPA, 2015c	--
t^*	Time it takes to reach steady state	hours	Chemical-specific	USEPA, 2004	Exhibit B-3	Chemical-specific	USEPA, 2004	Exhibit B-3	Chemical-specific	USEPA, 2004	Exhibit B-3
τ_{event}	Lag Time per Event	hr/event	Chemical-specific	USEPA, 2015c	--	Chemical-specific	USEPA, 2015c	--	Chemical-specific	USEPA, 2015c	--

General Statistics on Uncensored Data

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General Statistics for Censored Data Set (with NDs) using Kaplan Meier Method

Variable	NumObs	# Missing	Num Ds	NumNDs	% NDs	Min ND	Max ND	KM Mean	KM Var	KM SD	KM CV
Arsenic	182	0	182	0	0.00%	N/A	N/A	16.29	5882	76.69	4.708
Cadmium	182	0	70	112	61.54%	0.045	4.182	5.076	3708	60.9	12
Lead	182	0	182	0	0.00%	N/A	N/A	163.3	231062	480.7	2.944
Thallium	182	0	42	140	76.92%	0.282	25.09	0.615	12.13	3.483	5.659
Dibenz(a,h)anthracene	182	0	12	170	93.41%	230	2500	356	3411555	1847	5.188

General Statistics for Raw Data Sets using Detected Data Only

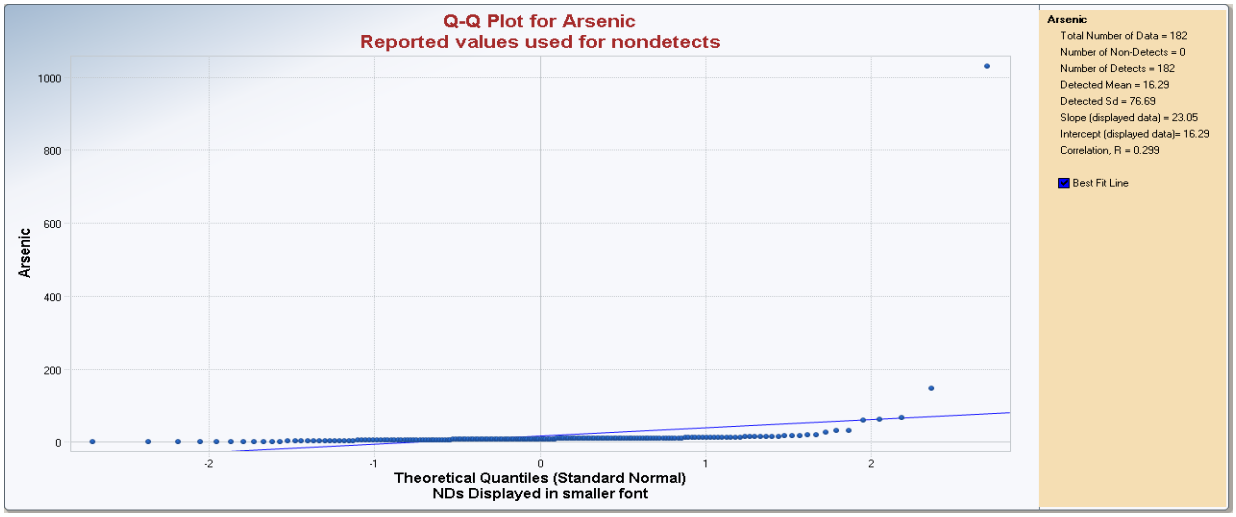
Variable	NumObs	# Missing	Minimum	Maximum	Mean	Median	Var	SD	MAD/0.675	Skewness	CV
Arsenic	182	0	0.858	1030	16.29	9.027	5882	76.69	3.524	12.93	4.708
Cadmium	70	0	0.0579	823	13.12	0.31	9674	98.36	0.265	8.327	7.495
Lead	182	0	2.754	4549	163.3	33.19	231062	480.7	33.62	6.167	2.944
Thallium	42	0	0.332	47.42	1.719	0.566	52.22	7.226	0.178	6.474	4.203
Dibenz(a,h)anthracene	12	0	160	25000	2742	445	49768924	7055	385.5	3.388	2.573

Percentiles using all Detects (Ds) and Non-Detects (NDs)

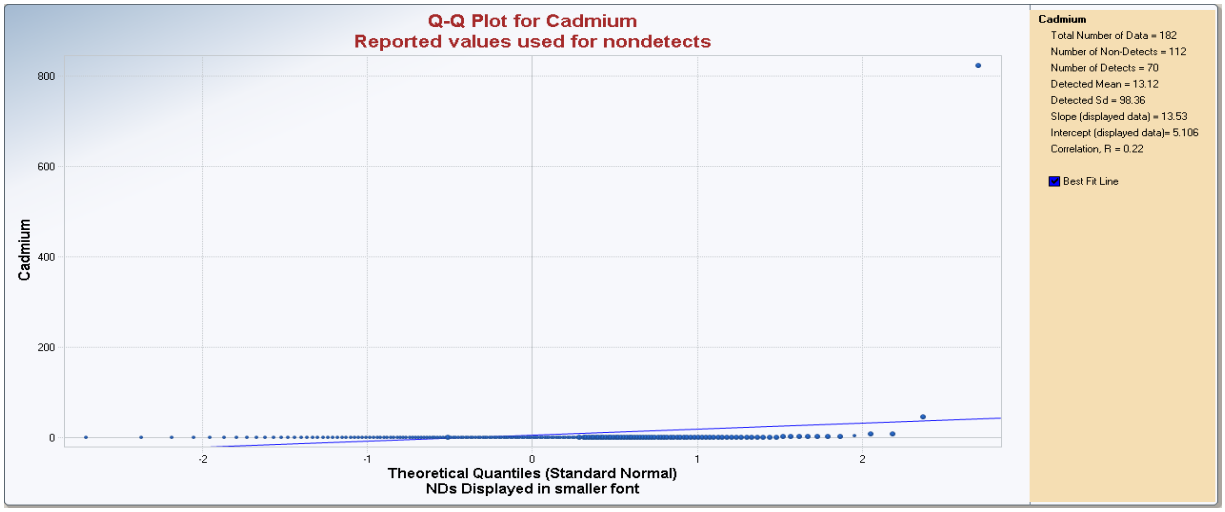
Variable	NumObs	# Missing	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
Arsenic	182	0	4.215	5.619	6.405	9.027	11.14	11.59	14.28	19.91	82.92
Cadmium	182	0	0.053	0.0552	0.057	0.062	0.225	0.297	0.677	1.84	15.63
Lead	182	0	8.356	11.84	14.36	33.19	90.89	121.4	289	805.2	2469
Thallium	182	0	0.315	0.331	0.338	0.363	0.407	0.432	0.599	0.724	5.626
Dibenz(a,h)anthracene	182	0	240	250	250	270	997.5	1000	1100	1200	2576

Q-Q plots

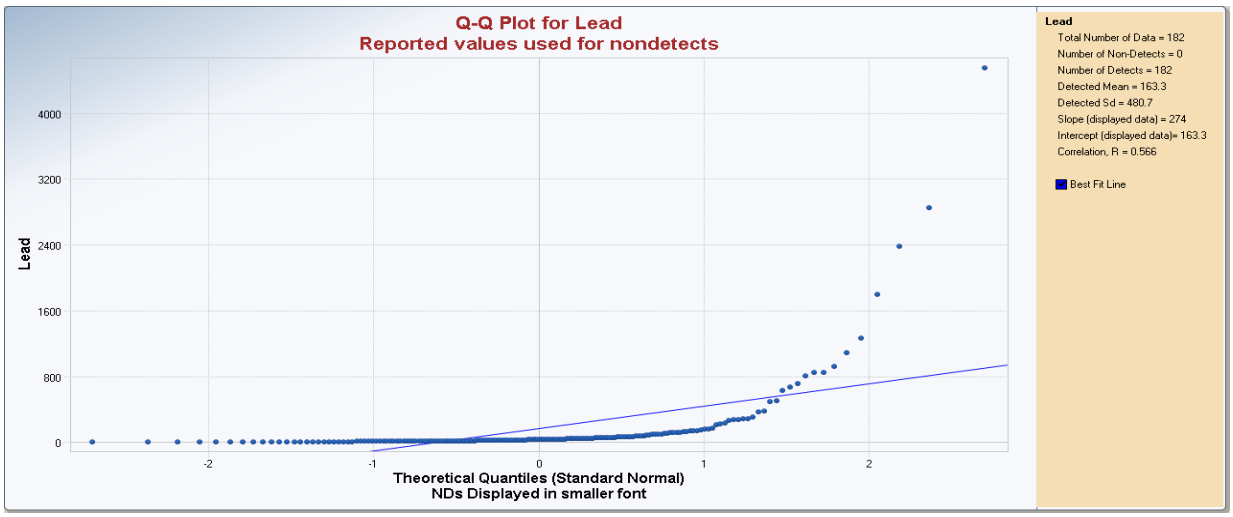
Arsenic



Cadmkum



Lead



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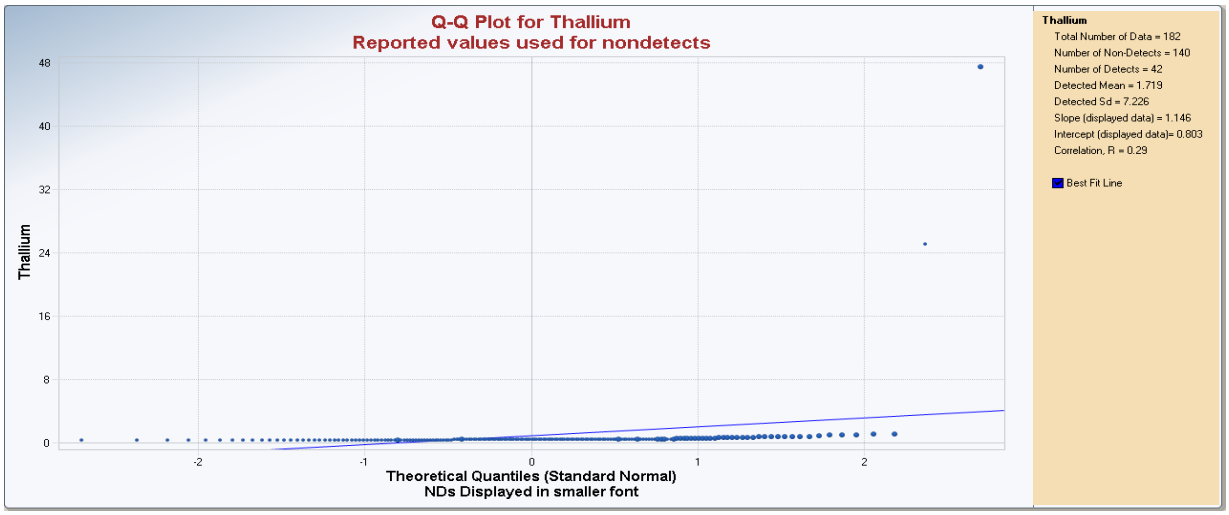
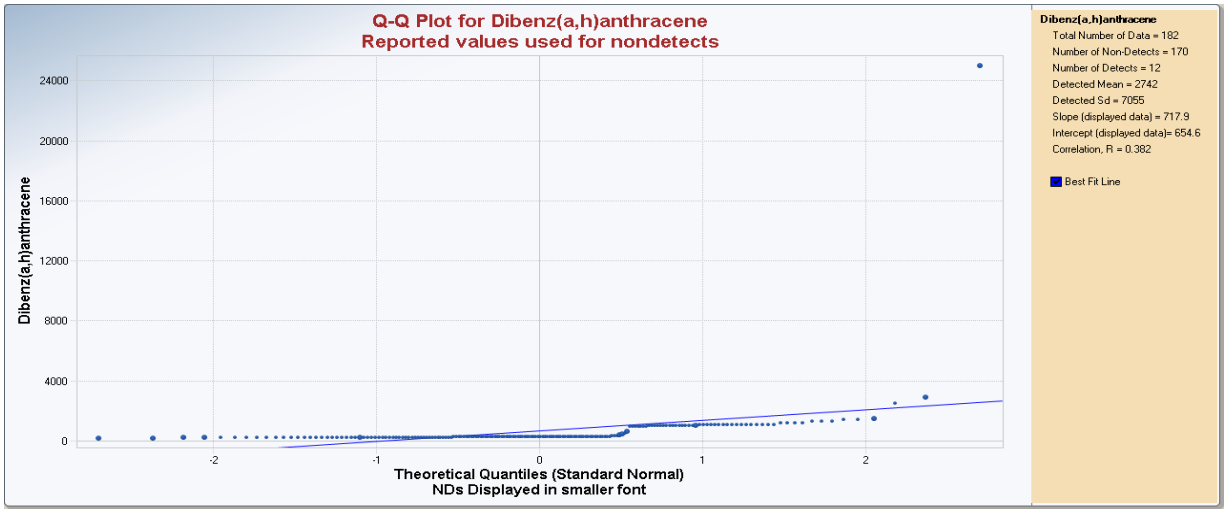


Dibenzo(a,h)anthracene



Outlier test

		Outlier Tests for Selected Variables excluding nondetects
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Full Precision		OFF

Rosner's Outlier Test for 1 Outliers in Arsenic

Total N	182
Number NDs	0
Number Detects	182
Mean of Detects	16.29
SD of Detects	76.69
Number of data	182
Number of suspected outliers	1
NDs not included in the following:	

#	Mean	sd	Potential outlier	Obs. Number	Test value	Critical value (5%)	Critical value (1%)
1	16.29	76.48	1030	182	13.25	3.578	3.948

For 5% Significance Level, there is 1 Potential Outlier
Therefore, Observation 1030 is a Potential Statistical Outlier

For 1% Significance Level, there is 1 Potential Outlier

Rosner's Outlier Test for 1 Outliers in Cadmium

Total N	182
Number NDs	112
Number Detects	70
Mean of Detects	13.12
SD of Detects	98.36
Number of data	70
Number of suspected outliers	1

NDs not included in the following:

#	Mean	sd	Potential outlier	Obs. Number	Test value	Critical value (5%)	Critical value (1%)
1	13.12	97.65	823	70	8.293	3.26	3.62

For 5% Significance Level, there is 1 Potential Outlier
Therefore, Observation 823 is a Potential Statistical Outlier

For 1% Significance Level, there is 1 Potential Outlier

Rosner's Outlier Test for 1 Outliers in Lead

Total N	182
Number NDs	0
Number Detects	182
Mean of Detects	163.3
SD of Detects	480.7
Number of data	182
Number of suspected outliers	1

NDs not included in the following:

#	Mean	sd	Potential outlier	Obs. Number	Test value	Critical value (5%)	Critical value (1%)
1	163.3	479.4	4549	182	9.149	3.578	3.948

For 5% Significance Level, there is 1 Potential Outlier
Therefore, Observation 4549 is a Potential Statistical Outlier

For 1% Significance Level, there is 1 Potential Outlier

Rosner's Outlier Test for 1 Outliers in Thallium

Total N	182
Number NDs	140
Number Detects	42
Mean of Detects	1.719
SD of Detects	7.226
Number of data	42
Number of suspected outliers	1

NDs not included in the following:

#	Mean	sd	Potential outlier	Obs. Number	Test value	Critical value (5%)	Critical value (1%)
1	1.719	7.14	47.42	42	6.401	3.06	3.4

For 5% Significance Level, there is 1 Potential Outlier
Therefore, Observation 47.42 is a Potential Statistical Outlier

For 1% Significance Level, there is 1 Potential Outlier

Dixon's Outlier Test for Dibenz(a,h)anthracene

Total N = 182
Number NDs = 170
Number Detects = 12
10% critical value: 0.49
5% critical value: 0.546
1% critical value: 0.642
Note: NDs excluded from Outlier Test

1. Data Value 25000 is a Potential Outlier (Upper Tail)?

Test Statistic: 0.946

For 10% significance level, 25000 is an outlier.
For 5% significance level, 25000 is an outlier.
For 1% significance level, 25000 is an outlier.

2. Data Value 160 is a Potential Outlier (Lower Tail)?

Test Statistic: 0.015

For 10% significance level, 160 is not an outlier.
For 5% significance level, 160 is not an outlier.
For 1% significance level, 160 is not an outlier.

General Statistics on Uncensored Data

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Full Precision	OFF

From File: Copy of FTMM05_Soil_ProUCL_ready.xls

General Statistics for Censored Datasets (with NDs) using Kaplan Meier Method

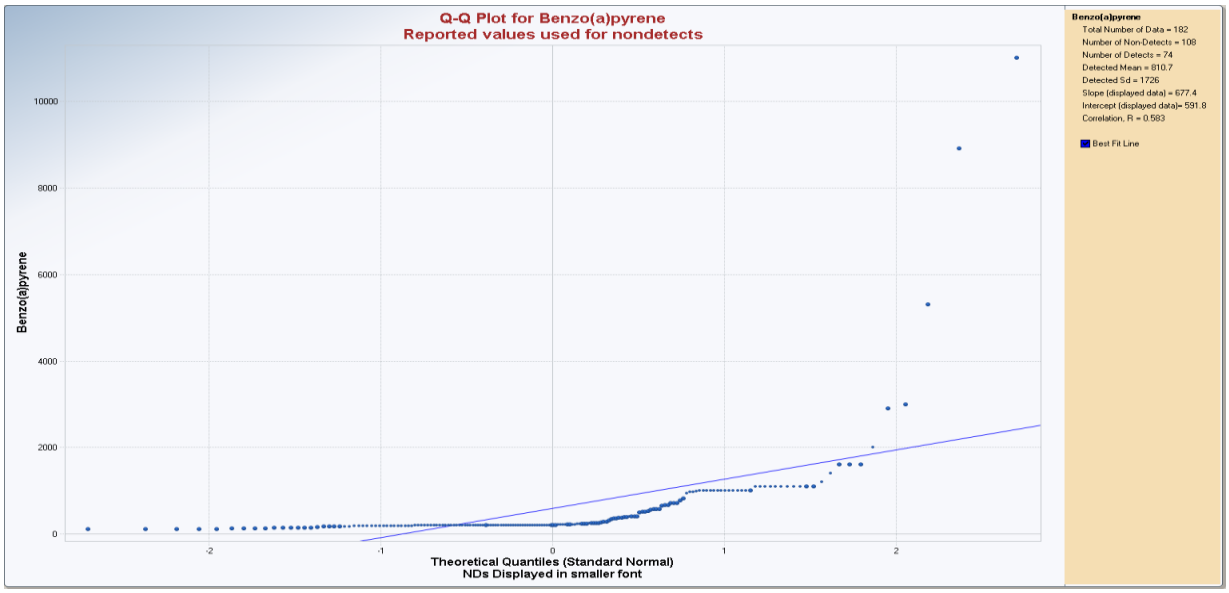
Variable	NumObs	# Missing	Num Ds	NumNDs	% NDs	Min ND	Max ND	KM Mean	KM Var	KM SD	KM CV
Benzo(a)pyrene	182	0	74	108	59.34%	180	2000	427.7	1302011	1141	2.668

General Statistics for Raw Dataset using Detected Data Only

Variable	NumObs	# Missing	Minimum	Maximum	Mean	Median	Var	SD	MAD/0.675	Skewness	CV
Benzo(a)pyrene	74	0	110	11000	810.7	335	2980768	1726	274.3	4.62	2.13

Percentiles using all Detects (Ds) and Non-Detects (NDs)

Variable	NumObs	# Missing	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
Benzo(a)pyrene	182	0	170	190	200	210	670	988	1100	1390	5984



Outlier Tests for Selected Variables excluding nondetects

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Rosner's Outlier Test for 1 Outliers in Benzo(a)pyrene

Total N	182
Number NDs	108
Number Detects	74
Mean of Detects	810.7
SD of Detects	1726
Number of data	74
Number of suspected outliers	1

NDs not included in the following:

#	Mean	sd	Potential outlier	Obs. Number	Test value	Critical value (5%)	Critical value (1%)
1	810.7	1715	11000	74	5.942	3.28	3.64

For 5% Significance Level, there is 1 Potential Outlier
Therefore, Observation 11000 is a Potential Statistical Outlier

For 1% Significance Level, there is 1 Potential Outlier

General Statistics on Uncensored Data

Date/Time of Computation	5/15/2014 13:55
User Selected Options	
From File	Copy of FTMM05_Soil_ProUCL_ready.xls
Full Precision	OFF

From File: Copy of FTMM05_Soil_ProUCL_ready.xls

General Statistics for Censored Datasets (with NDs) using Kaplan Meier Method

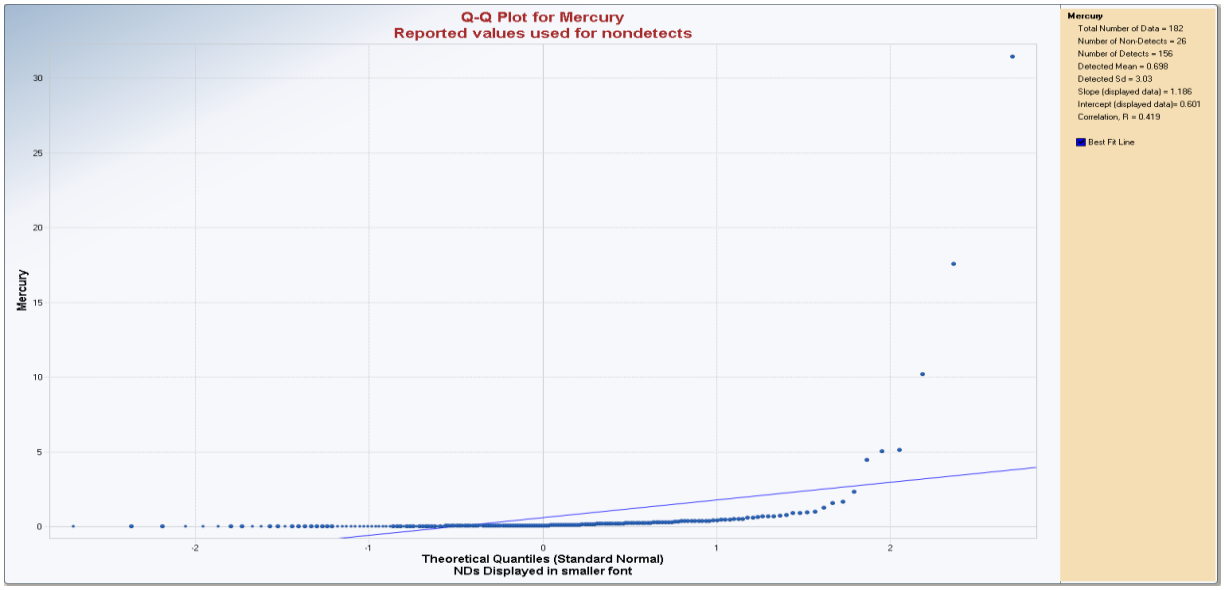
Variable	NumObs	# Missing	Num Ds	NumNDs	% NDs	Min ND	Max ND	KM Mean	KM Var	KM SD	KM CV
Mercury	182	0	156	26	14.29%	0	0.044	0.6	7.874	2.806	4.681

General Statistics for Raw Dataset using Detected Data Only

Variable	NumObs	# Missing	Minimum	Maximum	Mean	Median	Var	SD	MAD/0.675	Skewness	CV
Mercury	156	0	0.0062	31.45	0.698	0.115	9.178	3.03	0.134	8.218	4.341

Percentiles using all Detects (Ds) and Non-Detects (NDs)

Variable	NumObs	# Missing	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
Mercury	182	0	0.0181	0.024	0.029	0.0745	0.273	0.36	0.66	1.243	11.6



User Selected Options	
Date/Time of Computation	5/7/2014 2:21:14 PM
From File	Copy of FTMM05_Soil_ProUCL_ready.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Arsenic

General Statistics

Total Number of Observations	182	Number of Distinct Observations	175
		Number of Missing Observations	0
Minimum	0.858	Mean	16.29
Maximum	1030	Median	9.027
SD	76.69	Std. Error of Mean	5.685
Coefficient of Variation	4.708	Skewness	12.93

Normal GOF Test

Shapiro Wilk Test Statistic	0.133	**Shapiro Wilk GOF Test**
5% Shapiro Wilk P Value	0	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.436	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0657	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	25.69	95% Adjusted-CLT UCL (Chen-1995)	31.46
		95% Modified-t UCL (Johnson-1978)	26.6

Gamma GOF Test

A-D Test Statistic	5.495E+28	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.789	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.314	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.0706	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.885	k star (bias corrected MLE)	0.874
Theta hat (MLE)	18.4	Theta star (bias corrected MLE)	18.63
nu hat (MLE)	322.2	nu star (bias corrected)	318.2
MLE Mean (bias corrected)	16.29	MLE Sd (bias corrected)	17.42
		Approximate Chi Square Value (0.05)	277.9
Adjusted Level of Significance	0.0487	Adjusted Chi Square Value	277.6

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	18.65	95% Adjusted Gamma UCL (use when n<50)	18.67

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.857	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk P Value	0	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.164	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.0657	Data Not Lognormal at 5% Significance Level	

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-0.153	Mean of logged Data	2.129
Maximum of Logged Data	6.937	SD of logged Data	0.781

Assuming Lognormal Distribution

95% H-UCL	12.79	90% Chebyshev (MVUE) UCL	13.61
95% Chebyshev (MVUE) UCL	14.63	97.5% Chebyshev (MVUE) UCL	16.03
99% Chebyshev (MVUE) UCL	18.8		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	25.64	95% Jackknife UCL	25.69
95% Standard Bootstrap UCL	25.88	95% Bootstrap-t UCL	83.7
95% Hall's Bootstrap UCL	57.52	95% Percentile Bootstrap UCL	27.39
95% BCA Bootstrap UCL	39.15		
90% Chebyshev(Mean, Sd) UCL	33.34	95% Chebyshev(Mean, Sd) UCL	41.07
97.5% Chebyshev(Mean, Sd) UCL	51.79	99% Chebyshev(Mean, Sd) UCL	72.85

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	41.07

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

General Statistics

Total Number of Observations	182	Number of Distinct Observations	97
Number of Detects	70	Number of Non-Detects	112
Number of Distinct Detects	70	Number of Distinct Non-Detects	27
Minimum Detect	0.0579	Minimum Non-Detect	0.045
Maximum Detect	823	Maximum Non-Detect	4.182
Variance Detects	9674	Percent Non-Detects	61.54%
Mean Detects	13.12	SD Detects	98.36
Median Detects	0.31	CV Detects	7.495
Skewness Detects	8.327	Kurtosis Detects	69.53
Mean of Logged Detects	-0.832	SD of Logged Detects	1.495

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.135	**Normal GOF Test on Detected Observations Only**
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.49	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.106	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	5.076	Standard Error of Mean	4.546
SD	60.9	95% KM (BCA) UCL	14.26
95% KM (t) UCL	12.59	95% KM (Percentile Bootstrap) UCL	14.12
95% KM (z) UCL	12.55	95% KM Bootstrap t UCL	360
90% KM Chebyshev UCL	18.72	95% KM Chebyshev UCL	24.89
97.5% KM Chebyshev UCL	33.47	99% KM Chebyshev UCL	50.31

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	17.41	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.908	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.401	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.118	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.214	k star (bias corrected MLE)	0.214
Theta hat (MLE)	61.38	Theta star (bias corrected MLE)	61.28
nu hat (MLE)	29.93	nu star (bias corrected)	29.98
MLE Mean (bias corrected)	13.12	MLE Sd (bias corrected)	28.36

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.00695	nu hat (KM)	2.529
Approximate Chi Square Value (2.53, α)	0.248	Adjusted Chi Square Value (2.53, β)	0.244
95% Gamma Approximate KM-UCL (use when n>=50)	51.81	95% Gamma Adjusted KM-UCL (use when n<50)	52.71

Gamma (KM) may not be used when k hat (KM) is < 0.1

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	5.053
Maximum	823	Median	0.01
SD	61.07	CV	12.08
k hat (MLE)	0.16	k star (bias corrected MLE)	0.161
Theta hat (MLE)	31.68	Theta star (bias corrected MLE)	31.47
nu hat (MLE)	58.07	nu star (bias corrected)	58.45
MLE Mean (bias corrected)	5.053	MLE Sd (bias corrected)	12.61
		Adjusted Level of Significance (β)	0.0487
Approximate Chi Square Value (58.45, α)	41.87	Adjusted Chi Square Value (58.45, β)	41.76
95% Gamma Approximate UCL (use when n>=50)	7.054	95% Gamma Adjusted UCL (use when n<50)	7.073

Lognormal GOF Test on Detected Observations Only

Lilliefors Test Statistic	0.162	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.106	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	5.056	Mean in Log Scale	-3.329
SD in Original Scale	61.07	SD in Log Scale	2.387
95% t UCL (assumes normality of ROS data)	12.54	95% Percentile Bootstrap UCL	13.92
95% BCA Bootstrap UCL	22.88	95% Bootstrap t UCL	380.5
95% H-UCL (Log ROS)	1.186		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	5.076	Mean in Log Scale	-2.48
SD in Original Scale	61.06	SD in Log Scale	1.632
95% t UCL (Assumes normality)	12.56	95% H-Stat UCL	0.445

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (BCA) UCL 14.26

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

General Statistics

Total Number of Observations	182	Number of Distinct Observations	174
		Number of Missing Observations	0
Minimum	2.754	Mean	163.3
Maximum	4549	Median	33.19
SD	480.7	Std. Error of Mean	35.63
Coefficient of Variation	2.944	Skewness	6.167

Normal GOF Test

Shapiro Wilk Test Statistic	0.36	**Shapiro Wilk GOF Test**
5% Shapiro Wilk P Value	0	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.369	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0657	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	222.2	95% Adjusted-CLT UCL (Chen-1995)	239.3
		95% Modified-t UCL (Johnson-1978)	224.9

Gamma GOF Test

A-D Test Statistic	14.9	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.829	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.215	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.0726	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.464	k star (bias corrected MLE)	0.46
Theta hat (MLE)	351.8	Theta star (bias corrected MLE)	354.9
nu hat (MLE)	168.9	nu star (bias corrected)	167.5
MLE Mean (bias corrected)	163.3	MLE Sd (bias corrected)	240.7
		Approximate Chi Square Value (0.05)	138.6
Adjusted Level of Significance	0.0487	Adjusted Chi Square Value	138.4

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	197.4	95% Adjusted Gamma UCL (use when n<50)	197.7

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.936	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk P Value	1.9641E-9	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.0846	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.0657	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	1.013	Mean of logged Data	3.711
Maximum of Logged Data	8.423	SD of logged Data	1.445

Assuming Lognormal Distribution

95% H-UCL	153.4	90% Chebyshev (MVUE) UCL	166.1
95% Chebyshev (MVUE) UCL	189.3	97.5% Chebyshev (MVUE) UCL	221.6
99% Chebyshev (MVUE) UCL	285		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	221.9	95% Jackknife UCL	222.2
95% Standard Bootstrap UCL	221.5	95% Bootstrap-t UCL	253.9
95% Hall's Bootstrap UCL	261.3	95% Percentile Bootstrap UCL	226.1
95% BCA Bootstrap UCL	240.7		
90% Chebyshev(Mean, Sd) UCL	270.2	95% Chebyshev(Mean, Sd) UCL	318.6
97.5% Chebyshev(Mean, Sd) UCL	385.8	99% Chebyshev(Mean, Sd) UCL	517.8

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	318.6

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

General Statistics

Total Number of Observations	182	Number of Distinct Observations	121
Number of Detects	42	Number of Non-Detects	140
Number of Distinct Detects	41	Number of Distinct Non-Detects	82
Minimum Detect	0.332	Minimum Non-Detect	0.282
Maximum Detect	47.42	Maximum Non-Detect	25.09
Variance Detects	52.22	Percent Non-Detects	76.92%
Mean Detects	1.719	SD Detects	7.226
Median Detects	0.566	CV Detects	4.203
Skewness Detects	6.474	Kurtosis Detects	41.94
Mean of Logged Detects	-0.441	SD of Logged Detects	0.738

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.174	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.942	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.513	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.137	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.615	Standard Error of Mean	0.261
SD	3.483	95% KM (BCA) UCL	1.147
95% KM (t) UCL	1.047	95% KM (Percentile Bootstrap) UCL	1.129
95% KM (z) UCL	1.045	95% KM Bootstrap t UCL	7.02
90% KM Chebyshev UCL	1.399	95% KM Chebyshev UCL	1.754
97.5% KM Chebyshev UCL	2.247	99% KM Chebyshev UCL	3.215

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	11.59	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.801	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.443	**Kolmogrov-Smirnoff GOF**	
5% K-S Critical Value	0.143	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.625	k star (bias corrected MLE)	0.596
Theta hat (MLE)	2.751	Theta star (bias corrected MLE)	2.883
nu hat (MLE)	52.51	nu star (bias corrected)	50.09
MLE Mean (bias corrected)	1.719	MLE Sd (bias corrected)	2.227

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0312	nu hat (KM)	11.37
Approximate Chi Square Value (11.37, α)	4.812	Adjusted Chi Square Value (11.37, β)	4.778
95% Gamma Approximate KM-UCL (use when n>=50)	1.453	95% Gamma Adjusted KM-UCL (use when n<50)	1.464

Gamma (KM) may not be used when k hat (KM) is < 0.1

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.404
Maximum	47.42	Median	0.01
SD	3.514	CV	8.689
k hat (MLE)	0.258	k star (bias corrected MLE)	0.257
Theta hat (MLE)	1.568	Theta star (bias corrected MLE)	1.571
nu hat (MLE)	93.92	nu star (bias corrected)	93.7
MLE Mean (bias corrected)	0.404	MLE Sd (bias corrected)	0.797
		Adjusted Level of Significance (β)	0.0487
Approximate Chi Square Value (93.70, α)	72.38	Adjusted Chi Square Value (93.70, β)	72.23
95% Gamma Approximate UCL (use when n>=50)	0.524	95% Gamma Adjusted UCL (use when n<50)	0.525

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.502	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.942	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.26	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.137	Detected Data Not Lognormal at 5% Significance Level	

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.468	Mean in Log Scale	-1.998
SD in Original Scale	3.507	SD in Log Scale	0.997
95% t UCL (assumes normality of ROS data)	0.898	95% Percentile Bootstrap UCL	0.982
95% BCA Bootstrap UCL	1.27	95% Bootstrap t UCL	5.039
95% H-UCL (Log ROS)	0.262		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.6	Mean in Log Scale	-1.418
SD in Original Scale	3.612	SD in Log Scale	0.72
95% t UCL (Assumes normality)	1.043	95% H-Stat UCL	0.348

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	1.047	95% KM (% Bootstrap) UCL	1.129

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

General Statistics

Total Number of Observations	182	Number of Distinct Observations	30
Number of Detects	12	Number of Non-Detects	170
Number of Distinct Detects	11	Number of Distinct Non-Detects	21
Minimum Detect	160	Minimum Non-Detect	230
Maximum Detect	25000	Maximum Non-Detect	2500
Variance Detects	49768924	Percent Non-Detects	93.41%
Mean Detects	2742	SD Detects	7055
Median Detects	445	CV Detects	2.573
Skewness Detects	3.388	Kurtosis Detects	11.6
Mean of Logged Detects	6.439	SD of Logged Detects	1.485

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.41	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.859	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.408	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.256	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	356	Standard Error of Mean	143.3
SD	1847	95% KM (BCA) UCL	652.1
95% KM (t) UCL	592.9	95% KM (Percentile Bootstrap) UCL	622.9
95% KM (z) UCL	591.7	95% KM Bootstrap t UCL	2251
90% KM Chebyshev UCL	785.9	95% KM Chebyshev UCL	980.7
97.5% KM Chebyshev UCL	1251	99% KM Chebyshev UCL	1782

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.616	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.797	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.271	**Kolmogrov-Smirnoff GOF**	
5% K-S Critical Value	0.261	Detected Data Not Gamma Distributed at 5% Significance Level	

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.439	k star (bias corrected MLE)	0.385
Theta hat (MLE)	6249	Theta star (bias corrected MLE)	7128
nu hat (MLE)	10.53	nu star (bias corrected)	9.231
MLE Mean (bias corrected)	2742	MLE Sd (bias corrected)	4421

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0372	nu hat (KM)	13.52
Approximate Chi Square Value (13.52, α)	6.247	Adjusted Chi Square Value (13.52, β)	6.207
95% Gamma Approximate KM-UCL (use when n>=50)	770.8	95% Gamma Adjusted KM-UCL (use when n<50)	775.7

Gamma (KM) may not be used when k hat (KM) is < 0.1

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	241.6
Maximum	25000	Median	0.01
SD	1882	CV	7.791
k hat (MLE)	0.0957	k star (bias corrected MLE)	0.0978
Theta hat (MLE)	2524	Theta star (bias corrected MLE)	2471
nu hat (MLE)	34.83	nu star (bias corrected)	35.59
MLE Mean (bias corrected)	241.6	MLE Sd (bias corrected)	772.5
		Adjusted Level of Significance (β)	0.0487
Approximate Chi Square Value (35.59, α)	22.94	Adjusted Chi Square Value (35.59, β)	22.86
95% Gamma Approximate UCL (use when n>=50)	374.8	95% Gamma Adjusted UCL (use when n<50)	376.1

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.846	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.859	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.179	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.256	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	371.9	Mean in Log Scale	5.144
SD in Original Scale	1856	SD in Log Scale	0.89
95% t UCL (assumes normality of ROS data)	599.4	95% Percentile Bootstrap UCL	640.6
95% BCA Bootstrap UCL	790.4	95% Bootstrap t UCL	2026
95% H-UCL (Log ROS)	292		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	5.301	95% H-UCL (KM -Log)	242.3
KM SD (logged)	0.495	95% Critical H Value (KM-Log)	1.812
KM Standard Error of Mean (logged)	0.0618		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	417.7	Mean in Log Scale	5.361
SD in Original Scale	1856	SD in Log Scale	0.79
95% t UCL (Assumes normality)	645.2	95% H-Stat UCL	327.4

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (BCA) UCL 652.1

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	5/15/2014 1:24:32 PM
From File	Copy of FTMM05_Soil_ProUCL_ready.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Benzo(a)pyrene

General Statistics

Total Number of Observations	182	Number of Distinct Observations	54
Number of Detects	74	Number of Non-Detects	108
Number of Distinct Detects	44	Number of Distinct Non-Detects	18
Minimum Detect	110	Minimum Non-Detect	180
Maximum Detect	11000	Maximum Non-Detect	2000
Variance Detects	2980768	Percent Non-Detects	59.34%
Mean Detects	810.7	SD Detects	1726
Median Detects	335	CV Detects	2.13
Skewness Detects	4.62	Kurtosis Detects	22.85
Mean of Logged Detects	5.953	SD of Logged Detects	1.011

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.411	**Normal GOF Test on Detected Observations Only**
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.349	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.103	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	427.7	Standard Error of Mean	85.39
SD	1141	95% KM (BCA) UCL	574.2
95% KM (t) UCL	568.9	95% KM (Percentile Bootstrap) UCL	583.9
95% KM (z) UCL	568.2	95% KM Bootstrap t UCL	730.1
90% KM Chebyshev UCL	683.9	95% KM Chebyshev UCL	799.9
97.5% KM Chebyshev UCL	961	99% KM Chebyshev UCL	1277

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	6.088	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.791	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.215	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.108	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.797	k star (bias corrected MLE)	0.774
Theta hat (MLE)	1017	Theta star (bias corrected MLE)	1048
nu hat (MLE)	118	nu star (bias corrected)	114.5
MLE Mean (bias corrected)	810.7	MLE Sd (bias corrected)	921.7

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.141	nu hat (KM)	51.14
Approximate Chi Square Value (51.14, α)	35.72	Adjusted Chi Square Value (51.14, β)	35.62
95% Gamma Approximate KM-UCL (use when n>=50)	612.4	95% Gamma Adjusted KM-UCL (use when n<50)	614.2

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	353.1
Maximum	11000	Median	0.01
SD	1169	CV	3.31
k hat (MLE)	0.136	k star (bias corrected MLE)	0.138
Theta hat (MLE)	2593	Theta star (bias corrected MLE)	2567
nu hat (MLE)	49.56	nu star (bias corrected)	50.08
MLE Mean (bias corrected)	353.1	MLE Sd (bias corrected)	952
		Adjusted Level of Significance (β)	0.0487
Approximate Chi Square Value (50.08, α)	34.83	Adjusted Chi Square Value (50.08, β)	34.73
95% Gamma Approximate UCL (use when n>=50)	507.7	95% Gamma Adjusted UCL (use when n<50)	509.2

Lognormal GOF Test on Detected Observations Only

Lilliefors Test Statistic	0.11	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.103	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	425.5	Mean in Log Scale	5.331
SD in Original Scale	1145	SD in Log Scale	0.952
95% t UCL (assumes normality of ROS data)	565.8	95% Percentile Bootstrap UCL	568.8
95% BCA Bootstrap UCL	631.5	95% Bootstrap t UCL	676.1
95% H-UCL (Log ROS)	377.9		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	460.7	Mean in Log Scale	5.432
SD in Original Scale	1145	SD in Log Scale	0.962
95% t UCL (Assumes normality)	601	95% H-Stat UCL	423

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (BCA) UCL	574.2	0.5742

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

User Selected Options	
Date/Time of Computation	5/15/2014 1:40:13 PM
From File	Copy of FTMM05_Soil_ProUCL_ready.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Mercury

General Statistics

Total Number of Observations	182	Number of Distinct Observations	129
Number of Detects	156	Number of Non-Detects	26
Number of Distinct Detects	122	Number of Distinct Non-Detects	14
Minimum Detect	0.0062	Minimum Non-Detect	0
Maximum Detect	31.45	Maximum Non-Detect	0.044
Variance Detects	9.178	Percent Non-Detects	14.29%
Mean Detects	0.698	SD Detects	3.03
Median Detects	0.115	CV Detects	4.341
Skewness Detects	8.218	Kurtosis Detects	75.36

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.235	**Normal GOF Test on Detected Observations Only**
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.41	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0709	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.6	Standard Error of Mean	0.209
SD	2.806	95% KM (BCA) UCL	0.98
95% KM (t) UCL	0.945	95% KM (Percentile Bootstrap) UCL	0.955
95% KM (z) UCL	0.943	95% KM Bootstrap t UCL	1.549
90% KM Chebyshev UCL	1.226	95% KM Chebyshev UCL	1.509
97.5% KM Chebyshev UCL	1.903	99% KM Chebyshev UCL	2.676

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	14.33	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.846	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.235	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.0804	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.394	k star (bias corrected MLE)	0.391
Theta hat (MLE)	1.771	Theta star (bias corrected MLE)	1.786
nu hat (MLE)	122.9	nu star (bias corrected)	121.9
MLE Mean (bias corrected)	0.698	MLE Sd (bias corrected)	1.116

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0456	nu hat (KM)	16.61
		Adjusted Level of Significance (β)	0.0487
Approximate Chi Square Value (16.61, α)	8.397	Adjusted Chi Square Value (16.61, β)	8.351
95% Gamma Approximate KM-UCL (use when n>=50)	1.186	95% Gamma Adjusted KM-UCL (use when n<50)	1.193

Gamma (KM) may not be used when k hat (KM) is < 0.1

DL/2 Statistics

Mean in Original Scale	0.6	SD in Original Scale	2.814
95% t UCL (Assumes normality)	0.944		

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL 1.903

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Site-specific
Outdoor Worker Equation Inputs for Soil
MODIFIED FOR UTILITY WORKER

Variable	Value
TR (target cancer risk) unitless	0.000001
THQ (target hazard quotient) unitless	1
AT_{ow} (averaging time)	365
EF_{ow} (exposure frequency) d/yr	30
ED_{ow} (exposure duration) yr	1
ET_{ow} (exposure time) hr	8
LT (lifetime) yr	70
BW_{ow} (body weight)	80
IR_{ow} (soil ingestion rate) mg/day	330
SA_{ow} (surface area) cm^2/day	3470
AF_{ow} (skin adherence factor) mg/cm^2	0.12
City (Climate Zone) PEF Selection	Philadelphia, P
A_s (acres) PEF Selection	0.5
Q/C_{wp} (g/m^2-s per kg/m^3) PEF Selection	87.36898
PEF (particulate emission factor) m^3/kg	3232997857
A (PEF Dispersion Constant)	14.0111
B (PEF Dispersion Constant)	19.6154
C (PEF Dispersion Constant)	225.3397
V (fraction of vegetative cover) unitless	0.5
U_m (mean annual wind speed) m/s	4.29
U_t (equivalent threshold value)	11.32
F(x) (function dependant on U_m/U_t) unitless	0.0993
City (Climate Zone) VF Selection	Philadelphia, P
A_s (acres) VF Selection	0.5
Q/C_{wp} (g/m^2-s per kg/m^3) VF Selection	87.36898
foc (fraction organic carbon in soil) g/g	0.006

ρ$_b$ (dry soil bulk density) g/cm^3	1.5
ρ$_s$ (soil particle density) g/cm^3	2.65
θ$_w$ (water-filled soil porosity) L_{water}/L_{soil}	0.15
T (exposure interval) s	950000000
A (VF Dispersion Constant)	14.0111
B (VF Dispersion Constant)	19.6154
C (VF Dispersion Constant)	225.3397

Output generated 18MAY2015:09:10:02

Site-specific

Outdoor Worker Screening Levels (RSL) for Soil - Modified for Utility Worker Exposure to Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS
ALAR	1596-84-5	No	No	1.80E-02	U	5.10E-06	U	1.50E-01	U	-		1	0.1
Acenaphthene	83-32-9	No	Yes	-		-		6.00E-02	U	-		1	0.13
Acenaphthylene	208-96-8	No	Yes	-		-		-		-		1	0.13
Acephate	30560-19-1	No	No	8.70E-03	U	-		4.00E-03	U	-		1	0.1
Acetaldehyde	75-07-0	No	Yes	-		2.20E-06	U	-		9.00E-03	U	1	-
Acetochlor	34256-82-1	No	No	-		-		2.00E-02	U	-		1	0.1
Acetone	67-64-1	No	Yes	-		-		9.00E-01	U	3.09E+01	U	1	-
Acetone Cyanohydrin	75-86-5	No	Yes	-		-		-		2.00E-03	U	1	-
Acetonitrile	75-05-8	No	Yes	-		-		-		6.00E-02	U	1	-
Acetophenone	98-86-2	No	Yes	-		-		1.00E-01	U	-		1	-
Acetylaminofluorene, 2-	53-96-3	No	No	3.80E+00	U	1.30E-03	U	-		-		1	0.1
Acifluorofen	50594-66-6	No	No	-		-		-		-		1	0.1
Acridine	260-94-6	No	No	-		-		-		-		1	0.1
Acrolein	107-02-8	No	Yes	-		-		5.00E-04	U	2.00E-05	U	1	-
Acrylamide	79-06-1	Yes	No	5.00E-01	U	1.00E-04	U	2.00E-03	U	6.00E-03	U	1	0.1
Acrylic Acid	79-10-7	No	Yes	-		-		5.00E-01	U	1.00E-03	U	1	-
Acrylonitrile	107-13-1	No	Yes	5.40E-01	U	6.80E-05	U	4.00E-02	U	2.00E-03	U	1	-
Adiponitrile	111-69-3	No	No	-		-		-		6.00E-03	U	1	0.1
Alachlor	15972-60-8	No	No	5.60E-02	U	-		1.00E-02	U	-		1	0.1
Aldicarb	116-06-3	No	No	-		-		1.00E-03	U	-		1	0.1
Aldicarb Sulfone	1646-88-4	No	No	-		-		1.00E-03	U	-		1	0.1
Aldicarb sulfoxide	1646-87-3	No	No	-		-		-		-		1	0.1
Aldrin	309-00-2	No	Yes	1.70E+01	U	4.90E-03	U	3.00E-05	U	-		1	-
Aliphatic Chlorinated Hydrocarbons (each)	NA	No	No	-		-		-		-		1	0.1
Aliphatic Chlorinated Hydrocarbons (total)	NA	No	No	-		-		-		-		1	0.1
Alizarin Red Compounds	NA	No	No	-		-		-		-		1	0.1
Ally	74223-64-6	No	No	-		-		2.50E-01	U	-		1	0.1
Allyl Alcohol	107-18-6	No	Yes	-		-		5.00E-03	U	1.00E-04	U	1	-
Allyl Chloride	107-05-1	No	Yes	2.10E-02	U	6.00E-06	U	-		1.00E-03	U	1	-
Aluminum	7429-90-5	No	No	-		-		1.00E+00	U	5.00E-03	U	1	-
Aluminum Phosphide	20859-73-8	No	No	-		-		4.00E-04	U	-		1	-
Aluminum metaphosphate	13776-88-0	No	No	-		-		4.86E+01	U	-		1	-
Amdro	67485-29-4	No	No	-		-		3.00E-04	U	-		1	0.1
Ametryn	834-12-8	No	No	-		-		9.00E-03	U	-		1	0.1
Amino-4-chlorobenzotrifluoride, 3-	121-50-6	No	Yes	-		-		-		-		1	-
Aminoazobenzene, p-	60-09-3	No	No	-		-		-		-		1	0.1
Aminobiphenyl, 4-	92-67-1	No	No	2.10E+01	U	6.00E-03	U	-		-		1	0.1
Aminophenol, m-	591-27-5	No	No	-		-		8.00E-02	U	-		1	0.1
Aminophenol, o-	95-55-6	No	No	-		-		-		-		1	0.1
Aminophenol, p-	123-30-8	No	No	-		-		2.00E-02	U	-		1	0.1
Aminopyridine, 4-	504-24-5	No	No	-		-		-		-		1	0.1
Amitraz	33089-61-1	No	No	-		-		2.50E-03	U	-		1	0.1
Ammonium Perchlorate	7790-98-9	No	No	-		-		7.00E-04	U	-		1	-
Ammonium Sulfamate	7773-06-0	No	No	-		-		2.00E-01	U	-		1	-
Ammonium polyphosphate	68333-79-9	No	No	-		-		4.86E+01	U	-		1	-
Amyl Alcohol, tert-	75-85-4	No	Yes	-		-		-		3.00E-03	U	1	-
Aniline	62-53-3	No	No	5.70E-03	U	1.60E-06	U	7.00E-03	U	1.00E-03	U	1	0.1
Anilinobenzothiazole	1843-21-6	No	No	-		-		-		-		1	0.1
Anthracene	120-12-7	No	Yes	-		-		3.00E-01	U	-		1	0.13
Anthraquinone, 9,10-	84-65-1	No	No	4.00E-02	U	-		2.00E-03	U	-		1	0.1
Antimony (metallic)	7440-36-0	No	No	-		-		4.00E-04	U	-		0.15	-
Antimony Pentoxide	1314-60-9	No	No	-		-		5.00E-04	U	-		0.15	-
Antimony Potassium Tartrate	11071-15-1	No	No	-		-		9.00E-04	U	-		0.15	-

Site-specific

Outdoor Worker Screening Levels (RSL) for Soil - Modified for Utility Worker Exposure to Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gui
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
ALAR	1596-84-5	1	-	-	3.23E+09	1.15E+04	9.09E+04	1.62E+09	1.02E+04	4.42E+05	3.51E+06	-	3.93E+05	1.02E+04 ca*
Acenaphthene	83-32-9	1	1.94E+05	-	3.23E+09	-	-	-	-	1.77E+05	1.08E+06	-	1.52E+05	1.52E+05 max
Acenaphthylene	208-96-8	1	2.61E+05	-	3.23E+09	-	-	-	-	-	-	-	-	
Acephate	30560-19-1	1	-	-	3.23E+09	2.37E+04	1.88E+05	-	2.11E+04	1.18E+04	9.35E+04	-	1.05E+04	1.05E+04 nc
Acetaldehyde	75-07-0	1	1.20E+04	1.07E+05	3.23E+09	-	-	1.39E+04	1.39E+04	-	-	3.94E+03	3.94E+03	3.94E+03 nc
Acetochlor	34256-82-1	1	-	-	3.23E+09	-	-	-	-	5.90E+04	4.67E+05	-	5.24E+04	5.24E+04 nc
Acetone	67-64-1	1	1.88E+04	1.14E+05	3.23E+09	-	-	-	-	2.65E+06	-	2.13E+07	2.36E+06	2.36E+06 sat
Acetone Cyanohydrin	75-86-5	1	3.28E+04	1.06E+05	3.23E+09	-	-	-	-	-	-	2.39E+03	2.39E+03	2.39E+03 nc
Acetonitrile	75-05-8	1	1.79E+04	1.28E+05	3.23E+09	-	-	-	-	-	-	3.92E+04	3.92E+04	3.92E+04 nc
Acetophenone	98-86-2	1	8.24E+04	2.52E+03	3.23E+09	-	-	-	-	2.95E+05	-	-	2.95E+05	2.95E+05 sat
Acetylaminofluorene, 2-	53-96-3	1	-	-	3.23E+09	5.43E+01	4.31E+02	6.35E+06	4.82E+01	-	-	-	-	4.82E+01 ca
Acifluorofen	50594-66-6	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Acridine	260-94-6	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Acrolein	107-02-8	1	9.52E+03	2.27E+04	3.23E+09	-	-	-	-	1.47E+03	-	6.95E+00	6.92E+00	6.92E+00 nc
Acrylamide	79-06-1	1	-	-	3.23E+09	4.13E+02	3.27E+03	8.26E+07	3.67E+02	5.90E+03	4.67E+04	7.08E+08	5.24E+03	3.67E+02 ca*
Acrylic Acid	79-10-7	1	1.31E+05	1.09E+05	3.23E+09	-	-	-	-	1.47E+06	-	4.80E+03	4.78E+03	4.78E+03 nc
Acrylonitrile	107-13-1	1	1.06E+04	1.13E+04	3.23E+09	3.82E+02	-	3.98E+02	1.95E+02	1.18E+05	-	7.73E+02	7.68E+02	1.95E+02 ca**
Adiponitrile	111-69-3	1	-	-	3.23E+09	-	-	-	-	-	-	7.08E+08	7.08E+08	7.08E+08 max
Alachlor	15972-60-8	1	-	-	3.23E+09	3.69E+03	2.92E+04	-	3.27E+03	2.95E+04	2.34E+05	-	2.62E+04	3.27E+03 ca**
Aldicarb	116-06-3	1	-	-	3.23E+09	-	-	-	-	2.95E+03	2.34E+04	-	2.62E+03	2.62E+03 nc
Aldicarb Sulfone	1646-88-4	1	-	-	3.23E+09	-	-	-	-	2.95E+03	2.34E+04	-	2.62E+03	2.62E+03 nc
Aldicarb sulfoxide	1646-87-3	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Aldrin	309-00-2	1	2.37E+06	-	3.23E+09	1.21E+01	-	1.23E+03	1.20E+01	8.85E+01	-	-	8.85E+01	1.20E+01 ca**
Aliphatic Chlorinated Hydrocarbons (each)	NA	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Aliphatic Chlorinated Hydrocarbons (total)	NA	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Alizarin Red Compounds	NA	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Ally	74223-64-6	1	-	-	3.23E+09	-	-	-	-	7.37E+05	5.84E+06	-	6.55E+05	6.55E+05 max
Allyl Alcohol	107-18-6	1	4.71E+04	1.11E+05	3.23E+09	-	-	-	-	1.47E+04	-	1.72E+02	1.70E+02	1.70E+02 nc
Allyl Chloride	107-05-1	1	2.18E+03	1.42E+03	3.23E+09	9.83E+03	-	9.30E+02	8.49E+02	-	-	7.97E+01	7.97E+01	7.97E+01 nc
Aluminum	7429-90-5	1	-	-	3.23E+09	-	-	-	-	2.95E+06	-	5.90E+08	2.93E+06	2.93E+06 max
Aluminum Phosphide	20859-73-8	1	-	-	3.23E+09	-	-	-	-	1.18E+03	-	-	1.18E+03	1.18E+03 nc
Aluminum metaphosphate	13776-88-0	1	-	-	3.23E+09	-	-	-	-	1.43E+08	-	-	1.43E+08	1.43E+08 max
Amdro	67485-29-4	1	-	-	3.23E+09	-	-	-	-	8.85E+02	7.01E+03	-	7.86E+02	7.86E+02 nc
Ametryn	834-12-8	1	-	-	3.23E+09	-	-	-	-	2.65E+04	2.10E+05	-	2.36E+04	2.36E+04 nc
Amino-4-chlorobenzotrifluoride, 3-	121-50-6	1	3.69E+05	-	3.23E+09	-	-	-	-	-	-	-	-	
Aminoazobenzene, p-	60-09-3	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Aminobiphenyl, 4-	92-67-1	1	-	-	3.23E+09	9.83E+00	7.79E+01	1.38E+06	8.73E+00	-	-	-	-	8.73E+00 ca
Aminophenol, m-	591-27-5	1	-	-	3.23E+09	-	-	-	-	2.36E+05	1.87E+06	-	2.10E+05	2.10E+05 max
Aminophenol, o-	95-55-6	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Aminophenol, p-	123-30-8	1	-	-	3.23E+09	-	-	-	-	5.90E+04	4.67E+05	-	5.24E+04	5.24E+04 nc
Aminopyridine, 4-	504-24-5	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Amitraz	33089-61-1	1	-	-	3.23E+09	-	-	-	-	7.37E+03	5.84E+04	-	6.55E+03	6.55E+03 nc
Ammonium Perchlorate	7790-98-9	1	-	-	3.23E+09	-	-	-	-	2.06E+03	-	-	2.06E+03	2.06E+03 nc
Ammonium Sulfamate	7773-06-0	1	-	-	3.23E+09	-	-	-	-	5.90E+05	-	-	5.90E+05	5.90E+05 max
Ammonium polyphosphate	68333-79-9	1	-	-	3.23E+09	-	-	-	-	1.43E+08	-	-	1.43E+08	1.43E+08 max
Amyl Alcohol, tert-	75-85-4	1	3.62E+04	1.37E+04	3.23E+09	-	-	-	-	-	-	3.96E+03	3.96E+03	3.96E+03 nc
Aniline	62-53-3	1	-	-	3.23E+09	3.62E+04	2.87E+05	5.16E+09	3.22E+04	2.06E+04	1.64E+05	1.18E+08	1.83E+04	1.83E+04 nc
Anilinobenzothiazole	1843-21-6	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Anthracene	120-12-7	1	7.23E+05	-	3.23E+09	-	-	-	-	8.85E+05	5.39E+06	-	7.60E+05	7.60E+05 max
Anthraquinone, 9,10-	84-65-1	1	-	-	3.23E+09	5.16E+03	4.09E+04	-	4.58E+03	5.90E+03	4.67E+04	-	5.24E+03	4.58E+03 ca**
Antimony (metallic)	7440-36-0	1	-	-	3.23E+09	-	-	-	-	1.18E+03	-	-	1.18E+03	1.18E+03 nc
Antimony Pentoxide	1314-60-9	1	-	-	3.23E+09	-	-	-	-	1.47E+03	-	-	1.47E+03	1.47E+03 nc
Antimony Potassium Tartrate	11071-15-1	1	-	-	3.23E+09	-	-	-	-	2.65E+03	-	-	2.65E+03	2.65E+03 nc

Site-specific

Outdoor Worker Screening Levels (RSL) for Soil - Modified for Utility Worker Exposure to Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS
Antimony Tetroxide	1332-81-6	No	No	-		-		4.00E-04	U	-		0.15	-
Antimony Trichloride	10025-91-9	No	No	-		-		-		-		1	-
Antimony Trioxide	1309-64-4	No	No	-		-		-		2.00E-04	U	0.15	-
Apollo	74115-24-5	No	No	-		-		1.30E-02	U	-		1	0.1
Aramite	140-57-8	No	No	2.50E-02	U	7.10E-06	U	5.00E-02	U	-		1	0.1
Aroclor 1016	12674-11-2	No	Yes	7.00E-02	U	2.00E-05	U	7.00E-05	U	-		1	0.14
Aroclor 1221	11104-28-2	No	Yes	2.00E+00	U	5.71E-04	U	-		-		1	0.14
Aroclor 1232	11141-16-5	No	Yes	2.00E+00	U	5.71E-04	U	-		-		1	0.14
Aroclor 1242	53469-21-9	No	Yes	2.00E+00	U	5.71E-04	U	-		-		1	0.14
Aroclor 1248	12672-29-6	No	Yes	2.00E+00	U	5.71E-04	U	-		-		1	0.14
Aroclor 1254	11097-69-1	No	Yes	2.00E+00	U	5.71E-04	U	2.00E-05	U	-		1	0.14
Aroclor 1260	11096-82-5	No	Yes	2.00E+00	U	5.71E-04	U	-		-		1	0.14
Aroclor 5460	11126-42-4	No	Yes	-		-		6.00E-04	U	-		1	0.14
Arsenic Salts	NA	No	No	-		-		-		-		1	0.03
Arsenic, Inorganic	7440-38-2	No	No	1.50E+00	U	4.30E-03	U	3.00E-04	U	1.50E-05	U	1	0.03
Arsine	7784-42-1	No	No	-		-		3.50E-06	U	5.00E-05	U	1	-
Assure	76578-14-8	No	No	-		-		9.00E-03	U	-		1	0.1
Asulam	3337-71-1	No	No	-		-		5.00E-02	U	-		1	0.1
Atrazine	1912-24-9	No	No	2.30E-01	U	-		3.50E-02	U	-		1	0.1
Auramine	492-80-8	No	No	8.80E-01	U	2.50E-04	U	-		-		1	0.1
Avermectin B1	65195-55-3	No	No	-		-		4.00E-04	U	-		1	0.1
Azobenzene	103-33-3	No	Yes	1.10E-01	U	3.10E-05	U	-		-		1	-
Azodicarbonamide	123-77-3	No	No	-		-		1.00E+00	U	7.00E-06	U	1	0.1
Barium	7440-39-3	No	No	-		-		2.00E-01	U	5.00E-04	U	0.07	-
Barium Chromate	10294-40-3	Yes	No	5.00E-01	U	1.50E-01	U	2.00E-02	U	2.00E-04	U	0.025	-
Barium Cyanide	542-62-1	No	No	-		-		-		-		0.07	-
Baygon	114-26-1	No	No	-		-		4.00E-03	U	-		1	0.1
Bayleton	43121-43-3	No	No	-		-		3.00E-02	U	-		1	0.1
Baythroid	68359-37-5	No	No	-		-		2.50E-02	U	-		1	0.1
Benefin	1861-40-1	No	Yes	-		-		3.00E-01	U	-		1	-
Benomyl	17804-35-2	No	No	-		-		5.00E-02	U	-		1	0.1
Bentazon	25057-89-0	No	No	-		-		3.00E-02	U	-		1	0.1
Benz[a]anthracene	56-55-3	Yes	Yes	7.30E-01	U	1.10E-04	U	-		-		1	0.13
Benzaldehyde	100-52-7	No	Yes	-		-		1.00E-01	U	-		1	-
Benzene	71-43-2	No	Yes	5.50E-02	U	7.80E-06	U	4.00E-03	U	3.00E-02	U	1	-
Benzene, Ethyldimethyl	29224-55-3	No	Yes	-		-		-		-		1	-
Benzene, Ethylmethyl	25550-14-5	No	Yes	-		-		-		-		1	-
Benzene, Methylpropenyl	768-00-3	No	Yes	-		-		-		-		1	-
Benzene, Methylpropyl	28729-54-6	No	No	-		-		-		-		1	0.1
Benzene, Trimethyl	25551-13-7	No	Yes	-		-		-		-		1	-
Benzenediamine-2-methyl sulfate, 1,4-	6369-59-1	No	No	1.00E-01	U	-		3.00E-04	U	-		1	0.1
Benzenethiol	108-98-5	No	Yes	-		-		1.00E-03	U	-		1	-
Benzidine	92-87-5	Yes	No	2.30E+02	U	6.70E-02	U	3.00E-03	U	-		1	0.1
Benzo(j)fluoranthene	205-82-3	No	No	1.20E+00	U	1.10E-04	U	-		-		1	0.13
Benzo[a]pyrene	50-32-8	Yes	No	7.30E+00	U	1.10E-03	U	-		-		1	0.13
Benzo[b]fluoranthene	205-99-2	Yes	No	7.30E-01	U	1.10E-04	U	-		-		1	0.13
Benzo[g,h,i]perylene	191-24-2	No	No	-		-		-		-		1	0.13
Benzo[k]fluoranthene	207-08-9	Yes	No	7.30E-02	U	1.10E-04	U	-		-		1	0.13
Benzofluoranthenes, total	NA	No	No	-		-		-		-		1	0.1
Benzofluorene, 2,3-	243-17-4	No	No	-		-		-		-		1	0.1
Benzoic Acid	65-85-0	No	No	-		-		4.00E+00	U	-		1	0.1
Benzoic acid, 3,5-dichloro-	51-36-5	No	No	-		-		-		-		1	0.1
Benzoic acid, 4-hydroxy-, methyl ester	99-76-3	No	No	-		-		-		-		1	0.1

Site-specific

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ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gui
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Antimony Tetroxide	1332-81-6	1	-	-	3.23E+09	-	-	-	-	1.18E+03	-	-	1.18E+03	1.18E+03 nc
Antimony Trichloride	10025-91-9	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Antimony Trioxide	1309-64-4	1	-	-	3.23E+09	-	-	-	-	-	-	2.36E+07	2.36E+07	2.36E+07 max
Apollo	74115-24-5	1	-	-	3.23E+09	-	-	-	-	3.83E+04	3.04E+05	-	3.40E+04	3.40E+04 nc
Aramite	140-57-8	1	-	-	3.23E+09	8.26E+03	6.54E+04	1.16E+09	7.33E+03	1.47E+05	1.17E+06	-	1.31E+05	7.33E+03 ca*
Aroclor 1016	12674-11-2	1	8.07E+05	-	3.23E+09	2.95E+03	1.67E+04	1.03E+05	2.45E+03	2.06E+02	1.17E+03	-	1.75E+02	1.75E+02 nc
Aroclor 1221	11104-28-2	1	1.57E+05	-	3.23E+09	1.03E+02	5.84E+02	7.00E+02	7.80E+01	-	-	-	-	7.80E+01 ca
Aroclor 1232	11141-16-5	1	1.54E+05	-	3.23E+09	1.03E+02	5.84E+02	6.91E+02	7.78E+01	-	-	-	-	7.78E+01 ca
Aroclor 1242	53469-21-9	1	1.09E+06	-	3.23E+09	1.03E+02	5.84E+02	4.89E+03	8.62E+01	-	-	-	-	8.62E+01 ca
Aroclor 1248	12672-29-6	1	7.08E+05	-	3.23E+09	1.03E+02	5.84E+02	3.17E+03	8.54E+01	-	-	-	-	8.54E+01 ca
Aroclor 1254	11097-69-1	1	1.16E+06	-	3.23E+09	1.03E+02	5.84E+02	5.21E+03	8.63E+01	5.90E+01	3.34E+02	-	5.01E+01	5.01E+01 nc
Aroclor 1260	11096-82-5	1	1.82E+06	-	3.23E+09	1.03E+02	5.84E+02	8.13E+03	8.68E+01	-	-	-	-	8.68E+01 ca
Aroclor 5460	11126-42-4	1	9.89E+05	-	3.23E+09	-	-	-	-	1.77E+03	1.00E+04	-	1.50E+03	1.50E+03 nc
Arsenic Salts	NA	0.6	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Arsenic, Inorganic	7440-38-2	0.6	-	-	3.23E+09	2.29E+02	3.64E+03	1.92E+06	2.16E+02	1.47E+03	2.34E+04	1.77E+06	1.39E+03	2.16E+02 ca**
Arsine	7784-42-1	1	-	-	3.23E+09	-	-	-	-	1.03E+01	-	5.90E+06	1.03E+01	1.03E+01 nc
Assure	76578-14-8	1	-	-	3.23E+09	-	-	-	-	2.65E+04	2.10E+05	-	2.36E+04	2.36E+04 nc
Asulam	3337-71-1	1	-	-	3.23E+09	-	-	-	-	1.47E+05	1.17E+06	-	1.31E+05	1.31E+05 max
Atrazine	1912-24-9	1	-	-	3.23E+09	8.98E+02	7.11E+03	-	7.97E+02	1.03E+05	8.18E+05	-	9.17E+04	7.97E+02 ca
Auramine	492-80-8	1	-	-	3.23E+09	2.35E+02	1.86E+03	3.30E+07	2.08E+02	-	-	-	-	2.08E+02 ca
Avermectin B1	65195-55-3	1	-	-	3.23E+09	-	-	-	-	1.18E+03	9.35E+03	-	1.05E+03	1.05E+03 nc
Azobenzene	103-33-3	1	7.21E+05	-	3.23E+09	1.88E+03	-	5.94E+04	1.82E+03	-	-	-	-	1.82E+03 ca
Azodicarbonamide	123-77-3	1	-	-	3.23E+09	-	-	-	-	2.95E+06	2.34E+07	8.26E+05	6.28E+05	6.28E+05 max
Barium	7440-39-3	1	-	-	3.23E+09	-	-	-	-	5.90E+05	-	5.90E+07	5.84E+05	5.84E+05 max
Barium Chromate	10294-40-3	1	-	-	3.23E+09	4.13E+02	-	5.51E+04	4.10E+02	5.90E+04	-	2.36E+07	5.88E+04	4.10E+02 ca
Barium Cyanide	542-62-1	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Baygon	114-26-1	1	-	-	3.23E+09	-	-	-	-	1.18E+04	9.35E+04	-	1.05E+04	1.05E+04 nc
Bayleton	43121-43-3	1	-	-	3.23E+09	-	-	-	-	8.85E+04	7.01E+05	-	7.86E+04	7.86E+04 nc
Baythroid	68359-37-5	1	-	-	3.23E+09	-	-	-	-	7.37E+04	5.84E+05	-	6.55E+04	6.55E+04 nc
Benefin	1861-40-1	1	4.23E+05	-	3.23E+09	-	-	-	-	8.85E+05	-	-	8.85E+05	8.85E+05 max
Benomyl	17804-35-2	1	-	-	3.23E+09	-	-	-	-	1.47E+05	1.17E+06	-	1.31E+05	1.31E+05 max
Bentazon	25057-89-0	1	-	-	3.23E+09	-	-	-	-	8.85E+04	7.01E+05	-	7.86E+04	7.86E+04 nc
Benz[a]anthracene	56-55-3	1	6.09E+06	-	3.23E+09	2.83E+02	1.72E+03	1.41E+05	2.43E+02	-	-	-	-	2.43E+02 ca
Benzaldehyde	100-52-7	1	3.10E+04	1.16E+03	3.23E+09	-	-	-	-	2.95E+05	-	-	2.95E+05	2.95E+05 sat
Benzene	71-43-2	1	4.88E+03	1.82E+03	3.23E+09	3.75E+03	-	1.60E+03	1.12E+03	1.18E+04	-	5.34E+03	3.68E+03	1.12E+03 ca**
Benzene, Ethyldimethyl	29224-55-3	1	1.26E+04	1.31E+02	3.23E+09	-	-	-	-	-	-	-	-	
Benzene, Ethylmethyl	25550-14-5	1	1.30E+04	3.30E+02	3.23E+09	-	-	-	-	-	-	-	-	
Benzene, Methylpropenyl	768-00-3	1	1.58E+04	4.90E+02	3.23E+09	-	-	-	-	-	-	-	-	
Benzene, Methylpropyl	28729-54-6	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Benzene, Trimethyl	25551-13-7	1	9.03E+03	1.82E+02	3.23E+09	-	-	-	-	-	-	-	-	
Benzenediamine-2-methyl sulfate, 1,4-	6369-59-1	1	-	-	3.23E+09	2.06E+03	1.64E+04	-	1.83E+03	8.85E+02	7.01E+03	-	7.86E+02	7.86E+02 nc
Benzenethiol	108-98-5	1	2.67E+04	1.26E+03	3.23E+09	-	-	-	-	2.95E+03	-	-	2.95E+03	2.95E+03 sat
Benzidine	92-87-5	1	-	-	3.23E+09	8.98E-01	7.11E+00	1.23E+05	7.97E-01	8.85E+03	7.01E+04	-	7.86E+03	7.97E-01 ca
Benzo(j)fluoranthene	205-82-3	1	-	-	3.23E+09	1.72E+02	1.05E+03	7.51E+07	1.48E+02	-	-	-	-	1.48E+02 ca
Benzo[a]pyrene	50-32-8	1	-	-	3.23E+09	2.83E+01	1.72E+02	7.51E+06	2.43E+01	-	-	-	-	2.43E+01 ca
Benzo[b]fluoranthene	205-99-2	1	-	-	3.23E+09	2.83E+02	1.72E+03	7.51E+07	2.43E+02	-	-	-	-	2.43E+02 ca
Benzo[g,h,i]perylene	191-24-2	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Benzo[k]fluoranthene	207-08-9	1	-	-	3.23E+09	2.83E+03	1.72E+04	7.51E+07	2.43E+03	-	-	-	-	2.43E+03 ca
Benzofluoranthenes, total	NA	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Benzofluorene, 2,3-	243-17-4	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Benzoic Acid	65-85-0	1	-	-	3.23E+09	-	-	-	-	1.18E+07	9.35E+07	-	1.05E+07	1.05E+07 max
Benzoic acid, 3,5-dichloro-	51-36-5	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Benzoic acid, 4-hydroxy-, methyl ester	99-76-3	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	

Site-specific

Outdoor Worker Screening Levels (RSL) for Soil - Modified for Utility Worker Exposure to Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
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Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
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Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS
Benzothiazole	95-16-9	No	No	-		-		-		-		1	0.1
Benzotrichloride	98-07-7	No	Yes	1.30E+01	U	-		-		-		1	-
Benzyl Alcohol	100-51-6	No	No	-		-		1.00E-01	U	-		1	0.1
Benzyl Chloride	100-44-7	No	Yes	1.70E-01	U	4.90E-05	U	2.00E-03	U	1.00E-03	U	1	-
Beryllium and compounds	7440-41-7	No	No	-		2.40E-03	U	2.00E-03	U	2.00E-05	U	0.007	-
Bidrin	141-66-2	No	No	-		-		1.00E-04	U	-		1	0.1
Bifenox	42576-02-3	No	No	-		-		9.00E-03	U	-		1	0.1
Biphenthrin	82657-04-3	No	No	-		-		1.50E-02	U	-		1	0.1
Biphenyl, 1,1'-	92-52-4	No	Yes	8.00E-03	U	-		5.00E-01	U	4.00E-04	U	1	-
Bis(2-chloro-1-methylethyl) ether	108-60-1	No	Yes	7.00E-02	U	1.00E-05	U	4.00E-02	U	-		1	-
Bis(2-chloroethoxy)methane	111-91-1	No	No	-		-		3.00E-03	U	-		1	0.1
Bis(2-chloroethyl)ether	111-44-4	No	Yes	1.10E+00	U	3.30E-04	U	-		-		1	-
Bis(2-ethylhexyl)phthalate	117-81-7	No	No	1.40E-02	U	2.40E-06	U	2.00E-02	U	-		1	0.1
Bis(Octanoyloxy)Di-N-Butyl Stannane	4731-77-5	No	Yes	-		-		-		-		1	-
Bis(chloromethyl)ether	542-88-1	No	Yes	2.20E+02	U	6.20E-02	U	-		-		1	-
Bis(oleoyloxy)dibutyl tin	13323-62-1	No	Yes	-		-		-		-		1	-
Bisphenol A	80-05-7	No	No	-		-		5.00E-02	U	-		1	0.1
Boron And Borates Only	7440-42-8	No	No	-		-		2.00E-01	U	2.00E-02	U	1	-
Boron Trichloride	10294-34-5	No	Yes	-		-		2.00E+00	U	2.00E-02	U	1	-
Boron Trifluoride	7637-07-2	No	Yes	-		-		4.00E-02	U	1.30E-02	U	1	-
Bromacil	314-40-9	No	No	-		-		-		-		1	0.1
Bromate	15541-45-4	No	No	7.00E-01	U	-		4.00E-03	U	-		1	-
Bromine	7726-95-6	No	Yes	-		-		-		-		1	-
Bromo-2-chloroethane, 1-	107-04-0	No	Yes	2.00E+00	U	6.00E-04	U	-		-		1	-
Bromo-3-fluorobenzene, 1-	1073-06-9	No	Yes	-		-		-		-		1	-
Bromo-4-Ethylbenzene, 1-	1585-07-5	No	Yes	-		-		-		-		1	-
Bromoacetic acid	79-08-3	No	No	-		-		-		-		1	0.1
Bromoacetophenone, 3-	2142-63-4	No	No	-		-		-		-		1	0.1
Bromobenzene	108-86-1	No	Yes	-		-		8.00E-03	U	6.00E-02	U	1	-
Bromochloromethane	74-97-5	No	Yes	-		-		-		4.00E-02	U	1	-
Bromodichloromethane	75-27-4	No	Yes	6.20E-02	U	3.70E-05	U	2.00E-02	U	-		1	-
Bromodiphenyl Ether, p-	101-55-3	No	Yes	-		-		-		-		1	-
Bromofluorobenzene, p-	460-00-4	No	Yes	-		-		-		-		1	-
Bromoform	75-25-2	No	Yes	7.90E-03	U	1.10E-06	U	2.00E-02	U	-		1	-
Bromomethane	74-83-9	No	Yes	-		-		1.40E-03	U	5.00E-03	U	1	-
Bromophenol, p-	106-41-2	No	No	-		-		-		-		1	0.1
Bromophenyl-phenyl phthalate, 4-	NA	No	No	-		-		-		-		1	0.1
Bromophos	2104-96-3	No	Yes	-		-		5.00E-03	U	-		1	-
Bromopyridine, 2-	109-04-6	No	No	-		-		-		-		1	0.1
Bromotrichloromethane	75-62-7	No	Yes	-		-		-		-		1	-
Bromoxynil	1689-84-5	No	No	-		-		2.00E-02	U	-		1	0.1
Bromoxynil Octanoate	1689-99-2	No	Yes	-		-		2.00E-02	U	-		1	-
Butadiene, 1,3-	106-99-0	No	Yes	3.40E+00	U	3.00E-05	U	-		2.00E-03	U	1	-
Butanediol, 2,3-	513-85-9	No	No	-		-		-		-		1	0.1
Butanol	35296-72-1	No	Yes	-		-		-		-		1	-
Butanol, N-	71-36-3	No	Yes	-		-		1.00E-01	U	-		1	-
Butanone-2, 4-chloro-4,4-difluoro	NA	No	No	-		-		-		-		1	0.1
Butyl Alcohol, t-	75-65-0	No	Yes	-		-		-		-		1	-
Butyl Benzyl Phthlate	85-68-7	No	No	1.90E-03	U	-		2.00E-01	U	-		1	0.1
Butyl Formate, tert-	762-75-4	No	Yes	-		-		-		-		1	-
Butyl alcohol, sec-	78-92-2	No	Yes	-		-		2.00E+00	U	3.00E+01	U	1	-
Butylacetate	123-86-4	No	Yes	-		-		-		-		1	-
Butylate	2008-41-5	No	Yes	-		-		5.00E-02	U	-		1	-

Site-specific

Outdoor Worker Screening Levels (RSL) for Soil - Modified for Utility Worker Exposure to Soil

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Chemical	CAS Number	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Benzothiazole	95-16-9	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Benzotrichloride	98-07-7	1	9.33E+04	3.23E+02	3.23E+09	1.59E+01	-	-	1.59E+01	-	-	-	-	1.59E+01 ca
Benzyl Alcohol	100-51-6	1	-	-	3.23E+09	-	-	-	-	2.95E+05	2.34E+06	-	2.62E+05	2.62E+05 max
Benzyl Chloride	100-44-7	1	3.52E+04	1.46E+03	3.23E+09	1.21E+03	-	1.83E+03	7.31E+02	5.90E+03	-	1.28E+03	1.05E+03	7.31E+02 ca**
Beryllium and compounds	7440-41-7	1	-	-	3.23E+09	-	-	3.44E+06	3.44E+06	5.90E+03	-	2.36E+06	5.88E+03	5.88E+03 nc
Bidrin	141-66-2	1	-	-	3.23E+09	-	-	-	-	2.95E+02	2.34E+03	-	2.62E+02	2.62E+02 nc
Bifenox	42576-02-3	1	-	-	3.23E+09	-	-	-	-	2.65E+04	2.10E+05	-	2.36E+04	2.36E+04 nc
Biphenthrin	82657-04-3	1	-	-	3.23E+09	-	-	-	-	4.42E+04	3.51E+05	-	3.93E+04	3.93E+04 nc
Biphenyl, 1,1'-	92-52-4	1	1.57E+05	-	3.23E+09	2.58E+04	-	-	2.58E+04	1.47E+06	-	2.29E+03	2.29E+03	2.29E+03 nc
Bis(2-chloro-1-methylethyl) ether	108-60-1	1	4.83E+04	1.02E+03	3.23E+09	2.95E+03	-	1.23E+04	2.38E+03	1.18E+05	-	-	1.18E+05	2.38E+03 sat
Bis(2-chloroethoxy)methane	111-91-1	1	-	-	3.23E+09	-	-	-	-	8.85E+03	7.01E+04	-	7.86E+03	7.86E+03 nc
Bis(2-chloroethyl)ether	111-44-4	1	5.87E+04	5.05E+03	3.23E+09	1.88E+02	-	4.54E+02	1.33E+02	-	-	-	-	1.33E+02 ca
Bis(2-ethylhexyl)phthalate	117-81-7	1	-	-	3.23E+09	1.47E+04	1.17E+05	3.44E+09	1.31E+04	5.90E+04	4.67E+05	-	5.24E+04	1.31E+04 ca**
Bis(Octanoyloxy)Di-N-Butyl Stannane	4731-77-5	1	8.48E+04	-	3.23E+09	-	-	-	-	-	-	-	-	
Bis(chloromethyl)ether	542-88-1	1	2.59E+03	4.22E+03	3.23E+09	9.38E-01	-	1.07E-01	9.58E-02	-	-	-	-	9.58E-02 ca
Bis(oleoyloxy)dibutyl tin	13323-62-1	1	2.64E+06	-	3.23E+09	-	-	-	-	-	-	-	-	
Bisphenol A	80-05-7	1	-	-	3.23E+09	-	-	-	-	1.47E+05	1.17E+06	-	1.31E+05	1.31E+05 max
Boron And Borates Only	7440-42-8	1	-	-	3.23E+09	-	-	-	-	5.90E+05	-	2.36E+09	5.90E+05	5.90E+05 max
Boron Trichloride	10294-34-5	1	-	-	3.23E+09	-	-	-	-	5.90E+06	-	2.36E+09	5.88E+06	5.88E+06 max
Boron Trifluoride	7637-07-2	1	-	-	3.23E+09	-	-	-	-	1.18E+05	-	1.53E+09	1.18E+05	1.18E+05 max
Bromacil	314-40-9	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Bromate	15541-45-4	1	-	-	3.23E+09	2.95E+02	-	-	2.95E+02	1.18E+04	-	-	1.18E+04	2.95E+02 ca*
Bromine	7726-95-6	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Bromo-2-chloroethane, 1-	107-04-0	1	8.17E+03	2.38E+03	3.23E+09	1.03E+02	-	3.48E+01	2.60E+01	-	-	-	-	2.60E+01 ca
Bromo-3-fluorobenzene, 1-	1073-06-9	1	9.79E+03	9.07E+02	3.23E+09	-	-	-	-	-	-	-	-	
Bromo-4-Ethylbenzene, 1-	1585-07-5	1	1.96E+04	2.06E+02	3.23E+09	-	-	-	-	-	-	-	-	
Bromoacetic acid	79-08-3	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Bromoacetophenone, 3-	2142-63-4	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Bromobenzene	108-86-1	1	1.15E+04	6.79E+02	3.23E+09	-	-	-	-	2.36E+04	-	2.53E+04	1.22E+04	1.22E+04 sat
Bromochloromethane	74-97-5	1	4.94E+03	4.03E+03	3.23E+09	-	-	-	-	-	-	7.21E+03	7.21E+03	7.21E+03 sat
Bromodichloromethane	75-27-4	1	5.47E+03	9.31E+02	3.23E+09	3.33E+03	-	3.77E+02	3.39E+02	5.90E+04	-	-	5.90E+04	3.39E+02 ca
Bromodiphenyl Ether, p-	101-55-3	1	2.57E+05	1.06E+02	3.23E+09	-	-	-	-	-	-	-	-	
Bromofluorobenzene, p-	460-00-4	1	9.95E+03	1.06E+03	3.23E+09	-	-	-	-	-	-	-	-	
Bromoform	75-25-2	1	1.34E+04	9.14E+02	3.23E+09	2.61E+04	-	3.11E+04	1.42E+04	5.90E+04	-	-	5.90E+04	1.42E+04 sat
Bromomethane	74-83-9	1	1.93E+03	3.59E+03	3.23E+09	-	-	-	-	4.13E+03	-	3.53E+02	3.25E+02	3.25E+02 nc
Bromophenol, p-	106-41-2	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Bromophenyl-phenyl phthalate, 4-	NA	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Bromophos	2104-96-3	1	1.71E+05	-	3.23E+09	-	-	-	-	1.47E+04	-	-	1.47E+04	1.47E+04 nc
Bromopyridine, 2-	109-04-6	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Bromotrichloromethane	75-62-7	1	1.80E+04	4.25E+02	3.23E+09	-	-	-	-	-	-	-	-	
Bromoxynil	1689-84-5	1	-	-	3.23E+09	-	-	-	-	5.90E+04	4.67E+05	-	5.24E+04	5.24E+04 nc
Bromoxynil Octanoate	1689-99-2	1	6.55E+05	-	3.23E+09	-	-	-	-	5.90E+04	-	-	5.90E+04	5.90E+04 nc
Butadiene, 1,3-	106-99-0	1	1.20E+03	6.67E+02	3.23E+09	6.07E+01	-	1.02E+02	3.81E+01	-	-	8.73E+01	8.73E+01	3.81E+01 ca**
Butanediol, 2,3-	513-85-9	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Butanol	35296-72-1	1	4.02E+04	1.47E+04	3.23E+09	-	-	-	-	-	-	-	-	
Butanol, N-	71-36-3	1	4.13E+04	7.64E+03	3.23E+09	-	-	-	-	2.95E+05	-	-	2.95E+05	2.95E+05 sat
Butanone-2, 4-chloro-4,4-difluoro	NA	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Butyl Alcohol, t-	75-65-0	1	3.96E+04	-	3.23E+09	-	-	-	-	-	-	-	-	
Butyl Benzyl Phthlate	85-68-7	1	-	-	3.23E+09	1.09E+05	8.61E+05	-	9.65E+04	5.90E+05	4.67E+06	-	5.24E+05	9.65E+04 ca**
Butyl Formate, tert-	762-75-4	1	6.00E+03	2.99E+03	3.23E+09	-	-	-	-	-	-	-	-	
Butyl alcohol, sec-	78-92-2	1	4.03E+04	2.13E+04	3.23E+09	-	-	-	-	5.90E+06	-	4.41E+07	5.20E+06	5.20E+06 sat
Butylacetate	123-86-4	1	1.18E+04	1.79E+03	3.23E+09	-	-	-	-	-	-	-	-	
Butylate	2008-41-5	1	1.19E+05	-	3.23E+09	-	-	-	-	1.47E+05	-	-	1.47E+05	1.47E+05 max

Site-specific

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Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF (mg/kg-day)$^{-1}$	SFO Ref	Inhalation Unit Risk (ug/m^3)$^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS
Butylated hydroxyanisole	25013-16-5	No	No	2.00E-04	U	5.70E-08	U	-		-		1	0.1
Butylated hydroxytoluene	128-37-0	No	No	3.60E-03	U	-		3.00E-01	U	-		1	0.1
Butylbenzene, n-	104-51-8	No	Yes	-		-		5.00E-02	U	-		1	-
Butylbenzene, sec-	135-98-8	No	Yes	-		-		1.00E-01	U	-		1	-
Butylbenzene, tert-	98-06-6	No	Yes	-		-		1.00E-01	U	-		1	-
Butylchloride, t-	507-20-0	No	Yes	-		-		-		-		1	-
Butylphthalyl Butylglycolate	85-70-1	No	No	-		-		1.00E+00	U	-		1	0.1
Butyltin	NA	No	No	-		-		-		-		1	0.1
Cacodylic Acid	75-60-5	No	No	-		-		2.00E-02	U	-		1	0.1
Cadmium (Diet)	7440-43-9	No	No	-		1.80E-03	U	1.00E-03	U	1.00E-05	U	0.025	0.001
Calcium	7440-70-2	No	No	-		-		-		-		1	-
Calcium Chlorate	10137-74-3	No	No	-		-		-		-		1	-
Calcium Chromate	13765-19-0	Yes	No	5.00E-01	U	1.50E-01	U	2.00E-02	U	2.00E-04	U	0.025	-
Calcium Cyanide	592-01-8	No	No	-		-		1.00E-03	U	-		1	-
Calcium pyrophosphate	7790-76-3	No	No	-		-		4.86E+01	U	-		1	-
Caprolactam	105-60-2	No	No	-		-		5.00E-01	U	2.20E-03	U	1	0.1
Captafol	2425-06-1	No	No	1.50E-01	U	4.30E-05	U	2.00E-03	U	-		1	0.1
Captan	133-06-2	No	No	2.30E-03	U	6.60E-07	U	1.30E-01	U	-		1	0.1
Carbaryl	63-25-2	No	No	-		-		1.00E-01	U	-		1	0.1
Carbazole	86-74-8	No	No	-		-		-		-		1	0.1
Carbofuran	1563-66-2	No	No	-		-		5.00E-03	U	-		1	0.1
Carbon Disulfide	75-15-0	No	Yes	-		-		1.00E-01	U	7.00E-01	U	1	-
Carbon Tetrachloride	56-23-5	No	Yes	7.00E-02	U	6.00E-06	U	4.00E-03	U	1.00E-01	U	1	-
Carbosulfan	55285-14-8	No	No	-		-		1.00E-02	U	-		1	0.1
Carboxin	5234-68-4	No	No	-		-		1.00E-01	U	-		1	0.1
Catechol	120-80-9	No	No	-		-		-		-		1	0.1
Ceric oxide	1306-38-3	No	No	-		-		-		9.00E-04	U	1	-
Cerium, Stable	7440-45-1	No	No	-		-		-		-		1	-
Chloral	75-87-6	No	Yes	-		-		-		-		1	-
Chloral Hydrate	302-17-0	No	Yes	-		-		1.00E-01	U	-		1	-
Chloramben	133-90-4	No	No	-		-		1.50E-02	U	-		1	0.1
Chloramine	127-65-1	No	No	-		-		-		-		1	-
Chloranil	118-75-2	No	No	4.03E-01	U	-		-		-		1	0.1
Chlorate (ClO3) as	14866-68-3	No	No	-		-		-		-		1	-
Chlordane	12789-03-6	No	Yes	3.50E-01	U	1.00E-04	U	5.00E-04	U	7.00E-04	U	1	0.04
Chlordane (alpha)	5103-71-9	No	Yes	-		-		-		-		1	-
Chlordane (gamma)	5103-74-2	No	Yes	-		-		-		-		1	-
Chlordecone (Kepone)	143-50-0	No	No	1.00E+01	U	4.60E-03	U	3.00E-04	U	-		1	0.1
Chlorfenvinphos	470-90-6	No	No	-		-		7.00E-04	U	-		1	0.1
Chloride	16887-00-6	No	No	-		-		-		-		1	-
Chlorimuron, Ethyl-	90982-32-4	No	No	-		-		2.00E-02	U	-		1	0.1
Chlorinated Hydrocarbons (total)	NA	No	No	-		-		-		-		1	0.1
Chlorine	7782-50-5	No	Yes	-		-		1.00E-01	U	1.45E-04	U	1	-
Chlorine Dioxide	10049-04-4	No	Yes	-		-		3.00E-02	U	2.00E-04	U	1	-
Chlorite	14998-27-7	No	No	-		-		-		-		1	-
Chlorite (Sodium Salt)	7758-19-2	No	No	-		-		3.00E-02	U	-		1	-
Chloro-1,1-difluoroethane, 1-	75-68-3	No	Yes	-		-		-		5.00E+01	U	1	-
Chloro-1,3-butadiene, 2-	126-99-8	No	Yes	-		3.00E-04	U	2.00E-02	U	2.00E-02	U	1	-
Chloro-2-methylaniline HCl, 4-	3165-93-3	No	No	4.60E-01	U	-		-		-		1	0.1
Chloro-2-methylaniline, 4-	95-69-2	No	No	1.00E-01	U	7.70E-05	U	3.00E-03	U	-		1	0.1
Chloro-2-methylphenol, 4-	1570-64-5	No	No	-		-		-		-		1	0.1
Chloro-4-methylphenol	35421-08-0	No	No	-		-		-		-		1	0.1
Chloro-6-fluorophenol, 2-	2040-90-6	No	No	-		-		-		-		1	0.1

Site-specific

Outdoor Worker Screening Levels (RSL) for Soil - Modified for Utility Worker Exposure to Soil

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Smax=Soil SL exceeds ceiling limit and has been substituted with the max value
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Butylated hydroxyanisole	25013-16-5	1	-	-	3.23E+09	1.03E+06	8.18E+06	1.45E+11	9.17E+05	-	-	-	-	9.17E+05 max
Butylated hydroxytoluene	128-37-0	1	-	-	3.23E+09	5.74E+04	4.55E+05	-	5.09E+04	8.85E+05	7.01E+06	-	7.86E+05	5.09E+04 ca*
Butylbenzene, n-	104-51-8	1	1.12E+04	1.07E+02	3.23E+09	-	-	-	-	1.47E+05	-	-	1.47E+05	1.47E+05 sat
Butylbenzene, sec-	135-98-8	1	1.01E+04	1.45E+02	3.23E+09	-	-	-	-	2.95E+05	-	-	2.95E+05	2.95E+05 sat
Butylbenzene, tert-	98-06-6	1	1.01E+04	1.83E+02	3.23E+09	-	-	-	-	2.95E+05	-	-	2.95E+05	2.95E+05 sat
Butylchloride, t-	507-20-0	1	2.34E+03	1.33E+03	3.23E+09	-	-	-	-	-	-	-	-	
Butylphthalyl Butylglycolate	85-70-1	1	-	-	3.23E+09	-	-	-	-	2.95E+06	2.34E+07	-	2.62E+06	2.62E+06 max
Butyltin	NA	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Cacodylic Acid	75-60-5	1	-	-	3.23E+09	-	-	-	-	5.90E+04	4.67E+05	-	5.24E+04	5.24E+04 nc
Cadmium (Diet)	7440-43-9	1	-	-	3.23E+09	-	-	4.59E+06	4.59E+06	2.95E+03	5.84E+04	1.18E+06	2.80E+03	2.80E+03 nc
Calcium	7440-70-2	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Calcium Chlorate	10137-74-3	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Calcium Chromate	13765-19-0	1	-	-	3.23E+09	4.13E+02	-	5.51E+04	4.10E+02	5.90E+04	-	2.36E+07	5.88E+04	4.10E+02 ca
Calcium Cyanide	592-01-8	1	-	-	3.23E+09	-	-	-	-	2.95E+03	-	-	2.95E+03	2.95E+03 nc
Calcium pyrophosphate	7790-76-3	1	-	-	3.23E+09	-	-	-	-	1.43E+08	-	-	1.43E+08	1.43E+08 max
Caprolactam	105-60-2	1	-	-	3.23E+09	-	-	-	-	1.47E+06	1.17E+07	2.60E+08	1.30E+06	1.30E+06 max
Captafol	2425-06-1	1	-	-	3.23E+09	1.38E+03	1.09E+04	1.92E+08	1.22E+03	5.90E+03	4.67E+04	-	5.24E+03	1.22E+03 ca**
Captan	133-06-2	1	-	-	3.23E+09	8.98E+04	7.11E+05	1.25E+10	7.97E+04	3.83E+05	3.04E+06	-	3.40E+05	7.97E+04 ca**
Carbaryl	63-25-2	1	-	-	3.23E+09	-	-	-	-	2.95E+05	2.34E+06	-	2.62E+05	2.62E+05 max
Carbazole	86-74-8	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Carbofuran	1563-66-2	1	-	-	3.23E+09	-	-	-	-	1.47E+04	1.17E+05	-	1.31E+04	1.31E+04 nc
Carbon Disulfide	75-15-0	1	1.61E+03	7.38E+02	3.23E+09	-	-	-	-	2.95E+05	-	4.12E+04	3.61E+04	3.61E+04 sat
Carbon Tetrachloride	56-23-5	1	2.06E+03	4.58E+02	3.23E+09	2.95E+03	-	8.78E+02	6.76E+02	1.18E+04	-	7.52E+03	4.59E+03	6.76E+02 sat
Carbosulfan	55285-14-8	1	-	-	3.23E+09	-	-	-	-	2.95E+04	2.34E+05	-	2.62E+04	2.62E+04 nc
Carboxin	5234-68-4	1	-	-	3.23E+09	-	-	-	-	2.95E+05	2.34E+06	-	2.62E+05	2.62E+05 max
Catechol	120-80-9	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Ceric oxide	1306-38-3	1	-	-	3.23E+09	-	-	-	-	-	-	1.06E+08	1.06E+08	1.06E+08 max
Cerium, Stable	7440-45-1	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Chloral	75-87-6	1	2.14E+05	3.39E+03	3.23E+09	-	-	-	-	-	-	-	-	
Chloral Hydrate	302-17-0	1	2.02E+05	-	3.23E+09	-	-	-	-	2.95E+05	-	-	2.95E+05	2.95E+05 max
Chloramben	133-90-4	1	-	-	3.23E+09	-	-	-	-	4.42E+04	3.51E+05	-	3.93E+04	3.93E+04 nc
Chloramine	127-65-1	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Chloranil	118-75-2	1	-	-	3.23E+09	5.12E+02	4.06E+03	-	4.55E+02	-	-	-	-	4.55E+02 ca
Chlorate (ClO3) as	14866-68-3	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Chlordane	12789-03-6	1	1.49E+06	-	3.23E+09	5.90E+02	1.17E+04	3.81E+04	5.53E+02	1.47E+03	2.92E+04	3.81E+04	1.35E+03	5.53E+02 ca**
Chlordane (alpha)	5103-71-9	1	2.05E+06	-	3.23E+09	-	-	-	-	-	-	-	-	
Chlordane (gamma)	5103-74-2	1	2.05E+06	-	3.23E+09	-	-	-	-	-	-	-	-	
Chlordecone (Kepone)	143-50-0	1	-	-	3.23E+09	2.06E+01	1.64E+02	1.80E+06	1.83E+01	8.85E+02	7.01E+03	-	7.86E+02	1.83E+01 ca*
Chlorfenvinphos	470-90-6	1	-	-	3.23E+09	-	-	-	-	2.06E+03	1.64E+04	-	1.83E+03	1.83E+03 nc
Chloride	16887-00-6	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Chlorimuron, Ethyl-	90982-32-4	1	-	-	3.23E+09	-	-	-	-	5.90E+04	4.67E+05	-	5.24E+04	5.24E+04 nc
Chlorinated Hydrocarbons (total)	NA	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Chlorine	7782-50-5	1	1.69E+03	2.78E+03	3.23E+09	-	-	-	-	2.95E+05	-	8.92E+00	8.92E+00	8.92E+00 nc
Chlorine Dioxide	10049-04-4	1	-	-	3.23E+09	-	-	-	-	8.85E+04	-	2.36E+07	8.82E+04	8.82E+04 nc
Chlorite	14998-27-7	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Chlorite (Sodium Salt)	7758-19-2	1	-	-	3.23E+09	-	-	-	-	8.85E+04	-	-	8.85E+04	8.85E+04 nc
Chloro-1,1-difluoroethane, 1-	75-68-3	1	1.42E+03	1.14E+03	3.23E+09	-	-	-	-	-	-	2.59E+06	2.59E+06	2.59E+06 sat
Chloro-1,3-butadiene, 2-	126-99-8	1	1.49E+03	7.51E+02	3.23E+09	-	-	1.27E+01	1.27E+01	5.90E+04	-	1.09E+03	1.07E+03	1.27E+01 ca*
Chloro-2-methylaniline HCl, 4-	3165-93-3	1	-	-	3.23E+09	4.49E+02	3.56E+03	-	3.99E+02	-	-	-	-	3.99E+02 ca
Chloro-2-methylaniline, 4-	95-69-2	1	-	-	3.23E+09	2.06E+03	1.64E+04	1.07E+08	1.83E+03	8.85E+03	7.01E+04	-	7.86E+03	1.83E+03 ca**
Chloro-2-methylphenol, 4-	1570-64-5	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Chloro-4-methylphenol	35421-08-0	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Chloro-6-fluorophenol, 2-	2040-90-6	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	

Site-specific

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Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS
Chloroacetaldehyde, 2-	107-20-0	No	Yes	2.70E-01	U	-		-		-		1	-
Chloroacetamide	79-07-2	No	No	-		-		-		-		1	0.1
Chloroacetic Acid	79-11-8	No	No	-		-		2.00E-03	U	-		1	0.1
Chloroacetophenone, 2-	532-27-4	No	No	-		-		-		3.00E-05	U	1	0.1
Chloroaniline	27134-26-5	No	No	-		-		-		-		1	0.1
Chloroaniline, 3-	108-42-9	No	No	-		-		-		-		1	0.1
Chloroaniline, p-	106-47-8	No	No	2.00E-01	U	-		4.00E-03	U	-		1	0.1
Chlorobenzene	108-90-7	No	Yes	-		-		2.00E-02	U	5.00E-02	U	1	-
Chlorobenzene sulfonic acid, p-	98-66-8	No	No	-		-		-		-		1	0.1
Chlorobenzenes (total)	NA	No	No	-		-		-		-		1	0.1
Chlorobenzilate	510-15-6	No	No	1.10E-01	U	3.10E-05	U	2.00E-02	U	-		1	0.1
Chlorobenzoic Acid, p-	74-11-3	No	No	-		-		3.00E-02	U	-		1	0.1
Chlorobenzotrifluoride, 3-nitro-4-	121-17-5	No	Yes	-		-		-		-		1	-
Chlorobenzotrifluoride, 4-	98-56-6	No	Yes	-		-		3.00E-03	U	3.00E-01	U	1	-
Chlorobiphenyl, p-	2051-62-9	No	Yes	-		-		-		-		1	-
Chlorobutane, 1-	109-69-3	No	Yes	-		-		4.00E-02	U	-		1	-
Chlorobutane, 2-	78-86-4	No	Yes	-		-		-		-		1	-
Chlorocyclopentadiene	41851-50-7	No	Yes	-		-		-		-		1	-
Chlorodibromoethane	73506-94-2	No	No	-		-		-		-		1	0.1
Chlorodifluoromethane	75-45-6	No	Yes	-		-		-		5.00E+01	U	1	-
Chloroethanol, 2-	107-07-3	No	Yes	-		-		2.00E-02	U	-		1	-
Chloroethylvinyl ether, 2-	110-75-8	No	Yes	-		-		-		-		1	-
Chloroform	67-66-3	No	Yes	3.10E-02	U	2.30E-05	U	1.00E-02	U	9.77E-02	U	1	-
Chloromethane	74-87-3	No	Yes	-		-		-		9.00E-02	U	1	-
Chloromethyl Methyl Ether	107-30-2	No	Yes	2.40E+00	U	6.90E-04	U	-		-		1	-
Chloronaphthalene, Beta-	91-58-7	No	Yes	-		-		8.00E-02	U	-		1	0.13
Chloronaphthalene, alpha-	90-13-1	No	Yes	-		-		-		-		1	-
Chloronitrobenzene, o-	88-73-3	No	No	3.00E-01	U	-		3.00E-03	U	1.00E-05	U	1	0.1
Chloronitrobenzene, p-	100-00-5	No	No	6.30E-03	U	-		1.00E-03	U	6.00E-04	U	1	0.1
Chlorophenol, 2-	95-57-8	No	Yes	-		-		5.00E-03	U	-		1	-
Chlorophenol, 3-	108-43-0	No	No	-		-		-		-		1	0.1
Chlorophenol, 4-	106-48-9	No	No	-		-		-		-		1	0.1
Chlorophenols (each)	NA	No	No	-		-		-		-		1	0.1
Chlorophenols (total)	NA	No	No	-		-		-		-		1	0.1
Chlorophenyl Methyl Sulfide, p-	123-09-1	No	Yes	-		-		-		-		1	-
Chlorophenyl Methyl Sulfoxide	934-73-6	No	No	-		-		-		-		1	0.1
Chlorophenyl phenyl ether, 4-	7005-72-3	No	Yes	-		-		-		-		1	-
Chloropicrin	76-06-2	No	Yes	-		-		-		4.00E-04	U	1	-
Chloropropane, 2-	75-29-6	No	Yes	-		-		-		-		1	-
Chlorothalonil	1897-45-6	No	No	3.10E-03	U	8.90E-07	U	1.50E-02	U	-		1	0.1
Chlorotoluene, o-	95-49-8	No	Yes	-		-		2.00E-02	U	-		1	-
Chlorotoluene, p-	106-43-4	No	Yes	-		-		2.00E-02	U	-		1	-
Chlorozotocin	54749-90-5	No	No	2.40E+02	U	6.90E-02	U	-		-		1	0.1
Chlorpropham	101-21-3	No	No	-		-		2.00E-01	U	-		1	0.1
Chlorpyrifos	2921-88-2	No	No	-		-		1.00E-03	U	-		1	0.1
Chlorpyrifos Methyl	5598-13-0	No	No	-		-		1.00E-02	U	-		1	0.1
Chlorsulfuron	64902-72-3	No	No	-		-		5.00E-02	U	-		1	0.1
Chlorthiophos	60238-56-4	No	No	-		-		8.00E-04	U	-		1	0.1
Chromium(III), Insoluble Salts	16065-83-1	No	No	-		-		1.50E+00	U	-		0.013	-
Chromium(VI)	18540-29-9	Yes	No	5.00E-01	U	8.40E-02	U	3.00E-03	U	1.00E-04	U	0.025	-
Chromium, Total	7440-47-3	No	No	-		-		-		-		0.013	-
Chrysene	218-01-9	Yes	No	7.30E-03	U	1.10E-05	U	-		-		1	0.13
Cobalt	7440-48-4	No	No	-		9.00E-03	U	3.00E-04	U	6.00E-06	U	1	-

Site-specific

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Chemical	CAS Number	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Chloroacetaldehyde, 2-	107-20-0	1	2.56E+04	2.83E+04	3.23E+09	7.65E+02	-	-	7.65E+02	-	-	-	-	7.65E+02 ca
Chloroacetamide	79-07-2	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Chloroacetic Acid	79-11-8	1	-	-	3.23E+09	-	-	-	-	5.90E+03	4.67E+04	-	5.24E+03	5.24E+03 nc
Chloroacetophenone, 2-	532-27-4	1	-	-	3.23E+09	-	-	-	-	-	-	3.54E+06	3.54E+06	3.54E+06 max
Chloroaniline	27134-26-5	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Chloroaniline, 3-	108-42-9	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Chloroaniline, p-	106-47-8	1	-	-	3.23E+09	1.03E+03	8.18E+03	-	9.17E+02	1.18E+04	9.35E+04	-	1.05E+04	9.17E+02 ca*
Chlorobenzene	108-90-7	1	8.90E+03	7.61E+02	3.23E+09	-	-	-	-	5.90E+04	-	1.62E+04	1.27E+04	1.27E+04 sat
Chlorobenzene sulfonic acid, p-	98-66-8	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Chlorobenzenes (total)	NA	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Chlorobenzilate	510-15-6	1	-	-	3.23E+09	1.88E+03	1.49E+04	2.66E+08	1.67E+03	5.90E+04	4.67E+05	-	5.24E+04	1.67E+03 ca*
Chlorobenzoic Acid, p-	74-11-3	1	-	-	3.23E+09	-	-	-	-	8.85E+04	7.01E+05	-	7.86E+04	7.86E+04 nc
Chlorobenzotrifluoride, 3-nitro-4-	121-17-5	1	2.14E+05	9.07E+01	3.23E+09	-	-	-	-	-	-	-	-	
Chlorobenzotrifluoride, 4-	98-56-6	1	9.33E+03	1.17E+02	3.23E+09	-	-	-	-	8.85E+03	-	1.02E+05	8.14E+03	8.14E+03 sat
Chlorobiphenyl, p-	2051-62-9	1	1.78E+05	-	3.23E+09	-	-	-	-	-	-	-	-	
Chlorobutane, 1-	109-69-3	1	2.42E+03	7.29E+02	3.23E+09	-	-	-	-	1.18E+05	-	-	1.18E+05	1.18E+05 sat
Chlorobutane, 2-	78-86-4	1	2.01E+03	6.51E+02	3.23E+09	-	-	-	-	-	-	-	-	
Chlorocyclopentadiene	41851-50-7	1	2.60E+03	9.88E+02	3.23E+09	-	-	-	-	-	-	-	-	
Chlorodibromoethane	73506-94-2	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Chlorodifluoromethane	75-45-6	1	1.30E+03	1.68E+03	3.23E+09	-	-	-	-	-	-	2.37E+06	2.37E+06	2.37E+06 sat
Chloroethanol, 2-	107-07-3	1	1.08E+05	1.11E+05	3.23E+09	-	-	-	-	5.90E+04	-	-	5.90E+04	5.90E+04 nc
Chloroethylvinyl ether, 2-	110-75-8	1	2.21E+03	1.64E+03	3.23E+09	-	-	-	-	-	-	-	-	
Chloroform	67-66-3	1	3.62E+03	2.54E+03	3.23E+09	6.66E+03	-	4.03E+02	3.80E+02	2.95E+04	-	1.29E+04	8.99E+03	3.80E+02 ca*
Chloromethane	74-87-3	1	1.62E+03	1.32E+03	3.23E+09	-	-	-	-	-	-	5.32E+03	5.32E+03	5.32E+03 sat
Chloromethyl Methyl Ether	107-30-2	1	7.35E+03	2.58E+04	3.23E+09	8.60E+01	-	2.72E+01	2.07E+01	-	-	-	-	2.07E+01 ca
Chloronaphthalene, Beta-	91-58-7	1	1.10E+05	-	3.23E+09	-	-	-	-	2.36E+05	1.44E+06	-	2.03E+05	2.03E+05 max
Chloronaphthalene, alpha-	90-13-1	1	1.05E+05	2.66E+02	3.23E+09	-	-	-	-	-	-	-	-	
Chloronitrobenzene, o-	88-73-3	1	-	-	3.23E+09	6.88E+02	5.45E+03	-	6.11E+02	8.85E+03	7.01E+04	1.18E+06	7.81E+03	6.11E+02 ca*
Chloronitrobenzene, p-	100-00-5	1	-	-	3.23E+09	3.28E+04	2.60E+05	-	2.91E+04	2.95E+03	2.34E+04	7.08E+07	2.62E+03	2.62E+03 nc
Chlorophenol, 2-	95-57-8	1	1.71E+05	2.19E+04	3.23E+09	-	-	-	-	1.47E+04	-	-	1.47E+04	1.47E+04 nc
Chlorophenol, 3-	108-43-0	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Chlorophenol, 4-	106-48-9	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Chlorophenols (each)	NA	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Chlorophenols (total)	NA	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Chlorophenyl Methyl Sulfide, p-	123-09-1	1	6.97E+04	2.73E+02	3.23E+09	-	-	-	-	-	-	-	-	
Chlorophenyl Methyl Sulfoxide	934-73-6	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Chlorophenyl phenyl ether, 4-	7005-72-3	1	1.83E+05	-	3.23E+09	-	-	-	-	-	-	-	-	
Chloropicrin	76-06-2	1	6.46E+03	6.17E+02	3.23E+09	-	-	-	-	-	-	9.43E+01	9.43E+01	9.43E+01 nc
Chloropropane, 2-	75-29-6	1	1.79E+03	1.32E+03	3.23E+09	-	-	-	-	-	-	-	-	
Chlorothalonil	1897-45-6	1	-	-	3.23E+09	6.66E+04	5.28E+05	9.28E+09	5.91E+04	4.42E+04	3.51E+05	-	3.93E+04	3.93E+04 nc
Chlorotoluene, o-	95-49-8	1	1.12E+04	9.07E+02	3.23E+09	-	-	-	-	5.90E+04	-	-	5.90E+04	5.90E+04 sat
Chlorotoluene, p-	106-43-4	1	1.01E+04	2.53E+02	3.23E+09	-	-	-	-	5.90E+04	-	-	5.90E+04	5.90E+04 sat
Chlorozotocin	54749-90-5	1	-	-	3.23E+09	8.60E-01	6.82E+00	1.20E+05	7.64E-01	-	-	-	-	7.64E-01 ca
Chlorpropham	101-21-3	1	-	-	3.23E+09	-	-	-	-	5.90E+05	4.67E+06	-	5.24E+05	5.24E+05 max
Chlorpyrifos	2921-88-2	1	-	-	3.23E+09	-	-	-	-	2.95E+03	2.34E+04	-	2.62E+03	2.62E+03 nc
Chlorpyrifos Methyl	5598-13-0	1	-	-	3.23E+09	-	-	-	-	2.95E+04	2.34E+05	-	2.62E+04	2.62E+04 nc
Chlorsulfuron	64902-72-3	1	-	-	3.23E+09	-	-	-	-	1.47E+05	1.17E+06	-	1.31E+05	1.31E+05 max
Chlorthiophos	60238-56-4	1	-	-	3.23E+09	-	-	-	-	2.36E+03	1.87E+04	-	2.10E+03	2.10E+03 nc
Chromium(III), Insoluble Salts	16065-83-1	1	-	-	3.23E+09	-	-	-	-	4.42E+06	-	-	4.42E+06	4.42E+06 max
Chromium(VI)	18540-29-9	1	-	-	3.23E+09	4.13E+02	-	9.83E+04	4.11E+02	8.85E+03	-	1.18E+07	8.84E+03	4.11E+02 ca*
Chromium, Total	7440-47-3	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Chrysene	218-01-9	1	-	-	3.23E+09	2.83E+04	1.72E+05	7.51E+08	2.43E+04	-	-	-	-	2.43E+04 ca
Cobalt	7440-48-4	1	-	-	3.23E+09	-	-	9.18E+05	9.18E+05	8.85E+02	-	7.08E+05	8.84E+02	8.84E+02 nc

Site-specific

Outdoor Worker Screening Levels (RSL) for Soil - Modified for Utility Worker Exposure to Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS
Complex Mixtures of Aliphatic and Aromatic Hydrocarbons	NA	No	No	-		-		-		-		1	0.1
Copper	7440-50-8	No	No	-		-		4.00E-02	U	-		1	-
Copper Cyanide	544-92-3	No	No	-		-		5.00E-03	U	-		1	-
Coronene	191-07-1	No	No	-		-		-		-		1	0.13
Creosote	8001-58-9	No	No	-		-		-		-		1	0.1
Cresol, m-	108-39-4	No	No	-		-		5.00E-02	U	6.00E-01	U	1	0.1
Cresol, o-	95-48-7	No	No	-		-		5.00E-02	U	6.00E-01	U	1	0.1
Cresol, p-	106-44-5	No	No	-		-		1.00E-01	U	6.00E-01	U	1	0.1
Cresol, p-chloro-m-	59-50-7	No	No	-		-		1.00E-01	U	-		1	0.1
Cresols	1319-77-3	No	No	-		-		1.00E-01	U	6.00E-01	U	1	0.1
Crotonaldehyde	4170-30-3	No	Yes	-		-		-		-		1	-
Crotonaldehyde, trans-	123-73-9	No	Yes	1.90E+00	U	-		1.00E-03	U	-		1	-
Cumene	98-82-8	No	Yes	-		-		1.00E-01	U	4.00E-01	U	1	-
Cupferron	135-20-6	No	No	2.20E-01	U	6.30E-05	U	-		-		1	0.1
Cyanazine	21725-46-2	No	No	8.40E-01	U	-		2.00E-03	U	-		1	0.1
Cyanide (CN-)	57-12-5	No	Yes	-		-		6.00E-04	U	8.00E-04	U	1	-
Cyanide (total complex)	NA	No	No	-		-		-		-		1	-
Cyanogen	460-19-5	No	Yes	-		-		1.00E-03	U	-		1	-
Cyanogen Bromide	506-68-3	No	Yes	-		-		9.00E-02	U	-		1	-
Cyanogen Chloride	506-77-4	No	Yes	-		-		5.00E-02	U	-		1	-
Cyclohexane	110-82-7	No	Yes	-		-		-		6.00E+00	U	1	-
Cyclohexane, 1,2,3,4,5-pentabromo-6-chloro-	87-84-3	No	No	2.30E-02	U	-		-		-		1	0.1
Cyclohexanone	108-94-1	No	Yes	-		-		5.00E+00	U	7.00E-01	U	1	-
Cyclohexene	110-83-8	No	Yes	-		-		5.00E-03	U	1.00E+00	U	1	-
Cyclohexylamine	108-91-8	No	Yes	-		-		2.00E-01	U	-		1	-
Cyclopentadiene	542-92-7	No	Yes	-		-		-		-		1	-
Cyhalothrin/karate	68085-85-8	No	No	-		-		5.00E-03	U	-		1	0.1
Cypermethrin	52315-07-8	No	No	-		-		1.00E-02	U	-		1	0.1
Cyromazine	66215-27-8	No	No	-		-		7.50E-03	U	-		1	0.1
DDD	72-54-8	No	No	2.40E-01	U	6.90E-05	U	-		-		1	0.1
DDD, o,p'-	53-19-0	No	No	-		-		-		-		1	0.1
DDE, p,p'-	72-55-9	No	Yes	3.40E-01	U	9.70E-05	U	-		-		1	-
DDT	50-29-3	No	No	3.40E-01	U	9.70E-05	U	5.00E-04	U	-		1	0.03
DDT, o,p'-	789-02-6	No	No	-		-		-		-		1	0.1
DDT/DDE/DDD (total)	NA	No	No	-		-		-		-		1	0.1
Dacthal	1861-32-1	No	No	-		-		1.00E-02	U	-		1	0.1
Dalapon	75-99-0	No	No	-		-		3.00E-02	U	-		1	0.1
Decabromodiphenyl ether, 2,2',3,3',4,4',5,5',6,6'-(BDE-209)	1163-19-5	No	No	7.00E-04	U	-		7.00E-03	U	-		1	0.1
Decane	124-18-5	No	Yes	-		-		-		-		1	-
Decanol, n-	112-30-1	No	Yes	-		-		-		-		1	-
Deltamethrin	52918-63-5	No	No	-		-		-		-		1	0.1
Demeton	8065-48-3	No	No	-		-		4.00E-05	U	-		1	0.1
Di(2-ethylhexyl)adipate	103-23-1	No	No	1.20E-03	U	-		6.00E-01	U	-		1	0.1
Di-n-butyltin bis(2-ethylhexanoate)	2781-10-4	No	Yes	-		-		-		-		1	-
Di-n-butyltin bis(methyl maleate)	15546-11-9	No	No	-		-		-		-		1	0.1
Di-n-butyltin bis(n-butyl maleate)	15546-16-4	No	No	-		-		-		-		1	0.1
Di-n-butyltin dilaurate	77-58-7	No	Yes	-		-		-		-		1	-
Di-n-butyltin distearate	5847-55-2	No	Yes	-		-		-		-		1	-
Di-n-hexylphthalate	84-75-3	No	Yes	-		-		-		-		1	-
Diallate	2303-16-4	No	No	6.10E-02	U	-		-		-		1	0.1
Diammonium phosphate	7783-28-0	No	No	-		-		4.86E+01	U	-		1	-
Diazinon	333-41-5	No	No	-		-		7.00E-04	U	-		1	0.1

Site-specific

Outdoor Worker Screening Levels (RSL) for Soil - Modified for Utility Worker Exposure to Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gui
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Complex Mixtures of Aliphatic and Aromatic Hydrocarbons	NA	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Copper	7440-50-8	1	-	-	3.23E+09	-	-	-	-	1.18E+05	-	-	1.18E+05	1.18E+05 max
Copper Cyanide	544-92-3	1	-	-	3.23E+09	-	-	-	-	1.47E+04	-	-	1.47E+04	1.47E+04 nc
Coronene	191-07-1	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Creosote	8001-58-9	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Cresol, m-	108-39-4	1	-	-	3.23E+09	-	-	-	-	1.47E+05	1.17E+06	7.08E+10	1.31E+05	1.31E+05 max
Cresol, o-	95-48-7	1	-	-	3.23E+09	-	-	-	-	1.47E+05	1.17E+06	7.08E+10	1.31E+05	1.31E+05 max
Cresol, p-	106-44-5	1	-	-	3.23E+09	-	-	-	-	2.95E+05	2.34E+06	7.08E+10	2.62E+05	2.62E+05 max
Cresol, p-chloro-m-	59-50-7	1	-	-	3.23E+09	-	-	-	-	2.95E+05	2.34E+06	-	2.62E+05	2.62E+05 max
Cresols	1319-77-3	1	-	-	3.23E+09	-	-	-	-	2.95E+05	2.34E+06	7.08E+10	2.62E+05	2.62E+05 max
Crotonaldehyde	4170-30-3	1	2.61E+04	2.00E+04	3.23E+09	-	-	-	-	-	-	-	-	
Crotonaldehyde, trans-	123-73-9	1	2.61E+04	1.66E+04	3.23E+09	1.09E+02	-	-	1.09E+02	2.95E+03	-	-	2.95E+03	1.09E+02 ca*
Cumene	98-82-8	1	8.56E+03	2.68E+02	3.23E+09	-	-	-	-	2.95E+05	-	1.25E+05	8.78E+04	8.78E+04 sat
Cupferron	135-20-6	1	-	-	3.23E+09	9.38E+02	7.44E+03	1.31E+08	8.33E+02	-	-	-	-	8.33E+02 ca
Cyanazine	21725-46-2	1	-	-	3.23E+09	2.46E+02	1.95E+03	-	2.18E+02	5.90E+03	4.67E+04	-	5.24E+03	2.18E+02 ca*
Cyanide (CN-)	57-12-5	1	6.42E+04	1.00E+07	3.23E+09	-	-	-	-	1.77E+03	-	1.88E+03	9.11E+02	9.11E+02 nc
Cyanide (total complex)	NA	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Cyanogen	460-19-5	1	-	-	3.23E+09	-	-	-	-	2.95E+03	-	-	2.95E+03	2.95E+03 nc
Cyanogen Bromide	506-68-3	1	-	-	3.23E+09	-	-	-	-	2.65E+05	-	-	2.65E+05	2.65E+05 max
Cyanogen Chloride	506-77-4	1	-	-	3.23E+09	-	-	-	-	1.47E+05	-	-	1.47E+05	1.47E+05 max
Cyclohexane	110-82-7	1	1.44E+03	1.18E+02	3.23E+09	-	-	-	-	-	-	3.15E+05	3.15E+05	3.15E+05 sat
Cyclohexane, 1,2,3,4,5-pentabromo-6-chloro-	87-84-3	1	-	-	3.23E+09	8.98E+03	7.11E+04	-	7.97E+03	-	-	-	-	7.97E+03 ca
Cyclohexanone	108-94-1	1	5.75E+04	5.11E+03	3.23E+09	-	-	-	-	1.47E+07	-	1.47E+06	1.34E+06	1.34E+06 sat
Cyclohexene	110-83-8	1	2.02E+03	2.83E+02	3.23E+09	-	-	-	-	1.47E+04	-	7.37E+04	1.23E+04	1.23E+04 sat
Cyclohexylamine	108-91-8	1	1.03E+05	2.93E+05	3.23E+09	-	-	-	-	5.90E+05	-	-	5.90E+05	5.90E+05 sat
Cyclopentadiene	542-92-7	1	2.05E+03	1.34E+03	3.23E+09	-	-	-	-	-	-	-	-	
Cyhalothrin/karate	68085-85-8	1	-	-	3.23E+09	-	-	-	-	1.47E+04	1.17E+05	-	1.31E+04	1.31E+04 nc
Cypermethrin	52315-07-8	1	-	-	3.23E+09	-	-	-	-	2.95E+04	2.34E+05	-	2.62E+04	2.62E+04 nc
Cyromazine	66215-27-8	1	-	-	3.23E+09	-	-	-	-	2.21E+04	1.75E+05	-	1.96E+04	1.96E+04 nc
DDD	72-54-8	1	-	-	3.23E+09	8.60E+02	6.82E+03	1.20E+08	7.64E+02	-	-	-	-	7.64E+02 ca
DDD, o,p'-	53-19-0	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
DDE, p,p'-	72-55-9	1	2.91E+06	-	3.23E+09	6.07E+02	-	7.65E+04	6.02E+02	-	-	-	-	6.02E+02 ca
DDT	50-29-3	1	-	-	3.23E+09	6.07E+02	1.60E+04	8.52E+07	5.85E+02	1.47E+03	3.90E+04	-	1.42E+03	5.85E+02 ca**
DDT, o,p'-	789-02-6	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
DDT/DDE/DDD (total)	NA	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Dacthal	1861-32-1	1	-	-	3.23E+09	-	-	-	-	2.95E+04	2.34E+05	-	2.62E+04	2.62E+04 nc
Dalapon	75-99-0	1	-	-	3.23E+09	-	-	-	-	8.85E+04	7.01E+05	-	7.86E+04	7.86E+04 nc
Decabromodiphenyl ether, 2,2',3,3',4,4',5,5',6,6'-(BDE-209)	1163-19-5	1	-	-	3.23E+09	2.95E+05	2.34E+06	-	2.62E+05	2.06E+04	1.64E+05	-	1.83E+04	1.83E+04 nc
Decane	124-18-5	1	1.56E+03	2.53E+00	3.23E+09	-	-	-	-	-	-	-	-	
Decanol, n-	112-30-1	1	8.71E+04	3.19E+01	3.23E+09	-	-	-	-	-	-	-	-	
Deltamethrin	52918-63-5	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Demeton	8065-48-3	1	-	-	3.23E+09	-	-	-	-	1.18E+02	9.35E+02	-	1.05E+02	1.05E+02 nc
Di(2-ethylhexyl)adipate	103-23-1	1	-	-	3.23E+09	1.72E+05	1.36E+06	-	1.53E+05	1.77E+06	1.40E+07	-	1.57E+06	1.53E+05 max
Di-n-butyltin bis(2-ethylhexanoate)	2781-10-4	1	1.29E+05	-	3.23E+09	-	-	-	-	-	-	-	-	
Di-n-butyltin bis(methyl maleate)	15546-11-9	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Di-n-butyltin bis(n-butyl maleate)	15546-16-4	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Di-n-butyltin dilaurate	77-58-7	1	4.40E+05	-	3.23E+09	-	-	-	-	-	-	-	-	
Di-n-butyltin distearate	5847-55-2	1	2.33E+06	-	3.23E+09	-	-	-	-	-	-	-	-	
Di-n-hexylphthalate	84-75-3	1	1.33E+06	3.85E+00	3.23E+09	-	-	-	-	-	-	-	-	
Diallate	2303-16-4	1	-	-	3.23E+09	3.38E+03	2.68E+04	-	3.01E+03	-	-	-	-	3.01E+03 ca
Diammonium phosphate	7783-28-0	1	-	-	3.23E+09	-	-	-	-	1.43E+08	-	-	1.43E+08	1.43E+08 max
Diazinon	333-41-5	1	-	-	3.23E+09	-	-	-	-	2.06E+03	1.64E+04	-	1.83E+03	1.83E+03 nc

Site-specific

Outdoor Worker Screening Levels (RSL) for Soil - Modified for Utility Worker Exposure to Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS
Dibenz[a,h]anthracene	53-70-3	Yes	No	7.30E+00	U	1.20E-03	U	-		-		1	0.13
Dibenzo(a,e)pyrene	192-65-4	No	No	1.20E+01	U	1.10E-03	U	-		-		1	0.13
Dibenzofuran	132-64-9	No	Yes	-		-		1.00E-03	U	-		1	0.03
Dibenzothiophene	132-65-0	No	Yes	-		-		1.00E-02	U	-		1	-
Dibromo-3-chloropropane, 1,2-	96-12-8	Yes	Yes	8.00E-01	U	6.00E-03	U	2.00E-04	U	2.00E-04	U	1	-
Dibromoacetic acid	631-64-1	No	No	-		-		-		-		1	0.1
Dibromobenzene, 1,3-	108-36-1	No	Yes	-		-		4.00E-04	U	-		1	-
Dibromobenzene, 1,4-	106-37-6	No	Yes	-		-		1.00E-02	U	-		1	-
Dibromochloromethane	124-48-1	No	Yes	8.40E-02	U	2.70E-05	U	2.00E-02	U	-		1	-
Dibromodichloromethane	594-18-3	No	Yes	-		-		-		-		1	-
Dibromodiphenyl Ether, p,p'-	2050-47-7	No	Yes	-		-		-		-		1	-
Dibromoethane, 1,2-	106-93-4	No	Yes	2.00E+00	U	6.00E-04	U	9.00E-03	U	9.00E-03	U	1	-
Dibromomethane (Methylene Bromide)	74-95-3	No	Yes	-		-		1.00E-02	U	4.00E-03	U	1	-
Dibutoxy di-n-butyltin	3349-36-8	No	Yes	-		-		-		-		1	-
Dibutyl Phthalate	84-74-2	No	No	-		-		1.00E-01	U	-		1	0.1
Dibutylbis((1-oxoisooctyl)oxy)stannane	85702-74-5	No	No	-		-		-		-		1	0.1
Dibutylbis(octadeca-9(Z),12(Z),15(Z)-trienoyloxy)stannane	95873-60-2	No	Yes	-		-		-		-		1	-
Dibutylbis(octadeca-9(Z),12(Z)-dienoyloxy)stannane	85391-79-3	No	No	-		-		-		-		1	0.1
Dibutylbis(palmitoyloxy)stannane	13323-63-2	No	Yes	-		-		-		-		1	-
Dibutyltin Compounds	NA	No	No	-		-		3.00E-04	U	-		1	0.1
Dibutyltin diacetate	1067-33-0	No	Yes	-		-		-		-		1	-
Dibutyltin dichloride	683-18-1	No	Yes	-		-		-		-		1	-
Dibutyltin oxide	818-08-6	No	Yes	-		-		-		-		1	-
Dicalcium phosphate	7757-93-9	No	No	-		-		4.86E+01	U	-		1	-
Dicamba	1918-00-9	No	No	-		-		3.00E-02	U	-		1	0.1
Dichloro-2-butene, 1,4-	764-41-0	No	Yes	-		4.20E-03	U	-		-		1	-
Dichloro-2-butene, cis-1,4-	1476-11-5	No	Yes	-		4.20E-03	U	-		-		1	-
Dichloro-2-butene, trans-1,4-	110-57-6	No	Yes	-		4.20E-03	U	-		-		1	-
Dichloroacetic Acid	79-43-6	No	No	5.00E-02	U	-		4.00E-03	U	-		1	0.1
Dichloroaniline, 2,4-	554-00-7	No	No	-		-		-		-		1	0.1
Dichloroaniline, 3,4-	95-76-1	No	Yes	-		-		-		-		1	-
Dichlorobenzene	25321-22-6	No	Yes	-		-		-		-		1	-
Dichlorobenzene, 1,2-	95-50-1	No	Yes	-		-		9.00E-02	U	2.00E-01	U	1	-
Dichlorobenzene, 1,3-	541-73-1	No	Yes	-		-		-		-		1	-
Dichlorobenzene, 1,4-	106-46-7	No	Yes	5.40E-03	U	1.10E-05	U	7.00E-02	U	8.00E-01	U	1	-
Dichlorobenzidine, 3,3'-	91-94-1	No	No	4.50E-01	U	3.40E-04	U	-		-		1	0.1
Dichlorobenzoic acid, -3,5	51-36-5	No	No	-		-		-		-		1	0.1
Dichlorobenzophenone, 4,4'-	90-98-2	No	No	-		-		9.00E-03	U	-		1	0.1
Dichlorobenzotrifluoride, 3,4-	328-84-7	No	Yes	-		-		-		-		1	-
Dichlorodifluoromethane	75-71-8	No	Yes	-		-		2.00E-01	U	1.00E-01	U	1	-
Dichlorodiisopropyl ether, 2,2'-	39638-32-9	No	Yes	-		-		-		-		1	-
Dichloroethane, 1,1-	75-34-3	No	Yes	5.70E-03	U	1.60E-06	U	2.00E-01	U	-		1	-
Dichloroethane, 1,2-	107-06-2	No	Yes	9.10E-02	U	2.60E-05	U	6.00E-03	U	7.00E-03	U	1	-
Dichloroethylene, 1,1-	75-35-4	No	Yes	-		-		5.00E-02	U	2.00E-01	U	1	-
Dichloroethylene, 1,2-cis-	156-59-2	No	Yes	-		-		2.00E-03	U	-		1	-
Dichloroethylene, 1,2-trans-	156-60-5	No	Yes	-		-		2.00E-02	U	-		1	-
Dichlorophenol, 2,3-	576-24-9	Yes	No	-		-		-		-		1	0.1
Dichlorophenol, 2,4-	120-83-2	No	No	-		-		3.00E-03	U	-		1	0.1
Dichlorophenol, 2,5-	583-78-8	No	No	-		-		-		-		1	0.1
Dichlorophenol, 2,6-	87-65-0	No	No	-		-		-		-		1	0.1
Dichlorophenol, 3,4-	95-77-2	No	No	-		-		-		-		1	0.1
Dichlorophenols (total)	NA	No	No	-		-		-		-		1	0.1

Site-specific

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Smax=Soil SL exceeds ceiling limit and has been substituted with the max value
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Dibenz[a,h]anthracene	53-70-3	1	-	-	3.23E+09	2.83E+01	1.72E+02	6.88E+06	2.43E+01	-	-	-	-	2.43E+01 ca
Dibenzo(a,e)pyrene	192-65-4	1	-	-	3.23E+09	1.72E+01	1.05E+02	7.51E+06	1.48E+01	-	-	-	-	1.48E+01 ca
Dibenzofuran	132-64-9	1	2.70E+05	-	3.23E+09	-	-	-	-	2.95E+03	7.79E+04	-	2.84E+03	2.84E+03 nc
Dibenzothiophene	132-65-0	1	7.24E+05	-	3.23E+09	-	-	-	-	2.95E+04	-	-	2.95E+04	2.95E+04 nc
Dibromo-3-chloropropane, 1,2-	96-12-8	1	4.42E+04	9.80E+02	3.23E+09	2.58E+02	-	1.88E+01	1.75E+01	5.90E+02	-	3.22E+02	2.08E+02	1.75E+01 ca*
Dibromoacetic acid	631-64-1	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Dibromobenzene, 1,3-	108-36-1	1	2.66E+04	1.59E+02	3.23E+09	-	-	-	-	1.18E+03	-	-	1.18E+03	1.18E+03 sat
Dibromobenzene, 1,4-	106-37-6	1	3.03E+04	-	3.23E+09	-	-	-	-	2.95E+04	-	-	2.95E+04	2.95E+04 nc
Dibromochloromethane	124-48-1	1	1.10E+04	8.02E+02	3.23E+09	2.46E+03	-	1.04E+03	7.30E+02	5.90E+04	-	-	5.90E+04	7.30E+02 ca*
Dibromodichloromethane	594-18-3	1	3.20E+04	-	3.23E+09	-	-	-	-	-	-	-	-	
Dibromodiphenyl Ether, p,p'-	2050-47-7	1	5.22E+05	-	3.23E+09	-	-	-	-	-	-	-	-	
Dibromoethane, 1,2-	106-93-4	1	1.19E+04	1.34E+03	3.23E+09	1.03E+02	-	5.08E+01	3.40E+01	2.65E+04	-	3.92E+03	3.41E+03	3.40E+01 ca
Dibromomethane (Methylene Bromide)	74-95-3	1	7.79E+03	2.82E+03	3.23E+09	-	-	-	-	2.95E+04	-	1.14E+03	1.09E+03	1.09E+03 nc
Dibutoxy di-n-butyltin	3349-36-8	1	8.25E+04	-	3.23E+09	-	-	-	-	-	-	-	-	
Dibutyl Phthalate	84-74-2	1	-	-	3.23E+09	-	-	-	-	2.95E+05	2.34E+06	-	2.62E+05	2.62E+05 max
Dibutylbis((1-oxoisooctyl)oxy)stannane	85702-74-5	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Dibutylbis(octadeca-9(Z),12(Z),15(Z)-trienoyloxy)stannane	95873-60-2	1	3.40E+06	-	3.23E+09	-	-	-	-	-	-	-	-	
Dibutylbis(octadeca-9(Z),12(Z)-dienoyloxy)stannane	85391-79-3	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Dibutylbis(palmitoyloxy)stannane	13323-63-2	1	1.20E+06	-	3.23E+09	-	-	-	-	-	-	-	-	
Dibutyltin Compounds	NA	1	-	-	3.23E+09	-	-	-	-	8.85E+02	7.01E+03	-	7.86E+02	7.86E+02 nc
Dibutyltin diacetate	1067-33-0	1	1.75E+04	1.86E+00	3.23E+09	-	-	-	-	-	-	-	-	
Dibutyltin dichloride	683-18-1	1	3.93E+04	-	3.23E+09	-	-	-	-	-	-	-	-	
Dibutyltin oxide	818-08-6	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Dicalcium phosphate	7757-93-9	1	-	-	3.23E+09	-	-	-	-	1.43E+08	-	-	1.43E+08	1.43E+08 max
Dicamba	1918-00-9	1	-	-	3.23E+09	-	-	-	-	8.85E+04	7.01E+05	-	7.86E+04	7.86E+04 nc
Dichloro-2-butene, 1,4-	764-41-0	1	1.54E+04	5.20E+02	3.23E+09	-	-	9.35E+00	9.35E+00	-	-	-	-	9.35E+00 ca
Dichloro-2-butene, cis-1,4-	1476-11-5	1	1.54E+04	5.20E+02	3.23E+09	-	-	9.35E+00	9.35E+00	-	-	-	-	9.35E+00 ca
Dichloro-2-butene, trans-1,4-	110-57-6	1	1.54E+04	7.63E+02	3.23E+09	-	-	9.36E+00	9.36E+00	-	-	-	-	9.36E+00 ca
Dichloroacetic Acid	79-43-6	1	-	-	3.23E+09	4.13E+03	3.27E+04	-	3.67E+03	1.18E+04	9.35E+04	-	1.05E+04	3.67E+03 ca**
Dichloroaniline, 2,4-	554-00-7	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Dichloroaniline, 3,4-	95-76-1	1	1.39E+05	-	3.23E+09	-	-	-	-	-	-	-	-	
Dichlorobenzene	25321-22-6	1	1.61E+04	1.93E+02	3.23E+09	-	-	-	-	-	-	-	-	
Dichlorobenzene, 1,2-	95-50-1	1	1.61E+04	3.76E+02	3.23E+09	-	-	-	-	2.65E+05	-	1.18E+05	8.15E+04	8.15E+04 sat
Dichlorobenzene, 1,3-	541-73-1	1	1.37E+04	2.96E+02	3.23E+09	-	-	-	-	-	-	-	-	
Dichlorobenzene, 1,4-	106-46-7	1	1.44E+04	-	3.23E+09	3.82E+04	-	3.35E+03	3.08E+03	2.06E+05	-	4.21E+05	1.38E+05	3.08E+03 ca*
Dichlorobenzidine, 3,3'-	91-94-1	1	-	-	3.23E+09	4.59E+02	3.64E+03	2.43E+07	4.07E+02	-	-	-	-	4.07E+02 ca
Dichlorobenzoic acid, -3,5	51-36-5	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Dichlorobenzophenone, 4,4'-	90-98-2	1	-	-	3.23E+09	-	-	-	-	2.65E+04	2.10E+05	-	2.36E+04	2.36E+04 nc
Dichlorobenzotrifluoride, 3,4-	328-84-7	1	1.59E+04	4.57E+01	3.23E+09	-	-	-	-	-	-	-	-	
Dichlorodifluoromethane	75-71-8	1	1.16E+03	8.44E+02	3.23E+09	-	-	-	-	5.90E+05	-	4.23E+03	4.20E+03	4.20E+03 sat
Dichlorodiisopropyl ether, 2,2'-	39638-32-9	1	1.81E+04	2.35E+02	3.23E+09	-	-	-	-	-	-	-	-	
Dichloroethane, 1,1-	75-34-3	1	2.87E+03	1.69E+03	3.23E+09	3.62E+04	-	4.59E+03	4.07E+03	5.90E+05	-	-	5.90E+05	4.07E+03 sat
Dichloroethane, 1,2-	107-06-2	1	6.31E+03	2.98E+03	3.23E+09	2.27E+03	-	6.20E+02	4.87E+02	1.77E+04	-	1.61E+03	1.48E+03	4.87E+02 ca**
Dichloroethylene, 1,1-	75-35-4	1	1.59E+03	1.19E+03	3.23E+09	-	-	-	-	1.47E+05	-	1.16E+04	1.08E+04	1.08E+04 sat
Dichloroethylene, 1,2-cis-	156-59-2	1	3.45E+03	2.37E+03	3.23E+09	-	-	-	-	5.90E+03	-	-	5.90E+03	5.90E+03 sat
Dichloroethylene, 1,2-trans-	156-60-5	1	3.46E+03	1.67E+03	3.23E+09	-	-	-	-	5.90E+04	-	-	5.90E+04	5.90E+04 sat
Dichlorophenol, 2,3-	576-24-9	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Dichlorophenol, 2,4-	120-83-2	1	-	-	3.23E+09	-	-	-	-	8.85E+03	7.01E+04	-	7.86E+03	7.86E+03 nc
Dichlorophenol, 2,5-	583-78-8	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Dichlorophenol, 2,6-	87-65-0	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Dichlorophenol, 3,4-	95-77-2	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Dichlorophenols (total)	NA	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	

Site-specific

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Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS
Dichlorophenoxy Acetic Acid, 2,4-	94-75-7	No	No	-		-		1.00E-02	U	-		1	0.05
Dichlorophenoxy)butyric Acid, 4-(2,4-	94-82-6	No	No	-		-		8.00E-03	U	-		1	0.1
Dichloropropane, 1,2-	78-87-5	No	Yes	3.60E-02	U	1.00E-05	U	9.00E-02	U	4.00E-03	U	1	-
Dichloropropane, 1,3-	142-28-9	No	Yes	-		-		2.00E-02	U	-		1	-
Dichloropropane, 2,2-	594-20-7	Yes	Yes	-		-		-		-		1	-
Dichloropropanol, 2,3-	616-23-9	No	No	-		-		3.00E-03	U	-		1	0.1
Dichloropropene, 1,3-	542-75-6	No	Yes	1.00E-01	U	4.00E-06	U	3.00E-02	U	2.00E-02	U	1	-
Dichloropropene, 2,3-	78-88-6	No	Yes	-		-		-		-		1	-
Dichloropropene, cis-1,3-	10061-01-5	No	Yes	-		-		-		-		1	-
Dichloropropene, trans-1,3-	10061-02-6	No	Yes	-		-		-		-		1	-
Dichlorvos	62-73-7	No	No	2.90E-01	U	8.30E-05	U	5.00E-04	U	5.00E-04	U	1	0.1
Diclofop-methyl	51338-27-3	No	No	-		-		-		-		1	0.1
Dicofol	115-32-2	No	No	-		-		-		-		1	0.1
Dicyclohexylamine	101-83-7	No	Yes	-		-		-		-		1	-
Dicyclopentadiene	77-73-6	No	Yes	-		-		8.00E-02	U	3.00E-04	U	1	-
Didecyl dimethyl ammonium chloride	7173-51-5	No	No	-		-		-		-		1	0.1
Dieldrin	60-57-1	No	No	1.60E+01	U	4.60E-03	U	5.00E-05	U	-		1	0.1
Diepoxybutane	1464-53-5	No	Yes	-		-		-		-		1	-
Diethanolamine	111-42-2	No	No	-		-		2.00E-03	U	2.00E-04	U	1	0.1
Diethyl Phthalate	84-66-2	No	No	-		-		8.00E-01	U	-		1	0.1
Diethyl sulfate	64-67-5	No	No	-		-		-		-		1	0.1
Diethyl-p-nitrophenylphosphate	311-45-5	No	No	-		-		-		-		1	0.1
Diethylene Glycol Dinitrate (DEGDN)	693-21-0	No	No	-		-		-		-		1	0.1
Diethylene Glycol Monobutyl Ether	112-34-5	No	No	-		-		3.00E-02	U	1.00E-04	U	1	0.1
Diethylene Glycol Monoethyl Ether	111-90-0	No	No	-		-		6.00E-02	U	3.00E-04	U	1	0.1
Diethylene-glycol	111-46-6	No	No	-		-		-		-		1	0.1
Diethylformamide	617-84-5	No	Yes	-		-		1.00E-03	U	-		1	-
Diethylphosphorodithioate	298-06-6	No	Yes	-		-		-		-		1	-
Diethylstilbestrol	56-53-1	No	No	3.50E+02	U	1.00E-01	U	-		-		1	0.1
Difenzoquat	43222-48-6	No	No	-		-		8.00E-02	U	-		1	0.1
Diflubenzuron	35367-38-5	No	No	-		-		2.00E-02	U	-		1	0.1
Difluoroethane, 1,1-	75-37-6	No	Yes	-		-		-		4.00E+01	U	1	-
Difluoropropane, 2,2-	420-45-1	No	Yes	-		-		-		-		1	-
Dihydrosafrole	94-58-6	No	Yes	4.40E-02	U	1.30E-05	U	-		-		1	-
Diisopropyl Ether	108-20-3	No	Yes	-		-		-		7.00E-01	U	1	-
Diisopropyl Methylphosphonate	1445-75-6	No	Yes	-		-		8.00E-02	U	-		1	-
Dimagnesium phosphate	7782-75-4	No	No	-		-		4.86E+01	U	-		1	-
Dimethipin	55290-64-7	No	No	-		-		2.00E-02	U	-		1	0.1
Dimethoate	60-51-5	No	No	-		-		2.00E-04	U	-		1	0.1
Dimethoxybenzidine, 3,3'-	119-90-4	No	No	1.60E+00	U	-		-		-		1	0.1
Dimethyl Sulfate	77-78-1	No	No	-		-		-		-		1	0.1
Dimethyl Sulfide	75-18-3	No	Yes	-		-		-		-		1	-
Dimethyl methylphosphonate	756-79-6	No	No	1.70E-03	U	-		6.00E-02	U	-		1	0.1
Dimethylamino azobenzene [p-]	60-11-7	No	No	4.60E+00	U	1.30E-03	U	-		-		1	0.1
Dimethylaniline HCl, 2,4-	21436-96-4	No	No	5.80E-01	U	-		-		-		1	0.1
Dimethylaniline, 2,4-	95-68-1	No	No	2.00E-01	U	-		2.00E-03	U	-		1	0.1
Dimethylaniline, N,N-	121-69-7	No	Yes	-		-		2.00E-03	U	-		1	-
Dimethylbenz(a)anthracene, 7,12-	57-97-6	Yes	No	2.50E+02	U	7.10E-02	U	-		-		1	0.13
Dimethylbenzidine, 3,3'-	119-93-7	No	No	1.10E+01	U	-		-		-		1	0.1
Dimethylcyclohexylamine, n,n-	98-94-2	No	Yes	-		-		-		-		1	-
Dimethylethyl Lead	107584-40-7	No	No	-		-		-		-		1	0.1
Dimethylformamide	68-12-2	No	Yes	-		-		1.00E-01	U	3.00E-02	U	1	-
Dimethylhydrazine, 1,1-	57-14-7	No	Yes	-		-		1.00E-04	U	2.00E-06	U	1	-

Site-specific

Outdoor Worker Screening Levels (RSL) for Soil - Modified for Utility Worker Exposure to Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL), ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gui
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Dichlorophenoxy Acetic Acid, 2,4-	94-75-7	1	-	-	3.23E+09	-	-	-	-	2.95E+04	4.67E+05	-	2.77E+04	2.77E+04 nc
Dichlorophenoxy)butyric Acid, 4-(2,4-	94-82-6	1	-	-	3.23E+09	-	-	-	-	2.36E+04	1.87E+05	-	2.10E+04	2.10E+04 nc
Dichloropropane, 1,2-	78-87-5	1	5.23E+03	1.36E+03	3.23E+09	5.74E+03	-	1.34E+03	1.08E+03	2.65E+05	-	7.64E+02	7.62E+02	7.62E+02 nc
Dichloropropane, 1,3-	142-28-9	1	9.33E+03	1.49E+03	3.23E+09	-	-	-	-	5.90E+04	-	-	5.90E+04	5.90E+04 sat
Dichloropropane, 2,2-	594-20-7	1	2.21E+03	5.27E+02	3.23E+09	-	-	-	-	-	-	-	-	
Dichloropropanol, 2,3-	616-23-9	1	-	-	3.23E+09	-	-	-	-	8.85E+03	7.01E+04	-	7.86E+03	7.86E+03 nc
Dichloropropene, 1,3-	542-75-6	1	4.91E+03	1.57E+03	3.23E+09	2.06E+03	-	3.13E+03	1.24E+03	8.85E+04	-	3.58E+03	3.44E+03	1.24E+03 ca**
Dichloropropene, 2,3-	78-88-6	1	4.27E+03	1.07E+03	3.23E+09	-	-	-	-	-	-	-	-	
Dichloropropene, cis-1,3-	10061-01-5	1	4.90E+03	1.22E+03	3.23E+09	-	-	-	-	-	-	-	-	
Dichloropropene, trans-1,3-	10061-02-6	1	4.91E+03	1.57E+03	3.23E+09	-	-	-	-	-	-	-	-	
Dichlorvos	62-73-7	1	-	-	3.23E+09	7.12E+02	5.64E+03	9.95E+07	6.32E+02	1.47E+03	1.17E+04	5.90E+07	1.31E+03	6.32E+02 ca**
Diclofop-methyl	51338-27-3	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Dicofol	115-32-2	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Dicyclohexylamine	101-83-7	1	8.62E+04	2.16E+03	3.23E+09	-	-	-	-	-	-	-	-	
Dicyclopentadiene	77-73-6	1	5.67E+03	-	3.23E+09	-	-	-	-	2.36E+05	-	6.21E+01	6.20E+01	6.20E+01 nc
Didecyl dimethyl ammonium chloride	7173-51-5	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Dieldrin	60-57-1	1	-	-	3.23E+09	1.29E+01	1.02E+02	1.80E+06	1.15E+01	1.47E+02	1.17E+03	-	1.31E+02	1.15E+01 ca*
Diepoxybutane	1464-53-5	1	2.02E+05	1.15E+05	3.23E+09	-	-	-	-	-	-	-	-	
Diethanolamine	111-42-2	1	-	-	3.23E+09	-	-	-	-	5.90E+03	4.67E+04	2.36E+07	5.24E+03	5.24E+03 nc
Diethyl Phthalate	84-66-2	1	-	-	3.23E+09	-	-	-	-	2.36E+06	1.87E+07	-	2.10E+06	2.10E+06 max
Diethyl sulfate	64-67-5	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Diethyl-p-nitrophenylphosphate	311-45-5	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Diethylene Glycol Dinitrate (DEGDN)	693-21-0	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Diethylene Glycol Monobutyl Ether	112-34-5	1	-	-	3.23E+09	-	-	-	-	8.85E+04	7.01E+05	1.18E+07	7.81E+04	7.81E+04 nc
Diethylene Glycol Monoethyl Ether	111-90-0	1	-	-	3.23E+09	-	-	-	-	1.77E+05	1.40E+06	3.54E+07	1.56E+05	1.56E+05 max
Diethylene-glycol	111-46-6	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Diethylformamide	617-84-5	1	1.91E+05	1.12E+05	3.23E+09	-	-	-	-	2.95E+03	-	-	2.95E+03	2.95E+03 nc
Diethylphosphorodithioate	298-06-6	1	1.79E+04	2.15E-02	3.23E+09	-	-	-	-	-	-	-	-	
Diethylstilbestrol	56-53-1	1	-	-	3.23E+09	5.90E-01	4.67E+00	8.26E+04	5.24E-01	-	-	-	-	5.24E-01 ca
Difenzoquat	43222-48-6	1	-	-	3.23E+09	-	-	-	-	2.36E+05	1.87E+06	-	2.10E+05	2.10E+05 max
Diflubenzuron	35367-38-5	1	-	-	3.23E+09	-	-	-	-	5.90E+04	4.67E+05	-	5.24E+04	5.24E+04 nc
Difluoroethane, 1,1-	75-37-6	1	1.59E+03	1.43E+03	3.23E+09	-	-	-	-	-	-	2.31E+06	2.31E+06	2.31E+06 sat
Difluoropropane, 2,2-	420-45-1	1	1.01E+03	4.63E+04	3.23E+09	-	-	-	-	-	-	-	-	
Dihydrosafrole	94-58-6	1	2.08E+03	-	3.23E+09	4.69E+03	-	4.09E+02	3.76E+02	-	-	-	-	3.76E+02 ca
Diisopropyl Ether	108-20-3	1	4.21E+03	2.26E+03	3.23E+09	-	-	-	-	-	-	1.08E+05	1.08E+05	1.08E+05 sat
Diisopropyl Methylphosphonate	1445-75-6	1	5.26E+04	5.30E+02	3.23E+09	-	-	-	-	2.36E+05	-	-	2.36E+05	2.36E+05 sat
Dimagnesium phosphate	7782-75-4	1	-	-	3.23E+09	-	-	-	-	1.43E+08	-	-	1.43E+08	1.43E+08 max
Dimethipin	55290-64-7	1	-	-	3.23E+09	-	-	-	-	5.90E+04	4.67E+05	-	5.24E+04	5.24E+04 nc
Dimethoate	60-51-5	1	-	-	3.23E+09	-	-	-	-	5.90E+02	4.67E+03	-	5.24E+02	5.24E+02 nc
Dimethoxybenzidine, 3,3'-	119-90-4	1	-	-	3.23E+09	1.29E+02	1.02E+03	-	1.15E+02	-	-	-	-	1.15E+02 ca
Dimethyl Sulfate	77-78-1	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Dimethyl Sulfide	75-18-3	1	4.10E+03	5.34E+03	3.23E+09	-	-	-	-	-	-	-	-	
Dimethyl methylphosphonate	756-79-6	1	-	-	3.23E+09	1.21E+05	9.62E+05	-	1.08E+05	1.77E+05	1.40E+06	-	1.57E+05	1.08E+05 max
Dimethylamino azobenzene [p-]	60-11-7	1	-	-	3.23E+09	4.49E+01	3.56E+02	6.35E+06	3.99E+01	-	-	-	-	3.99E+01 ca
Dimethylaniline HCl, 2,4-	21436-96-4	1	-	-	3.23E+09	3.56E+02	2.82E+03	-	3.16E+02	-	-	-	-	3.16E+02 ca
Dimethylaniline, 2,4-	95-68-1	1	-	-	3.23E+09	1.03E+03	8.18E+03	-	9.17E+02	5.90E+03	4.67E+04	-	5.24E+03	9.17E+02 ca**
Dimethylaniline, N,N-	121-69-7	1	4.32E+04	8.30E+02	3.23E+09	-	-	-	-	5.90E+03	-	-	5.90E+03	5.90E+03 sat
Dimethylbenz(a)anthracene, 7,12-	57-97-6	1	-	-	3.23E+09	8.26E-01	5.03E+00	1.16E+05	7.09E-01	-	-	-	-	7.09E-01 ca
Dimethylbenzidine, 3,3'-	119-93-7	1	-	-	3.23E+09	1.88E+01	1.49E+02	-	1.67E+01	-	-	-	-	1.67E+01 ca
Dimethylcyclohexylamine, n,n-	98-94-2	1	5.23E+04	-	3.23E+09	-	-	-	-	-	-	-	-	
Dimethylethyl Lead	107584-40-7	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Dimethylformamide	68-12-2	1	1.76E+05	1.06E+05	3.23E+09	-	-	-	-	2.95E+05	-	1.93E+05	1.16E+05	1.16E+05 sat
Dimethylhydrazine, 1,1-	57-14-7	1	2.23E+05	1.72E+05	3.23E+09	-	-	-	-	2.95E+02	-	1.63E+01	1.54E+01	1.54E+01 nc

Site-specific

Outdoor Worker Screening Levels (RSL) for Soil - Modified for Utility Worker Exposure to Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
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Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
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Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF (mg/kg-day)$^{-1}$	SFO Ref	Inhalation Unit Risk (ug/m^3)$^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS
Dimethylhydrazine, 1,2-	540-73-8	No	Yes	5.50E+02	U	1.60E-01	U	-		-		1	-
Dimethylmercury	593-74-8	No	Yes	-		-		-		-		1	-
Dimethylphenethylamine	122-09-8	No	No	-		-		-		-		1	0.1
Dimethylphenol, 2,4-	105-67-9	No	No	-		-		2.00E-02	U	-		1	0.1
Dimethylphenol, 2,6-	576-26-1	No	No	-		-		6.00E-04	U	-		1	0.1
Dimethylphenol, 3,4-	95-65-8	No	No	-		-		1.00E-03	U	-		1	0.1
Dimethylphthalate	131-11-3	No	No	-		-		-		-		1	0.1
Dimethylterephthalate	120-61-6	No	Yes	-		-		1.00E-01	U	-		1	-
Dimethylvinylchloride	513-37-1	No	Yes	4.50E-02	U	1.30E-05	U	-		-		1	-
Dinitro-o-cresol, 4,6-	534-52-1	No	No	-		-		8.00E-05	U	-		1	0.1
Dinitro-o-cyclohexyl Phenol, 4,6-	131-89-5	No	No	-		-		2.00E-03	U	-		1	0.1
Dinitroaniline, 3,5-	618-87-1	No	No	-		-		-		-		1	0.1
Dinitrobenzene, 1,2-	528-29-0	No	No	-		-		1.00E-04	U	-		1	0.1
Dinitrobenzene, 1,3-	99-65-0	No	No	-		-		1.00E-04	U	-		1	0.1
Dinitrobenzene, 1,4-	100-25-4	No	No	-		-		1.00E-04	U	-		1	0.1
Dinitrophenol, 2,4-	51-28-5	No	No	-		-		2.00E-03	U	-		1	0.1
Dinitrophenols	25550-58-7	Yes	No	-		-		-		-		1	0.1
Dinitrosopentamethylenetetramine, N,N-	101-25-7	No	No	-		-		-		-		1	0.1
Dinitrotoluene Mixture, 2,4/2,6-	NA	No	No	6.80E-01	U	-		-		-		1	0.1
Dinitrotoluene, 2,4-	121-14-2	No	No	3.10E-01	U	8.90E-05	U	2.00E-03	U	-		1	0.102
Dinitrotoluene, 2,6-	606-20-2	No	No	1.50E+00	U	-		3.00E-04	U	-		1	0.099
Dinitrotoluene, 2-Amino-4,6-	35572-78-2	No	No	-		-		2.00E-03	U	-		1	0.006
Dinitrotoluene, 4-Amino-2,6-	19406-51-0	No	No	-		-		2.00E-03	U	-		1	0.009
Dinitrotoluene, Technical grade	25321-14-6	No	No	4.50E-01	U	-		9.00E-04	U	-		1	0.1
Dinoseb	88-85-7	No	No	-		-		1.00E-03	U	-		1	0.1
Dioxane, 1,4-	123-91-1	No	Yes	1.00E-01	U	5.00E-06	U	3.00E-02	U	3.00E-02	U	1	-
Diphenamid	957-51-7	No	No	-		-		3.00E-02	U	-		1	0.1
Diphenyl Sulfone	127-63-9	No	No	-		-		8.00E-04	U	-		1	0.1
Diphenylamine	122-39-4	No	No	-		-		2.50E-02	U	-		1	0.1
Diphenylhydrazine, 1,2-	122-66-7	No	No	8.00E-01	U	2.20E-04	U	-		-		1	0.1
Dipotassium phosphate	7758-11-4	No	No	-		-		4.86E+01	U	-		1	-
Diquat	85-00-7	No	No	-		-		2.20E-03	U	-		1	0.1
Direct Black 38	1937-37-7	No	No	7.10E+00	U	1.40E-01	U	-		-		1	0.1
Direct Blue 6	2602-46-2	No	No	7.40E+00	U	1.40E-01	U	-		-		1	0.1
Direct Brown 95	16071-86-6	No	No	6.70E+00	U	1.40E-01	U	-		-		1	0.1
Direct Sky Blue	2610-05-1	No	No	-		-		-		-		1	0.1
Disodium phosphate	7558-79-4	No	No	-		-		4.86E+01	U	-		1	-
Disulfoton	298-04-4	No	No	-		-		4.00E-05	U	-		1	0.1
Dithiane, 1,4-	505-29-3	No	Yes	-		-		1.00E-02	U	-		1	-
Diuron	330-54-1	No	No	-		-		2.00E-03	U	-		1	0.1
Dodecyl benzenesulfonic acid	27176-87-0	No	No	-		-		-		-		1	0.1
Dodine	2439-10-3	No	No	-		-		4.00E-03	U	-		1	0.1
EPTC	759-94-4	No	Yes	-		-		2.50E-02	U	-		1	-
Endosulfan	115-29-7	No	Yes	-		-		6.00E-03	U	-		1	-
Endosulfan I	959-98-8	No	Yes	-		-		-		-		1	-
Endosulfan II	33213-65-9	No	Yes	-		-		-		-		1	-
Endosulfan Sulfate	1031-07-8	No	No	-		-		-		-		1	0.1
Endothall	145-73-3	No	No	-		-		2.00E-02	U	-		1	0.1
Endrin	72-20-8	No	No	-		-		3.00E-04	U	-		1	0.1
Endrin aldehyde	7421-93-4	No	No	-		-		-		-		1	0.1
Endrin ketone	53494-70-5	No	No	-		-		-		-		1	0.1
Epichlorohydrin	106-89-8	No	Yes	9.90E-03	U	1.20E-06	U	6.00E-03	U	1.00E-03	U	1	-
Epoxybutane, 1,2-	106-88-7	No	Yes	-		-		-		2.00E-02	U	1	-

Site-specific

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Smax=Soil SL exceeds ceiling limit and has been substituted with the max value
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Dimethylhydrazine, 1,2-	540-73-8	1	2.31E+05	1.89E+05	3.23E+09	3.75E-01	-	3.69E+00	3.41E-01	-	-	-	-	3.41E-01 ca
Dimethylmercury	593-74-8	1	5.88E+03	4.14E+03	3.23E+09	-	-	-	-	-	-	-	-	
Dimethylphenethylamine	122-09-8	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Dimethylphenol, 2,4-	105-67-9	1	-	-	3.23E+09	-	-	-	-	5.90E+04	4.67E+05	-	5.24E+04	5.24E+04 nc
Dimethylphenol, 2,6-	576-26-1	1	-	-	3.23E+09	-	-	-	-	1.77E+03	1.40E+04	-	1.57E+03	1.57E+03 nc
Dimethylphenol, 3,4-	95-65-8	1	-	-	3.23E+09	-	-	-	-	2.95E+03	2.34E+04	-	2.62E+03	2.62E+03 nc
Dimethylphthalate	131-11-3	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Dimethylterephthalate	120-61-6	1	2.95E+04	-	3.23E+09	-	-	-	-	2.95E+05	-	-	2.95E+05	2.95E+05 max
Dimethylvinylchloride	513-37-1	1	1.39E+03	1.09E+03	3.23E+09	4.59E+03	-	2.73E+02	2.58E+02	-	-	-	-	2.58E+02 ca
Dinitro-o-cresol, 4,6-	534-52-1	1	-	-	3.23E+09	-	-	-	-	2.36E+02	1.87E+03	-	2.10E+02	2.10E+02 nc
Dinitro-o-cyclohexyl Phenol, 4,6-	131-89-5	1	-	-	3.23E+09	-	-	-	-	5.90E+03	4.67E+04	-	5.24E+03	5.24E+03 nc
Dinitroaniline, 3,5-	618-87-1	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Dinitrobenzene, 1,2-	528-29-0	1	-	-	3.23E+09	-	-	-	-	2.95E+02	2.34E+03	-	2.62E+02	2.62E+02 nc
Dinitrobenzene, 1,3-	99-65-0	1	-	-	3.23E+09	-	-	-	-	2.95E+02	2.34E+03	-	2.62E+02	2.62E+02 nc
Dinitrobenzene, 1,4-	100-25-4	1	-	-	3.23E+09	-	-	-	-	2.95E+02	2.34E+03	-	2.62E+02	2.62E+02 nc
Dinitrophenol, 2,4-	51-28-5	1	-	-	3.23E+09	-	-	-	-	5.90E+03	4.67E+04	-	5.24E+03	5.24E+03 nc
Dinitrophenols	25550-58-7	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Dinitrosopentamethylenetetramine, N,N-	101-25-7	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Dinitrotoluene Mixture, 2,4/2,6-	NA	1	-	-	3.23E+09	3.04E+02	2.41E+03	-	2.70E+02	-	-	-	-	2.70E+02 ca
Dinitrotoluene, 2,4-	121-14-2	1	-	-	3.23E+09	6.66E+02	5.17E+03	9.28E+07	5.90E+02	5.90E+03	4.58E+04	-	5.23E+03	5.90E+02 ca**
Dinitrotoluene, 2,6-	606-20-2	1	-	-	3.23E+09	1.38E+02	1.10E+03	-	1.22E+02	8.85E+02	7.08E+03	-	7.87E+02	1.22E+02 ca**
Dinitrotoluene, 2-Amino-4,6-	35572-78-2	1	-	-	3.23E+09	-	-	-	-	5.90E+03	7.79E+05	-	5.85E+03	5.85E+03 nc
Dinitrotoluene, 4-Amino-2,6-	19406-51-0	1	-	-	3.23E+09	-	-	-	-	5.90E+03	5.19E+05	-	5.83E+03	5.83E+03 nc
Dinitrotoluene, Technical grade	25321-14-6	1	-	-	3.23E+09	4.59E+02	3.64E+03	-	4.07E+02	2.65E+03	2.10E+04	-	2.36E+03	4.07E+02 ca**
Dinoseb	88-85-7	1	-	-	3.23E+09	-	-	-	-	2.95E+03	2.34E+04	-	2.62E+03	2.62E+03 nc
Dioxane, 1,4-	123-91-1	1	5.47E+04	1.16E+05	3.23E+09	2.06E+03	-	2.80E+04	1.92E+03	8.85E+04	-	5.99E+04	3.57E+04	1.92E+03 ca*
Diphenamid	957-51-7	1	-	-	3.23E+09	-	-	-	-	8.85E+04	7.01E+05	-	7.86E+04	7.86E+04 nc
Diphenyl Sulfone	127-63-9	1	-	-	3.23E+09	-	-	-	-	2.36E+03	1.87E+04	-	2.10E+03	2.10E+03 nc
Diphenylamine	122-39-4	1	-	-	3.23E+09	-	-	-	-	7.37E+04	5.84E+05	-	6.55E+04	6.55E+04 nc
Diphenylhydrazine, 1,2-	122-66-7	1	-	-	3.23E+09	2.58E+02	2.05E+03	3.75E+07	2.29E+02	-	-	-	-	2.29E+02 ca
Dipotassium phosphate	7758-11-4	1	-	-	3.23E+09	-	-	-	-	1.43E+08	-	-	1.43E+08	1.43E+08 max
Diquat	85-00-7	1	-	-	3.23E+09	-	-	-	-	6.49E+03	5.14E+04	-	5.76E+03	5.76E+03 nc
Direct Black 38	1937-37-7	1	-	-	3.23E+09	2.91E+01	2.30E+02	5.90E+04	2.58E+01	-	-	-	-	2.58E+01 ca
Direct Blue 6	2602-46-2	1	-	-	3.23E+09	2.79E+01	2.21E+02	5.90E+04	2.48E+01	-	-	-	-	2.48E+01 ca
Direct Brown 95	16071-86-6	1	-	-	3.23E+09	3.08E+01	2.44E+02	5.90E+04	2.74E+01	-	-	-	-	2.74E+01 ca
Direct Sky Blue	2610-05-1	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Disodium phosphate	7558-79-4	1	-	-	3.23E+09	-	-	-	-	1.43E+08	-	-	1.43E+08	1.43E+08 max
Disulfoton	298-04-4	1	-	-	3.23E+09	-	-	-	-	1.18E+02	9.35E+02	-	1.05E+02	1.05E+02 nc
Dithiane, 1,4-	505-29-3	1	6.26E+04	-	3.23E+09	-	-	-	-	2.95E+04	-	-	2.95E+04	2.95E+04 nc
Diuron	330-54-1	1	-	-	3.23E+09	-	-	-	-	5.90E+03	4.67E+04	-	5.24E+03	5.24E+03 nc
Dodecyl benzenesulfonic acid	27176-87-0	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Dodine	2439-10-3	1	-	-	3.23E+09	-	-	-	-	1.18E+04	9.35E+04	-	1.05E+04	1.05E+04 nc
EPTC	759-94-4	1	1.62E+05	-	3.23E+09	-	-	-	-	7.37E+04	-	-	7.37E+04	7.37E+04 nc
Endosulfan	115-29-7	1	5.65E+05	-	3.23E+09	-	-	-	-	1.77E+04	-	-	1.77E+04	1.77E+04 nc
Endosulfan I	959-98-8	1	5.65E+05	-	3.23E+09	-	-	-	-	-	-	-	-	
Endosulfan II	33213-65-9	1	5.51E+05	-	3.23E+09	-	-	-	-	-	-	-	-	
Endosulfan Sulfate	1031-07-8	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Endothall	145-73-3	1	-	-	3.23E+09	-	-	-	-	5.90E+04	4.67E+05	-	5.24E+04	5.24E+04 nc
Endrin	72-20-8	1	-	-	3.23E+09	-	-	-	-	8.85E+02	7.01E+03	-	7.86E+02	7.86E+02 nc
Endrin aldehyde	7421-93-4	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Endrin ketone	53494-70-5	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Epichlorohydrin	106-89-8	1	2.61E+04	1.05E+04	3.23E+09	2.09E+04	-	5.55E+04	1.52E+04	1.77E+04	-	9.52E+02	9.03E+02	9.03E+02 nc
Epoxybutane, 1,2-	106-88-7	1	1.06E+04	1.53E+04	3.23E+09	-	-	-	-	-	-	7.71E+03	7.71E+03	7.71E+03 nc

Site-specific

Outdoor Worker Screening Levels (RSL) for Soil - Modified for Utility Worker Exposure to Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS
Ethanol	64-17-5	No	Yes	-		-		-		-		1	-
Ethanol, 2-(2-methoxyethoxy)-	111-77-3	No	No	-		-		-		-		1	0.1
Ethephon	16672-87-0	No	No	-		-		5.00E-03	U	-		1	0.1
Ethion	563-12-2	No	No	-		-		5.00E-04	U	-		1	0.1
Ethoxy Propanol	52125-53-8	No	Yes	-		-		-		-		1	-
Ethoxyethanol Acetate, 2-	111-15-9	No	Yes	-		-		1.00E-01	U	6.00E-02	U	1	-
Ethoxyethanol, 2-	110-80-5	No	Yes	-		-		9.00E-02	U	2.00E-01	U	1	-
Ethyl Acetate	141-78-6	No	Yes	-		-		9.00E-01	U	7.00E-02	U	1	-
Ethyl Acrylate	140-88-5	No	Yes	4.80E-02	U	-		5.00E-03	U	8.00E-03	U	1	-
Ethyl Chloride	75-00-3	No	Yes	-		-		-		1.00E+01	U	1	-
Ethyl Ether	60-29-7	No	Yes	-		-		2.00E-01	U	-		1	-
Ethyl Methacrylate	97-63-2	No	Yes	-		-		9.00E-02	U	3.00E-01	U	1	-
Ethyl methane sulfonate	62-50-0	No	No	-		-		-		-		1	0.1
Ethyl-p-nitrophenyl Phosphonate	2104-64-5	No	No	-		-		1.00E-05	U	-		1	0.1
Ethylbenzene	100-41-4	No	Yes	1.10E-02	U	2.50E-06	U	1.00E-01	U	1.00E+00	U	1	-
Ethylene Cyanohydrin	109-78-4	No	No	-		-		7.00E-02	U	-		1	0.1
Ethylene Diamine	107-15-3	No	Yes	-		-		9.00E-02	U	-		1	-
Ethylene Glycol	107-21-1	No	No	-		-		2.00E+00	U	4.00E-01	U	1	0.1
Ethylene Glycol Monobutyl Ether	111-76-2	No	No	-		-		1.00E-01	U	1.60E+00	U	1	0.1
Ethylene Oxide	75-21-8	No	Yes	3.10E-01	U	8.80E-05	U	-		3.00E-02	U	1	-
Ethylene Thiourea	96-45-7	No	No	4.50E-02	U	1.30E-05	U	8.00E-05	U	-		1	0.1
Ethyleneimine	151-56-4	No	Yes	6.50E+01	U	1.90E-02	U	-		-		1	-
Ethylphenol, 4-	123-07-9	No	No	-		-		-		-		1	0.1
Ethylphthalyl Ethyl Glycolate	84-72-0	No	No	-		-		3.00E+00	U	-		1	0.1
Express	101200-48-0	No	No	-		-		8.00E-03	U	-		1	0.1
Famphur	52-85-7	No	No	-		-		-		-		1	0.1
Fenamiphos	22224-92-6	No	No	-		-		2.50E-04	U	-		1	0.1
Fenpropathrin	39515-41-8	No	No	-		-		2.50E-02	U	-		1	0.1
Fluometuron	2164-17-2	No	No	-		-		1.30E-02	U	-		1	0.1
Fluoranthene	206-44-0	No	No	-		-		4.00E-02	U	-		1	0.13
Fluorene	86-73-7	No	Yes	-		-		4.00E-02	U	-		1	0.13
Fluoride	16984-48-8	No	No	-		-		4.00E-02	U	1.30E-02	U	1	-
Fluorine (Soluble Fluoride)	7782-41-4	No	No	-		-		6.00E-02	U	1.30E-02	U	1	-
Fluorobenzene	462-06-6	No	Yes	-		-		-		-		1	-
Fluorobiphenyl, 2-	321-60-8	No	Yes	-		-		-		-		1	-
Fluorophenol, 2-	367-12-4	No	Yes	-		-		-		-		1	-
Fluridone	59756-60-4	No	No	-		-		8.00E-02	U	-		1	0.1
Flurprimidol	56425-91-3	No	No	-		-		2.00E-02	U	-		1	0.1
Flutolanil	66332-96-5	No	No	-		-		6.00E-02	U	-		1	0.1
Fluvalinate	69409-94-5	No	No	-		-		1.00E-02	U	-		1	0.1
Folpet	133-07-3	No	No	3.50E-03	U	-		1.00E-01	U	-		1	0.1
Fomesafen	72178-02-0	No	No	1.90E-01	U	-		-		-		1	0.1
Fonofos	944-22-9	No	No	-		-		2.00E-03	U	-		1	0.1
Formaldehyde	50-00-0	No	Yes	-		1.30E-05	U	2.00E-01	U	9.83E-03	U	1	-
Formic Acid	64-18-6	No	Yes	-		-		9.00E-01	U	3.00E-04	U	1	-
Fosetyl-AL	39148-24-8	No	No	-		-		3.00E+00	U	-		1	0.1
Fuel Oil Number 2	68476-30-2	No	No	-		-		-		-		1	0.1
Furan	110-00-9	No	Yes	-		-		1.00E-03	U	-		1	0.03
Furazolidone	67-45-8	No	No	3.80E+00	U	-		-		-		1	0.1
Furfural	98-01-1	No	Yes	-		-		3.00E-03	U	5.00E-02	U	1	-
Furium	531-82-8	No	No	1.50E+00	U	4.30E-04	U	-		-		1	0.1
Furmecyclox	60568-05-0	No	No	3.00E-02	U	8.60E-06	U	-		-		1	0.1
Gadolinium	7440-54-2	No	No	-		-		-		-		1	-

Site-specific

Outdoor Worker Screening Levels (RSL) for Soil - Modified for Utility Worker Exposure to Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL), ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gui Smax=Soil SL exceeds ceiling limit and has been substituted with the max value Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Ethanol	64-17-5	1	4.34E+04	1.06E+05	3.23E+09	-	-	-	-	-	-	-	-	
Ethanol, 2-(2-methoxyethoxy)-	111-77-3	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Ethephon	16672-87-0	1	-	-	3.23E+09	-	-	-	-	1.47E+04	1.17E+05	-	1.31E+04	1.31E+04 nc
Ethion	563-12-2	1	-	-	3.23E+09	-	-	-	-	1.47E+03	1.17E+04	-	1.31E+03	1.31E+03 nc
Ethoxy Propanol	52125-53-8	1	1.26E+05	8.55E+04	3.23E+09	-	-	-	-	-	-	-	-	
Ethoxyethanol Acetate, 2-	111-15-9	1	8.47E+04	3.14E+04	3.23E+09	-	-	-	-	2.95E+05	-	1.86E+05	1.14E+05	1.14E+05 sat
Ethoxyethanol, 2-	110-80-5	1	1.36E+05	1.06E+05	3.23E+09	-	-	-	-	2.65E+05	-	9.91E+05	2.09E+05	2.09E+05 sat
Ethyl Acetate	141-78-6	1	1.19E+04	1.08E+04	3.23E+09	-	-	-	-	2.65E+06	-	3.04E+04	3.00E+04	3.00E+04 sat
Ethyl Acrylate	140-88-5	1	8.74E+03	2.50E+03	3.23E+09	4.30E+03	-	-	4.30E+03	1.47E+04	-	2.55E+03	2.18E+03	2.18E+03 nc
Ethyl Chloride	75-00-3	1	1.78E+03	2.12E+03	3.23E+09	-	-	-	-	-	-	6.51E+05	6.51E+05	6.51E+05 sat
Ethyl Ether	60-29-7	1	4.31E+03	1.01E+04	3.23E+09	-	-	-	-	5.90E+05	-	-	5.90E+05	5.90E+05 sat
Ethyl Methacrylate	97-63-2	1	7.97E+03	1.11E+03	3.23E+09	-	-	-	-	2.65E+05	-	8.73E+04	6.57E+04	6.57E+04 sat
Ethyl methane sulfonate	62-50-0	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Ethyl-p-nitrophenyl Phosphonate	2104-64-5	1	-	-	3.23E+09	-	-	-	-	2.95E+01	2.34E+02	-	2.62E+01	2.62E+01 nc
Ethylbenzene	100-41-4	1	7.82E+03	4.79E+02	3.23E+09	1.88E+04	-	7.99E+03	5.60E+03	2.95E+05	-	2.85E+05	1.45E+05	5.60E+03 sat
Ethylene Cyanohydrin	109-78-4	1	-	-	3.23E+09	-	-	-	-	2.06E+05	1.64E+06	-	1.83E+05	1.83E+05 max
Ethylene Diamine	107-15-3	1	2.48E+05	1.89E+05	3.23E+09	-	-	-	-	2.65E+05	-	-	2.65E+05	2.65E+05 sat
Ethylene Glycol	107-21-1	1	-	-	3.23E+09	-	-	-	-	5.90E+06	4.67E+07	4.72E+10	5.24E+06	5.24E+06 max
Ethylene Glycol Monobutyl Ether	111-76-2	1	-	-	3.23E+09	-	-	-	-	2.95E+05	2.34E+06	1.89E+11	2.62E+05	2.62E+05 max
Ethylene Oxide	75-21-8	1	8.40E+03	1.21E+05	3.23E+09	6.66E+02	-	2.44E+02	1.78E+02	-	-	9.19E+03	9.19E+03	1.78E+02 ca*
Ethylene Thiourea	96-45-7	1	-	-	3.23E+09	4.59E+03	3.64E+04	6.35E+08	4.07E+03	2.36E+02	1.87E+03	-	2.10E+02	2.10E+02 nc
Ethyleneimine	151-56-4	1	3.29E+04	1.54E+05	3.23E+09	3.18E+00	-	4.43E+00	1.85E+00	-	-	-	-	1.85E+00 ca
Ethylphenol, 4-	123-07-9	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Ethylphthalyl Ethyl Glycolate	84-72-0	1	-	-	3.23E+09	-	-	-	-	8.85E+06	7.01E+07	-	7.86E+06	7.86E+06 max
Express	101200-48-0	1	-	-	3.23E+09	-	-	-	-	2.36E+04	1.87E+05	-	2.10E+04	2.10E+04 nc
Famphur	52-85-7	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Fenamiphos	22224-92-6	1	-	-	3.23E+09	-	-	-	-	7.37E+02	5.84E+03	-	6.55E+02	6.55E+02 nc
Fenpropathrin	39515-41-8	1	-	-	3.23E+09	-	-	-	-	7.37E+04	5.84E+05	-	6.55E+04	6.55E+04 nc
Fluometuron	2164-17-2	1	-	-	3.23E+09	-	-	-	-	3.83E+04	3.04E+05	-	3.40E+04	3.40E+04 nc
Fluoranthene	206-44-0	1	-	-	3.23E+09	-	-	-	-	1.18E+05	7.19E+05	-	1.01E+05	1.01E+05 max
Fluorene	86-73-7	1	3.88E+05	-	3.23E+09	-	-	-	-	1.18E+05	7.19E+05	-	1.01E+05	1.01E+05 max
Fluoride	16984-48-8	1	-	-	3.23E+09	-	-	-	-	1.18E+05	-	1.53E+09	1.18E+05	1.18E+05 max
Fluorine (Soluble Fluoride)	7782-41-4	1	-	-	3.23E+09	-	-	-	-	1.77E+05	-	1.53E+09	1.77E+05	1.77E+05 max
Fluorobenzene	462-06-6	1	6.49E+03	2.39E+03	3.23E+09	-	-	-	-	-	-	-	-	
Fluorobiphenyl, 2-	321-60-8	1	1.08E+05	-	3.23E+09	-	-	-	-	-	-	-	-	
Fluorophenol, 2-	367-12-4	1	2.93E+05	9.21E+04	3.23E+09	-	-	-	-	-	-	-	-	
Fluridone	59756-60-4	1	-	-	3.23E+09	-	-	-	-	2.36E+05	1.87E+06	-	2.10E+05	2.10E+05 max
Flurprimidol	56425-91-3	1	-	-	3.23E+09	-	-	-	-	5.90E+04	4.67E+05	-	5.24E+04	5.24E+04 nc
Flutolanil	66332-96-5	1	-	-	3.23E+09	-	-	-	-	1.77E+05	1.40E+06	-	1.57E+05	1.57E+05 max
Fluvalinate	69409-94-5	1	-	-	3.23E+09	-	-	-	-	2.95E+04	2.34E+05	-	2.62E+04	2.62E+04 nc
Folpet	133-07-3	1	-	-	3.23E+09	5.90E+04	4.67E+05	-	5.24E+04	2.95E+05	2.34E+06	-	2.62E+05	5.24E+04 ca**
Fomesafen	72178-02-0	1	-	-	3.23E+09	1.09E+03	8.61E+03	-	9.65E+02	-	-	-	-	9.65E+02 ca
Fonofos	944-22-9	1	-	-	3.23E+09	-	-	-	-	5.90E+03	4.67E+04	-	5.24E+03	5.24E+03 nc
Formaldehyde	50-00-0	1	1.07E+05	4.24E+04	3.23E+09	-	-	2.11E+04	2.11E+04	5.90E+05	-	3.85E+04	3.61E+04	2.11E+04 ca**
Formic Acid	64-18-6	1	1.28E+05	1.06E+05	3.23E+09	-	-	-	-	2.65E+06	-	1.40E+03	1.40E+03	1.40E+03 nc
Fosetyl-AL	39148-24-8	1	-	-	3.23E+09	-	-	-	-	8.85E+06	7.01E+07	-	7.86E+06	7.86E+06 max
Fuel Oil Number 2	68476-30-2	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Furan	110-00-9	1	3.60E+03	6.22E+03	3.23E+09	-	-	-	-	2.95E+03	7.79E+04	-	2.84E+03	2.84E+03 nc
Furazolidone	67-45-8	1	-	-	3.23E+09	5.43E+01	4.31E+02	-	4.82E+01	-	-	-	-	4.82E+01 ca
Furfural	98-01-1	1	6.71E+04	1.01E+04	3.23E+09	-	-	-	-	8.85E+03	-	1.22E+05	8.25E+03	8.25E+03 nc
Furium	531-82-8	1	-	-	3.23E+09	1.38E+02	1.09E+03	1.92E+07	1.22E+02	-	-	-	-	1.22E+02 ca
Furmecyclox	60568-05-0	1	-	-	3.23E+09	6.88E+03	5.45E+04	9.61E+08	6.11E+03	-	-	-	-	6.11E+03 ca
Gadolinium	7440-54-2	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	

Site-specific

Outdoor Worker Screening Levels (RSL) for Soil - Modified for Utility Worker Exposure to Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS
Gallium	7440-55-3	No	No	-		-		-		-		1	-
Germanium	7440-56-4	No	No	-		-		-		-		1	-
Glufosinate, Ammonium	77182-82-2	No	No	-		-		4.00E-04	U	-		1	0.1
Glutaraldehyde	111-30-8	No	No	-		-		-		8.00E-05	U	1	0.1
Glycerol	56-81-5	No	No	-		-		-		-		1	0.1
Glycidyl	765-34-4	No	Yes	-		-		4.00E-04	U	1.00E-03	U	1	-
Glyphosate	1071-83-6	No	No	-		-		1.00E-01	U	-		1	0.1
Goal	42874-03-3	No	No	-		-		3.00E-03	U	-		1	0.1
Guanidine	113-00-8	No	Yes	-		-		1.00E-02	U	-		1	-
Guanidine Chloride	50-01-1	No	No	-		-		2.00E-02	U	-		1	0.1
Guanidine Nitrate	506-93-4	No	No	-		-		-		-		1	0.1
Guthion	86-50-0	No	No	-		-		3.00E-03	U	1.00E-02	U	1	0.1
HCDD, 1,2,3,4,6,7,8,-	35822-46-9	No	Yes	1.30E+03	U	3.80E-01	U	1.00E-06	U	4.00E-06	U	1	-
Haloacetic acids	NA	No	No	-		-		-		-		1	0.1
Haloxyfop, Methyl	69806-40-2	No	No	-		-		5.00E-05	U	-		1	0.1
Harmony	79277-27-3	No	No	-		-		1.30E-02	U	-		1	0.1
Heptachlor	76-44-8	No	Yes	4.50E+00	U	1.30E-03	U	5.00E-04	U	-		1	-
Heptachlor Epoxide	1024-57-3	No	Yes	9.10E+00	U	2.60E-03	U	1.30E-05	U	-		1	-
Heptachlorobiphenyl, 2,3,3',4,4',5,5'- (PCB 189)	39635-31-9	No	Yes	3.90E+00	U	1.14E-03	U	2.33E-05	U	1.33E-03	U	1	0.14
Heptachlorodibenzofuran, 1,2,3,4,6,7,8-	67562-39-4	No	Yes	1.30E+03	U	3.80E-01	U	7.00E-08	U	4.00E-06	U	1	0.03
Heptanal, n-	111-71-7	No	Yes	-		-		-		-		1	-
Heptane, N-	142-82-5	No	Yes	-		-		-		-		1	-
Heptanol, n-	111-70-6	No	Yes	-		-		-		-		1	-
Hexabromobenzene	87-82-1	No	Yes	-		-		2.00E-03	U	-		1	-
Hexabromodiphenyl ether, 2,2',4,4',5,5'- (BDE-153)	68631-49-2	No	No	-		-		2.00E-04	U	-		1	0.1
Hexachlorobenzene	118-74-1	No	Yes	1.60E+00	U	4.60E-04	U	8.00E-04	U	-		1	-
Hexachlorobiphenyl, 2,3',4,4',5,5'- (PCB 167)	52663-72-6	No	Yes	3.90E+00	U	1.14E-03	U	2.33E-05	U	1.33E-03	U	1	0.14
Hexachlorobiphenyl, 2,3,3',4,4',5'- (PCB 157)	69782-90-7	No	Yes	3.90E+00	U	1.14E-03	U	2.33E-05	U	1.33E-03	U	1	0.14
Hexachlorobiphenyl, 2,3,3',4,4',5- (PCB 156)	38380-08-4	No	Yes	3.90E+00	U	1.14E-03	U	2.33E-05	U	1.33E-03	U	1	0.14
Hexachlorobiphenyl, 3,3',4,4',5,5'- (PCB 169)	32774-16-6	No	Yes	3.90E+03	U	1.14E+00	U	2.33E-08	U	1.33E-06	U	1	0.14
Hexachlorobutadiene	87-68-3	No	Yes	7.80E-02	U	2.20E-05	U	1.00E-03	U	-		1	-
Hexachlorocyclohexane, Alpha-	319-84-6	No	No	6.30E+00	U	1.80E-03	U	8.00E-03	U	-		1	0.1
Hexachlorocyclohexane, Beta-	319-85-7	No	No	1.80E+00	U	5.30E-04	U	-		-		1	0.1
Hexachlorocyclohexane, Delta-	319-86-8	No	No	-		-		-		-		1	0.1
Hexachlorocyclohexane, Epsilon	6108-10-7	No	No	-		-		-		-		1	0.1
Hexachlorocyclohexane, Gamma- (Lindane)	58-89-9	No	No	1.10E+00	U	3.10E-04	U	3.00E-04	U	-		1	0.04
Hexachlorocyclohexane, Technical	608-73-1	No	No	1.80E+00	U	5.10E-04	U	-		-		1	0.1
Hexachlorocyclopentadiene	77-47-4	No	Yes	-		-		6.00E-03	U	2.00E-04	U	1	-
Hexachlorodibenzo-p-dioxin	34465-46-8	No	No	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1	0.03
Hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8-	39227-28-6	No	Yes	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1	0.03
Hexachlorodibenzo-p-dioxin, Mixture	NA	No	No	6.20E+03	U	1.30E+00	U	-		-		1	0.03
Hexachlorodibenzofuran, 1,2,3,4,7,8-	70648-26-9	No	Yes	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1	0.03
Hexachloroethane	67-72-1	No	Yes	4.00E-02	U	1.10E-05	U	7.00E-04	U	3.00E-02	U	1	-
Hexachlorophene	70-30-4	No	No	-		-		3.00E-04	U	-		1	0.1
Hexachloropropene	1888-71-7	No	Yes	-		-		-		-		1	-
Hexadecanoic Acid	57-10-3	No	Yes	-		-		-		-		1	-
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	121-82-4	No	No	1.10E-01	U	-		3.00E-03	U	-		1	0.015
Hexamethylene Diisocyanate, 1,6-	822-06-0	No	Yes	-		-		-		1.00E-05	U	1	-
Hexamethylphosphoramide	680-31-9	No	No	-		-		4.00E-04	U	-		1	0.1
Hexane, N-	110-54-3	No	Yes	-		-		6.00E-02	U	7.00E-01	U	1	-
Hexanedioic Acid	124-04-9	No	No	-		-		2.00E+00	U	-		1	0.1
Hexanol, n-	111-27-3	No	Yes	-		-		-		-		1	-

Site-specific

Outdoor Worker Screening Levels (RSL) for Soil - Modified for Utility Worker Exposure to Soil

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Smax=Soil SL exceeds ceiling limit and has been substituted with the max value
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Gallium	7440-55-3	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Germanium	7440-56-4	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Glufosinate, Ammonium	77182-82-2	1	-	-	3.23E+09	-	-	-	-	1.18E+03	9.35E+03	-	1.05E+03	1.05E+03 nc
Glutaraldehyde	111-30-8	1	-	-	3.23E+09	-	-	-	-	-	-	9.44E+06	9.44E+06	9.44E+06 max
Glycerol	56-81-5	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Glycidyl	765-34-4	1	1.01E+05	1.06E+05	3.23E+09	-	-	-	-	1.18E+03	-	3.70E+03	8.94E+02	8.94E+02 nc
Glyphosate	1071-83-6	1	-	-	3.23E+09	-	-	-	-	2.95E+05	2.34E+06	-	2.62E+05	2.62E+05 max
Goal	42874-03-3	1	-	-	3.23E+09	-	-	-	-	8.85E+03	7.01E+04	-	7.86E+03	7.86E+03 nc
Guanidine	113-00-8	1	2.00E+05	-	3.23E+09	-	-	-	-	2.95E+04	-	-	2.95E+04	2.95E+04 nc
Guanidine Chloride	50-01-1	1	-	-	3.23E+09	-	-	-	-	5.90E+04	4.67E+05	-	5.24E+04	5.24E+04 nc
Guanidine Nitrate	506-93-4	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Guthion	86-50-0	1	-	-	3.23E+09	-	-	-	-	8.85E+03	7.01E+04	1.18E+09	7.86E+03	7.86E+03 nc
HCDD, 1,2,3,4,6,7,8,-	35822-46-9	1	4.52E+06	-	3.23E+09	1.59E-01	-	3.04E+01	1.58E-01	2.95E+00	-	6.59E+02	2.94E+00	1.58E-01 ca*
Haloacetic acids	NA	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Haloxyfop, Methyl	69806-40-2	1	-	-	3.23E+09	-	-	-	-	1.47E+02	1.17E+03	-	1.31E+02	1.31E+02 nc
Harmony	79277-27-3	1	-	-	3.23E+09	-	-	-	-	3.83E+04	3.04E+05	-	3.40E+04	3.40E+04 nc
Heptachlor	76-44-8	1	6.62E+05	-	3.23E+09	4.59E+01	-	1.30E+03	4.43E+01	1.47E+03	-	-	1.47E+03	4.43E+01 ca*
Heptachlor Epoxide	1024-57-3	1	1.16E+06	-	3.23E+09	2.27E+01	-	1.14E+03	2.22E+01	3.83E+01	-	-	3.83E+01	2.22E+01 ca**
Heptachlorobiphenyl, 2,3,3',4,4',5,5'- (PCB 189)	39635-31-9	1	2.81E+06	-	3.23E+09	5.29E+01	3.00E+02	6.29E+03	4.47E+01	6.87E+01	3.89E+02	1.36E+05	5.84E+01	4.47E+01 ca**
Heptachlorodibenzofuran, 1,2,3,4,6,7,8-	67562-39-4	1	1.15E+07	-	3.23E+09	1.59E-01	4.20E+00	7.74E+01	1.53E-01	2.06E-01	5.45E+00	1.68E+03	1.99E-01	1.53E-01 ca**
Heptanal, n-	111-71-7	1	1.08E+04	2.09E+02	3.23E+09	-	-	-	-	-	-	-	-	
Heptane, N-	142-82-5	1	1.23E+03	5.79E+01	3.23E+09	-	-	-	-	-	-	-	-	
Heptanol, n-	111-70-6	1	4.73E+04	3.78E+02	3.23E+09	-	-	-	-	-	-	-	-	
Hexabromobenzene	87-82-1	1	5.24E+05	-	3.23E+09	-	-	-	-	5.90E+03	-	-	5.90E+03	5.90E+03 nc
Hexabromodiphenyl ether, 2,2',4,4',5,5'- (BDE-153)	68631-49-2	1	-	-	3.23E+09	-	-	-	-	5.90E+02	4.67E+03	-	5.24E+02	5.24E+02 nc
Hexachlorobenzene	118-74-1	1	9.37E+04	-	3.23E+09	1.29E+02	-	5.21E+02	1.03E+02	2.36E+03	-	-	2.36E+03	1.03E+02 ca*
Hexachlorobiphenyl, 2,3',4,4',5,5'- (PCB 167)	52663-72-6	1	1.98E+06	-	3.23E+09	5.29E+01	3.00E+02	4.43E+03	4.45E+01	6.87E+01	3.89E+02	9.59E+04	5.84E+01	4.45E+01 ca**
Hexachlorobiphenyl, 2,3,3',4,4',5'- (PCB 157)	69782-90-7	1	2.00E+06	-	3.23E+09	5.29E+01	3.00E+02	4.48E+03	4.45E+01	6.87E+01	3.89E+02	9.71E+04	5.84E+01	4.45E+01 ca**
Hexachlorobiphenyl, 2,3,3',4,4',5- (PCB 156)	38380-08-4	1	2.13E+06	-	3.23E+09	5.29E+01	3.00E+02	4.77E+03	4.46E+01	6.87E+01	3.89E+02	1.03E+05	5.84E+01	4.46E+01 ca**
Hexachlorobiphenyl, 3,3',4,4',5,5'- (PCB 169)	32774-16-6	1	1.98E+06	-	3.23E+09	5.29E-02	3.00E-01	4.43E+00	4.45E-02	6.87E-02	3.89E-01	9.59E+01	5.84E-02	4.45E-02 ca**
Hexachlorobutadiene	87-68-3	1	1.49E+04	1.68E+01	3.23E+09	2.65E+03	-	1.73E+03	1.05E+03	2.95E+03	-	-	2.95E+03	1.05E+03 sat
Hexachlorocyclohexane, Alpha-	319-84-6	1	-	-	3.23E+09	3.28E+01	2.60E+02	4.59E+06	2.91E+01	2.36E+04	1.87E+05	-	2.10E+04	2.91E+01 ca
Hexachlorocyclohexane, Beta-	319-85-7	1	-	-	3.23E+09	1.15E+02	9.09E+02	1.56E+07	1.02E+02	-	-	-	-	1.02E+02 ca
Hexachlorocyclohexane, Delta-	319-86-8	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Hexachlorocyclohexane, Epsilon	6108-10-7	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Hexachlorocyclohexane, Gamma- (Lindane)	58-89-9	1	-	-	3.23E+09	1.88E+02	3.72E+03	2.66E+07	1.79E+02	8.85E+02	1.75E+04	-	8.42E+02	1.79E+02 ca**
Hexachlorocyclohexane, Technical	608-73-1	1	-	-	3.23E+09	1.15E+02	9.09E+02	1.62E+07	1.02E+02	-	-	-	-	1.02E+02 ca
Hexachlorocyclopentadiene	77-47-4	1	1.18E+04	1.57E+01	3.23E+09	-	-	-	-	1.77E+04	-	8.58E+01	8.54E+01	8.54E+01 sat
Hexachlorodibenzo-p-dioxin	34465-46-8	1	-	-	3.23E+09	1.59E-02	4.20E-01	2.17E+03	1.53E-02	2.06E-02	5.45E-01	4.72E+04	1.99E-02	1.53E-02 ca**
Hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8-	39227-28-6	1	6.59E+06	-	3.23E+09	1.59E-02	4.20E-01	4.42E+00	1.52E-02	2.06E-02	5.45E-01	9.61E+01	1.99E-02	1.52E-02 ca**
Hexachlorodibenzo-p-dioxin, Mixture	NA	1	-	-	3.23E+09	3.33E-02	8.80E-01	6.35E+03	3.21E-02	-	-	-	-	3.21E-02 ca
Hexachlorodibenzofuran, 1,2,3,4,7,8-	70648-26-9	1	5.38E+06	-	3.23E+09	1.59E-02	4.20E-01	3.61E+00	1.52E-02	2.06E-02	5.45E-01	7.85E+01	1.99E-02	1.52E-02 ca**
Hexachloroethane	67-72-1	1	1.10E+04	-	3.23E+09	5.16E+03	-	2.57E+03	1.71E+03	2.06E+03	-	1.21E+04	1.76E+03	1.71E+03 ca**
Hexachlorophene	70-30-4	1	-	-	3.23E+09	-	-	-	-	8.85E+02	7.01E+03	-	7.86E+02	7.86E+02 nc
Hexachloropropene	1888-71-7	1	1.48E+04	4.37E+01	3.23E+09	-	-	-	-	-	-	-	-	
Hexadecanoic Acid	57-10-3	1	7.66E+05	-	3.23E+09	-	-	-	-	-	-	-	-	
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	121-82-4	1	-	-	3.23E+09	1.88E+03	9.92E+04	-	1.84E+03	8.85E+03	4.67E+05	-	8.68E+03	1.84E+03 ca**
Hexamethylene Diisocyanate, 1,6-	822-06-0	1	4.15E+05	5.19E+03	3.23E+09	-	-	-	-	-	-	1.51E+02	1.51E+02	1.51E+02 nc
Hexamethylphosphoramide	680-31-9	1	-	-	3.23E+09	-	-	-	-	1.18E+03	9.35E+03	-	1.05E+03	1.05E+03 nc
Hexane, N-	110-54-3	1	1.14E+03	1.41E+02	3.23E+09	-	-	-	-	1.77E+05	-	2.92E+04	2.51E+04	2.51E+04 sat
Hexanedioic Acid	124-04-9	1	-	-	3.23E+09	-	-	-	-	5.90E+06	4.67E+07	-	5.24E+06	5.24E+06 max
Hexanol, n-	111-27-3	1	4.03E+04	9.98E+02	3.23E+09	-	-	-	-	-	-	-	-	

Site-specific

Outdoor Worker Screening Levels (RSL) for Soil - Modified for Utility Worker Exposure to Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
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Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF (mg/kg-day)$^{-1}$	SFO Ref	Inhalation Unit Risk (ug/m^3)$^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS
Hexanone, 2-	591-78-6	No	Yes	-		-		5.00E-03	U	3.00E-02	U	1	-
Hexazinone	51235-04-2	No	No	-		-		3.30E-02	U	-		1	0.1
HpCDD, 2,3,7,8-	37871-00-4	No	Yes	1.30E+03	U	3.80E-01	U	7.00E-08	U	4.00E-06	U	1	0.03
HpCDF, 1,2,3,4,7,8,9-	55673-89-7	No	Yes	1.30E+03	U	3.80E-01	U	7.00E-08	U	4.00E-06	U	1	0.03
HpCDF, 2,3,7,8-	38998-75-3	No	Yes	1.30E+03	U	3.80E-01	U	7.00E-08	U	4.00E-06	U	1	0.03
HxCDD, 1,2,3,6,7,8-	57653-85-7	No	Yes	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1	0.03
HxCDD, 1,2,3,7,8,9-	19408-74-3	No	Yes	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1	0.03
HxCDF, 1,2,3,6,7,8-	57117-44-9	No	Yes	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1	0.03
HxCDF, 1,2,3,7,8,9-	72918-21-9	No	No	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1	0.03
HxCDF, 2,3,4,6,7,8-	60851-34-5	No	Yes	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1	0.03
HxCDF, 2,3,7,8-	55684-94-1	No	No	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1	0.03
Hydrazine	302-01-2	No	Yes	3.00E+00	U	4.90E-03	U	-		3.00E-05	U	1	-
Hydrazine Sulfate	10034-93-2	No	No	3.00E+00	U	4.90E-03	U	-		-		1	-
Hydrogen Chloride	7647-01-0	No	Yes	-		-		-		2.00E-02	U	1	-
Hydrogen Cyanide	74-90-8	No	Yes	-		-		6.00E-04	U	8.00E-04	U	1	-
Hydrogen Fluoride	7664-39-3	No	Yes	-		-		4.00E-02	U	1.40E-02	U	1	-
Hydrogen Selenide	77830-70-5	No	No	-		-		-		-		1	-
Hydrogen Sulfate	12143-45-2	No	No	-		-		-		-		1	-
Hydrogen Sulfide	7783-06-4	No	Yes	-		-		-		2.00E-03	U	1	-
Hydroquinone	123-31-9	No	No	6.00E-02	U	-		4.00E-02	U	-		1	0.1
Imazalil	35554-44-0	No	No	-		-		1.30E-02	U	-		1	0.1
Imazaquin	81335-37-7	No	No	-		-		2.50E-01	U	-		1	0.1
Indeno[1,2,3-cd]pyrene	193-39-5	Yes	No	7.30E-01	U	1.10E-04	U	-		-		1	0.13
Indium	7440-74-6	No	No	-		-		-		-		1	-
Iodide	20461-54-5	No	No	-		-		-		-		1	-
Iodine	7553-56-2	No	No	-		-		1.00E-02	U	-		1	-
Iodomethane	74-88-4	No	Yes	-		-		-		-		1	-
Iodopropynyl Butylcarbamate (IPBC)	55406-53-6	No	No	-		-		-		-		1	0.1
Iprodione	36734-19-7	No	No	-		-		4.00E-02	U	-		1	0.1
Iron	7439-89-6	No	No	-		-		7.00E-01	U	-		1	-
Iron Sulfide	11126-12-8	No	No	-		-		-		-		1	-
Isobutyl Alcohol	78-83-1	No	Yes	-		-		3.00E-01	U	-		1	-
Isodrin	465-73-6	No	Yes	-		-		-		-		1	-
Isophorone	78-59-1	No	No	9.50E-04	U	-		2.00E-01	U	2.00E+00	U	1	0.1
Isopropalin	33820-53-0	No	Yes	-		-		1.50E-02	U	-		1	-
Isopropanol	67-63-0	No	Yes	-		-		2.00E+00	U	2.00E-01	U	1	-
Isopropyl Methyl Phosphonic Acid	1832-54-8	No	No	-		-		1.00E-01	U	-		1	0.1
Isopropyltoluene, p-	99-87-6	No	Yes	-		-		-		-		1	-
Isosafrole	120-58-1	No	Yes	-		-		-		-		1	-
Isoxaben	82558-50-7	No	No	-		-		5.00E-02	U	-		1	0.1
JP-4	50815-00-4	No	Yes	-		-		-		-		1	-
JP-5/JP-8	8002-20-6	No	Yes	-		-		-		-		1	-
JP-7	NA	No	Yes	-		-		-		3.00E-01	U	1	-
Kerb	23950-58-5	No	No	-		-		7.50E-02	U	-		1	0.1
Kerosene	8008-20-6	No	Yes	-		-		-		-		1	-
Lactofen	77501-63-4	No	No	-		-		2.00E-03	U	-		1	0.1
Lactonitrile	78-97-7	No	No	-		-		-		-		1	0.1
Lanthanum	7439-91-0	No	No	-		-		-		-		1	-
Lead Alkyls	NA	No	No	-		-		-		-		1	0.1
Lead Chromate	7758-97-6	Yes	No	5.00E-01	U	1.50E-01	U	2.00E-02	U	2.00E-04	U	0.025	-
Lead Phosphate	7446-27-7	No	No	8.50E-03	U	1.20E-05	U	-		-		1	-
Lead acetate	301-04-2	No	No	2.80E-01	U	8.00E-05	U	-		-		1	0.1
Lead and Compounds	7439-92-1	No	No	-		-		-		-		1	-

Site-specific

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Smax=Soil SL exceeds ceiling limit and has been substituted with the max value
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Hexanone, 2-	591-78-6	1	1.83E+04	3.28E+03	3.23E+09	-	-	-	-	1.47E+04	-	2.01E+04	8.50E+03	8.50E+03 sat
Hexazinone	51235-04-2	1	-	-	3.23E+09	-	-	-	-	9.73E+04	7.71E+05	-	8.64E+04	8.64E+04 nc
HpCDD, 2,3,7,8-	37871-00-4	1	3.36E+06	-	3.23E+09	1.59E-01	4.20E+00	2.26E+01	1.52E-01	2.06E-01	5.45E+00	4.90E+02	1.99E-01	1.52E-01 ca**
HpCDF, 1,2,3,4,7,8,9-	55673-89-7	1	1.15E+07	-	3.23E+09	1.59E-01	4.20E+00	7.74E+01	1.53E-01	2.06E-01	5.45E+00	1.68E+03	1.99E-01	1.53E-01 ca**
HpCDF, 2,3,7,8-	38998-75-3	1	1.15E+07	-	3.23E+09	1.59E-01	4.20E+00	7.74E+01	1.53E-01	2.06E-01	5.45E+00	1.68E+03	1.99E-01	1.53E-01 ca**
HxCDD, 1,2,3,6,7,8-	57653-85-7	1	6.59E+06	-	3.23E+09	1.59E-02	4.20E-01	4.42E+00	1.52E-02	2.06E-02	5.45E-01	9.61E+01	1.99E-02	1.52E-02 ca**
HxCDD, 1,2,3,7,8,9-	19408-74-3	1	6.59E+06	-	3.23E+09	1.59E-02	4.20E-01	4.42E+00	1.52E-02	2.06E-02	5.45E-01	9.61E+01	1.99E-02	1.52E-02 ca**
HxCDF, 1,2,3,6,7,8-	57117-44-9	1	5.38E+06	-	3.23E+09	1.59E-02	4.20E-01	3.61E+00	1.52E-02	2.06E-02	5.45E-01	7.85E+01	1.99E-02	1.52E-02 ca**
HxCDF, 1,2,3,7,8,9-	72918-21-9	1	-	-	3.23E+09	1.59E-02	4.20E-01	2.17E+03	1.53E-02	2.06E-02	5.45E-01	4.72E+04	1.99E-02	1.53E-02 ca**
HxCDF, 2,3,4,6,7,8-	60851-34-5	1	5.38E+06	-	3.23E+09	1.59E-02	4.20E-01	3.61E+00	1.52E-02	2.06E-02	5.45E-01	7.85E+01	1.99E-02	1.52E-02 ca**
HxCDF, 2,3,7,8-	55684-94-1	1	-	-	3.23E+09	1.59E-02	4.20E-01	2.17E+03	1.53E-02	2.06E-02	5.45E-01	4.72E+04	1.99E-02	1.53E-02 ca**
Hydrazine	302-01-2	1	-	-	3.23E+09	6.88E+01	-	1.69E+06	6.88E+01	-	-	3.54E+06	3.54E+06	6.88E+01 ca
Hydrazine Sulfate	10034-93-2	1	-	-	3.23E+09	6.88E+01	-	1.69E+06	6.88E+01	-	-	-	-	6.88E+01 ca
Hydrogen Chloride	7647-01-0	1	-	-	3.23E+09	-	-	-	-	-	-	2.36E+09	2.36E+09	2.36E+09 max
Hydrogen Cyanide	74-90-8	1	7.20E+04	1.00E+07	3.23E+09	-	-	-	-	1.77E+03	-	2.10E+03	9.61E+02	9.61E+02 nc
Hydrogen Fluoride	7664-39-3	1	-	-	3.23E+09	-	-	-	-	1.18E+05	-	1.65E+09	1.18E+05	1.18E+05 max
Hydrogen Selenide	77830-70-5	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Hydrogen Sulfate	12143-45-2	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Hydrogen Sulfide	7783-06-4	1	-	-	3.23E+09	-	-	-	-	-	-	2.36E+08	2.36E+08	2.36E+08 max
Hydroquinone	123-31-9	1	-	-	3.23E+09	3.44E+03	2.73E+04	-	3.06E+03	1.18E+05	9.35E+05	-	1.05E+05	3.06E+03 ca*
Imazalil	35554-44-0	1	-	-	3.23E+09	-	-	-	-	3.83E+04	3.04E+05	-	3.40E+04	3.40E+04 nc
Imazaquin	81335-37-7	1	-	-	3.23E+09	-	-	-	-	7.37E+05	5.84E+06	-	6.55E+05	6.55E+05 max
Indeno[1,2,3-cd]pyrene	193-39-5	1	-	-	3.23E+09	2.83E+02	1.72E+03	7.51E+07	2.43E+02	-	-	-	-	2.43E+02 ca
Indium	7440-74-6	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Iodide	20461-54-5	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Iodine	7553-56-2	1	-	-	3.23E+09	-	-	-	-	2.95E+04	-	-	2.95E+04	2.95E+04 nc
Iodomethane	74-88-4	1	2.55E+03	3.03E+03	3.23E+09	-	-	-	-	-	-	-	-	
Iodopropynyl Butylcarbamate (IPBC)	55406-53-6	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Iprodione	36734-19-7	1	-	-	3.23E+09	-	-	-	-	1.18E+05	9.35E+05	-	1.05E+05	1.05E+05 max
Iron	7439-89-6	1	-	-	3.23E+09	-	-	-	-	2.06E+06	-	-	2.06E+06	2.06E+06 max
Iron Sulfide	11126-12-8	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Isobutyl Alcohol	78-83-1	1	3.88E+04	1.00E+04	3.23E+09	-	-	-	-	8.85E+05	-	-	8.85E+05	8.85E+05 sat
Isodrin	465-73-6	1	2.32E+06	-	3.23E+09	-	-	-	-	-	-	-	-	
Isophorone	78-59-1	1	-	-	3.23E+09	2.17E+05	1.72E+06	-	1.93E+05	5.90E+05	4.67E+06	2.36E+11	5.24E+05	1.93E+05 max
Isopropalin	33820-53-0	1	5.78E+05	-	3.23E+09	-	-	-	-	4.42E+04	-	-	4.42E+04	4.42E+04 nc
Isopropanol	67-63-0	1	3.83E+04	1.09E+05	3.23E+09	-	-	-	-	5.90E+06	-	2.79E+05	2.67E+05	2.67E+05 sat
Isopropyl Methyl Phosphonic Acid	1832-54-8	1	-	-	3.23E+09	-	-	-	-	2.95E+05	2.34E+06	-	2.62E+05	2.62E+05 max
Isopropyltoluene, p-	99-87-6	1	1.18E+04	1.62E+02	3.23E+09	-	-	-	-	-	-	-	-	
Isosafrole	120-58-1	1	3.42E+03	2.04E+01	3.23E+09	-	-	-	-	-	-	-	-	
Isoxaben	82558-50-7	1	-	-	3.23E+09	-	-	-	-	1.47E+05	1.17E+06	-	1.31E+05	1.31E+05 max
JP-4	50815-00-4	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
JP-5/JP-8	8002-20-6	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
JP-7	NA	1	-	-	3.23E+09	-	-	-	-	-	-	3.54E+10	3.54E+10	3.54E+10 max
Kerb	23950-58-5	1	-	-	3.23E+09	-	-	-	-	2.21E+05	1.75E+06	-	1.96E+05	1.96E+05 max
Kerosene	8008-20-6	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Lactofen	77501-63-4	1	-	-	3.23E+09	-	-	-	-	5.90E+03	4.67E+04	-	5.24E+03	5.24E+03 nc
Lactonitrile	78-97-7	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Lanthanum	7439-91-0	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Lead Alkyls	NA	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Lead Chromate	7758-97-6	1	-	-	3.23E+09	4.13E+02	-	5.51E+04	4.10E+02	5.90E+04	-	2.36E+07	5.88E+04	4.10E+02 ca
Lead Phosphate	7446-27-7	1	-	-	3.23E+09	2.43E+04	-	6.88E+08	2.43E+04	-	-	-	-	2.43E+04 ca
Lead acetate	301-04-2	1	-	-	3.23E+09	7.37E+02	5.84E+03	1.03E+08	6.55E+02	-	-	-	-	6.55E+02 ca
Lead and Compounds	7439-92-1	1	-	-	3.23E+09	-	-	-	-	-	-	-	8.00E+02	8.00E+02 nc

Site-specific

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Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF (mg/kg-day)$^{-1}$	SFO Ref	Inhalation Unit Risk (ug/m^3)$^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS
Lead subacetate	1335-32-6	No	No	8.50E-03	U	1.20E-05	U	-		-		1	0.1
Linuron	330-55-2	No	No	-		-		2.00E-03	U	-		1	0.1
Lithium	7439-93-2	No	No	-		-		2.00E-03	U	-		1	-
Lithium Perchlorate	7791-03-9	No	No	-		-		7.00E-04	U	-		1	-
Londax	83055-99-6	No	No	-		-		2.00E-01	U	-		1	0.1
Lutetium	7439-94-3	No	No	-		-		-		-		1	-
MCPA	94-74-6	No	No	-		-		5.00E-04	U	-		1	0.1
MCPB	94-81-5	No	No	-		-		1.00E-02	U	-		1	0.1
MCPP	93-65-2	No	No	-		-		1.00E-03	U	-		1	0.1
Magnesium	7439-95-4	No	No	-		-		-		-		1	-
Magnesium Chlorate	10326-21-3	No	No	-		-		-		-		1	-
Malathion	121-75-5	No	No	-		-		2.00E-02	U	-		1	0.1
Maleic Anhydride	108-31-6	No	No	-		-		1.00E-01	U	7.00E-04	U	1	0.1
Maleic Hydrazide	123-33-1	No	No	-		-		5.00E-01	U	-		1	0.1
Malononitrile	109-77-3	No	No	-		-		1.00E-04	U	-		1	0.1
Mancozeb	8018-01-7	No	No	-		-		3.00E-02	U	-		1	0.1
Maneb	12427-38-2	No	No	-		-		5.00E-03	U	-		1	0.1
Manganese (Non-diet)	7439-96-5	No	No	-		-		2.40E-02	U	5.00E-05	U	0.04	-
Mechlorethamine	51-75-2	No	No	-		-		-		-		1	0.1
Mephosfolan	950-10-7	No	No	-		-		9.00E-05	U	-		1	0.1
Mepiquat Chloride	24307-26-4	No	No	-		-		3.00E-02	U	-		1	0.1
Mercuric Chloride	7487-94-7	No	No	-		-		3.00E-04	U	3.00E-04	U	0.07	-
Mercury (elemental)	7439-97-6	No	Yes	-		-		-		3.00E-04	U	1	-
Merphos	150-50-5	No	Yes	-		-		3.00E-05	U	-		1	-
Merphos Oxide	78-48-8	No	No	-		-		3.00E-05	U	-		1	0.1
Metalaxyl	57837-19-1	No	No	-		-		6.00E-02	U	-		1	0.1
Methacrylonitrile	126-98-7	No	Yes	-		-		1.00E-04	U	3.00E-02	U	1	-
Methamidophos	10265-92-6	No	No	-		-		5.00E-05	U	-		1	0.1
Methanol	67-56-1	No	Yes	-		-		2.00E+00	U	2.00E+01	U	1	-
Methapyrilene	91-80-5	No	No	-		-		-		-		1	0.1
Methidathion	950-37-8	No	No	-		-		1.00E-03	U	-		1	0.1
Methomyl	16752-77-5	No	No	-		-		2.50E-02	U	-		1	0.1
Methoxy-5-nitroaniline, 2-	99-59-2	No	No	4.90E-02	U	1.40E-05	U	-		-		1	0.1
Methoxychlor	72-43-5	No	No	-		-		5.00E-03	U	-		1	0.1
Methoxyethanol Acetate, 2-	110-49-6	No	Yes	-		-		8.00E-03	U	1.00E-03	U	1	-
Methoxyethanol, 2-	109-86-4	No	Yes	-		-		5.00E-03	U	2.00E-02	U	1	-
Methyl Acetate	79-20-9	No	Yes	-		-		1.00E+00	U	-		1	-
Methyl Acrylate	96-33-3	No	Yes	-		-		3.00E-02	U	2.00E-02	U	1	-
Methyl Ethyl Ketone (2-Butanone)	78-93-3	No	Yes	-		-		6.00E-01	U	5.00E+00	U	1	-
Methyl Hydrazine	60-34-4	No	Yes	-		1.00E-03	U	1.00E-03	U	2.00E-05	U	1	-
Methyl Isobutyl Ketone (4-methyl-2-pentanone)	108-10-1	No	Yes	-		-		8.00E-02	U	3.00E+00	U	1	-
Methyl Isocyanate	624-83-9	No	Yes	-		-		-		1.00E-03	U	1	-
Methyl Mercaptan	74-93-1	No	Yes	-		-		-		-		1	-
Methyl Mercury	22967-92-6	No	No	-		-		1.00E-04	U	-		1	-
Methyl Methacrylate	80-62-6	No	Yes	-		-		1.40E+00	U	7.00E-01	U	1	-
Methyl Parathion	298-00-0	No	No	-		-		2.50E-04	U	-		1	0.1
Methyl Phosphonic Acid	993-13-5	No	No	-		-		6.00E-02	U	-		1	0.1
Methyl Styrene (Mixed Isomers)	25013-15-4	No	Yes	-		-		6.00E-03	U	4.00E-02	U	1	-
Methyl dicyclohexylamine, n-	7560-83-0	No	Yes	-		-		-		-		1	-
Methyl methanesulfonate	66-27-3	No	No	9.90E-02	U	2.80E-05	U	-		-		1	0.1
Methyl tert-Butyl Ether (MTBE)	1634-04-4	No	Yes	1.80E-03	U	2.60E-07	U	-		3.00E+00	U	1	-
Methyl-1,4-benzenediamine dihydrochloride, 2-	615-45-2	No	No	-		-		3.00E-04	U	-		1	0.1

Site-specific

Outdoor Worker Screening Levels (RSL) for Soil - Modified for Utility Worker Exposure to Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gui
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Lead subacetate	1335-32-6	1	-	-	3.23E+09	2.43E+04	1.92E+05	6.88E+08	2.16E+04	-	-	-	-	2.16E+04 ca
Linuron	330-55-2	1	-	-	3.23E+09	-	-	-	-	5.90E+03	4.67E+04	-	5.24E+03	5.24E+03 nc
Lithium	7439-93-2	1	-	-	3.23E+09	-	-	-	-	5.90E+03	-	-	5.90E+03	5.90E+03 nc
Lithium Perchlorate	7791-03-9	1	-	-	3.23E+09	-	-	-	-	2.06E+03	-	-	2.06E+03	2.06E+03 nc
Londax	83055-99-6	1	-	-	3.23E+09	-	-	-	-	5.90E+05	4.67E+06	-	5.24E+05	5.24E+05 max
Lutetium	7439-94-3	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
MCPA	94-74-6	1	-	-	3.23E+09	-	-	-	-	1.47E+03	1.17E+04	-	1.31E+03	1.31E+03 nc
MCPB	94-81-5	1	-	-	3.23E+09	-	-	-	-	2.95E+04	2.34E+05	-	2.62E+04	2.62E+04 nc
MCPP	93-65-2	1	-	-	3.23E+09	-	-	-	-	2.95E+03	2.34E+04	-	2.62E+03	2.62E+03 nc
Magnesium	7439-95-4	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Magnesium Chlorate	10326-21-3	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Malathion	121-75-5	1	-	-	3.23E+09	-	-	-	-	5.90E+04	4.67E+05	-	5.24E+04	5.24E+04 nc
Maleic Anhydride	108-31-6	1	-	-	3.23E+09	-	-	-	-	2.95E+05	2.34E+06	8.26E+07	2.61E+05	2.61E+05 max
Maleic Hydrazide	123-33-1	1	-	-	3.23E+09	-	-	-	-	1.47E+06	1.17E+07	-	1.31E+06	1.31E+06 max
Malononitrile	109-77-3	1	-	-	3.23E+09	-	-	-	-	2.95E+02	2.34E+03	-	2.62E+02	2.62E+02 nc
Mancozeb	8018-01-7	1	-	-	3.23E+09	-	-	-	-	8.85E+04	7.01E+05	-	7.86E+04	7.86E+04 nc
Maneb	12427-38-2	1	-	-	3.23E+09	-	-	-	-	1.47E+04	1.17E+05	-	1.31E+04	1.31E+04 nc
Manganese (Non-diet)	7439-96-5	1	-	-	3.23E+09	-	-	-	-	7.08E+04	-	5.90E+06	6.99E+04	6.99E+04 nc
Mechlorethamine	51-75-2	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Mephosfolan	950-10-7	1	-	-	3.23E+09	-	-	-	-	2.65E+02	2.10E+03	-	2.36E+02	2.36E+02 nc
Mepiquat Chloride	24307-26-4	1	-	-	3.23E+09	-	-	-	-	8.85E+04	7.01E+05	-	7.86E+04	7.86E+04 nc
Mercuric Chloride	7487-94-7	1	-	-	3.23E+09	-	-	-	-	8.85E+02	-	3.54E+07	8.85E+02	8.85E+02 nc
Mercury (elemental)	7439-97-6	1	4.16E+04	3.13E+00	3.23E+09	-	-	-	-	-	-	4.55E+02	4.55E+02	4.55E+02 sat
Merphos	150-50-5	1	2.67E+06	-	3.23E+09	-	-	-	-	8.85E+01	-	-	8.85E+01	8.85E+01 nc
Merphos Oxide	78-48-8	1	-	-	3.23E+09	-	-	-	-	8.85E+01	7.01E+02	-	7.86E+01	7.86E+01 nc
Metalaxyl	57837-19-1	1	-	-	3.23E+09	-	-	-	-	1.77E+05	1.40E+06	-	1.57E+05	1.57E+05 max
Methacrylonitrile	126-98-7	1	9.38E+03	4.59E+03	3.23E+09	-	-	-	-	2.95E+02	-	1.03E+04	2.87E+02	2.87E+02 nc
Methamidophos	10265-92-6	1	-	-	3.23E+09	-	-	-	-	1.47E+02	1.17E+03	-	1.31E+02	1.31E+02 nc
Methanol	67-56-1	1	4.01E+04	1.06E+05	3.23E+09	-	-	-	-	5.90E+06	-	2.93E+07	4.91E+06	4.91E+06 sat
Methapyrilene	91-80-5	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Methidathion	950-37-8	1	-	-	3.23E+09	-	-	-	-	2.95E+03	2.34E+04	-	2.62E+03	2.62E+03 nc
Methomyl	16752-77-5	1	-	-	3.23E+09	-	-	-	-	7.37E+04	5.84E+05	-	6.55E+04	6.55E+04 nc
Methoxy-5-nitroaniline, 2-	99-59-2	1	-	-	3.23E+09	4.21E+03	3.34E+04	5.90E+08	3.74E+03	-	-	-	-	3.74E+03 ca
Methoxychlor	72-43-5	1	-	-	3.23E+09	-	-	-	-	1.47E+04	1.17E+05	-	1.31E+04	1.31E+04 nc
Methoxyethanol Acetate, 2-	110-49-6	1	1.71E+05	1.15E+05	3.23E+09	-	-	-	-	2.36E+04	-	6.23E+03	4.93E+03	4.93E+03 nc
Methoxyethanol, 2-	109-86-4	1	1.39E+05	1.06E+05	3.23E+09	-	-	-	-	1.47E+04	-	1.02E+05	1.29E+04	1.29E+04 nc
Methyl Acetate	79-20-9	1	1.12E+04	2.90E+04	3.23E+09	-	-	-	-	2.95E+06	-	-	2.95E+06	2.95E+06 sat
Methyl Acrylate	96-33-3	1	9.62E+03	6.75E+03	3.23E+09	-	-	-	-	8.85E+04	-	7.02E+03	6.50E+03	6.50E+03 nc
Methyl Ethyl Ketone (2-Butanone)	78-93-3	1	1.68E+04	2.84E+04	3.23E+09	-	-	-	-	1.77E+06	-	3.07E+06	1.12E+06	1.12E+06 sat
Methyl Hydrazine	60-34-4	1	2.16E+05	1.80E+05	3.23E+09	-	-	5.51E+02	5.51E+02	2.95E+03	-	1.57E+02	1.49E+02	1.49E+02 nc
Methyl Isobutyl Ketone (4-methyl-2-pentanone)	108-10-1	1	1.46E+04	3.36E+03	3.23E+09	-	-	-	-	2.36E+05	-	1.60E+06	2.06E+05	2.06E+05 sat
Methyl Isocyanate	624-83-9	1	6.08E+03	1.67E+04	3.23E+09	-	-	-	-	-	-	2.22E+02	2.22E+02	2.22E+02 nc
Methyl Mercaptan	74-93-1	1	2.46E+03	3.13E+03	3.23E+09	-	-	-	-	-	-	-	-	
Methyl Mercury	22967-92-6	1	-	-	3.23E+09	-	-	-	-	2.95E+02	-	-	2.95E+02	2.95E+02 nc
Methyl Methacrylate	80-62-6	1	8.75E+03	2.36E+03	3.23E+09	-	-	-	-	4.13E+06	-	2.24E+05	2.12E+05	2.12E+05 sat
Methyl Parathion	298-00-0	1	-	-	3.23E+09	-	-	-	-	7.37E+02	5.84E+03	-	6.55E+02	6.55E+02 nc
Methyl Phosphonic Acid	993-13-5	1	-	-	3.23E+09	-	-	-	-	1.77E+05	1.40E+06	-	1.57E+05	1.57E+05 max
Methyl Styrene (Mixed Isomers)	25013-15-4	1	1.65E+04	3.93E+02	3.23E+09	-	-	-	-	1.77E+04	-	2.42E+04	1.02E+04	1.02E+04 sat
Methyl dicyclohexylamine, n-	7560-83-0	1	6.54E+04	-	3.23E+09	-	-	-	-	-	-	-	-	
Methyl methanesulfonate	66-27-3	1	-	-	3.23E+09	2.09E+03	1.65E+04	2.95E+08	1.85E+03	-	-	-	-	1.85E+03 ca
Methyl tert-Butyl Ether (MTBE)	1634-04-4	1	6.76E+03	8.88E+03	3.23E+09	1.15E+05	-	6.65E+04	4.21E+04	-	-	7.41E+05	7.41E+05	4.21E+04 sat
Methyl-1,4-benzenediamine dihydrochloride, 2-	615-45-2	1	-	-	3.23E+09	-	-	-	-	8.85E+02	7.01E+03	-	7.86E+02	7.86E+02 nc

Site-specific

Outdoor Worker Screening Levels (RSL) for Soil - Modified for Utility Worker Exposure to Soil

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ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS
Methyl-2-Pentanol, 4-	108-11-2	No	Yes	-		-		-		-		1	-
Methyl-5-Nitroaniline, 2-	99-55-8	No	No	9.00E-03	U	-		2.00E-02	U	-		1	0.1
Methyl-N-nitro-N-nitrosoguanidine, N-	70-25-7	No	No	8.30E+00	U	2.40E-03	U	-		-		1	0.1
Methylaniline Hydrochloride, 2-	636-21-5	No	No	1.30E-01	U	3.70E-05	U	-		-		1	0.1
Methylarsonic acid	124-58-3	No	No	-		-		1.00E-02	U	-		1	0.1
Methylaziridine, 2-	75-55-8	No	Yes	-		-		-		-		1	-
Methylbenzene,1-4-diamine monohydrochloride, 2-	74612-12-7	No	No	-		-		2.00E-04	U	-		1	0.1
Methylbenzene-1,4-diamine sulfate, 2-	615-50-9	No	No	1.00E-01	U	-		3.00E-04	U	-		1	0.1
Methylcholanthrene, 3-	56-49-5	Yes	No	2.20E+01	U	6.30E-03	U	-		-		1	0.1
Methylcyclohexane	108-87-2	No	Yes	-		-		-		-		1	-
Methylcyclohexylamine, n-	100-60-7	No	Yes	-		-		-		-		1	-
Methylcyclopentane	96-37-7	No	Yes	-		-		-		-		1	-
Methylene Chloride	75-09-2	Yes	Yes	2.00E-03	U	1.00E-08	U	6.00E-03	U	6.00E-01	U	1	-
Methylene-bis(2-chloroaniline), 4,4'-	101-14-4	Yes	No	1.00E-01	U	4.30E-04	U	2.00E-03	U	-		1	0.1
Methylene-bis(N,N-dimethyl) Aniline, 4,4'-	101-61-1	No	No	4.60E-02	U	1.30E-05	U	-		-		1	0.1
Methylenebisbenzenamine, 4,4'-	101-77-9	No	No	1.60E+00	U	4.60E-04	U	-		2.00E-02	U	1	0.1
Methylenediphenyl Diisocyanate	101-68-8	No	No	-		-		-		6.00E-04	U	1	0.1
Methylisothiocyanate	556-61-6	No	Yes	-		-		-		-		1	-
Methylnaphthalene	1321-94-4	No	Yes	-		-		-		-		1	-
Methylnaphthalene, 1-	90-12-0	No	Yes	2.90E-02	U	-		7.00E-02	U	-		1	0.13
Methylnaphthalene, 2-	91-57-6	No	Yes	-		-		4.00E-03	U	-		1	0.13
Methylstyrene, Alpha-	98-83-9	No	Yes	-		-		7.00E-02	U	-		1	-
Methyltriethyl Lead	1762-28-3	No	Yes	-		-		-		-		1	-
Metolachlor	51218-45-2	No	No	-		-		1.50E-01	U	-		1	0.1
Metribuzin	21087-64-9	No	No	-		-		2.50E-02	U	-		1	0.1
Mineral oils	8012-95-1	No	Yes	-		-		3.00E+00	U	-		1	-
Mirex	2385-85-5	No	Yes	1.80E+01	U	5.10E-03	U	2.00E-04	U	-		1	-
Molinate	2212-67-1	No	No	-		-		2.00E-03	U	-		1	0.1
Molybdenum	7439-98-7	No	No	-		-		5.00E-03	U	-		1	-
Monoaluminum phosphate	13530-50-2	No	No	-		-		4.86E+01	U	-		1	-
Monoammonium phosphate	7722-76-1	No	No	-		-		4.86E+01	U	-		1	-
Monobutyltin Compounds	NA	No	No	-		-		-		-		1	0.1
Monocalcium phosphate	7758-23-8	No	No	-		-		4.86E+01	U	-		1	-
Monochloramine	10599-90-3	No	No	-		-		1.00E-01	U	-		1	-
Monochlorobutanes	25154-42-1	No	No	-		-		-		-		1	0.1
Monochlorophenols (total)	NA	No	No	-		-		-		-		1	0.1
Monocyclic aromatic hydrocarbons (total)	NA	No	No	-		-		-		-		1	0.1
Monomagnesium phosphate	7757-86-0	No	No	-		-		4.86E+01	U	-		1	-
Monomethylaniline	100-61-8	No	No	-		-		2.00E-03	U	-		1	0.1
Monopotassium phosphate	7778-77-0	No	No	-		-		4.86E+01	U	-		1	-
Monosodium phosphate	7558-80-7	No	No	-		-		4.86E+01	U	-		1	-
N,N'-Diphenyl-1,4-benzenediamine	74-31-7	No	No	-		-		3.00E-04	U	-		1	0.1
N-Methyl dithiocarbamate	137-42-8	No	No	-		-		-		-		1	0.1
Naled	300-76-5	No	Yes	-		-		2.00E-03	U	-		1	-
Naphtha, High Flash Aromatic (HFAN)	64742-95-6	No	Yes	-		-		3.00E-02	U	1.00E-01	U	1	-
Naphthalene	91-20-3	No	Yes	-		3.40E-05	U	2.00E-02	U	3.00E-03	U	1	0.13
Naphthol, 2-	135-19-3	No	No	-		-		-		-		1	0.1
Naphthoquinone, 1,4-	130-15-4	No	No	-		-		-		-		1	0.1
Naphthylamine, 1-	134-32-7	No	No	-		-		-		-		1	0.1
Naphthylamine, 2-	91-59-8	No	No	1.80E+00	U	0.00E+00	U	-		-		1	0.1
Napropamide	15299-99-7	No	No	-		-		1.00E-01	U	-		1	0.1
Neodymium Chloride (Stable, Nonradioactive)	10024-93-8	No	No	-		-		-		-		1	-

Site-specific

Outdoor Worker Screening Levels (RSL) for Soil - Modified for Utility Worker Exposure to Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gui
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Methyl-2-Pentanol, 4-	108-11-2	1	2.37E+04	2.45E+03	3.23E+09	-	-	-	-	-	-	-	-	
Methyl-5-Nitroaniline, 2-	99-55-8	1	-	-	3.23E+09	2.29E+04	1.82E+05	-	2.04E+04	5.90E+04	4.67E+05	-	5.24E+04	2.04E+04 ca**
Methyl-N-nitro-N-nitrosoguanidine, N-	70-25-7	1	-	-	3.23E+09	2.49E+01	1.97E+02	3.44E+06	2.21E+01	-	-	-	-	2.21E+01 ca
Methylaniline Hydrochloride, 2-	636-21-5	1	-	-	3.23E+09	1.59E+03	1.26E+04	2.23E+08	1.41E+03	-	-	-	-	1.41E+03 ca
Methylarsonic acid	124-58-3	1	-	-	3.23E+09	-	-	-	-	2.95E+04	2.34E+05	-	2.62E+04	2.62E+04 nc
Methylaziridine, 2-	75-55-8	1	4.41E+04	1.87E+05	3.23E+09	-	-	-	-	-	-	-	-	
Methylbenzene,1-4-diamine monohydrochloride, 2-	74612-12-7	1	-	-	3.23E+09	-	-	-	-	5.90E+02	4.67E+03	-	5.24E+02	5.24E+02 nc
Methylbenzene-1,4-diamine sulfate, 2-	615-50-9	1	-	-	3.23E+09	2.06E+03	1.64E+04	-	1.83E+03	8.85E+02	7.01E+03	-	7.86E+02	7.86E+02 nc
Methylcholanthrene, 3-	56-49-5	1	-	-	3.23E+09	9.38E+00	7.44E+01	1.31E+06	8.33E+00	-	-	-	-	8.33E+00 ca
Methylcyclohexane	108-87-2	1	1.37E+03	6.77E+01	3.23E+09	-	-	-	-	-	-	-	-	
Methylcyclohexylamine, n-	100-60-7	1	4.39E+04	2.81E+04	3.23E+09	-	-	-	-	-	-	-	-	
Methylcyclopentane	96-37-7	1	1.22E+03	1.54E+02	3.23E+09	-	-	-	-	-	-	-	-	
Methylene Chloride	75-09-2	1	3.02E+03	3.32E+03	3.23E+09	1.03E+05	-	7.72E+05	9.11E+04	1.77E+04	-	6.62E+04	1.40E+04	1.40E+04 sat
Methylene-bis(2-chloroaniline), 4,4'-	101-14-4	1	-	-	3.23E+09	2.06E+03	1.64E+04	1.92E+07	1.83E+03	5.90E+03	4.67E+04	-	5.24E+03	1.83E+03 ca**
Methylene-bis(N,N-dimethyl) Aniline, 4,4'-	101-61-1	1	-	-	3.23E+09	4.49E+03	3.56E+04	6.35E+08	3.99E+03	-	-	-	-	3.99E+03 ca
Methylenebisbenzenamine, 4,4'-	101-77-9	1	-	-	3.23E+09	1.29E+02	1.02E+03	1.80E+07	1.15E+02	-	-	2.36E+09	2.36E+09	1.15E+02 ca
Methylenediphenyl Diisocyanate	101-68-8	1	-	-	3.23E+09	-	-	-	-	-	-	7.08E+07	7.08E+07	7.08E+07 max
Methylisothiocyanate	556-61-6	1	2.04E+04	-	3.23E+09	-	-	-	-	-	-	-	-	
Methylnaphthalene	1321-94-4	1	8.08E+04	-	3.23E+09	-	-	-	-	-	-	-	-	
Methylnaphthalene, 1-	90-12-0	1	8.09E+04	-	3.23E+09	7.12E+03	4.34E+04	-	6.12E+03	2.06E+05	1.26E+06	-	1.77E+05	6.12E+03 ca*
Methylnaphthalene, 2-	91-57-6	1	8.00E+04	-	3.23E+09	-	-	-	-	1.18E+04	7.19E+04	-	1.01E+04	1.01E+04 nc
Methylstyrene, Alpha-	98-83-9	1	1.77E+04	5.00E+02	3.23E+09	-	-	-	-	2.06E+05	-	-	2.06E+05	2.06E+05 sat
Methyltriethyl Lead	1762-28-3	1	2.24E+03	4.81E+03	3.23E+09	-	-	-	-	-	-	-	-	
Metolachlor	51218-45-2	1	-	-	3.23E+09	-	-	-	-	4.42E+05	3.51E+06	-	3.93E+05	3.93E+05 max
Metribuzin	21087-64-9	1	-	-	3.23E+09	-	-	-	-	7.37E+04	5.84E+05	-	6.55E+04	6.55E+04 nc
Mineral oils	8012-95-1	1	1.90E+03	3.41E-01	3.23E+09	-	-	-	-	8.85E+06	-	-	8.85E+06	8.85E+06 sat
Mirex	2385-85-5	1	1.18E+06	-	3.23E+09	1.15E+01	-	5.92E+02	1.13E+01	5.90E+02	-	-	5.90E+02	1.13E+01 ca*
Molinate	2212-67-1	1	-	-	3.23E+09	-	-	-	-	5.90E+03	4.67E+04	-	5.24E+03	5.24E+03 nc
Molybdenum	7439-98-7	1	-	-	3.23E+09	-	-	-	-	1.47E+04	-	-	1.47E+04	1.47E+04 nc
Monoaluminum phosphate	13530-50-2	1	-	-	3.23E+09	-	-	-	-	1.43E+08	-	-	1.43E+08	1.43E+08 max
Monoammonium phosphate	7722-76-1	1	-	-	3.23E+09	-	-	-	-	1.43E+08	-	-	1.43E+08	1.43E+08 max
Monobutyltin Compounds	NA	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Monocalcium phosphate	7758-23-8	1	-	-	3.23E+09	-	-	-	-	1.43E+08	-	-	1.43E+08	1.43E+08 max
Monochloramine	10599-90-3	1	-	-	3.23E+09	-	-	-	-	2.95E+05	-	-	2.95E+05	2.95E+05 max
Monochlorobutanes	25154-42-1	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Monochlorophenols (total)	NA	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Monocyclic aromatic hydrocarbons (total)	NA	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Monomagnesium phosphate	7757-86-0	1	-	-	3.23E+09	-	-	-	-	1.43E+08	-	-	1.43E+08	1.43E+08 max
Monomethylaniline	100-61-8	1	-	-	3.23E+09	-	-	-	-	5.90E+03	4.67E+04	-	5.24E+03	5.24E+03 nc
Monopotassium phosphate	7778-77-0	1	-	-	3.23E+09	-	-	-	-	1.43E+08	-	-	1.43E+08	1.43E+08 max
Monosodium phosphate	7558-80-7	1	-	-	3.23E+09	-	-	-	-	1.43E+08	-	-	1.43E+08	1.43E+08 max
N,N'-Diphenyl-1,4-benzenediamine	74-31-7	1	-	-	3.23E+09	-	-	-	-	8.85E+02	7.01E+03	-	7.86E+02	7.86E+02 nc
N-Methyl dithiocarbamate	137-42-8	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Naled	300-76-5	1	7.87E+04	-	3.23E+09	-	-	-	-	5.90E+03	-	-	5.90E+03	5.90E+03 nc
Naphtha, High Flash Aromatic (HFAN)	64742-95-6	1	-	-	3.23E+09	-	-	-	-	8.85E+04	-	1.18E+10	8.85E+04	8.85E+04 nc
Naphthalene	91-20-3	1	6.38E+04	-	3.23E+09	-	-	4.79E+03	4.79E+03	5.90E+04	3.60E+05	6.99E+03	6.14E+03	4.79E+03 ca**
Naphthol, 2-	135-19-3	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Naphthoquinone, 1,4-	130-15-4	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Naphthylamine, 1-	134-32-7	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Naphthylamine, 2-	91-59-8	1	-	-	3.23E+09	1.15E+02	9.09E+02	-	1.02E+02	-	-	-	-	1.02E+02 ca
Napropamide	15299-99-7	1	-	-	3.23E+09	-	-	-	-	2.95E+05	2.34E+06	-	2.62E+05	2.62E+05 max
Neodymium Chloride (Stable, Nonradioactive)	10024-93-8	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	

Site-specific

Outdoor Worker Screening Levels (RSL) for Soil - Modified for Utility Worker Exposure to Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS
Niagara Blue 4B	2429-74-5	No	No	-		-		-		-		1	0.1
Nickel Acetate	373-02-4	No	No	-		2.60E-04	U	1.10E-02	U	1.40E-05	U	1	0.1
Nickel Carbonate	3333-67-3	No	No	-		2.60E-04	U	1.10E-02	U	1.40E-05	U	1	0.1
Nickel Carbonyl	13463-39-3	No	Yes	-		2.60E-04	U	1.10E-02	U	1.40E-05	U	1	-
Nickel Hydroxide	12054-48-7	No	No	-		2.60E-04	U	1.10E-02	U	1.40E-05	U	0.04	-
Nickel Oxide	1313-99-1	No	No	-		2.60E-04	U	1.10E-02	U	2.00E-05	U	0.04	-
Nickel Refinery Dust	NA	No	No	-		2.40E-04	U	1.10E-02	U	1.40E-05	U	0.04	-
Nickel Soluble Salts	7440-02-0	No	No	-		2.60E-04	U	2.00E-02	U	9.00E-05	U	0.04	-
Nickel Subsulfide	12035-72-2	No	No	1.70E+00	U	4.80E-04	U	1.10E-02	U	1.40E-05	U	0.04	-
Nickelocene	1271-28-9	No	No	-		2.60E-04	U	1.10E-02	U	1.40E-05	U	1	0.1
Nicotinonitrile	100-54-9	No	No	-		-		-		-		1	0.1
Niobium	7440-03-1	No	No	-		-		-		-		1	-
Nitrapyrin	1929-82-4	No	Yes	-		-		-		-		1	-
Nitrate	14797-55-8	No	No	-		-		1.60E+00	U	-		1	-
Nitrate + Nitrite (as N)	NA	No	No	-		-		-		-		1	-
Nitric Acid	7697-37-2	No	No	-		-		-		-		1	0.1
Nitric Oxide	10102-43-9	No	Yes	-		-		-		-		1	-
Nitrite	14797-65-0	No	No	-		-		1.00E-01	U	-		1	-
Nitroaniline, 2-	88-74-4	No	No	-		-		1.00E-02	U	5.00E-05	U	1	0.1
Nitroaniline, 3-	99-09-2	No	No	-		-		-		-		1	0.1
Nitroaniline, 4-	100-01-6	No	No	2.00E-02	U	-		4.00E-03	U	6.00E-03	U	1	0.1
Nitrobenzene	98-95-3	No	Yes	-		4.00E-05	U	2.00E-03	U	9.00E-03	U	1	-
Nitrobiphenyl, 4-	92-93-3	No	No	-		-		-		-		1	0.1
Nitrocellulose	9004-70-0	No	No	-		-		3.00E+03	U	-		1	0.1
Nitrodiphenylamine, 2-	119-75-5	No	No	-		-		-		-		1	0.1
Nitrofurantoin	67-20-9	No	No	-		-		7.00E-02	U	-		1	0.1
Nitrofurazone	59-87-0	No	No	1.30E+00	U	3.70E-04	U	-		-		1	0.1
Nitrogen Dioxide	10102-44-0	No	Yes	-		-		-		-		1	-
Nitroglycerin	55-63-0	No	No	1.70E-02	U	-		1.00E-04	U	-		1	0.1
Nitroguanidine	556-88-7	No	No	-		-		1.00E-01	U	-		1	0.1
Nitromethane	75-52-5	No	Yes	-		8.80E-06	U	-		5.00E-03	U	1	-
Nitrophenol, 2-	88-75-5	No	Yes	-		-		-		-		1	-
Nitrophenol, 2-amino-4-	99-57-0	No	No	-		-		-		-		1	0.1
Nitrophenol, 3-	554-84-7	No	No	-		-		-		-		1	0.1
Nitrophenol, 4-	100-02-7	No	No	-		-		-		-		1	0.1
Nitrophenol, 4-amino-2-	119-34-6	No	No	-		-		-		-		1	0.1
Nitropropane, 2-	79-46-9	No	Yes	-		2.70E-03	U	-		2.00E-02	U	1	-
Nitropyrene, 4-	57835-92-4	No	No	1.20E+00	U	1.10E-04	U	-		-		1	0.13
Nitroquinoline-1-oxide. 4-	56-57-5	No	No	-		-		-		-		1	0.1
Nitroso-N-ethylurea, N-	759-73-9	Yes	No	2.70E+01	U	7.70E-03	U	-		-		1	0.1
Nitroso-N-methylurea, N-	684-93-5	Yes	No	1.20E+02	U	3.40E-02	U	-		-		1	0.1
Nitroso-di-N-butylamine, N-	924-16-3	No	Yes	5.40E+00	U	1.60E-03	U	-		-		1	-
Nitroso-di-N-propylamine, N-	621-64-7	No	No	7.00E+00	U	2.00E-03	U	-		-		1	0.1
Nitrosodiethanolamine, N-	1116-54-7	No	No	2.80E+00	U	8.00E-04	U	-		-		1	0.1
Nitrosodiethylamine, N-	55-18-5	Yes	No	1.50E+02	U	4.30E-02	U	-		-		1	0.1
Nitrosodimethylamine, N-	62-75-9	Yes	Yes	5.10E+01	U	1.40E-02	U	8.00E-06	U	4.00E-05	U	1	-
Nitrosodiphenylamine, N-	86-30-6	No	No	4.90E-03	U	2.60E-06	U	-		-		1	0.1
Nitrosomethylethylamine, N-	10595-95-6	No	Yes	2.20E+01	U	6.30E-03	U	-		-		1	-
Nitrosomethylvinylamine, N-	4549-40-0	No	Yes	-		-		-		-		1	-
Nitrosomorpholine [N-]	59-89-2	No	No	6.70E+00	U	1.90E-03	U	-		-		1	0.1
Nitrosopiperidine [N-]	100-75-4	No	No	9.40E+00	U	2.70E-03	U	-		-		1	0.1
Nitrosopyrrolidine, N-	930-55-2	No	No	2.10E+00	U	6.10E-04	U	-		-		1	0.1
Nitrotoluene, 4-Amino-2-	119-32-4	No	No	-		-		-		-		1	0.1

Site-specific

Outdoor Worker Screening Levels (RSL) for Soil - Modified for Utility Worker Exposure to Soil

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Smax=Soil SL exceeds ceiling limit and has been substituted with the max value
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Niagara Blue 4B	2429-74-5	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Nickel Acetate	373-02-4	1	-	-	3.23E+09	-	-	3.18E+07	3.18E+07	3.24E+04	2.57E+05	1.65E+06	2.83E+04	2.83E+04 nc
Nickel Carbonate	3333-67-3	1	-	-	3.23E+09	-	-	3.18E+07	3.18E+07	3.24E+04	2.57E+05	1.65E+06	2.83E+04	2.83E+04 nc
Nickel Carbonyl	13463-39-3	1	-	-	3.23E+09	-	-	3.18E+07	3.18E+07	3.24E+04	-	1.65E+06	3.18E+04	3.18E+04 nc
Nickel Hydroxide	12054-48-7	1	-	-	3.23E+09	-	-	3.18E+07	3.18E+07	3.24E+04	-	1.65E+06	3.18E+04	3.18E+04 nc
Nickel Oxide	1313-99-1	1	-	-	3.23E+09	-	-	3.18E+07	3.18E+07	3.24E+04	-	2.36E+06	3.20E+04	3.20E+04 nc
Nickel Refinery Dust	NA	1	-	-	3.23E+09	-	-	3.44E+07	3.44E+07	3.24E+04	-	1.65E+06	3.18E+04	3.18E+04 nc
Nickel Soluble Salts	7440-02-0	1	-	-	3.23E+09	-	-	3.18E+07	3.18E+07	5.90E+04	-	1.06E+07	5.87E+04	5.87E+04 nc
Nickel Subsulfide	12035-72-2	1	-	-	3.23E+09	1.21E+02	-	1.72E+07	1.21E+02	3.24E+04	-	1.65E+06	3.18E+04	1.21E+02 ca
Nickelocene	1271-28-9	1	-	-	3.23E+09	-	-	3.18E+07	3.18E+07	3.24E+04	2.57E+05	1.65E+06	2.83E+04	2.83E+04 nc
Nicotinonitrile	100-54-9	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Niobium	7440-03-1	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Nitrapyrin	1929-82-4	1	3.05E+05	-	3.23E+09	-	-	-	-	-	-	-	-	
Nitrate	14797-55-8	1	-	-	3.23E+09	-	-	-	-	4.72E+06	-	-	4.72E+06	4.72E+06 max
Nitrate + Nitrite (as N)	NA	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Nitric Acid	7697-37-2	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Nitric Oxide	10102-43-9	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Nitrite	14797-65-0	1	-	-	3.23E+09	-	-	-	-	2.95E+05	-	-	2.95E+05	2.95E+05 max
Nitroaniline, 2-	88-74-4	1	-	-	3.23E+09	-	-	-	-	2.95E+04	2.34E+05	5.90E+06	2.61E+04	2.61E+04 nc
Nitroaniline, 3-	99-09-2	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Nitroaniline, 4-	100-01-6	1	-	-	3.23E+09	1.03E+04	8.18E+04	-	9.17E+03	1.18E+04	9.35E+04	7.08E+08	1.05E+04	9.17E+03 ca**
Nitrobenzene	98-95-3	1	1.01E+05	3.04E+03	3.23E+09	-	-	6.44E+03	6.44E+03	5.90E+03	-	3.31E+04	5.01E+03	5.01E+03 sat
Nitrobiphenyl, 4-	92-93-3	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Nitrocellulose	9004-70-0	1	-	-	3.23E+09	-	-	-	-	8.85E+09	7.01E+10	-	7.86E+09	7.86E+09 max
Nitrodiphenylamine, 2-	119-75-5	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Nitrofurantoin	67-20-9	1	-	-	3.23E+09	-	-	-	-	2.06E+05	1.64E+06	-	1.83E+05	1.83E+05 max
Nitrofurazone	59-87-0	1	-	-	3.23E+09	1.59E+02	1.26E+03	2.23E+07	1.41E+02	-	-	-	-	1.41E+02 ca
Nitrogen Dioxide	10102-44-0	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Nitroglycerin	55-63-0	1	-	-	3.23E+09	1.21E+04	9.62E+04	-	1.08E+04	2.95E+02	2.34E+03	-	2.62E+02	2.62E+02 nc
Nitroguanidine	556-88-7	1	-	-	3.23E+09	-	-	-	-	2.95E+05	2.34E+06	-	2.62E+05	2.62E+05 max
Nitromethane	75-52-5	1	2.34E+04	1.80E+04	3.23E+09	-	-	6.78E+03	6.78E+03	-	-	4.26E+03	4.26E+03	4.26E+03 nc
Nitrophenol, 2-	88-75-5	1	1.65E+05	-	3.23E+09	-	-	-	-	-	-	-	-	
Nitrophenol, 2-amino-4-	99-57-0	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Nitrophenol, 3-	554-84-7	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Nitrophenol, 4-	100-02-7	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Nitrophenol, 4-amino-2-	119-34-6	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Nitropropane, 2-	79-46-9	1	1.81E+04	4.86E+03	3.23E+09	-	-	1.71E+01	1.71E+01	-	-	1.32E+04	1.32E+04	1.71E+01 ca
Nitropyrene, 4-	57835-92-4	1	-	-	3.23E+09	1.72E+02	1.05E+03	7.51E+07	1.48E+02	-	-	-	-	1.48E+02 ca
Nitroquinoline-1-oxide. 4-	56-57-5	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Nitroso-N-ethylurea, N-	759-73-9	1	-	-	3.23E+09	7.65E+00	6.06E+01	1.07E+06	6.79E+00	-	-	-	-	6.79E+00 ca
Nitroso-N-methylurea, N-	684-93-5	1	-	-	3.23E+09	1.72E+00	1.36E+01	2.43E+05	1.53E+00	-	-	-	-	1.53E+00 ca
Nitroso-di-N-butylamine, N-	924-16-3	1	3.35E+05	-	3.23E+09	3.82E+01	-	5.35E+02	3.57E+01	-	-	-	-	3.57E+01 ca
Nitroso-di-N-propylamine, N-	621-64-7	1	-	-	3.23E+09	2.95E+01	2.34E+02	4.13E+06	2.62E+01	-	-	-	-	2.62E+01 ca
Nitrosodiethanolamine, N-	1116-54-7	1	-	-	3.23E+09	7.37E+01	5.84E+02	1.03E+07	6.55E+01	-	-	-	-	6.55E+01 ca
Nitrosodiethylamine, N-	55-18-5	1	-	-	3.23E+09	1.38E+00	1.09E+01	1.92E+05	1.22E+00	-	-	-	-	1.22E+00 ca
Nitrosodimethylamine, N-	62-75-9	1	1.14E+05	2.37E+05	3.23E+09	4.05E+00	-	2.07E+01	3.39E+00	2.36E+01	-	1.66E+02	2.07E+01	3.39E+00 ca**
Nitrosodiphenylamine, N-	86-30-6	1	-	-	3.23E+09	4.21E+04	3.34E+05	3.18E+09	3.74E+04	-	-	-	-	3.74E+04 ca
Nitrosomethylethylamine, N-	10595-95-6	1	1.67E+05	1.08E+05	3.23E+09	9.38E+00	-	6.77E+01	8.24E+00	-	-	-	-	8.24E+00 ca
Nitrosomethylvinylamine, N-	4549-40-0	1	1.12E+05	1.08E+04	3.23E+09	-	-	-	-	-	-	-	-	
Nitrosomorpholine [N-]	59-89-2	1	-	-	3.23E+09	3.08E+01	2.44E+02	4.35E+06	2.74E+01	-	-	-	-	2.74E+01 ca
Nitrosopiperidine [N-]	100-75-4	1	-	-	3.23E+09	2.20E+01	1.74E+02	3.06E+06	1.95E+01	-	-	-	-	1.95E+01 ca
Nitrosopyrrolidine, N-	930-55-2	1	-	-	3.23E+09	9.83E+01	7.79E+02	1.35E+07	8.73E+01	-	-	-	-	8.73E+01 ca
Nitrotoluene, 4-Amino-2-	119-32-4	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	

Site-specific

Outdoor Worker Screening Levels (RSL) for Soil - Modified for Utility Worker Exposure to Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS
Nitrotoluene, m-	99-08-1	No	No	-		-		1.00E-04	U	-		1	0.1
Nitrotoluene, o-	88-72-2	No	Yes	2.20E-01	U	-		9.00E-04	U	-		1	-
Nitrotoluene, p-	99-99-0	No	No	1.60E-02	U	-		4.00E-03	U	-		1	0.1
Nonachlor, trans-	39765-80-5	No	Yes	-		-		-		-		1	-
Nonane, n-	111-84-2	No	Yes	-		-		3.00E-04	U	2.00E-02	U	1	-
Nonanol, n-	143-08-8	No	Yes	-		-		-		-		1	-
Norflurazon	27314-13-2	No	No	-		-		4.00E-02	U	-		1	0.1
Nustar	85509-19-9	No	No	-		-		7.00E-04	U	-		1	0.1
OCDD	3268-87-9	No	No	3.90E+01	U	1.14E-02	U	2.33E-06	U	1.33E-04	U	1	0.03
OCDF	39001-02-0	No	No	3.90E+01	U	1.14E-02	U	2.33E-06	U	1.33E-04	U	1	0.03
Octabromodiphenyl Ether	32536-52-0	No	No	-		-		3.00E-03	U	-		1	0.1
Octachlorostyrene	29082-74-4	No	Yes	-		-		-		-		1	-
Octadecanoic Acid	57-11-4	No	No	-		-		-		-		1	0.1
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	No	No	-		-		5.00E-02	U	-		1	0.006
Octahydrotrimethylmethylethylphenanthrenol	511-15-9	No	No	-		-		-		-		1	0.1
Octamethylpyrophosphoramide	152-16-9	No	No	-		-		2.00E-03	U	-		1	0.1
Octanol, n-	111-87-5	No	Yes	-		-		-		-		1	-
Octanone, 2-	111-13-7	No	Yes	-		-		-		-		1	-
Octanone, 3-	106-68-3	No	Yes	-		-		-		-		1	-
Octyl Phthalate, di-N-	117-84-0	No	No	-		-		1.00E-02	U	-		1	0.1
Oleic acid	112-80-1	No	Yes	-		-		-		-		1	-
Oleum	8014-95-7	Yes	No	-		-		-		-		1	-
Oryzalin	19044-88-3	No	No	-		-		5.00E-02	U	-		1	0.1
Oxadiazon	19666-30-9	No	No	-		-		5.00E-03	U	-		1	0.1
Oxamyl	23135-22-0	No	No	-		-		2.50E-02	U	-		1	0.1
Oxychlordane	27304-13-8	No	No	-		-		-		-		1	0.1
Ozone	10028-15-6	No	No	-		-		-		-		1	-
Paclobutrazol	76738-62-0	No	No	-		-		1.30E-02	U	-		1	0.1
Paraquat Dichloride	1910-42-5	No	No	-		-		4.50E-03	U	-		1	0.1
Parathion	56-38-2	No	No	-		-		6.00E-03	U	-		1	0.1
PeCDD, 2,3,7,8-	36088-22-9	No	No	1.30E+05	U	3.80E+01	U	7.00E-10	U	4.00E-08	U	1	0.03
PeCDF, 1,2,3,7,8-	57117-41-6	No	No	3.90E+03	U	1.14E+00	U	2.33E-08	U	1.33E-06	U	1	0.03
PeCDF, 2,3,4,7,8-	57117-31-4	No	No	3.90E+04	U	1.14E+01	U	2.33E-09	U	1.33E-07	U	1	0.03
Pebulate	1114-71-2	No	Yes	-		-		5.00E-02	U	-		1	-
Pendimethalin	40487-42-1	No	No	-		-		4.00E-02	U	-		1	0.1
Pentabromodiphenyl Ether	32534-81-9	No	No	-		-		2.00E-03	U	-		1	0.1
Pentabromodiphenyl ether, 2,2',4,4',5- (BDE-99)	60348-60-9	No	No	-		-		1.00E-04	U	-		1	0.1
Pentachloroaniline	527-20-8	No	No	-		-		-		-		1	0.1
Pentachlorobenzene	608-93-5	No	Yes	-		-		8.00E-04	U	-		1	-
Pentachlorobiphenyl, 2',3,4,4',5- (PCB 123)	65510-44-3	No	Yes	3.90E+00	U	1.14E-03	U	2.33E-05	U	1.33E-03	U	1	0.14
Pentachlorobiphenyl, 2,3',4,4',5- (PCB 118)	31508-00-6	No	Yes	3.90E+00	U	1.14E-03	U	2.33E-05	U	1.33E-03	U	1	0.14
Pentachlorobiphenyl, 2,3,3',4,4'- (PCB 105)	32598-14-4	No	Yes	3.90E+00	U	1.14E-03	U	2.33E-05	U	1.33E-03	U	1	0.14
Pentachlorobiphenyl, 2,3,4,4',5- (PCB 114)	74472-37-0	No	Yes	3.90E+00	U	1.14E-03	U	2.33E-05	U	1.33E-03	U	1	0.14
Pentachlorobiphenyl, 3,3',4,4',5- (PCB 126)	57465-28-8	No	Yes	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1	0.14
Pentachlorocyclopentadiene	25329-35-5	No	Yes	-		-		-		-		1	-
Pentachlorodibenzo-p-dioxin, 1,2,3,7,8-	40321-76-4	No	Yes	1.30E+05	U	3.80E+01	U	7.00E-10	U	4.00E-08	U	1	0.03
Pentachloroethane	76-01-7	No	Yes	9.00E-02	U	-		-		-		1	-
Pentachloronitrobenzene	82-68-8	No	Yes	2.60E-01	U	-		3.00E-03	U	-		1	-
Pentachlorophenol	87-86-5	No	No	4.00E-01	U	5.10E-06	U	5.00E-03	U	-		1	0.25
Pentaerythritol tetranitrate (PETN)	78-11-5	No	No	4.00E-03	U	-		2.00E-03	U	-		1	0.1
Pentamethyl dipropylenetriamine	3855-32-1	No	No	-		-		-		-		1	0.1
Pentane, n-	109-66-0	No	Yes	-		-		-		1.00E+00	U	1	-

Site-specific

Outdoor Worker Screening Levels (RSL) for Soil - Modified for Utility Worker Exposure to Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gui
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Nitrotoluene, m-	99-08-1	1	-	-	3.23E+09	-	-	-	-	2.95E+02	2.34E+03	-	2.62E+02	2.62E+02 nc
Nitrotoluene, o-	88-72-2	1	1.89E+05	1.51E+03	3.23E+09	9.38E+02	-	-	9.38E+02	2.65E+03	-	-	2.65E+03	9.38E+02 ca**
Nitrotoluene, p-	99-99-0	1	-	-	3.23E+09	1.29E+04	1.02E+05	-	1.15E+04	1.18E+04	9.35E+04	-	1.05E+04	1.05E+04 nc
Nonachlor, trans-	39765-80-5	1	3.73E+06	-	3.23E+09	-	-	-	-	-	-	-	-	
Nonane, n-	111-84-2	1	1.44E+03	6.86E+00	3.23E+09	-	-	-	-	8.85E+02	-	1.05E+03	4.80E+02	4.80E+02 sat
Nonanol, n-	143-08-8	1	6.41E+04	7.27E+01	3.23E+09	-	-	-	-	-	-	-	-	
Norflurazon	27314-13-2	1	-	-	3.23E+09	-	-	-	-	1.18E+05	9.35E+05	-	1.05E+05	1.05E+05 max
Nustar	85509-19-9	1	-	-	3.23E+09	-	-	-	-	2.06E+03	1.64E+04	-	1.83E+03	1.83E+03 nc
OCDD	3268-87-9	1	-	-	3.23E+09	5.29E+00	1.40E+02	7.25E+05	5.10E+00	6.87E+00	1.82E+02	1.57E+07	6.62E+00	5.10E+00 ca**
OCDF	39001-02-0	1	-	-	3.23E+09	5.29E+00	1.40E+02	7.25E+05	5.10E+00	6.87E+00	1.82E+02	1.57E+07	6.62E+00	5.10E+00 ca**
Octabromodiphenyl Ether	32536-52-0	1	-	-	3.23E+09	-	-	-	-	8.85E+03	7.01E+04	-	7.86E+03	7.86E+03 nc
Octachlorostyrene	29082-74-4	1	8.40E+05	-	3.23E+09	-	-	-	-	-	-	-	-	
Octadecanoic Acid	57-11-4	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	1	-	-	3.23E+09	-	-	-	-	1.47E+05	1.95E+07	-	1.46E+05	1.46E+05 max
Octahydrotrimethylmethylethylphenanthrenol	511-15-9	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Octamethylpyrophosphoramide	152-16-9	1	-	-	3.23E+09	-	-	-	-	5.90E+03	4.67E+04	-	5.24E+03	5.24E+03 nc
Octanol, n-	111-87-5	1	5.35E+04	1.78E+02	3.23E+09	-	-	-	-	-	-	-	-	
Octanone, 2-	111-13-7	1	2.12E+04	3.60E+02	3.23E+09	-	-	-	-	-	-	-	-	
Octanone, 3-	106-68-3	1	2.60E+04	1.08E+03	3.23E+09	-	-	-	-	-	-	-	-	
Octyl Phthalate, di-N-	117-84-0	1	-	-	3.23E+09	-	-	-	-	2.95E+04	2.34E+05	-	2.62E+04	2.62E+04 nc
Oleic acid	112-80-1	1	1.43E+06	1.44E+00	3.23E+09	-	-	-	-	-	-	-	-	
Oleum	8014-95-7	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Oryzalin	19044-88-3	1	-	-	3.23E+09	-	-	-	-	1.47E+05	1.17E+06	-	1.31E+05	1.31E+05 max
Oxadiazon	19666-30-9	1	-	-	3.23E+09	-	-	-	-	1.47E+04	1.17E+05	-	1.31E+04	1.31E+04 nc
Oxamyl	23135-22-0	1	-	-	3.23E+09	-	-	-	-	7.37E+04	5.84E+05	-	6.55E+04	6.55E+04 nc
Oxychlordane	27304-13-8	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Ozone	10028-15-6	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Paclobutrazol	76738-62-0	1	-	-	3.23E+09	-	-	-	-	3.83E+04	3.04E+05	-	3.40E+04	3.40E+04 nc
Paraquat Dichloride	1910-42-5	1	-	-	3.23E+09	-	-	-	-	1.33E+04	1.05E+05	-	1.18E+04	1.18E+04 nc
Parathion	56-38-2	1	-	-	3.23E+09	-	-	-	-	1.77E+04	1.40E+05	-	1.57E+04	1.57E+04 nc
PeCDD, 2,3,7,8-	36088-22-9	1	-	-	3.23E+09	1.59E-03	4.20E-02	2.17E+02	1.53E-03	2.06E-03	5.45E-02	4.72E+03	1.99E-03	1.53E-03 ca**
PeCDF, 1,2,3,7,8-	57117-41-6	1	-	-	3.23E+09	5.29E-02	1.40E+00	7.25E+03	5.10E-02	6.87E-02	1.82E+00	1.57E+05	6.62E-02	5.10E-02 ca**
PeCDF, 2,3,4,7,8-	57117-31-4	1	-	-	3.23E+09	5.29E-03	1.40E-01	7.25E+02	5.10E-03	6.87E-03	1.82E-01	1.57E+04	6.62E-03	5.10E-03 ca**
Pebulate	1114-71-2	1	6.20E+04	-	3.23E+09	-	-	-	-	1.47E+05	-	-	1.47E+05	1.47E+05 max
Pendimethalin	40487-42-1	1	-	-	3.23E+09	-	-	-	-	1.18E+05	9.35E+05	-	1.05E+05	1.05E+05 max
Pentabromodiphenyl Ether	32534-81-9	1	-	-	3.23E+09	-	-	-	-	5.90E+03	4.67E+04	-	5.24E+03	5.24E+03 nc
Pentabromodiphenyl ether, 2,2',4,4',5- (BDE-99)	60348-60-9	1	-	-	3.23E+09	-	-	-	-	2.95E+02	2.34E+03	-	2.62E+02	2.62E+02 nc
Pentachloroaniline	527-20-8	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Pentachlorobenzene	608-93-5	1	1.12E+05	-	3.23E+09	-	-	-	-	2.36E+03	-	-	2.36E+03	2.36E+03 nc
Pentachlorobiphenyl, 2',3,4,4',5- (PCB 123)	65510-44-3	1	1.42E+06	-	3.23E+09	5.29E+01	3.00E+02	3.19E+03	4.44E+01	6.87E+01	3.89E+02	6.91E+04	5.84E+01	4.44E+01 ca**
Pentachlorobiphenyl, 2,3',4,4',5- (PCB 118)	31508-00-6	1	1.14E+06	-	3.23E+09	5.29E+01	3.00E+02	2.56E+03	4.42E+01	6.87E+01	3.89E+02	5.55E+04	5.83E+01	4.42E+01 ca**
Pentachlorobiphenyl, 2,3,3',4,4'- (PCB 105)	32598-14-4	1	1.17E+06	-	3.23E+09	5.29E+01	3.00E+02	2.61E+03	4.42E+01	6.87E+01	3.89E+02	5.66E+04	5.83E+01	4.42E+01 ca**
Pentachlorobiphenyl, 2,3,4,4',5- (PCB 114)	74472-37-0	1	1.42E+06	-	3.23E+09	5.29E+01	3.00E+02	3.19E+03	4.44E+01	6.87E+01	3.89E+02	6.91E+04	5.84E+01	4.44E+01 ca**
Pentachlorobiphenyl, 3,3',4,4',5- (PCB 126)	57465-28-8	1	1.41E+06	-	3.23E+09	1.59E-02	8.99E-02	9.46E-01	1.33E-02	2.06E-02	1.17E-01	2.05E+01	1.75E-02	1.33E-02 ca**
Pentachlorocyclopentadiene	25329-35-5	1	1.95E+04	-	3.23E+09	-	-	-	-	-	-	-	-	
Pentachlorodibenzo-p-dioxin, 1,2,3,7,8-	40321-76-4	1	4.61E+06	-	3.23E+09	1.59E-03	4.20E-02	3.10E-01	1.52E-03	2.06E-03	5.45E-02	6.72E+00	1.99E-03	1.52E-03 ca**
Pentachloroethane	76-01-7	1	1.33E+04	4.47E+02	3.23E+09	2.29E+03	-	-	2.29E+03	-	-	-	-	2.29E+03 sat
Pentachloronitrobenzene	82-68-8	1	5.95E+05	-	3.23E+09	7.94E+02	-	-	7.94E+02	8.85E+03	-	-	8.85E+03	7.94E+02 ca*
Pentachlorophenol	87-86-5	1	-	-	3.23E+09	5.16E+02	1.64E+03	1.62E+09	3.92E+02	1.47E+04	4.67E+04	-	1.12E+04	3.92E+02 ca*
Pentaerythritol tetranitrate (PETN)	78-11-5	1	-	-	3.23E+09	5.16E+04	4.09E+05	-	4.58E+04	5.90E+03	4.67E+04	-	5.24E+03	5.24E+03 nc
Pentamethyl dipropylenetriamine	3855-32-1	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Pentane, n-	109-66-0	1	1.07E+03	3.88E+02	3.23E+09	-	-	-	-	-	-	3.92E+04	3.92E+04	3.92E+04 sat

Site-specific

Outdoor Worker Screening Levels (RSL) for Soil - Modified for Utility Worker Exposure to Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS
Pentyl Alcohol, N-	71-41-0	No	Yes	-		-		-		-		1	-
Perchlorate and Perchlorate Salts	14797-73-0	No	No	-		-		7.00E-04	U	-		1	-
Perfluorobutane Sulfonate	375-73-5	No	Yes	-		-		2.00E-02	U	-		1	-
Perfluorooctane Sulphonic Acid	1763-23-1	No	Yes	-		-		-		-		1	-
Perfluorooctanoic acid	335-67-1	No	Yes	-		-		-		-		1	-
Permethrin	52645-53-1	No	No	-		-		5.00E-02	U	-		1	0.1
Perylene	198-55-0	No	No	-		-		-		-		1	0.13
Pesticides (total)	NA	No	No	-		-		-		-		1	0.1
Pesticides, organochlorinated (each)	NA	No	No	-		-		-		-		1	0.1
Pesticides, organochlorinated (total)	NA	No	No	-		-		-		-		1	0.1
Phenacetin	62-44-2	No	No	2.20E-03	U	6.30E-07	U	-		-		1	0.1
Phenanthrene	85-01-8	No	Yes	-		-		-		-		1	0.13
Phenmedipham	13684-63-4	No	No	-		-		2.50E-01	U	-		1	0.1
Phenol	108-95-2	No	No	-		-		3.00E-01	U	2.00E-01	U	1	0.1
Phenothiazine	92-84-2	No	No	-		-		5.00E-04	U	-		1	0.1
Phenyl Isothiocyanate	103-72-0	No	Yes	-		-		-		-		1	-
Phenylenediamine, m-	108-45-2	No	No	-		-		6.00E-03	U	-		1	0.1
Phenylenediamine, o-	95-54-5	No	No	4.70E-02	U	-		-		-		1	0.1
Phenylenediamine, p-	106-50-3	No	No	-		-		1.90E-01	U	-		1	0.1
Phenylmercuric Acetate	62-38-4	No	No	-		-		8.00E-05	U	-		1	0.1
Phenylphenol, 2-	90-43-7	No	No	1.94E-03	U	-		-		-		1	0.1
Phorate	298-02-2	No	No	-		-		2.00E-04	U	-		1	0.1
Phosgene	75-44-5	No	Yes	-		-		-		3.00E-04	U	1	-
Phosmet	732-11-6	No	No	-		-		2.00E-02	U	-		1	0.1
Phosphine	7803-51-2	No	Yes	-		-		3.00E-04	U	3.00E-04	U	1	-
Phosphoric Acid	7664-38-2	No	No	-		-		4.86E+01	U	1.00E-02	U	1	-
Phosphorus (total)	NA	No	No	-		-		-		-		1	-
Phosphorus pentoxide	1314-56-3	No	No	-		-		-		-		1	-
Phosphorus, White	7723-14-0	No	Yes	-		-		2.00E-05	U	-		1	-
Phthalates (total)	NA	No	No	-		-		-		-		1	0.1
Phthalic Acid, P-	100-21-0	No	No	-		-		1.00E+00	U	-		1	0.1
Phthalic Acid, m-	121-91-5	No	No	-		-		-		-		1	0.1
Phthalic Acid, o-	88-99-3	No	No	-		-		-		-		1	0.1
Phthalic Anhydride	85-44-9	No	No	-		-		2.00E+00	U	2.00E-02	U	1	0.1
Picloram	1918-02-1	No	No	-		-		7.00E-02	U	-		1	0.1
Picoline, 2-	109-06-8	No	Yes	-		-		-		-		1	-
Picramic Acid (2-Amino-4,6-dinitrophenol)	96-91-3	No	No	-		-		1.00E-04	U	-		1	0.1
Picric Acid (2,4,6-Trinitrophenol)	88-89-1	No	No	-		-		-		-		1	0.1
Piperidine	110-89-4	No	Yes	-		-		-		-		1	-
Pirimiphos, Methyl	29232-93-7	No	No	-		-		1.00E-02	U	-		1	0.1
Polybrominated Biphenyls	59536-65-1	No	No	3.00E+01	U	8.60E-03	U	7.00E-06	U	-		1	0.1
Polychlorinated Biphenyls (high risk)	1336-36-3	No	Yes	2.00E+00	U	5.71E-04	U	-		-		1	0.14
Polycyclic aromatic hydrocarbons (PAH), Total	NA	No	No	-		-		-		-		1	0.13
Polycyclic aromatic hydrocarbons (PAH), Total (high molecular weight)	NA	No	No	-		-		-		-		1	0.13
Polycyclic aromatic hydrocarbons (PAH), Total (low molecular weight)	NA	No	No	-		-		-		-		1	0.13
Polycyclic chlorinated hydrocarbons (total)	NA	No	No	-		-		-		-		1	0.1
Polymeric Methylene Diphenyl Diisocyanate (PMDI)	9016-87-9	No	No	-		-		-		6.00E-04	U	1	0.1
Polyphosphoric acid	8017-16-1	No	No	-		-		4.86E+01	U	-		1	-
Potassium	7440-09-7	No	No	-		-		-		-		1	-
Potassium Cyanide	151-50-8	No	No	-		-		2.00E-03	U	-		1	-

Site-specific

Outdoor Worker Screening Levels (RSL) for Soil - Modified for Utility Worker Exposure to Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL), ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gui
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Pentyl Alcohol, N-	71-41-0	1	3.91E+04	3.04E+03	3.23E+09	-	-	-	-	-	-	-	-	
Perchlorate and Perchlorate Salts	14797-73-0	1	-	-	3.23E+09	-	-	-	-	2.06E+03	-	-	2.06E+03	2.06E+03 nc
Perfluorobutane Sulfonate	375-73-5	1	1.82E+05	-	3.23E+09	-	-	-	-	5.90E+04	-	-	5.90E+04	5.90E+04 nc
Perfluorooctane Sulphonic Acid	1763-23-1	1	1.48E+05	-	3.23E+09	-	-	-	-	-	-	-	-	
Perfluorooctanoic acid	335-67-1	1	3.00E+04	-	3.23E+09	-	-	-	-	-	-	-	-	
Permethrin	52645-53-1	1	-	-	3.23E+09	-	-	-	-	1.47E+05	1.17E+06	-	1.31E+05	1.31E+05 max
Perylene	198-55-0	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Pesticides (total)	NA	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Pesticides, organochlorinated (each)	NA	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Pesticides, organochlorinated (total)	NA	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Phenacetin	62-44-2	1	-	-	3.23E+09	9.38E+04	7.44E+05	1.31E+10	8.33E+04	-	-	-	-	8.33E+04 ca
Phenanthrene	85-01-8	1	8.87E+05	-	3.23E+09	-	-	-	-	-	-	-	-	
Phenmedipham	13684-63-4	1	-	-	3.23E+09	-	-	-	-	7.37E+05	5.84E+06	-	6.55E+05	6.55E+05 max
Phenol	108-95-2	1	-	-	3.23E+09	-	-	-	-	8.85E+05	7.01E+06	2.36E+10	7.86E+05	7.86E+05 max
Phenothiazine	92-84-2	1	-	-	3.23E+09	-	-	-	-	1.47E+03	1.17E+04	-	1.31E+03	1.31E+03 nc
Phenyl Isothiocyanate	103-72-0	1	9.76E+03	1.29E+02	3.23E+09	-	-	-	-	-	-	-	-	
Phenylenediamine, m-	108-45-2	1	-	-	3.23E+09	-	-	-	-	1.77E+04	1.40E+05	-	1.57E+04	1.57E+04 nc
Phenylenediamine, o-	95-54-5	1	-	-	3.23E+09	4.39E+03	3.48E+04	-	3.90E+03	-	-	-	-	3.90E+03 ca
Phenylenediamine, p-	106-50-3	1	-	-	3.23E+09	-	-	-	-	5.60E+05	4.44E+06	-	4.98E+05	4.98E+05 max
Phenylmercuric Acetate	62-38-4	1	-	-	3.23E+09	-	-	-	-	2.36E+02	1.87E+03	-	2.10E+02	2.10E+02 nc
Phenylphenol, 2-	90-43-7	1	-	-	3.23E+09	1.06E+05	8.43E+05	-	9.45E+04	-	-	-	-	9.45E+04 ca
Phorate	298-02-2	1	-	-	3.23E+09	-	-	-	-	5.90E+02	4.67E+03	-	5.24E+02	5.24E+02 nc
Phosgene	75-44-5	1	1.35E+03	1.61E+03	3.23E+09	-	-	-	-	-	-	1.48E+01	1.48E+01	1.48E+01 nc
Phosmet	732-11-6	1	-	-	3.23E+09	-	-	-	-	5.90E+04	4.67E+05	-	5.24E+04	5.24E+04 nc
Phosphine	7803-51-2	1	-	-	3.23E+09	-	-	-	-	8.85E+02	-	3.54E+07	8.85E+02	8.85E+02 nc
Phosphoric Acid	7664-38-2	1	-	-	3.23E+09	-	-	-	-	1.43E+08	-	1.18E+09	1.28E+08	1.28E+08 max
Phosphorus (total)	NA	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Phosphorus pentoxide	1314-56-3	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Phosphorus, White	7723-14-0	1	9.55E+03	-	3.23E+09	-	-	-	-	5.90E+01	-	-	5.90E+01	5.90E+01 nc
Phthalates (total)	NA	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Phthalic Acid, P-	100-21-0	1	-	-	3.23E+09	-	-	-	-	2.95E+06	2.34E+07	-	2.62E+06	2.62E+06 max
Phthalic Acid, m-	121-91-5	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Phthalic Acid, o-	88-99-3	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Phthalic Anhydride	85-44-9	1	-	-	3.23E+09	-	-	-	-	5.90E+06	4.67E+07	2.36E+09	5.23E+06	5.23E+06 max
Picloram	1918-02-1	1	-	-	3.23E+09	-	-	-	-	2.06E+05	1.64E+06	-	1.83E+05	1.83E+05 max
Picoline, 2-	109-06-8	1	1.05E+05	7.90E+05	3.23E+09	-	-	-	-	-	-	-	-	
Picramic Acid (2-Amino-4,6-dinitrophenol)	96-91-3	1	-	-	3.23E+09	-	-	-	-	2.95E+02	2.34E+03	-	2.62E+02	2.62E+02 nc
Picric Acid (2,4,6-Trinitrophenol)	88-89-1	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Piperidine	110-89-4	1	1.12E+05	1.96E+05	3.23E+09	-	-	-	-	-	-	-	-	
Pirimiphos, Methyl	29232-93-7	1	-	-	3.23E+09	-	-	-	-	2.95E+04	2.34E+05	-	2.62E+04	2.62E+04 nc
Polybrominated Biphenyls	59536-65-1	1	-	-	3.23E+09	6.88E+00	5.45E+01	9.61E+05	6.11E+00	2.06E+01	1.64E+02	-	1.83E+01	6.11E+00 ca**
Polychlorinated Biphenyls (high risk)	1336-36-3	1	1.08E+06	-	3.23E+09	1.03E+02	5.84E+02	4.85E+03	8.62E+01	-	-	-	-	8.62E+01 ca
Polycyclic aromatic hydrocarbons (PAH), Total	NA	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Polycyclic aromatic hydrocarbons (PAH), Total (high molecular weight)	NA	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Polycyclic aromatic hydrocarbons (PAH), Total (low molecular weight)	NA	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Polycyclic chlorinated hydrocarbons (total)	NA	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Polymeric Methylene Diphenyl Diisocyanate (PMDI)	9016-87-9	1	-	-	3.23E+09	-	-	-	-	-	-	7.08E+07	7.08E+07	7.08E+07 max
Polyphosphoric acid	8017-16-1	1	-	-	3.23E+09	-	-	-	-	1.43E+08	-	-	1.43E+08	1.43E+08 max
Potassium	7440-09-7	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Potassium Cyanide	151-50-8	1	-	-	3.23E+09	-	-	-	-	5.90E+03	-	-	5.90E+03	5.90E+03 nc

Site-specific

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Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS
Potassium Perchlorate	7778-74-7	No	No	-		-		7.00E-04	U	-		1	-
Potassium Perfluorobutane Sulfonate	29420-49-3	No	No	-		-		2.00E-02	U	-		1	0.1
Potassium Silver Cyanide	506-61-6	No	No	-		-		5.00E-03	U	-		0.04	-
Potassium chlorate	3811-04-9	No	No	-		-		-		-		1	-
Potassium tripolyphosphate	13845-36-8	No	No	-		-		4.86E+01	U	-		1	-
Praseodymium	7440-10-0	No	No	-		-		-		-		1	-
Praseodymium Chloride (Stable, Nonradioactive)	10361-79-2	No	No	-		-		-		-		1	-
Prochloraz	67747-09-5	No	No	1.50E-01	U	-		9.00E-03	U	-		1	0.1
Profluralin	26399-36-0	No	Yes	-		-		6.00E-03	U	-		1	-
Promethium	7440-12-2	No	No	-		-		-		-		1	-
Prometon	1610-18-0	No	No	-		-		1.50E-02	U	-		1	0.1
Prometryn	7287-19-6	No	No	-		-		4.00E-03	U	-		1	0.1
Propachlor	1918-16-7	No	No	-		-		1.30E-02	U	-		1	0.1
Propanil	709-98-8	No	No	-		-		5.00E-03	U	-		1	0.1
Propanoic acid, 2-(2,4-dichlorophenoxy)-	120-36-5	No	No	-		-		-		-		1	0.1
Propargite	2312-35-8	No	No	-		-		2.00E-02	U	-		1	0.1
Propargyl Alcohol	107-19-7	No	Yes	-		-		2.00E-03	U	-		1	-
Propazine	139-40-2	No	No	-		-		2.00E-02	U	-		1	0.1
Propham	122-42-9	No	No	-		-		2.00E-02	U	-		1	0.1
Propiconazole	60207-90-1	No	No	-		-		1.30E-02	U	-		1	0.1
Propionaldehyde	123-38-6	No	Yes	-		-		-		8.00E-03	U	1	-
Propionitrile	107-12-0	No	Yes	-		-		-		-		1	-
Propionitrile, 3-(NN-dimethylamino)	1738-25-6	No	Yes	-		-		-		-		1	-
Propyl Alcohol, n-	71-23-8	No	Yes	-		-		-		-		1	-
Propyl benzene	103-65-1	No	Yes	-		-		1.00E-01	U	1.00E+00	U	1	-
Propylene	115-07-1	No	Yes	-		-		-		3.00E+00	U	1	-
Propylene Glycol	57-55-6	No	No	-		-		2.00E+01	U	-		1	0.1
Propylene Glycol Dinitrate	6423-43-4	No	No	-		-		-		2.72E-04	U	1	0.1
Propylene Glycol Monoethyl Ether	1569-02-4	No	Yes	-		-		7.00E-01	U	-		1	-
Propylene Glycol Monomethyl Ether	107-98-2	No	Yes	-		-		7.00E-01	U	2.00E+00	U	1	-
Propylene Oxide	75-56-9	No	Yes	2.40E-01	U	3.70E-06	U	-		3.00E-02	U	1	-
Prussian Blue (Ferric Ferrocyanide)	14038-43-8	No	No	-		-		-		-		1	0.1
Pursuit	81335-77-5	No	No	-		-		2.50E-01	U	-		1	0.1
Pydrin	51630-58-1	No	No	-		-		2.50E-02	U	-		1	0.1
Pyrazinyl phosphorothioate, O,O-diethyl O-2-	297-97-2	No	No	-		-		-		-		1	0.1
Pyrene	129-00-0	No	Yes	-		-		3.00E-02	U	-		1	0.13
Pyridine	110-86-1	No	Yes	-		-		1.00E-03	U	-		1	-
Quinalphos	13593-03-8	No	No	-		-		5.00E-04	U	-		1	0.1
Quinoline	91-22-5	No	No	3.00E+00	U	-		-		-		1	0.1
Refractory Ceramic Fibers	NA	No	No	-		-		-		3.00E-02	U	1	-
Resmethrin	10453-86-8	No	No	-		-		3.00E-02	U	-		1	0.1
Resorcinol	108-46-3	No	No	-		-		-		-		1	0.1
Ronnel	299-84-3	No	Yes	-		-		5.00E-02	U	-		1	-
Rotenone	83-79-4	No	No	-		-		4.00E-03	U	-		1	0.1
Safrole	94-59-7	Yes	No	2.20E-01	U	6.30E-05	U	-		-		1	0.1
Samarium Chloride (Stable, Nonradioactive)	10361-82-7	No	No	-		-		-		-		1	-
Samarium Nitrate (Stable, Nonradioactive)	10361-83-8	No	No	-		-		-		-		1	-
Savey	78587-05-0	No	No	-		-		2.50E-02	U	-		1	0.1
Scandium	7440-20-2	No	No	-		-		-		-		1	-
Selenious Acid	7783-00-8	No	No	-		-		5.00E-03	U	-		1	-
Selenite	14124-67-5	No	No	-		-		-		-		1	-
Selenium	7782-49-2	No	No	-		-		5.00E-03	U	2.00E-02	U	1	-

Site-specific

Outdoor Worker Screening Levels (RSL) for Soil - Modified for Utility Worker Exposure to Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gui
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Potassium Perchlorate	7778-74-7	1	-	-	3.23E+09	-	-	-	-	2.06E+03	-	-	2.06E+03	2.06E+03 nc
Potassium Perfluorobutane Sulfonate	29420-49-3	1	-	-	3.23E+09	-	-	-	-	5.90E+04	4.67E+05	-	5.24E+04	5.24E+04 nc
Potassium Silver Cyanide	506-61-6	1	-	-	3.23E+09	-	-	-	-	1.47E+04	-	-	1.47E+04	1.47E+04 nc
Potassium chlorate	3811-04-9	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Potassium tripolyphosphate	13845-36-8	1	-	-	3.23E+09	-	-	-	-	1.43E+08	-	-	1.43E+08	1.43E+08 max
Praseodymium	7440-10-0	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Praseodymium Chloride (Stable, Nonradioactive)	10361-79-2	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Prochloraz	67747-09-5	1	-	-	3.23E+09	1.38E+03	1.09E+04	-	1.22E+03	2.65E+04	2.10E+05	-	2.36E+04	1.22E+03 ca*
Profluralin	26399-36-0	1	5.78E+05	-	3.23E+09	-	-	-	-	1.77E+04	-	-	1.77E+04	1.77E+04 nc
Promethium	7440-12-2	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Prometon	1610-18-0	1	-	-	3.23E+09	-	-	-	-	4.42E+04	3.51E+05	-	3.93E+04	3.93E+04 nc
Prometryn	7287-19-6	1	-	-	3.23E+09	-	-	-	-	1.18E+04	9.35E+04	-	1.05E+04	1.05E+04 nc
Propachlor	1918-16-7	1	-	-	3.23E+09	-	-	-	-	3.83E+04	3.04E+05	-	3.40E+04	3.40E+04 nc
Propanil	709-98-8	1	-	-	3.23E+09	-	-	-	-	1.47E+04	1.17E+05	-	1.31E+04	1.31E+04 nc
Propanoic acid, 2-(2,4-dichlorophenoxy)-	120-36-5	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Propargite	2312-35-8	1	-	-	3.23E+09	-	-	-	-	5.90E+04	4.67E+05	-	5.24E+04	5.24E+04 nc
Propargyl Alcohol	107-19-7	1	8.66E+04	1.11E+05	3.23E+09	-	-	-	-	5.90E+03	-	-	5.90E+03	5.90E+03 nc
Propazine	139-40-2	1	-	-	3.23E+09	-	-	-	-	5.90E+04	4.67E+05	-	5.24E+04	5.24E+04 nc
Propham	122-42-9	1	-	-	3.23E+09	-	-	-	-	5.90E+04	4.67E+05	-	5.24E+04	5.24E+04 nc
Propiconazole	60207-90-1	1	-	-	3.23E+09	-	-	-	-	3.83E+04	3.04E+05	-	3.40E+04	3.40E+04 nc
Propionaldehyde	123-38-6	1	1.24E+04	3.26E+04	3.23E+09	-	-	-	-	-	-	3.61E+03	3.61E+03	3.61E+03 nc
Propionitrile	107-12-0	1	2.07E+04	1.56E+04	3.23E+09	-	-	-	-	-	-	-	-	
Propionitrile, 3-(NN-dimethylamino)	1738-25-6	1	2.62E+05	1.60E+05	3.23E+09	-	-	-	-	-	-	-	-	
Propyl Alcohol, n-	71-23-8	1	4.01E+04	1.11E+05	3.23E+09	-	-	-	-	-	-	-	-	
Propyl benzene	103-65-1	1	9.64E+03	2.64E+02	3.23E+09	-	-	-	-	2.95E+05	-	3.52E+05	1.60E+05	1.60E+05 sat
Propylene	115-07-1	1	9.70E+02	3.49E+02	3.23E+09	-	-	-	-	-	-	1.06E+05	1.06E+05	1.06E+05 sat
Propylene Glycol	57-55-6	1	-	-	3.23E+09	-	-	-	-	5.90E+07	4.67E+08	-	5.24E+07	5.24E+07 max
Propylene Glycol Dinitrate	6423-43-4	1	-	-	3.23E+09	-	-	-	-	-	-	3.21E+07	3.21E+07	3.21E+07 max
Propylene Glycol Monoethyl Ether	1569-02-4	1	2.14E+05	8.52E+04	3.23E+09	-	-	-	-	2.06E+06	-	-	2.06E+06	2.06E+06 sat
Propylene Glycol Monomethyl Ether	107-98-2	1	1.08E+05	1.06E+05	3.23E+09	-	-	-	-	2.06E+06	-	7.89E+06	1.64E+06	1.64E+06 sat
Propylene Oxide	75-56-9	1	1.42E+04	7.77E+04	3.23E+09	8.60E+02	-	9.77E+03	7.91E+02	-	-	1.55E+04	1.55E+04	7.91E+02 ca*
Prussian Blue (Ferric Ferrocyanide)	14038-43-8	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Pursuit	81335-77-5	1	-	-	3.23E+09	-	-	-	-	7.37E+05	5.84E+06	-	6.55E+05	6.55E+05 max
Pydrin	51630-58-1	1	-	-	3.23E+09	-	-	-	-	7.37E+04	5.84E+05	-	6.55E+04	6.55E+04 nc
Pyrazinyl phosphorothioate, O,O-diethyl O-2-	297-97-2	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Pyrene	129-00-0	1	3.28E+06	-	3.23E+09	-	-	-	-	8.85E+04	5.39E+05	-	7.60E+04	7.60E+04 nc
Pyridine	110-86-1	1	7.64E+04	5.30E+05	3.23E+09	-	-	-	-	2.95E+03	-	-	2.95E+03	2.95E+03 nc
Quinalphos	13593-03-8	1	-	-	3.23E+09	-	-	-	-	1.47E+03	1.17E+04	-	1.31E+03	1.31E+03 nc
Quinoline	91-22-5	1	-	-	3.23E+09	6.88E+01	5.45E+02	-	6.11E+01	-	-	-	-	6.11E+01 ca
Refractory Ceramic Fibers	NA	1	-	-	3.23E+09	-	-	-	-	-	-	3.54E+09	3.54E+09	3.54E+09 max
Resmethrin	10453-86-8	1	-	-	3.23E+09	-	-	-	-	8.85E+04	7.01E+05	-	7.86E+04	7.86E+04 nc
Resorcinol	108-46-3	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Ronnel	299-84-3	1	6.40E+05	-	3.23E+09	-	-	-	-	1.47E+05	-	-	1.47E+05	1.47E+05 max
Rotenone	83-79-4	1	-	-	3.23E+09	-	-	-	-	1.18E+04	9.35E+04	-	1.05E+04	1.05E+04 nc
Safrole	94-59-7	1	-	-	3.23E+09	9.38E+02	7.44E+03	1.31E+08	8.33E+02	-	-	-	-	8.33E+02 ca
Samarium Chloride (Stable, Nonradioactive)	10361-82-7	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Samarium Nitrate (Stable, Nonradioactive)	10361-83-8	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Savey	78587-05-0	1	-	-	3.23E+09	-	-	-	-	7.37E+04	5.84E+05	-	6.55E+04	6.55E+04 nc
Scandium	7440-20-2	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Selenious Acid	7783-00-8	1	-	-	3.23E+09	-	-	-	-	1.47E+04	-	-	1.47E+04	1.47E+04 nc
Selenite	14124-67-5	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Selenium	7782-49-2	1	-	-	3.23E+09	-	-	-	-	1.47E+04	-	2.36E+09	1.47E+04	1.47E+04 nc

Site-specific

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ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS
Selenium Sulfide	7446-34-6	No	No	-		-		5.00E-03	U	2.00E-02	U	1	-
Selenourea	630-10-4	No	No	-		-		-		-		1	0.1
Sethoxydim	74051-80-2	No	No	-		-		9.00E-02	U	-		1	0.1
Silica (crystalline, respirable)	7631-86-9	No	No	-		-		-		3.00E-03	U	1	-
Silicon	7440-21-3	No	No	-		-		-		-		1	-
Silver	7440-22-4	No	No	-		-		5.00E-03	U	-		0.04	-
Silver Cyanide	506-64-9	No	No	-		-		1.00E-01	U	-		0.04	-
Simazine	122-34-9	No	No	1.20E-01	U	-		5.00E-03	U	-		1	0.1
Sodium	7440-23-5	No	No	-		-		-		-		1	-
Sodium Acifluorfen	62476-59-9	No	No	-		-		1.30E-02	U	-		1	0.1
Sodium Azide	26628-22-8	No	No	-		-		4.00E-03	U	-		1	-
Sodium Chlorate	7775-09-9	No	No	-		-		-		-		1	-
Sodium Cyanide	143-33-9	No	No	-		-		1.00E-03	U	-		1	-
Sodium Dichromate	10588-01-9	Yes	No	5.00E-01	U	1.50E-01	U	2.00E-02	U	2.00E-04	U	0.025	-
Sodium Diethyldithiocarbamate	148-18-5	No	No	2.70E-01	U	-		3.00E-02	U	-		1	0.1
Sodium Fluoride	7681-49-4	No	No	-		-		5.00E-02	U	1.30E-02	U	1	-
Sodium Fluoroacetate	62-74-8	No	No	-		-		2.00E-05	U	-		1	0.1
Sodium Hydroxide	1310-73-2	No	No	-		-		-		-		1	-
Sodium Metavanadate	13718-26-8	No	No	-		-		1.00E-03	U	-		1	-
Sodium Perchlorate	7601-89-0	No	No	-		-		7.00E-04	U	-		1	-
Sodium acid pyrophosphate	7758-16-9	No	No	-		-		4.86E+01	U	-		1	-
Sodium aluminum phosphate (acidic)	7785-88-8	No	No	-		-		4.86E+01	U	-		1	-
Sodium aluminum phosphate (anhydrous)	10279-59-1	No	No	-		-		4.86E+01	U	-		1	-
Sodium aluminum phosphate (tetrahydrate)	10305-76-7	No	No	-		-		4.86E+01	U	-		1	-
Sodium hexametaphosphate	10124-56-8	No	No	-		-		4.86E+01	U	-		1	-
Sodium polyphosphate	68915-31-1	No	No	-		-		4.86E+01	U	-		1	-
Sodium trimetaphosphate	7785-84-4	No	No	-		-		4.86E+01	U	-		1	-
Sodium tripolyphosphate	7758-29-4	No	No	-		-		4.86E+01	U	-		1	-
Stearyl Acetate	822-23-1	No	Yes	-		-		-		-		1	-
Stirofos (Tetrachlorovinphos)	961-11-5	No	No	2.40E-02	U	-		3.00E-02	U	-		1	0.1
Strontium Chromate	7789-06-2	Yes	No	5.00E-01	U	1.50E-01	U	2.00E-02	U	2.00E-04	U	0.025	-
Strontium, Stable	7440-24-6	No	No	-		-		6.00E-01	U	-		1	-
Strychnine	57-24-9	No	No	-		-		3.00E-04	U	-		1	0.1
Styrene	100-42-5	No	Yes	-		-		2.00E-01	U	1.00E+00	U	1	-
Styrene-Acrylonitrile (SAN) Trimer	NA	No	No	-		-		3.00E-03	U	-		1	0.1
Sulfate	14808-79-8	No	No	-		-		-		-		1	-
Sulfide	18496-25-8	No	No	-		-		-		-		1	-
Sulfolane	126-33-0	No	No	-		-		1.00E-03	U	2.00E-03	U	1	0.1
Sulfonylbis(4-chlorobenzene), 1,1'-	80-07-9	No	No	-		-		8.00E-04	U	-		1	0.1
Sulfur	7704-34-9	No	No	-		-		-		-		1	-
Sulfur Dioxide	7446-09-5	No	Yes	-		-		-		-		1	-
Sulfur Mustard	505-60-2	No	Yes	-		-		-		-		1	-
Sulfur Trioxide	7446-11-9	No	Yes	-		-		-		1.00E-03	U	1	-
Sulfuric Acid	7664-93-9	No	No	-		-		-		1.00E-03	U	1	-
Systhane	88671-89-0	No	No	-		-		2.50E-02	U	-		1	0.1
TCDD, 2,3,7,8-	1746-01-6	No	Yes	1.30E+05	U	3.80E+01	U	7.00E-10	U	4.00E-08	U	1	0.03
TCDF, 2,3,7,8-	51207-31-9	No	Yes	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1	0.03
TCMTB	21564-17-0	No	No	-		-		3.00E-02	U	-		1	0.1
Tebuthiuron	34014-18-1	No	No	-		-		7.00E-02	U	-		1	0.1
Technetium	7440-26-8	No	No	-		-		-		-		1	-
Tellurium	13494-80-9	No	No	-		-		-		-		1	-
Temephos	3383-96-8	No	No	-		-		2.00E-02	U	-		1	0.1
Terbacil	5902-51-2	No	No	-		-		1.30E-02	U	-		1	0.1

Site-specific

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Chemical	CAS Number	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Selenium Sulfide	7446-34-6	1	-	-	3.23E+09	-	-	-	-	1.47E+04	-	2.36E+09	1.47E+04	1.47E+04 nc
Selenourea	630-10-4	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Sethoxydim	74051-80-2	1	-	-	3.23E+09	-	-	-	-	2.65E+05	2.10E+06	-	2.36E+05	2.36E+05 max
Silica (crystalline, respirable)	7631-86-9	1	-	-	3.23E+09	-	-	-	-	-	-	3.54E+08	3.54E+08	3.54E+08 max
Silicon	7440-21-3	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Silver	7440-22-4	1	-	-	3.23E+09	-	-	-	-	1.47E+04	-	-	1.47E+04	1.47E+04 nc
Silver Cyanide	506-64-9	1	-	-	3.23E+09	-	-	-	-	2.95E+05	-	-	2.95E+05	2.95E+05 max
Simazine	122-34-9	1	-	-	3.23E+09	1.72E+03	1.36E+04	-	1.53E+03	1.47E+04	1.17E+05	-	1.31E+04	1.53E+03 ca**
Sodium	7440-23-5	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Sodium Acifluorfen	62476-59-9	1	-	-	3.23E+09	-	-	-	-	3.83E+04	3.04E+05	-	3.40E+04	3.40E+04 nc
Sodium Azide	26628-22-8	1	-	-	3.23E+09	-	-	-	-	1.18E+04	-	-	1.18E+04	1.18E+04 nc
Sodium Chlorate	7775-09-9	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Sodium Cyanide	143-33-9	1	-	-	3.23E+09	-	-	-	-	2.95E+03	-	-	2.95E+03	2.95E+03 nc
Sodium Dichromate	10588-01-9	1	-	-	3.23E+09	4.13E+02	-	5.51E+04	4.10E+02	5.90E+04	-	2.36E+07	5.88E+04	4.10E+02 ca
Sodium Diethyldithiocarbamate	148-18-5	1	-	-	3.23E+09	7.65E+02	6.06E+03	-	6.79E+02	8.85E+04	7.01E+05	-	7.86E+04	6.79E+02 ca
Sodium Fluoride	7681-49-4	1	-	-	3.23E+09	-	-	-	-	1.47E+05	-	1.53E+09	1.47E+05	1.47E+05 max
Sodium Fluoroacetate	62-74-8	1	-	-	3.23E+09	-	-	-	-	5.90E+01	4.67E+02	-	5.24E+01	5.24E+01 nc
Sodium Hydroxide	1310-73-2	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Sodium Metavanadate	13718-26-8	1	-	-	3.23E+09	-	-	-	-	2.95E+03	-	-	2.95E+03	2.95E+03 nc
Sodium Perchlorate	7601-89-0	1	-	-	3.23E+09	-	-	-	-	2.06E+03	-	-	2.06E+03	2.06E+03 nc
Sodium acid pyrophosphate	7758-16-9	1	-	-	3.23E+09	-	-	-	-	1.43E+08	-	-	1.43E+08	1.43E+08 max
Sodium aluminum phosphate (acidic)	7785-88-8	1	-	-	3.23E+09	-	-	-	-	1.43E+08	-	-	1.43E+08	1.43E+08 max
Sodium aluminum phosphate (anhydrous)	10279-59-1	1	-	-	3.23E+09	-	-	-	-	1.43E+08	-	-	1.43E+08	1.43E+08 max
Sodium aluminum phosphate (tetrahydrate)	10305-76-7	1	-	-	3.23E+09	-	-	-	-	1.43E+08	-	-	1.43E+08	1.43E+08 max
Sodium hexametaphosphate	10124-56-8	1	-	-	3.23E+09	-	-	-	-	1.43E+08	-	-	1.43E+08	1.43E+08 max
Sodium polyphosphate	68915-31-1	1	-	-	3.23E+09	-	-	-	-	1.43E+08	-	-	1.43E+08	1.43E+08 max
Sodium trimetaphosphate	7785-84-4	1	-	-	3.23E+09	-	-	-	-	1.43E+08	-	-	1.43E+08	1.43E+08 max
Sodium tripolyphosphate	7758-29-4	1	-	-	3.23E+09	-	-	-	-	1.43E+08	-	-	1.43E+08	1.43E+08 max
Stearyl Acetate	822-23-1	1	8.92E+04	-	3.23E+09	-	-	-	-	-	-	-	-	
Stirofos (Tetrachlorovinphos)	961-11-5	1	-	-	3.23E+09	8.60E+03	6.82E+04	-	7.64E+03	8.85E+04	7.01E+05	-	7.86E+04	7.64E+03 ca*
Strontium Chromate	7789-06-2	1	-	-	3.23E+09	4.13E+02	-	5.51E+04	4.10E+02	5.90E+04	-	2.36E+07	5.88E+04	4.10E+02 ca
Strontium, Stable	7440-24-6	1	-	-	3.23E+09	-	-	-	-	1.77E+06	-	-	1.77E+06	1.77E+06 max
Strychnine	57-24-9	1	-	-	3.23E+09	-	-	-	-	8.85E+02	7.01E+03	-	7.86E+02	7.86E+02 nc
Styrene	100-42-5	1	1.29E+04	8.67E+02	3.23E+09	-	-	-	-	5.90E+05	-	4.71E+05	2.62E+05	2.62E+05 sat
Styrene-Acrylonitrile (SAN) Trimer	NA	1	-	-	3.23E+09	-	-	-	-	8.85E+03	7.01E+04	-	7.86E+03	7.86E+03 nc
Sulfate	14808-79-8	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Sulfide	18496-25-8	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Sulfolane	126-33-0	1	-	-	3.23E+09	-	-	-	-	2.95E+03	2.34E+04	2.36E+08	2.62E+03	2.62E+03 nc
Sulfonylbis(4-chlorobenzene), 1,1'-	80-07-9	1	-	-	3.23E+09	-	-	-	-	2.36E+03	1.87E+04	-	2.10E+03	2.10E+03 nc
Sulfur	7704-34-9	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Sulfur Dioxide	7446-09-5	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Sulfur Mustard	505-60-2	1	1.21E+05	1.08E+03	3.23E+09	-	-	-	-	-	-	-	-	
Sulfur Trioxide	7446-11-9	1	-	-	3.23E+09	-	-	-	-	-	-	1.18E+08	1.18E+08	1.18E+08 max
Sulfuric Acid	7664-93-9	1	-	-	3.23E+09	-	-	-	-	-	-	1.18E+08	1.18E+08	1.18E+08 max
Systhane	88671-89-0	1	-	-	3.23E+09	-	-	-	-	7.37E+04	5.84E+05	-	6.55E+04	6.55E+04 nc
TCDD, 2,3,7,8-	1746-01-6	1	2.71E+06	-	3.23E+09	1.59E-03	4.20E-02	1.82E-01	1.52E-03	2.06E-03	5.45E-02	3.95E+00	1.99E-03	1.52E-03 ca**
TCDF, 2,3,7,8-	51207-31-9	1	4.72E+06	-	3.23E+09	1.59E-02	4.20E-01	3.17E+00	1.52E-02	2.06E-02	5.45E-01	6.88E+01	1.99E-02	1.52E-02 ca**
TCMTB	21564-17-0	1	-	-	3.23E+09	-	-	-	-	8.85E+04	7.01E+05	-	7.86E+04	7.86E+04 nc
Tebuthiuron	34014-18-1	1	-	-	3.23E+09	-	-	-	-	2.06E+05	1.64E+06	-	1.83E+05	1.83E+05 max
Technetium	7440-26-8	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Tellurium	13494-80-9	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Temephos	3383-96-8	1	-	-	3.23E+09	-	-	-	-	5.90E+04	4.67E+05	-	5.24E+04	5.24E+04 nc
Terbacil	5902-51-2	1	-	-	3.23E+09	-	-	-	-	3.83E+04	3.04E+05	-	3.40E+04	3.40E+04 nc

Site-specific

Outdoor Worker Screening Levels (RSL) for Soil - Modified for Utility Worker Exposure to Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS
Terbufos	13071-79-9	No	Yes	-		-		2.50E-05	U	-		1	-
Terbutryn	886-50-0	No	No	-		-		1.00E-03	U	-		1	0.1
Tetrabutyl Lead	1920-90-7	No	Yes	-		-		-		-		1	-
Tetrachloroaniline, 2,3,5,6-	3481-20-7	No	No	-		-		-		-		1	0.1
Tetrachlorobenzene, 1,2,3,4-	634-66-2	No	Yes	-		-		-		-		1	-
Tetrachlorobenzene, 1,2,4,5-	95-94-3	No	Yes	-		-		3.00E-04	U	-		1	-
Tetrachlorobiphenyl, 3,3',4,4'- (PCB 77)	32598-13-3	No	No	1.30E+01	U	3.80E-03	U	7.00E-06	U	4.00E-04	U	1	0.14
Tetrachlorobiphenyl, 3,4,4',5- (PCB 81)	70362-50-4	No	Yes	3.90E+01	U	1.14E-02	U	2.33E-06	U	1.33E-04	U	1	0.14
Tetrachloroethane, 1,1,1,2-	630-20-6	No	Yes	2.60E-02	U	7.40E-06	U	3.00E-02	U	-		1	-
Tetrachloroethane, 1,1,2,2-	79-34-5	No	Yes	2.00E-01	U	5.80E-05	U	2.00E-02	U	-		1	-
Tetrachloroethylene	127-18-4	No	Yes	2.10E-03	U	2.60E-07	U	6.00E-03	U	4.00E-02	U	1	-
Tetrachlorophenol, 2,3,4,5-	4901-51-3	No	No	-		-		-		-		1	0.1
Tetrachlorophenol, 2,3,4,6-	58-90-2	No	No	-		-		3.00E-02	U	-		1	0.1
Tetrachlorophenols (total)	25167-83-3	No	No	-		-		-		-		1	0.1
Tetrachloroterephthalate, 2,3,5,6-	2136-79-0	No	No	-		-		-		-		1	0.1
Tetrachlorotoluene, p- alpha, alpha, alpha-	5216-25-1	No	Yes	2.00E+01	U	-		-		-		1	-
Tetraethyl Dithiopyrophosphate	3689-24-5	No	No	-		-		5.00E-04	U	-		1	0.1
Tetraethyl Lead	78-00-2	No	Yes	-		-		1.00E-07	U	-		1	-
Tetrafluoroethane, 1,1,1,2-	811-97-2	No	Yes	-		-		-		8.00E+01	U	1	-
Tetrahydrofuran	109-99-9	No	Yes	-		-		9.00E-01	U	2.00E+00	U	1	0.03
Tetrahydrothiophene	110-01-0	No	Yes	-		-		-		-		1	-
Tetramethyl Lead	75-74-1	No	Yes	-		-		-		-		1	-
Tetramethylcyclohexane	30501-43-0	No	Yes	-		-		-		-		1	-
Tetrapotassium phosphate	7320-34-5	No	No	-		-		4.86E+01	U	-		1	-
Tetrapropyl Lead	3440-75-3	No	Yes	-		-		-		-		1	-
Tetrasodium pyrophosphate	7722-88-5	No	No	-		-		4.86E+01	U	-		1	-
Tetryl (Trinitrophenylmethylnitramine)	479-45-8	No	No	-		-		2.00E-03	U	-		1	0.00065
Thallic Oxide	1314-32-5	No	No	-		-		-		-		1	-
Thallium (I) Nitrate	10102-45-1	No	No	-		-		7.00E-06	U	-		1	-
Thallium (Soluble Salts)	7440-28-0	No	No	-		-		1.00E-05	U	-		1	-
Thallium Acetate	563-68-8	No	No	-		-		6.00E-06	U	-		1	0.1
Thallium Carbonate	6533-73-9	No	No	-		-		2.00E-05	U	-		1	0.1
Thallium Chloride	7791-12-0	No	No	-		-		6.00E-06	U	-		1	-
Thallium Selenite	12039-52-0	No	No	-		-		-		-		1	-
Thallium Sulfate	7446-18-6	No	No	-		-		2.00E-05	U	-		1	-
Thiobencarb	28249-77-6	No	No	-		-		1.00E-02	U	-		1	0.1
Thiocyanates	NA	No	No	-		-		2.00E-04	U	-		1	-
Thiocyanic Acid	463-56-9	No	Yes	-		-		2.00E-04	U	-		1	-
Thiodiglycol	111-48-8	No	No	-		-		7.00E-02	U	-		1	0.0075
Thiofanox	39196-18-4	No	No	-		-		3.00E-04	U	-		1	0.1
Thiophanate, Methyl	23564-05-8	No	No	-		-		8.00E-02	U	-		1	0.1
Thiophene	110-02-1	No	Yes	-		-		-		-		1	-
Thiram	137-26-8	No	No	-		-		5.00E-03	U	-		1	0.1
Thorium	NA	No	No	-		-		-		-		1	-
Thymol	89-83-8	No	No	-		-		-		-		1	0.1
Tin	7440-31-5	No	No	-		-		6.00E-01	U	-		1	-
Titanium	7440-32-6	No	No	-		-		-		-		1	-
Titanium Tetrachloride	7550-45-0	No	Yes	-		-		-		1.00E-04	U	1	-
Toluene	108-88-3	No	Yes	-		-		8.00E-02	U	5.00E+00	U	1	-
Toluene-2,5-diamine	95-70-5	No	No	1.80E-01	U	-		2.00E-04	U	-		1	0.1
Toluenediamine, 2,3-	2687-25-4	No	No	-		-		-		-		1	0.1
Toluenediamine, 3,4-	496-72-0	No	No	-		-		-		-		1	0.1
Toluidine, p-	106-49-0	No	No	3.00E-02	U	-		4.00E-03	U	-		1	0.1

Site-specific

Outdoor Worker Screening Levels (RSL) for Soil - Modified for Utility Worker Exposure to Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gui
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Terbufos	13071-79-9	1	3.64E+05	3.09E+01	3.23E+09	-	-	-	-	7.37E+01	-	-	7.37E+01	7.37E+01 sat
Terbutryn	886-50-0	1	-	-	3.23E+09	-	-	-	-	2.95E+03	2.34E+04	-	2.62E+03	2.62E+03 nc
Tetrabutyl Lead	1920-90-7	1	6.41E+03	-	3.23E+09	-	-	-	-	-	-	-	-	-
Tetrachloroaniline, 2,3,5,6-	3481-20-7	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	-
Tetrachlorobenzene, 1,2,3,4-	634-66-2	1	8.26E+04	-	3.23E+09	-	-	-	-	-	-	-	-	-
Tetrachlorobenzene, 1,2,4,5-	95-94-3	1	6.99E+04	-	3.23E+09	-	-	-	-	8.85E+02	-	-	8.85E+02	8.85E+02 nc
Tetrachlorobiphenyl, 3,3',4,4'- (PCB 77)	32598-13-3	1	-	-	3.23E+09	1.59E+01	8.99E+01	2.17E+06	1.35E+01	2.06E+01	1.17E+02	4.72E+07	1.75E+01	1.35E+01 ca**
Tetrachlorobiphenyl, 3,4,4',5- (PCB 81)	70362-50-4	1	1.00E+06	-	3.23E+09	5.29E+00	3.00E+01	2.24E+02	4.41E+00	6.87E+00	3.89E+01	4.86E+03	5.83E+00	4.41E+00 ca**
Tetrachloroethane, 1,1,1,2-	630-20-6	1	7.83E+03	6.80E+02	3.23E+09	7.94E+03	-	2.70E+03	2.02E+03	8.85E+04	-	-	8.85E+04	2.02E+03 sat
Tetrachloroethane, 1,1,2,2-	79-34-5	1	2.08E+04	1.90E+03	3.23E+09	1.03E+03	-	9.18E+02	4.86E+02	5.90E+04	-	-	5.90E+04	4.86E+02 ca
Tetrachloroethylene	127-18-4	1	3.24E+03	1.66E+02	3.23E+09	9.83E+04	-	3.18E+04	2.40E+04	1.77E+04	-	4.73E+03	3.73E+03	3.73E+03 sat
Tetrachlorophenol, 2,3,4,5-	4901-51-3	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	-
Tetrachlorophenol, 2,3,4,6-	58-90-2	1	-	-	3.23E+09	-	-	-	-	8.85E+04	7.01E+05	-	7.86E+04	7.86E+04 nc
Tetrachlorophenols (total)	25167-83-3	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	-
Tetrachloroterephthalate, 2,3,5,6-	2136-79-0	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	-
Tetrachlorotoluene, p- alpha, alpha, alpha-	5216-25-1	1	1.46E+05	-	3.23E+09	1.03E+01	-	-	1.03E+01	-	-	-	-	1.03E+01 ca
Tetraethyl Dithiopyrophosphate	3689-24-5	1	-	-	3.23E+09	-	-	-	-	1.47E+03	1.17E+04	-	1.31E+03	1.31E+03 nc
Tetraethyl Lead	78-00-2	1	2.64E+03	2.43E+00	3.23E+09	-	-	-	-	2.95E-01	-	-	2.95E-01	2.95E-01 nc
Tetrafluoroethane, 1,1,1,2-	811-97-2	1	1.68E+03	1.09E+03	3.23E+09	-	-	-	-	-	-	4.92E+06	4.92E+06	4.92E+06 sat
Tetrahydrofuran	109-99-9	1	1.69E+04	1.65E+05	3.23E+09	-	-	-	-	2.65E+06	7.01E+07	1.23E+06	8.31E+05	8.31E+05 sat
Tetrahydrothiophene	110-01-0	1	1.81E+04	3.44E+03	3.23E+09	-	-	-	-	-	-	-	-	-
Tetramethyl Lead	75-74-1	1	1.89E+03	3.64E+01	3.23E+09	-	-	-	-	-	-	-	-	-
Tetramethylcyclohexane	30501-43-0	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	-
Tetrapotassium phosphate	7320-34-5	1	-	-	3.23E+09	-	-	-	-	1.43E+08	-	-	1.43E+08	1.43E+08 max
Tetrapropyl Lead	3440-75-3	1	3.65E+03	-	3.23E+09	-	-	-	-	-	-	-	-	-
Tetrasodium pyrophosphate	7722-88-5	1	-	-	3.23E+09	-	-	-	-	1.43E+08	-	-	1.43E+08	1.43E+08 max
Tetryl (Trinitrophenylmethylnitramine)	479-45-8	1	-	-	3.23E+09	-	-	-	-	5.90E+03	7.19E+06	-	5.89E+03	5.89E+03 nc
Thallic Oxide	1314-32-5	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	-
Thallium (I) Nitrate	10102-45-1	1	-	-	3.23E+09	-	-	-	-	2.06E+01	-	-	2.06E+01	2.06E+01 nc
Thallium (Soluble Salts)	7440-28-0	1	-	-	3.23E+09	-	-	-	-	2.95E+01	-	-	2.95E+01	2.95E+01 nc
Thallium Acetate	563-68-8	1	-	-	3.23E+09	-	-	-	-	1.77E+01	1.40E+02	-	1.57E+01	1.57E+01 nc
Thallium Carbonate	6533-73-9	1	-	-	3.23E+09	-	-	-	-	5.90E+01	4.67E+02	-	5.24E+01	5.24E+01 nc
Thallium Chloride	7791-12-0	1	-	-	3.23E+09	-	-	-	-	1.77E+01	-	-	1.77E+01	1.77E+01 nc
Thallium Selenite	12039-52-0	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	-
Thallium Sulfate	7446-18-6	1	-	-	3.23E+09	-	-	-	-	5.90E+01	-	-	5.90E+01	5.90E+01 nc
Thiobencarb	28249-77-6	1	-	-	3.23E+09	-	-	-	-	2.95E+04	2.34E+05	-	2.62E+04	2.62E+04 nc
Thiocyanates	NA	1	-	-	3.23E+09	-	-	-	-	5.90E+02	-	-	5.90E+02	5.90E+02 nc
Thiocyanic Acid	463-56-9	1	-	-	3.23E+09	-	-	-	-	5.90E+02	-	-	5.90E+02	5.90E+02 nc
Thiodiglycol	111-48-8	1	-	-	3.23E+09	-	-	-	-	2.06E+05	2.18E+07	-	2.05E+05	2.05E+05 max
Thiofanox	39196-18-4	1	-	-	3.23E+09	-	-	-	-	8.85E+02	7.01E+03	-	7.86E+02	7.86E+02 nc
Thiophanate, Methyl	23564-05-8	1	-	-	3.23E+09	-	-	-	-	2.36E+05	1.87E+06	-	2.10E+05	2.10E+05 max
Thiophene	110-02-1	1	5.77E+03	1.80E+03	3.23E+09	-	-	-	-	-	-	-	-	-
Thiram	137-26-8	1	-	-	3.23E+09	-	-	-	-	1.47E+04	1.17E+05	-	1.31E+04	1.31E+04 nc
Thorium	NA	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	-
Thymol	89-83-8	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	-
Tin	7440-31-5	1	-	-	3.23E+09	-	-	-	-	1.77E+06	-	-	1.77E+06	1.77E+06 max
Titanium	7440-32-6	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	-
Titanium Tetrachloride	7550-45-0	1	-	-	3.23E+09	-	-	-	-	-	-	1.18E+07	1.18E+07	1.18E+07 max
Toluene	108-88-3	1	5.92E+03	8.18E+02	3.23E+09	-	-	-	-	2.36E+05	-	1.08E+06	1.94E+05	1.94E+05 sat
Toluene-2,5-diamine	95-70-5	1	-	-	3.23E+09	1.15E+03	9.09E+03	-	1.02E+03	5.90E+02	4.67E+03	-	5.24E+02	5.24E+02 nc
Toluenediamine, 2,3-	2687-25-4	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	-
Toluenediamine, 3,4-	496-72-0	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	-
Toluidine, p-	106-49-0	1	-	-	3.23E+09	6.88E+03	5.45E+04	-	6.11E+03	1.18E+04	9.35E+04	-	1.05E+04	6.11E+03 ca**

Site-specific

Outdoor Worker Screening Levels (RSL) for Soil - Modified for Utility Worker Exposure to Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS
Total Petroleum Hydrocarbons (Aliphatic High)	NA	No	Yes	-		-		3.00E+00	U	-		1	-
Total Petroleum Hydrocarbons (Aliphatic Low)	NA	No	Yes	-		-		-		6.00E-01	U	1	-
Total Petroleum Hydrocarbons (Aliphatic Medium)	NA	No	Yes	-		-		1.00E-02	U	1.00E-01	U	1	-
Total Petroleum Hydrocarbons (Aromatic High)	NA	No	No	-		-		4.00E-02	U	-		1	0.1
Total Petroleum Hydrocarbons (Aromatic Low)	NA	No	Yes	-		-		4.00E-03	U	3.00E-02	U	1	-
Total Petroleum Hydrocarbons (Aromatic Medium)	NA	No	Yes	-		-		4.00E-03	U	3.00E-03	U	1	-
Toxaphene	8001-35-2	No	No	1.10E+00	U	3.20E-04	U	-		-		1	0.1
Tralomethrin	66841-25-6	No	No	-		-		7.50E-03	U	-		1	0.1
Tri-n-butyltin	688-73-3	No	Yes	-		-		3.00E-04	U	-		1	-
Triacetin	102-76-1	No	No	-		-		8.00E+01	U	-		1	0.1
Triallate	2303-17-5	No	Yes	-		-		1.30E-02	U	-		1	-
Trialuminum sodium tetra decahydrogenoctaorthophosphate (dihydrate)	15136-87-5	No	No	-		-		4.86E+01	U	-		1	-
Triasulfuron	82097-50-5	No	No	-		-		1.00E-02	U	-		1	0.1
Triaziquone	68-76-8	No	No	-		-		-		-		1	0.1
Tribromobenzene, 1,2,4-	615-54-3	No	Yes	-		-		5.00E-03	U	-		1	-
Tribromochloromethane	594-15-0	No	Yes	-		-		-		-		1	-
Tribromodiphenyl Ether	49690-94-0	No	Yes	-		-		-		-		1	-
Tribromophenol, 2,4,6-	118-79-6	No	No	-		-		-		-		1	0.1
Tributyl Phosphate	126-73-8	No	No	9.00E-03	U	-		1.00E-02	U	-		1	0.1
Tributyltin	56573-85-4	No	Yes	-		-		-		-		1	-
Tributyltin Compounds	NA	No	No	-		-		3.00E-04	U	-		1	0.1
Tributyltin Oxide	56-35-9	No	No	-		-		3.00E-04	U	-		1	0.1
Tributyltin chloride	1461-22-9	No	Yes	-		-		-		-		1	-
Tributyltin fluoride	1983-10-4	No	Yes	-		-		-		-		1	-
Tributyltin linoleate	24124-25-2	No	Yes	-		-		-		-		1	-
Tributyltin methacrylate	2155-70-6	No	Yes	-		-		-		-		1	-
Tributyltin naphthenate	85409-17-2	No	No	-		-		-		-		1	0.1
Tricaine Methanesulfonate	886-86-2	No	No	-		-		-		-		1	0.1
Tricalcium phosphate	7758-87-4	No	No	-		-		4.86E+01	U	-		1	-
Trichloro-1,2,2-trifluoroethane, 1,1,2-	76-13-1	No	Yes	-		-		3.00E+01	U	3.00E+01	U	1	-
Trichloro-2'-hydroxydiphenylether	3380-34-5	No	No	-		-		-		-		1	0.1
Trichloroacetic Acid	76-03-9	No	No	7.00E-02	U	-		2.00E-02	U	-		1	0.1
Trichloroaniline HCl, 2,4,6-	33663-50-2	No	No	2.90E-02	U	-		-		-		1	0.1
Trichloroaniline, 2,4,5-	636-30-6	No	No	-		-		-		-		1	0.1
Trichloroaniline, 2,4,6-	634-93-5	No	No	7.00E-03	U	-		3.00E-05	U	-		1	0.1
Trichlorobenzene	12002-48-1	No	Yes	-		-		-		-		1	-
Trichlorobenzene, 1,2,3-	87-61-6	No	Yes	-		-		8.00E-04	U	-		1	-
Trichlorobenzene, 1,2,4-	120-82-1	No	Yes	2.90E-02	U	-		1.00E-02	U	2.00E-03	U	1	-
Trichloroethane, 1,1,1-	71-55-6	No	Yes	-		-		2.00E+00	U	5.00E+00	U	1	-
Trichloroethane, 1,1,2-	79-00-5	No	Yes	5.70E-02	U	1.60E-05	U	4.00E-03	U	2.00E-04	U	1	-
Trichloroethylene	79-01-6	Yes	Yes	4.60E-02	U	4.10E-06	U	5.00E-04	U	2.00E-03	U	1	-
Trichlorofluoromethane	75-69-4	No	Yes	-		-		3.00E-01	U	7.00E-01	U	1	-
Trichlorophenol, 2,4,5-	95-95-4	No	No	-		-		1.00E-01	U	-		1	0.1
Trichlorophenol, 2,4,6-	88-06-2	No	No	1.10E-02	U	3.10E-06	U	1.00E-03	U	-		1	0.1
Trichlorophenoxyacetic Acid, 2,4,5-	93-76-5	No	No	-		-		1.00E-02	U	-		1	0.1
Trichlorophenoxyacetic acid, 2,4,5- Amine Salts, PARENT (2,4,5-T)	NA	Yes	No	-		-		-		-		1	-
Trichlorophenoxypropionic acid, -2,4,5	93-72-1	No	No	-		-		8.00E-03	U	-		1	0.1
Trichloropropane, 1,1,2-	598-77-6	No	Yes	-		-		5.00E-03	U	-		1	-

Site-specific

Outdoor Worker Screening Levels (RSL) for Soil - Modified for Utility Worker Exposure to Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gui
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Total Petroleum Hydrocarbons (Aliphatic High)	NA	1	1.46E+03	3.41E-01	3.23E+09	-	-	-	-	8.85E+06	-	-	8.85E+06	8.85E+06 sat
Total Petroleum Hydrocarbons (Aliphatic Low)	NA	1	1.14E+03	1.41E+02	3.23E+09	-	-	-	-	-	-	2.51E+04	2.51E+04	2.51E+04 sat
Total Petroleum Hydrocarbons (Aliphatic Medium)	NA	1	1.44E+03	6.86E+00	3.23E+09	-	-	-	-	2.95E+04	-	5.26E+03	4.46E+03	4.46E+03 sat
Total Petroleum Hydrocarbons (Aromatic High)	NA	1	-	-	3.23E+09	-	-	-	-	1.18E+05	9.35E+05	-	1.05E+05	1.05E+05 max
Total Petroleum Hydrocarbons (Aromatic Low)	NA	1	4.88E+03	1.82E+03	3.23E+09	-	-	-	-	1.18E+04	-	5.34E+03	3.68E+03	3.68E+03 sat
Total Petroleum Hydrocarbons (Aromatic Medium)	NA	1	7.23E+04	-	3.23E+09	-	-	-	-	1.18E+04	-	7.91E+03	4.74E+03	4.74E+03 nc
Toxaphene	8001-35-2	1	-	-	3.23E+09	1.88E+02	1.49E+03	2.58E+07	1.67E+02	-	-	-	-	1.67E+02 ca
Tralomethrin	66841-25-6	1	-	-	3.23E+09	-	-	-	-	2.21E+04	1.75E+05	-	1.96E+04	1.96E+04 nc
Tri-n-butyltin	688-73-3	1	4.63E+03	-	3.23E+09	-	-	-	-	8.85E+02	-	-	8.85E+02	8.85E+02 nc
Triacetin	102-76-1	1	-	-	3.23E+09	-	-	-	-	2.36E+08	1.87E+09	-	2.10E+08	2.10E+08 max
Triallate	2303-17-5	1	5.00E+05	-	3.23E+09	-	-	-	-	3.83E+04	-	-	3.83E+04	3.83E+04 nc
Trialuminum sodium tetra decahydrogenoctaorthophosphate (dihydrate)	15136-87-5	1	-	-	3.23E+09	-	-	-	-	1.43E+08	-	-	1.43E+08	1.43E+08 max
Triasulfuron	82097-50-5	1	-	-	3.23E+09	-	-	-	-	2.95E+04	2.34E+05	-	2.62E+04	2.62E+04 nc
Triaziquone	68-76-8	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Tribromobenzene, 1,2,4-	615-54-3	1	6.24E+04	-	3.23E+09	-	-	-	-	1.47E+04	-	-	1.47E+04	1.47E+04 nc
Tribromochloromethane	594-15-0	1	5.65E+04	-	3.23E+09	-	-	-	-	-	-	-	-	
Tribromodiphenyl Ether	49690-94-0	1	1.07E+06	-	3.23E+09	-	-	-	-	-	-	-	-	
Tribromophenol, 2,4,6-	118-79-6	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Tributyl Phosphate	126-73-8	1	-	-	3.23E+09	2.29E+04	1.82E+05	-	2.04E+04	2.95E+04	2.34E+05	-	2.62E+04	2.04E+04 ca**
Tributyltin	56573-85-4	1	4.95E+04	-	3.23E+09	-	-	-	-	-	-	-	-	
Tributyltin Compounds	NA	1	-	-	3.23E+09	-	-	-	-	8.85E+02	7.01E+03	-	7.86E+02	7.86E+02 nc
Tributyltin Oxide	56-35-9	1	-	-	3.23E+09	-	-	-	-	8.85E+02	7.01E+03	-	7.86E+02	7.86E+02 nc
Tributyltin chloride	1461-22-9	1	5.94E+03	-	3.23E+09	-	-	-	-	-	-	-	-	
Tributyltin fluoride	1983-10-4	1	8.59E+03	-	3.23E+09	-	-	-	-	-	-	-	-	
Tributyltin linoleate	24124-25-2	1	1.67E+05	-	3.23E+09	-	-	-	-	-	-	-	-	
Tributyltin methacrylate	2155-70-6	1	1.41E+04	-	3.23E+09	-	-	-	-	-	-	-	-	
Tributyltin naphthenate	85409-17-2	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Tricaine Methanesulfonate	886-86-2	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Tricalcium phosphate	7758-87-4	1	-	-	3.23E+09	-	-	-	-	1.43E+08	-	-	1.43E+08	1.43E+08 max
Trichloro-1,2,2-trifluoroethane, 1,1,2-	76-13-1	1	1.77E+03	9.10E+02	3.23E+09	-	-	-	-	8.85E+07	-	1.94E+06	1.90E+06	1.90E+06 sat
Trichloro-2'-hydroxydiphenylether	3380-34-5	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Trichloroacetic Acid	76-03-9	1	-	-	3.23E+09	2.95E+03	2.34E+04	-	2.62E+03	5.90E+04	4.67E+05	-	5.24E+04	2.62E+03 ca*
Trichloroaniline HCl, 2,4,6-	33663-50-2	1	-	-	3.23E+09	7.12E+03	5.64E+04	-	6.32E+03	-	-	-	-	6.32E+03 ca
Trichloroaniline, 2,4,5-	636-30-6	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Trichloroaniline, 2,4,6-	634-93-5	1	-	-	3.23E+09	2.95E+04	2.34E+05	-	2.62E+04	8.85E+01	7.01E+02	-	7.86E+01	7.86E+01 nc
Trichlorobenzene	12002-48-1	1	3.55E+04	-	3.23E+09	-	-	-	-	-	-	-	-	
Trichlorobenzene, 1,2,3-	87-61-6	1	4.44E+04	-	3.23E+09	-	-	-	-	2.36E+03	-	-	2.36E+03	2.36E+03 nc
Trichlorobenzene, 1,2,4-	120-82-1	1	4.13E+04	4.05E+02	3.23E+09	7.12E+03	-	-	7.12E+03	2.95E+04	-	3.02E+03	2.74E+03	2.74E+03 sat
Trichloroethane, 1,1,1-	71-55-6	1	2.27E+03	6.40E+02	3.23E+09	-	-	-	-	5.90E+06	-	4.15E+05	3.88E+05	3.88E+05 sat
Trichloroethane, 1,1,2-	79-00-5	1	9.95E+03	2.16E+03	3.23E+09	3.62E+03	-	1.59E+03	1.10E+03	1.18E+04	-	7.27E+01	7.22E+01	7.22E+01 nc
Trichloroethylene	79-01-6	1	3.04E+03	6.92E+02	3.23E+09	4.49E+03	-	1.90E+03	1.33E+03	1.47E+03	-	2.22E+02	1.93E+02	1.93E+02 nc
Trichlorofluoromethane	75-69-4	1	1.43E+03	1.23E+03	3.23E+09	-	-	-	-	8.85E+05	-	3.65E+04	3.50E+04	3.50E+04 sat
Trichlorophenol, 2,4,5-	95-95-4	1	-	-	3.23E+09	-	-	-	-	2.95E+05	2.34E+06	-	2.62E+05	2.62E+05 max
Trichlorophenol, 2,4,6-	88-06-2	1	-	-	3.23E+09	1.88E+04	1.49E+05	2.66E+09	1.67E+04	2.95E+03	2.34E+04	-	2.62E+03	2.62E+03 nc
Trichlorophenoxyacetic Acid, 2,4,5-	93-76-5	1	-	-	3.23E+09	-	-	-	-	2.95E+04	2.34E+05	-	2.62E+04	2.62E+04 nc
Trichlorophenoxyacetic acid, 2,4,5- Amine Salts, PARENT (2,4,5-T)	NA	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Trichlorophenoxypropionic acid, -2,4,5	93-72-1	1	-	-	3.23E+09	-	-	-	-	2.36E+04	1.87E+05	-	2.10E+04	2.10E+04 nc
Trichloropropane, 1,1,2-	598-77-6	1	2.07E+04	1.28E+03	3.23E+09	-	-	-	-	1.47E+04	-	-	1.47E+04	1.47E+04 sat

Site-specific

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ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
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Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS
Trichloropropane, 1,2,3-	96-18-4	Yes	Yes	3.00E+01	U	-		4.00E-03	U	3.00E-04	U	1	-
Trichloropropene, 1,2,3-	96-19-5	No	Yes	-		-		3.00E-03	U	3.00E-04	U	1	-
Trichlorotoluene, 2,3,6-	2077-46-5	No	Yes	-		-		-		-		1	-
Trichlorotoluene, alpha 2,6-	2014-83-7	No	Yes	-		-		-		-		1	-
Triclorophenols (total)	NA	No	No	-		-		-		-		1	0.1
Tricresyl Phosphate (TCP)	1330-78-5	No	No	-		-		2.00E-02	U	-		1	0.1
Tridiphane	58138-08-2	No	No	-		-		3.00E-03	U	-		1	0.1
Tridymite	15468-32-3	No	No	-		-		-		-		1	-
Triethyl Lead	5224-23-7	No	Yes	-		-		-		-		1	-
Triethyl phosphorothioate [O,O,O-]	126-68-1	No	Yes	-		-		-		-		1	-
Triethylamine	121-44-8	No	Yes	-		-		-		7.00E-03	U	1	-
Triethylene Glycol	112-27-6	No	No	-		-		2.00E+00	U	-		1	0.1
Trifluralin	1582-09-8	No	Yes	7.70E-03	U	-		7.50E-03	U	-		1	-
Trimagnesium phosphate	7757-87-1	No	No	-		-		4.86E+01	U	-		1	-
Trimethyl Lead	7442-13-9	No	Yes	-		-		-		-		1	-
Trimethyl Phosphate	512-56-1	No	No	2.00E-02	U	-		1.00E-02	U	-		1	0.1
Trimethyl-4-Propenylnaphthalene, 1,2,3-	26137-53-1	No	Yes	-		-		-		-		1	-
Trimethylbenzene, 1,2,3-	526-73-8	No	Yes	-		-		-		5.00E-03	U	1	-
Trimethylbenzene, 1,2,4-	95-63-6	No	Yes	-		-		-		7.00E-03	U	1	-
Trimethylbenzene, 1,3,5-	108-67-8	No	Yes	-		-		1.00E-02	U	-		1	-
Trimethylethyl Lead	1762-26-1	No	Yes	-		-		-		-		1	-
Trimethylpentane, 2,2,4-	540-84-1	No	Yes	-		-		-		-		1	-
Trinitrobenzene, 1,3,5-	99-35-4	No	No	-		-		3.00E-02	U	-		1	0.019
Trinitrotoluene, 2,4,6-	118-96-7	No	No	3.00E-02	U	-		5.00E-04	U	-		1	0.032
Triphenylphosphine Oxide	791-28-6	No	No	-		-		2.00E-02	U	-		1	0.1
Triphenyltin	668-34-8	No	Yes	-		-		-		-		1	-
Tripotassium phosphate	7778-53-2	No	No	-		-		4.86E+01	U	-		1	-
Tripropyl Lead	6618-03-7	No	Yes	-		-		-		-		1	-
Tris(1,3-Dichloro-2-propyl) Phosphate	13674-87-8	No	No	-		-		2.00E-02	U	-		1	0.1
Tris(1-chloro-2-propyl)phosphate	13674-84-5	No	No	-		-		1.00E-02	U	-		1	0.1
Tris(2,3-dibromopropyl)phosphate	126-72-7	No	Yes	2.30E+00	U	6.60E-04	U	-		-		1	-
Tris(2-chloroethyl)phosphate	115-96-8	No	No	2.00E-02	U	-		7.00E-03	U	-		1	0.1
Tris(2-ethylhexyl)phosphate	78-42-2	No	No	3.20E-03	U	-		1.00E-01	U	-		1	0.1
Trisbutoxyethyl Phosphate	78-51-3	No	No	-		-		-		-		1	0.1
Trisodium phosphate	7601-54-9	No	No	-		-		4.86E+01	U	-		1	-
Trithion	786-19-6	No	No	-		-		-		-		1	0.1
Tungsten	7440-33-7	No	No	-		-		-		-		1	-
Uranium (Soluble Salts)	NA	No	No	-		-		3.00E-03	U	4.00E-05	U	1	-
Urea	57-13-6	No	No	-		-		-		-		1	0.1
Urethane	51-79-6	Yes	No	1.00E+00	U	2.90E-04	U	-		-		1	0.1
Vanadium Pentoxide	1314-62-1	No	No	-		8.30E-03	U	9.00E-03	U	7.00E-06	U	0.026	-
Vanadium Sulfate	36907-42-3	No	No	-		-		-		-		0.026	-
Vanadium and Compounds	7440-62-2	No	No	-		-		5.04E-03	U	1.00E-04	U	0.026	-
Vanadyl Sulfate	27774-13-6	No	No	-		-		-		-		1	-
Vernolate	1929-77-7	No	Yes	-		-		1.00E-03	U	-		1	-
Vinclozolin	50471-44-8	No	No	-		-		2.50E-02	U	-		1	0.1
Vinyl Acetate	108-05-4	No	Yes	-		-		1.00E+00	U	2.00E-01	U	1	-
Vinyl Bromide	593-60-2	No	Yes	-		3.20E-05	U	-		3.00E-03	U	1	-
Vinyl Chloride	75-01-4	Yes	Yes	7.20E-01	U	4.40E-06	U	3.00E-03	U	1.00E-01	U	1	-
Warfarin	81-81-2	No	No	-		-		3.00E-04	U	-		1	0.1
Xylene, P-	106-42-3	No	Yes	-		-		2.00E-01	U	1.00E-01	U	1	-
Xylene, m-	108-38-3	No	Yes	-		-		2.00E-01	U	1.00E-01	U	1	-
Xylene, o-	95-47-6	No	Yes	-		-		2.00E-01	U	1.00E-01	U	1	-

Site-specific

Outdoor Worker Screening Levels (RSL) for Soil - Modified for Utility Worker Exposure to Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gui
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Trichloropropane, 1,2,3-	96-18-4	1	2.17E+04	1.40E+03	3.23E+09	6.88E+00	-	-	6.88E+00	1.18E+04	-	2.38E+02	2.33E+02	6.88E+00 ca*
Trichloropropene, 1,2,3-	96-19-5	1	3.23E+03	4.51E+02	3.23E+09	-	-	-	-	8.85E+03	-	3.53E+01	3.52E+01	3.52E+01 nc
Trichlorotoluene, 2,3,6-	2077-46-5	1	5.83E+04	-	3.23E+09	-	-	-	-	-	-	-	-	
Trichlorotoluene, alpha 2,6-	2014-83-7	1	9.70E+04	-	3.23E+09	-	-	-	-	-	-	-	-	
Triclorophenols (total)	NA	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Tricresyl Phosphate (TCP)	1330-78-5	1	-	-	3.23E+09	-	-	-	-	5.90E+04	4.67E+05	-	5.24E+04	5.24E+04 nc
Tridiphane	58138-08-2	1	-	-	3.23E+09	-	-	-	-	8.85E+03	7.01E+04	-	7.86E+03	7.86E+03 nc
Tridymite	15468-32-3	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Triethyl Lead	5224-23-7	1	1.80E+03	5.67E+03	3.23E+09	-	-	-	-	-	-	-	-	
Triethyl phosphorothioate [O,O,O-]	126-68-1	1	3.87E+04	4.67E+02	3.23E+09	-	-	-	-	-	-	-	-	
Triethylamine	121-44-8	1	2.18E+04	2.78E+04	3.23E+09	-	-	-	-	-	-	5.57E+03	5.57E+03	5.57E+03 nc
Triethylene Glycol	112-27-6	1	-	-	3.23E+09	-	-	-	-	5.90E+06	4.67E+07	-	5.24E+06	5.24E+06 max
Trifluralin	1582-09-8	1	7.07E+05	-	3.23E+09	2.68E+04	-	-	2.68E+04	2.21E+04	-	-	2.21E+04	2.21E+04 nc
Trimagnesium phosphate	7757-87-1	1	-	-	3.23E+09	-	-	-	-	1.43E+08	-	-	1.43E+08	1.43E+08 max
Trimethyl Lead	7442-13-9	1	1.54E+03	6.92E+04	3.23E+09	-	-	-	-	-	-	-	-	
Trimethyl Phosphate	512-56-1	1	-	-	3.23E+09	1.03E+04	8.18E+04	-	9.17E+03	2.95E+04	2.34E+05	-	2.62E+04	9.17E+03 ca**
Trimethyl-4-Propenylnaphthalene, 1,2,3-	26137-53-1	1	6.96E+05	-	3.23E+09	-	-	-	-	-	-	-	-	
Trimethylbenzene, 1,2,3-	526-73-8	1	1.30E+04	2.93E+02	3.23E+09	-	-	-	-	-	-	2.38E+03	2.38E+03	2.38E+03 sat
Trimethylbenzene, 1,2,4-	95-63-6	1	1.09E+04	2.18E+02	3.23E+09	-	-	-	-	-	-	2.79E+03	2.79E+03	2.79E+03 sat
Trimethylbenzene, 1,3,5-	108-67-8	1	9.11E+03	1.82E+02	3.23E+09	-	-	-	-	2.95E+04	-	-	2.95E+04	2.95E+04 sat
Trimethylethyl Lead	1762-26-1	1	1.98E+03	2.51E+04	3.23E+09	-	-	-	-	-	-	-	-	
Trimethylpentane, 2,2,4-	540-84-1	1	1.29E+03	6.10E+01	3.23E+09	-	-	-	-	-	-	-	-	
Trinitrobenzene, 1,3,5-	99-35-4	1	-	-	3.23E+09	-	-	-	-	8.85E+04	3.69E+06	-	8.64E+04	8.64E+04 nc
Trinitrotoluene, 2,4,6-	118-96-7	1	-	-	3.23E+09	6.88E+03	1.70E+05	-	6.62E+03	1.47E+03	3.65E+04	-	1.42E+03	1.42E+03 nc
Triphenylphosphine Oxide	791-28-6	1	-	-	3.23E+09	-	-	-	-	5.90E+04	4.67E+05	-	5.24E+04	5.24E+04 nc
Triphenyltin	668-34-8	1	2.79E+06	-	3.23E+09	-	-	-	-	-	-	-	-	
Tripotassium phosphate	7778-53-2	1	-	-	3.23E+09	-	-	-	-	1.43E+08	-	-	1.43E+08	1.43E+08 max
Tripropyl Lead	6618-03-7	1	2.30E+03	5.57E+02	3.23E+09	-	-	-	-	-	-	-	-	
Tris(1,3-Dichloro-2-propyl) Phosphate	13674-87-8	1	-	-	3.23E+09	-	-	-	-	5.90E+04	4.67E+05	-	5.24E+04	5.24E+04 nc
Tris(1-chloro-2-propyl)phosphate	13674-84-5	1	-	-	3.23E+09	-	-	-	-	2.95E+04	2.34E+05	-	2.62E+04	2.62E+04 nc
Tris(2,3-dibromopropyl)phosphate	126-72-7	1	1.25E+06	4.67E+02	3.23E+09	8.98E+01	-	4.82E+03	8.81E+01	-	-	-	-	8.81E+01 ca
Tris(2-chloroethyl)phosphate	115-96-8	1	-	-	3.23E+09	1.03E+04	8.18E+04	-	9.17E+03	2.06E+04	1.64E+05	-	1.83E+04	9.17E+03 ca**
Tris(2-ethylhexyl)phosphate	78-42-2	1	-	-	3.23E+09	6.45E+04	5.11E+05	-	5.73E+04	2.95E+05	2.34E+06	-	2.62E+05	5.73E+04 ca**
Trisbutoxyethyl Phosphate	78-51-3	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Trisodium phosphate	7601-54-9	1	-	-	3.23E+09	-	-	-	-	1.43E+08	-	-	1.43E+08	1.43E+08 max
Trithion	786-19-6	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Tungsten	7440-33-7	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Uranium (Soluble Salts)	NA	1	-	-	3.23E+09	-	-	-	-	8.85E+03	-	4.72E+06	8.83E+03	8.83E+03 nc
Urea	57-13-6	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Urethane	51-79-6	1	-	-	3.23E+09	2.06E+02	1.64E+03	2.85E+07	1.83E+02	-	-	-	-	1.83E+02 ca
Vanadium Pentoxide	1314-62-1	1	-	-	3.23E+09	-	-	9.95E+05	9.95E+05	2.65E+04	-	8.26E+05	2.57E+04	2.57E+04 nc
Vanadium Sulfate	36907-42-3	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Vanadium and Compounds	7440-62-2	1	-	-	3.23E+09	-	-	-	-	1.49E+04	-	1.18E+07	1.48E+04	1.48E+04 nc
Vanadyl Sulfate	27774-13-6	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Vernolate	1929-77-7	1	1.70E+05	-	3.23E+09	-	-	-	-	2.95E+03	-	-	2.95E+03	2.95E+03 nc
Vinclozolin	50471-44-8	1	-	-	3.23E+09	-	-	-	-	7.37E+04	5.84E+05	-	6.55E+04	6.55E+04 nc
Vinyl Acetate	108-05-4	1	6.06E+03	2.75E+03	3.23E+09	-	-	-	-	2.95E+06	-	4.43E+04	4.36E+04	4.36E+04 sat
Vinyl Bromide	593-60-2	1	1.89E+03	3.38E+03	3.23E+09	-	-	1.51E+02	1.51E+02	-	-	2.07E+02	2.07E+02	1.51E+02 ca**
Vinyl Chloride	75-01-4	1	1.32E+03	3.92E+03	3.23E+09	2.87E+02	-	7.65E+02	2.09E+02	8.85E+03	-	4.81E+03	3.12E+03	2.09E+02 ca*
Warfarin	81-81-2	1	-	-	3.23E+09	-	-	-	-	8.85E+02	7.01E+03	-	7.86E+02	7.86E+02 nc
Xylene, P-	106-42-3	1	7.70E+03	3.89E+02	3.23E+09	-	-	-	-	5.90E+05	-	2.81E+04	2.68E+04	2.68E+04 sat
Xylene, m-	108-38-3	1	7.54E+03	3.87E+02	3.23E+09	-	-	-	-	5.90E+05	-	2.75E+04	2.63E+04	2.63E+04 sat
Xylene, o-	95-47-6	1	8.90E+03	4.34E+02	3.23E+09	-	-	-	-	5.90E+05	-	3.25E+04	3.08E+04	3.08E+04 sat

Site-specific

Outdoor Worker Screening Levels (RSL) for Soil - Modified for Utility Worker Exposure to Soil

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS
Xylenes	1330-20-7	No	Yes	-		-		2.00E-01	U	1.00E-01	U	1	-
Ytterbium	7440-64-4	No	No	-		-		-		-		1	-
Yttrium	7440-65-5	No	No	-		-		-		-		1	-
Zinc Cyanide	557-21-1	No	No	-		-		5.00E-02	U	-		1	-
Zinc Phosphide	1314-84-7	No	No	-		-		3.00E-04	U	-		1	-
Zinc and Compounds	7440-66-6	No	No	-		-		3.00E-01	U	-		1	-
Zineb	12122-67-7	No	No	-		-		5.00E-02	U	-		1	0.1
Zirconium	7440-67-7	No	No	-		-		8.00E-05	U	-		1	-

Site-specific

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Smax=Soil SL exceeds ceiling limit and has been substituted with the max value
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Chemical	CAS Number	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL HQ=1 (mg/kg)	Dermal SL HQ=1 (mg/kg)	Inhalation SL HQ=1 (mg/kg)	Noncarcinogenic SL HI=1 (mg/kg)	Screening Level (mg/kg)
Xylenes	1330-20-7	1	8.93E+03	2.58E+02	3.23E+09	-	-	-	-	5.90E+05	-	3.26E+04	3.09E+04	3.09E+04 sat
Ytterbium	7440-64-4	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Yttrium	7440-65-5	1	-	-	3.23E+09	-	-	-	-	-	-	-	-	
Zinc Cyanide	557-21-1	1	-	-	3.23E+09	-	-	-	-	1.47E+05	-	-	1.47E+05	1.47E+05 max
Zinc Phosphide	1314-84-7	1	-	-	3.23E+09	-	-	-	-	8.85E+02	-	-	8.85E+02	8.85E+02 nc
Zinc and Compounds	7440-66-6	1	-	-	3.23E+09	-	-	-	-	8.85E+05	-	-	8.85E+05	8.85E+05 max
Zineb	12122-67-7	1	-	-	3.23E+09	-	-	-	-	1.47E+05	1.17E+06	-	1.31E+05	1.31E+05 max
Zirconium	7440-67-7	1	-	-	3.23E+09	-	-	-	-	2.36E+02	-	-	2.36E+02	2.36E+02 nc

Site-specific
Recreator Equation Inputs for Soil

Variable	Value
TR (target cancer risk) unitless	0.000001
SA_{recsc} (skin surface area - child) cm^2/day	0
SA_{recsa} (skin surface area - adult) cm^2/day	2924.2
SA_{0-2} (skin surface area - mutagenic) cm^2/day	0
SA_{2-6} (skin surface area - mutagenic) cm^2/day	0
SA_{6-16} (skin surface area - mutagenic) cm^2/day	2160
SA_{16-30} (skin surface area - mutagenic) cm^2/day	3470
SA_{recsa} (skin surface area - adult) cm^2/day	2924.2
THQ (target hazard quotient) unitless	1
LT (lifetime - recreator) year	70
$IFS_{rec-adj}$ (age-adjusted soil ingestion factor) mg/kg	1307.077
$DFS_{rec-adj}$ (age-adjusted soil dermal factor) mg/kg	3735.778
$IFSM_{rec-adj}$ (mutagenic age-adjusted soil ingestion factor) mg/kg	3846.591
$DFSM_{rec-adj}$ (mutagenic age-adjusted soil dermal factor) mg/kg	5678.08
EF_{0-2} (exposure frequency) day/year	0
EF_{2-6} (exposure frequency) day/year	0
EF_{6-16} (exposure frequency) day/year	50
EF_{16-30} (exposure frequency) day/year	50
EF_{recsc} (exposure frequency - child) day/year	0
EF_{recsa} (exposure frequency - adult) day/year	50
EF_{recsa} (exposure frequency - adult) day/year	50
EF_{recs} (exposure frequency - recreator) day/year	50
IRS_{0-2} (soil intake rate) mg/day	0
IRS_{2-6} (soil intake rate) mg/day	0
IRS_{6-16} (soil intake rate) mg/day	100
IRS_{16-30} (soil intake rate) mg/day	50

IRS_{recsc} (soil intake rate - child) mg/day	0
IRS_{recsa} (soil intake rate - adult) mg/day	70.8
IRS_{recsa} (soil intake rate - adult) mg/day	70.8
ED_{0-2} (exposure duration) year	0
ED_{2-6} (exposure duration) year	0
ED_{6-16} (exposure duration) year	10
ED_{16-30} (exposure duration) year	14
ED_{recsc} (exposure duration - child) year	0
ED_{recsa} (exposure duration - adult) year	24
ED_{recsa} (exposure duration - adult) year	24
ED_{recs} (exposure duration - recreator) year	24
ET_{0-2} (exposure time) hr/day	0
ET_{2-6} (exposure time) hr/day	0
ET_{6-16} (exposure time) hr/day	2
ET_{16-30} (exposure time) hr/day	2
ET_{recsc} (exposure time - child) hr/day	0
ET_{recsa} (exposure time - adult) hr/day	2
ET_{recsa} (exposure time - adult) hr/day	2
ET_{recs} (exposure time - recreator) hr/day	2
BW_{0-2} (body weight) kg	0
BW_{2-6} (body weight) kg	0
BW_{6-16} (body weight) kg	44
BW_{16-30} (body weight) kg	80
BW_{recsc} (body weight - child) kg	0
BW_{recsa} (body weight - adult) kg	65
BW_{recsa} (body weight - adult) kg	65
AF_{0-2} (skin adherence factor) mg/cm^2	0
AF_{2-6} (skin adherence factor) mg/cm^2	0
AF_{6-16} (skin adherence factor) mg/cm^2	0.04
AF_{16-30} (skin adherence factor) mg/cm^2	0.09
AF_{recsc} (skin adherence factor - child) mg/cm^2	0
AF_{recsa} (skin adherence factor - adult) mg/cm^2	0.0692

AF_{recsa} (skin adherence factor - adult) mg/cm^2	0.0692
City (Climate Zone) PEF Selection	Philadelphia, P
A_s (acres) PEF Selection	0.5
Q/C_{wp} (g/m^2-s per kg/m^3) PEF Selection	87.36898
PEF (particulate emission factor) m^3/kg	3232997857
A (PEF Dispersion Constant)	14.0111
B (PEF Dispersion Constant)	19.6154
C (PEF Dispersion Constant)	225.3397
V (fraction of vegetative cover) unitless	0.5
U_m (mean annual wind speed) m/s	4.29
U_t (equivalent threshold value)	11.32
F(x) (function dependant on U_m/U_t) unitless	0.0993
City (Climate Zone) VF Selection	Philadelphia, P
A_s (acres) VF Selection	0.5
Q/C_{wp} (g/m^2-s per kg/m^3) VF Selection	87.36898
foc (fraction organic carbon in soil) g/g	0.006
ρ$_b$ (dry soil bulk density) g/cm^3	1.5
ρ$_s$ (soil particle density) g/cm^3	2.65
θ$_w$ (water-filled soil porosity) L_{water}/L_{soil}	0.15
T (exposure interval) s	950000000
A (VF Dispersion Constant)	14.0111
B (VF Dispersion Constant)	19.6154
C (VF Dispersion Constant)	225.3397

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Site-specific

Recreator Screening Levels (RSL) for Soil - Modified for site-specific recreational user

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC ?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)
ALAR	1596-84-5	No	No	1.80E-02	U	5.10E-06	U	1.50E-01	U			1	0.1	1		
Acenaphthene	83-32-9	No	Yes					6.00E-02	U			1	0.13	1	1.94E+05	
Acenaphthylene	208-96-8	No	Yes									1	0.13	1	2.61E+05	
Acephate	30560-19-1	No	No	8.70E-03	U			4.00E-03	U			1	0.1	1		
Acetaldehyde	75-07-0	No	Yes			2.20E-06	U			9.00E-03	U	1		1	1.20E+04	1.07E+05
Acetochlor	34256-82-1	No	No					2.00E-02	U			1	0.1	1		
Acetone	67-64-1	No	Yes					9.00E-01	U	3.09E+01	U	1		1	1.88E+04	1.14E+05
Acetone Cyanohydrin	75-86-5	No	Yes							2.00E-03	U	1		1	3.28E+04	1.06E+05
Acetonitrile	75-05-8	No	Yes							6.00E-02	U	1		1	1.79E+04	1.28E+05
Acetophenone	98-86-2	No	Yes					1.00E-01	U			1		1	8.24E+04	2.52E+03
Acetylaminofluorene, 2-	53-96-3	No	No	3.80E+00	U	1.30E-03	U					1	0.1	1		
Acifluorofen	50594-66-6	No	No									1	0.1	1		
Acridine	260-94-6	No	No									1	0.1	1		
Acrolein	107-02-8	No	Yes					5.00E-04	U	2.00E-05	U	1		1	9.52E+03	2.27E+04
Acrylamide	79-06-1	Yes	No	5.00E-01	U	1.00E-04	U	2.00E-03	U	6.00E-03	U	1	0.1	1		
Acrylic Acid	79-10-7	No	Yes					5.00E-01	U	1.00E-03	U	1		1	1.31E+05	1.09E+05
Acrylonitrile	107-13-1	No	Yes	5.40E-01	U	6.80E-05	U	4.00E-02	U	2.00E-03	U	1		1	1.06E+04	1.13E+04
Adiponitrile	111-69-3	No	No							6.00E-03	U	1	0.1	1		
Alachlor	15972-60-8	No	No	5.60E-02	U			1.00E-02	U			1	0.1	1		
Aldicarb	116-06-3	No	No					1.00E-03	U			1	0.1	1		
Aldicarb Sulfone	1646-88-4	No	No					1.00E-03	U			1	0.1	1		
Aldicarb sulfoxide	1646-87-3	No	No									1	0.1	1		
Aldrin	309-00-2	No	Yes	1.70E+01	U	4.90E-03	U	3.00E-05	U			1		1	2.37E+06	
Aliphatic Chlorinated Hydrocarbons (each)	NA	No	No									1	0.1	1		
Aliphatic Chlorinated Hydrocarbons (total)	NA	No	No									1	0.1	1		
Alizarin Red Compounds	NA	No	No									1	0.1	1		
Ally	74223-64-6	No	No					2.50E-01	U			1	0.1	1		
Allyl Alcohol	107-18-6	No	Yes					5.00E-03	U	1.00E-04	U	1		1	4.71E+04	1.11E+05
Allyl Chloride	107-05-1	No	Yes	2.10E-02	U	6.00E-06	U			1.00E-03	U	1		1	2.18E+03	1.42E+03
Aluminum	7429-90-5	No	No					1.00E+00	U	5.00E-03	U	1		1		
Aluminum Phosphide	20859-73-8	No	No					4.00E-04	U			1		1		
Aluminum metaphosphate	13776-88-0	No	No					4.86E+01	U			1		1		
Amdro	67485-29-4	No	No					3.00E-04	U			1	0.1	1		
Ametryn	834-12-8	No	No					9.00E-03	U			1	0.1	1		
Amino-4-chlorobenzotrifluoride, 3-	121-50-6	No	Yes									1		1	3.69E+05	
Aminoazobenzene, p-	60-09-3	No	No									1	0.1	1		
Aminobiphenyl, 4-	92-67-1	No	No	2.10E+01	U	6.00E-03	U					1	0.1	1		
Aminophenol, m-	591-27-5	No	No					8.00E-02	U			1	0.1	1		
Aminophenol, o-	95-55-6	No	No									1	0.1	1		
Aminophenol, p-	123-30-8	No	No					2.00E-02	U			1	0.1	1		
Aminopyridine, 4-	504-24-5	No	No									1	0.1	1		
Amitraz	33089-61-1	No	No					2.50E-03	U			1	0.1	1		
Ammonium Perchlorate	7790-98-9	No	No					7.00E-04	U			1		1		
Ammonium Sulfamate	7773-06-0	No	No					2.00E-01	U			1		1		
Ammonium polyphosphate	68333-79-9	No	No					4.86E+01	U			1		1		
Amyl Alcohol, tert-	75-85-4	No	Yes							3.00E-03	U	1		1	3.62E+04	1.37E+04
Aniline	62-53-3	No	No	5.70E-03	U	1.60E-06	U	7.00E-03	U	1.00E-03	U	1	0.1	1		
Anilinobenzothiazole	1843-21-6	No	No									1	0.1	1		
Anthracene	120-12-7	No	Yes					3.00E-01	U			1	0.13	1	7.23E+05	
Anthraquinone, 9,10-	84-65-1	No	No	4.00E-02	U			2.00E-03	U			1	0.1	1		
Antimony (metallic)	7440-36-0	No	No					4.00E-04	U			0.15		1		
Antimony Pentoxide	1314-60-9	No	No					5.00E-04	U			0.15		1		
Antimony Potassium Tartrate	11071-15-1	No	No					9.00E-04	U			0.15		1		
Antimony Tetroxide	1332-81-6	No	No					4.00E-04	U			0.15		1		
Antimony Trichloride	10025-91-9	No	No									1		1		
Antimony Trioxide	1309-64-4	No	No							2.00E-04	U	0.15		1		
Apollo	74115-24-5	No	No					1.30E-02	U			1	0.1	1		
Aramite	140-57-8	No	No	2.50E-02	U	7.10E-06	U	5.00E-02	U			1	0.1	1		
Aroclor 1016	12674-11-2	No	Yes	7.00E-02	U	2.00E-05	U	7.00E-05	U			1	0.14	1	8.07E+05	
Aroclor 1221	11104-28-2	No	Yes	2.00E+00	U	5.71E-04	U					1	0.14	1	1.57E+05	
Aroclor 1232	11141-16-5	No	Yes	2.00E+00	U	5.71E-04	U					1	0.14	1	1.54E+05	
Aroclor 1242	53469-21-9	No	Yes	2.00E+00	U	5.71E-04	U					1	0.14	1	1.09E+06	
Aroclor 1248	12672-29-6	No	Yes	2.00E+00	U	5.71E-04	U					1	0.14	1	7.08E+05	
Aroclor 1254	11097-69-1	No	Yes	2.00E+00	U	5.71E-04	U	2.00E-05	U			1	0.14	1	1.16E+06	

Site-specific

Recreator Screening Levels (RSL) for Soil - Modified for site-specific recreational user

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
ALAR	1596-84-5	3.23E+09	1.09E+03	3.80E+03	1.62E+08	8.45E+02					1.01E+06	3.52E+06		7.82E+05	8.45E+02 ca
Acenaphthene	83-32-9	3.23E+09									4.02E+05	1.08E+06		2.93E+05	2.93E+05 max
Acenaphthylene	208-96-8	3.23E+09													
Acephate	30560-19-1	3.23E+09	2.25E+03	7.86E+03		1.75E+03					2.68E+04	9.38E+04		2.08E+04	1.75E+03 ca*
Acetaldehyde	75-07-0	3.23E+09			1.39E+03	1.39E+03							9.46E+03	9.46E+03	1.39E+03 ca**
Acetochlor	34256-82-1	3.23E+09									1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Acetone	67-64-1	3.23E+09									6.03E+06		5.10E+07	5.39E+06	5.39E+06 sat
Acetone Cyanohydrin	75-86-5	3.23E+09											5.75E+03	5.75E+03	5.75E+03 nc
Acetonitrile	75-05-8	3.23E+09											9.40E+04	9.40E+04	9.40E+04 nc
Acetophenone	98-86-2	3.23E+09									6.70E+05			6.70E+05	6.70E+05 sat
Acetylaminofluorene, 2-	53-96-3	3.23E+09	5.14E+00	1.80E+01	6.35E+05	4.00E+00									4.00E+00 ca
Acifluorofen	50594-66-6	3.23E+09													
Acridine	260-94-6	3.23E+09													
Acrolein	107-02-8	3.23E+09									3.35E+03		1.67E+01	1.66E+01	1.66E+01 nc
Acrylamide	79-06-1	3.23E+09	1.33E+01	9.00E+01	4.51E+06	1.16E+01					1.34E+04	4.69E+04	1.70E+09	1.04E+04	1.16E+01 ca
Acrylic Acid	79-10-7	3.23E+09									3.35E+06		1.15E+04	1.15E+04	1.15E+04 nc
Acrylonitrile	107-13-1	3.23E+09	3.62E+01		3.98E+01	1.90E+01					2.68E+05		1.85E+03	1.84E+03	1.90E+01 ca*
Adiponitrile	111-69-3	3.23E+09											1.70E+09	1.70E+09	1.70E+09 max
Alachlor	15972-60-8	3.23E+09	3.49E+02	1.22E+03		2.71E+02					6.70E+04	2.34E+05		5.21E+04	2.71E+02 ca
Aldicarb	116-06-3	3.23E+09									6.70E+03	2.34E+04		5.21E+03	5.21E+03 nc
Aldicarb Sulfone	1646-88-4	3.23E+09									6.70E+03	2.34E+04		5.21E+03	5.21E+03 nc
Aldicarb sulfoxide	1646-87-3	3.23E+09													
Aldrin	309-00-2	3.23E+09	1.15E+00		1.23E+02	1.14E+00					2.01E+02			2.01E+02	1.14E+00 ca
Aliphatic Chlorinated Hydrocarbons (each)	NA	3.23E+09													
Aliphatic Chlorinated Hydrocarbons (total)	NA	3.23E+09													
Alizarin Red Compounds	NA	3.23E+09													
Ally	74223-64-6	3.23E+09									1.68E+06	5.86E+06		1.30E+06	1.30E+06 max
Allyl Alcohol	107-18-6	3.23E+09									3.35E+04		4.12E+02	4.07E+02	4.07E+02 nc
Allyl Chloride	107-05-1	3.23E+09	9.31E+02		9.30E+01	8.45E+01							1.91E+02	1.91E+02	8.45E+01 ca**
Aluminum	7429-90-5	3.23E+09									6.70E+06		1.42E+09	6.67E+06	6.67E+06 max
Aluminum Phosphide	20859-73-8	3.23E+09									2.68E+03			2.68E+03	2.68E+03 nc
Aluminum metaphosphate	13776-88-0	3.23E+09									3.26E+08			3.26E+08	3.26E+08 max
Amdro	67485-29-4	3.23E+09									2.01E+03	7.03E+03		1.56E+03	1.56E+03 nc
Ametryn	834-12-8	3.23E+09									6.03E+04	2.11E+05		4.69E+04	4.69E+04 nc
Amino-4-chlorobenzotrifluoride, 3-	121-50-6	3.23E+09													
Aminoazobenzene, p-	60-09-3	3.23E+09													
Aminobiphenyl, 4-	92-67-1	3.23E+09	9.31E-01	3.26E+00	1.38E+05	7.24E-01									7.24E-01 ca
Aminophenol, m-	591-27-5	3.23E+09									5.36E+05	1.88E+06		4.17E+05	4.17E+05 max
Aminophenol, o-	95-55-6	3.23E+09													
Aminophenol, p-	123-30-8	3.23E+09									1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Aminopyridine, 4-	504-24-5	3.23E+09													
Amitraz	33089-61-1	3.23E+09									1.68E+04	5.86E+04		1.30E+04	1.30E+04 nc
Ammonium Perchlorate	7790-98-9	3.23E+09									4.69E+03			4.69E+03	4.69E+03 nc
Ammonium Sulfamate	7773-06-0	3.23E+09									1.34E+06			1.34E+06	1.34E+06 max
Ammonium polyphosphate	68333-79-9	3.23E+09									3.26E+08			3.26E+08	3.26E+08 max
Amyl Alcohol, tert-	75-85-4	3.23E+09											9.50E+03	9.50E+03	9.50E+03 nc
Aniline	62-53-3	3.23E+09	3.43E+03	1.20E+04	5.16E+08	2.67E+03					4.69E+04	1.64E+05	2.83E+08	3.65E+04	2.67E+03 ca*
Anilinobenzothiazole	1843-21-6	3.23E+09													
Anthracene	120-12-7	3.23E+09									2.01E+06	5.41E+06		1.47E+06	1.47E+06 max
Anthraquinone, 9,10-	84-65-1	3.23E+09	4.89E+02	1.71E+03		3.80E+02					1.34E+04	4.69E+04		1.04E+04	3.80E+02 ca*
Antimony (metallic)	7440-36-0	3.23E+09									2.68E+03			2.68E+03	2.68E+03 nc
Antimony Pentoxide	1314-60-9	3.23E+09									3.35E+03			3.35E+03	3.35E+03 nc
Antimony Potassium Tartrate	11071-15-1	3.23E+09									6.03E+03			6.03E+03	6.03E+03 nc
Antimony Tetroxide	1332-81-6	3.23E+09									2.68E+03			2.68E+03	2.68E+03 nc
Antimony Trichloride	10025-91-9	3.23E+09													
Antimony Trioxide	1309-64-4	3.23E+09											5.66E+07	5.66E+07	5.66E+07 max
Apollo	74115-24-5	3.23E+09									8.71E+04	3.05E+05		6.78E+04	6.78E+04 nc
Aramite	140-57-8	3.23E+09	7.82E+02	2.74E+03	1.16E+08	6.08E+02					3.35E+05	1.17E+06		2.61E+05	6.08E+02 ca
Aroclor 1016	12674-11-2	3.23E+09	2.79E+02	6.98E+02	1.03E+04	1.96E+02					4.69E+02	1.17E+03		3.35E+02	1.96E+02 ca**
Aroclor 1221	11104-28-2	3.23E+09	9.77E+00	2.44E+01	7.00E+01	6.35E+00									6.35E+00 ca
Aroclor 1232	11141-16-5	3.23E+09	9.77E+00	2.44E+01	6.91E+01	6.34E+00									6.34E+00 ca
Aroclor 1242	53469-21-9	3.23E+09	9.77E+00	2.44E+01	4.89E+02	6.88E+00									6.88E+00 ca
Aroclor 1248	12672-29-6	3.23E+09	9.77E+00	2.44E+01	3.17E+02	6.83E+00									6.83E+00 ca
Aroclor 1254	11097-69-1	3.23E+09	9.77E+00	2.44E+01	5.21E+02	6.89E+00					1.34E+02	3.35E+02		9.57E+01	6.89E+00 ca*

Site-specific

Recreator Screening Levels (RSL) for Soil - Modified for site-specific recreational user

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC ?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)
Aroclor 1260	11096-82-5	No	Yes	2.00E+00	U	5.71E-04	U					1	0.14	1	1.82E+06	
Aroclor 5460	11126-42-4	No	Yes					6.00E-04	U			1	0.14	1	9.89E+05	
Arsenic Salts	NA	No	No									1	0.03	0.6		
Arsenic, Inorganic	7440-38-2	No	No	1.50E+00	U	4.30E-03	U	3.00E-04	U	1.50E-05	U	1	0.03	0.6		
Arsine	7784-42-1	No	No					3.50E-06	U	5.00E-05	U	1		1		
Assure	76578-14-8	No	No					9.00E-03	U			1	0.1	1		
Asulam	3337-71-1	No	No					5.00E-02	U			1	0.1	1		
Atrazine	1912-24-9	No	No	2.30E-01	U			3.50E-02	U			1	0.1	1		
Auramine	492-80-8	No	No	8.80E-01	U	2.50E-04	U					1	0.1	1		
Avermectin B1	65195-55-3	No	No					4.00E-04	U			1	0.1	1		
Azobenzene	103-33-3	No	Yes	1.10E-01	U	3.10E-05	U					1		1	7.21E+05	
Azodicarbonamide	123-77-3	No	No					1.00E+00	U	7.00E-06	U	1	0.1	1		
Barium	7440-39-3	No	No					2.00E-01	U	5.00E-04	U	0.07		1		
Barium Chromate	10294-40-3	Yes	No	5.00E-01	U	1.50E-01	U	2.00E-02	U	2.00E-04	U	0.025		1		
Barium Cyanide	542-62-1	No	No									0.07		1		
Baygon	114-26-1	No	No					4.00E-03	U			1	0.1	1		
Bayleton	43121-43-3	No	No					3.00E-02	U			1	0.1	1		
Baythroid	68359-37-5	No	No					2.50E-02	U			1	0.1	1		
Benefin	1861-40-1	No	Yes					3.00E-01	U			1		1	4.23E+05	
Benomyl	17804-35-2	No	No					5.00E-02	U			1	0.1	1		
Bentazon	25057-89-0	No	No					3.00E-02	U			1	0.1	1		
Benz[a]anthracene	56-55-3	Yes	Yes	7.30E-01	U	1.10E-04	U					1	0.13	1	6.09E+06	
Benzaldehyde	100-52-7	No	Yes					1.00E-01	U			1		1	3.10E+04	1.16E+03
Benzene	71-43-2	No	Yes	5.50E-02	U	7.80E-06	U	4.00E-03	U	3.00E-02	U	1		1	4.88E+03	1.82E+03
Benzene, Ethyldimethyl	29224-55-3	No	Yes									1		1	1.26E+04	1.31E+02
Benzene, Ethylmethyl	25550-14-5	No	Yes									1		1	1.30E+04	3.30E+02
Benzene, Methylpropenyl	768-00-3	No	Yes									1		1	1.58E+04	4.90E+02
Benzene, Methylpropyl	28729-54-6	No	No									1	0.1	1		
Benzene, Trimethyl	25551-13-7	No	Yes									1		1	9.03E+03	1.82E+02
Benzenediamine-2-methyl sulfate, 1,4-	6369-59-1	No	No	1.00E-01	U			3.00E-04	U			1	0.1	1		
Benzenethiol	108-98-5	No	Yes					1.00E-03	U			1		1	2.67E+04	1.26E+03
Benzidine	92-87-5	Yes	No	2.30E+02	U	6.70E-02	U	3.00E-03	U			1	0.1	1		
Benzo(j)fluoranthene	205-82-3	No	No	1.20E+00	U	1.10E-04	U					1	0.13	1		
Benzo[a]pyrene	50-32-8	Yes	No	7.30E+00	U	1.10E-03	U					1	0.13	1		
Benzo[b]fluoranthene	205-99-2	Yes	No	7.30E-01	U	1.10E-04	U					1	0.13	1		
Benzo[g,h,i]perylene	191-24-2	No	No									1	0.13	1		
Benzo[k]fluoranthene	207-08-9	Yes	No	7.30E-02	U	1.10E-04	U					1	0.13	1		
Benzofluoranthenes, total	NA	No	No									1	0.1	1		
Benzofluorene, 2,3-	243-17-4	No	No									1	0.1	1		
Benzoic Acid	65-85-0	No	No					4.00E+00	U			1	0.1	1		
Benzoic acid, 3,5-dichloro-	51-36-5	No	No									1	0.1	1		
Benzoic acid, 4-hydroxy-, methyl ester	99-76-3	No	No									1	0.1	1		
Benzothiazole	95-16-9	No	No									1	0.1	1		
Benzotrichloride	98-07-7	No	Yes	1.30E+01	U							1		1	9.33E+04	3.23E+02
Benzyl Alcohol	100-51-6	No	No					1.00E-01	U			1	0.1	1		
Benzyl Chloride	100-44-7	No	Yes	1.70E-01	U	4.90E-05	U	2.00E-03	U	1.00E-03	U	1		1	3.52E+04	1.46E+03
Beryllium and compounds	7440-41-7	No	No			2.40E-03	U	2.00E-03	U	2.00E-05	U	0.007		1		
Bidrin	141-66-2	No	No					1.00E-04	U			1	0.1	1		
Bifenox	42576-02-3	No	No					9.00E-03	U			1	0.1	1		
Biphenthrin	82657-04-3	No	No					1.50E-02	U			1	0.1	1		
Biphenyl, 1,1'-	92-52-4	No	Yes	8.00E-03	U			5.00E-01	U	4.00E-04	U	1		1	1.57E+05	
Bis(2-chloro-1-methylethyl) ether	108-60-1	No	Yes	7.00E-02	U	1.00E-05	U	4.00E-02	U			1		1	4.83E+04	1.02E+03
Bis(2-chloroethoxy)methane	111-91-1	No	No					3.00E-03	U			1	0.1	1		
Bis(2-chloroethyl)ether	111-44-4	No	Yes	1.10E+00	U	3.30E-04	U					1		1	5.87E+04	5.05E+03
Bis(2-ethylhexyl)phthalate	117-81-7	No	No	1.40E-02	U	2.40E-06	U	2.00E-02	U			1	0.1	1		
Bis(Octanoyloxy)Di-N-Butyl Stannane	4731-77-5	No	Yes									1		1	8.48E+04	
Bis(chloromethyl)ether	542-88-1	No	Yes	2.20E+02	U	6.20E-02	U					1		1	2.59E+03	4.22E+03
Bis(oleoyloxy)dibutyl tin	13323-62-1	No	Yes									1		1	2.64E+06	
Bisphenol A	80-05-7	No	No					5.00E-02	U			1	0.1	1		
Boron And Borates Only	7440-42-8	No	No					2.00E-01	U	2.00E-02	U	1		1		
Boron Trichloride	10294-34-5	No	Yes					2.00E+00	U	2.00E-02	U	1		1		
Boron Trifluoride	7637-07-2	No	Yes					4.00E-02	U	1.30E-02	U	1		1		
Bromacil	314-40-9	No	No									1	0.1	1		
Bromate	15541-45-4	No	No	7.00E-01	U			4.00E-03	U			1		1		

Site-specific

Recreator Screening Levels (RSL) for Soil - Modified for site-specific recreational user
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Aroclor 1260	11096-82-5	3.23E+09	9.77E+00	2.44E+01	8.13E+02	6.92E+00									6.92E+00 ca
Aroclor 5460	11126-42-4	3.23E+09									4.02E+03	1.00E+04		2.87E+03	2.87E+03 nc
Arsenic Salts	NA	3.23E+09													
Arsenic, Inorganic	7440-38-2	3.23E+09	2.17E+01	1.52E+02	1.92E+05	1.90E+01					3.35E+03	2.34E+04	4.25E+06	2.93E+03	1.90E+01 ca
Arsine	7784-42-1	3.23E+09									2.35E+01		1.42E+07	2.35E+01	2.35E+01 nc
Assure	76578-14-8	3.23E+09									6.03E+04	2.11E+05		4.69E+04	4.69E+04 nc
Asulam	3337-71-1	3.23E+09									3.35E+05	1.17E+06		2.61E+05	2.61E+05 max
Atrazine	1912-24-9	3.23E+09	8.50E+01	2.97E+02		6.61E+01					2.35E+05	8.21E+05		1.82E+05	6.61E+01 ca
Auramine	492-80-8	3.23E+09	2.22E+01	7.77E+01	3.30E+06	1.73E+01									1.73E+01 ca
Avermectin B1	65195-55-3	3.23E+09									2.68E+03	9.38E+03		2.08E+03	2.08E+03 nc
Azobenzene	103-33-3	3.23E+09	1.78E+02		5.94E+03	1.73E+02									1.73E+02 ca
Azodicarbonamide	123-77-3	3.23E+09									6.70E+06	2.34E+07	1.98E+06	1.44E+06	1.44E+06 max
Barium	7440-39-3	3.23E+09									1.34E+06		1.42E+08	1.33E+06	1.33E+06 max
Barium Chromate	10294-40-3	3.23E+09	1.33E+01		3.00E+03	1.32E+01					1.34E+05		5.66E+07	1.34E+05	1.32E+01 ca
Barium Cyanide	542-62-1	3.23E+09													
Baygon	114-26-1	3.23E+09									2.68E+04	9.38E+04		2.08E+04	2.08E+04 nc
Bayleton	43121-43-3	3.23E+09									2.01E+05	7.03E+05		1.56E+05	1.56E+05 max
Baythroid	68359-37-5	3.23E+09									1.68E+05	5.86E+05		1.30E+05	1.30E+05 max
Benefin	1861-40-1	3.23E+09									2.01E+06			2.01E+06	2.01E+06 max
Benomyl	17804-35-2	3.23E+09									3.35E+05	1.17E+06		2.61E+05	2.61E+05 max
Bentazon	25057-89-0	3.23E+09									2.01E+05	7.03E+05		1.56E+05	1.56E+05 max
Benz[a]anthracene	56-55-3	3.23E+09	9.10E+00	4.74E+01	7.70E+03	7.63E+00									7.63E+00 ca
Benzaldehyde	100-52-7	3.23E+09									6.70E+05			6.70E+05	6.70E+05 sat
Benzene	71-43-2	3.23E+09	3.55E+02		1.60E+02	1.10E+02					2.68E+04		1.28E+04	8.67E+03	1.10E+02 ca*
Benzene, Ethyldimethyl	29224-55-3	3.23E+09													
Benzene, Ethylmethyl	25550-14-5	3.23E+09													
Benzene, Methylpropenyl	768-00-3	3.23E+09													
Benzene, Methylpropyl	28729-54-6	3.23E+09													
Benzene, Trimethyl	25551-13-7	3.23E+09													
Benzenediamine-2-methyl sulfate, 1,4-	6369-59-1	3.23E+09	1.95E+02	6.84E+02		1.52E+02					2.01E+03	7.03E+03		1.56E+03	1.52E+02 ca*
Benzenethiol	108-98-5	3.23E+09									6.70E+03			6.70E+03	6.70E+03 sat
Benzidine	92-87-5	3.23E+09	2.89E-02	1.96E-01	6.72E+03	2.52E-02					2.01E+04	7.03E+04		1.56E+04	2.52E-02 ca
Benzo(j)fluoranthene	205-82-3	3.23E+09	1.63E+01	4.38E+01	7.51E+06	1.19E+01									1.19E+01 ca
Benzo[a]pyrene	50-32-8	3.23E+09	9.10E-01	4.74E+00	4.10E+05	7.63E-01									7.63E-01 ca
Benzo[b]fluoranthene	205-99-2	3.23E+09	9.10E+00	4.74E+01	4.10E+06	7.63E+00									7.63E+00 ca
Benzo[g,h,i]perylene	191-24-2	3.23E+09													
Benzo[k]fluoranthene	207-08-9	3.23E+09	9.10E+01	4.74E+02	4.10E+06	7.63E+01									7.63E+01 ca
Benzofluoranthenes, total	NA	3.23E+09													
Benzofluorene, 2,3-	243-17-4	3.23E+09													
Benzoic Acid	65-85-0	3.23E+09									2.68E+07	9.38E+07		2.08E+07	2.08E+07 max
Benzoic acid, 3,5-dichloro-	51-36-5	3.23E+09													
Benzoic acid, 4-hydroxy-, methyl ester	99-76-3	3.23E+09													
Benzothiazole	95-16-9	3.23E+09													
Benzotrichloride	98-07-7	3.23E+09	1.50E+00			1.50E+00									1.50E+00 ca
Benzyl Alcohol	100-51-6	3.23E+09									6.70E+05	2.34E+06		5.21E+05	5.21E+05 max
Benzyl Chloride	100-44-7	3.23E+09	1.15E+02		1.83E+02	7.07E+01					1.34E+04		3.08E+03	2.51E+03	7.07E+01 ca*
Beryllium and compounds	7440-41-7	3.23E+09			3.44E+05	3.44E+05					1.34E+04		5.66E+06	1.34E+04	1.34E+04 nc
Bidrin	141-66-2	3.23E+09									6.70E+02	2.34E+03		5.21E+02	5.21E+02 nc
Bifenox	42576-02-3	3.23E+09									6.03E+04	2.11E+05		4.69E+04	4.69E+04 nc
Biphenthrin	82657-04-3	3.23E+09									1.01E+05	3.52E+05		7.82E+04	7.82E+04 nc
Biphenyl, 1,1'-	92-52-4	3.23E+09	2.44E+03			2.44E+03					3.35E+06		5.50E+03	5.49E+03	2.44E+03 ca**
Bis(2-chloro-1-methylethyl) ether	108-60-1	3.23E+09	2.79E+02		1.23E+03	2.28E+02					2.68E+05			2.68E+05	2.28E+02 ca
Bis(2-chloroethoxy)methane	111-91-1	3.23E+09									2.01E+04	7.03E+04		1.56E+04	1.56E+04 nc
Bis(2-chloroethyl)ether	111-44-4	3.23E+09	1.78E+01		4.54E+01	1.28E+01									1.28E+01 ca
Bis(2-ethylhexyl)phthalate	117-81-7	3.23E+09	1.40E+03	4.89E+03	3.44E+08	1.09E+03					1.34E+05	4.69E+05		1.04E+05	1.09E+03 ca*
Bis(Octanoyloxy)Di-N-Butyl Stannane	4731-77-5	3.23E+09													
Bis(chloromethyl)ether	542-88-1	3.23E+09	8.89E-02		1.07E-02	9.53E-03									9.53E-03 ca
Bis(oleoyloxy)dibutyl tin	13323-62-1	3.23E+09													
Bisphenol A	80-05-7	3.23E+09									3.35E+05	1.17E+06		2.61E+05	2.61E+05 max
Boron And Borates Only	7440-42-8	3.23E+09									1.34E+06		5.66E+09	1.34E+06	1.34E+06 max
Boron Trichloride	10294-34-5	3.23E+09									1.34E+07		5.66E+09	1.34E+07	1.34E+07 max
Boron Trifluoride	7637-07-2	3.23E+09									2.68E+05		3.68E+09	2.68E+05	2.68E+05 max
Bromacil	314-40-9	3.23E+09													
Bromate	15541-45-4	3.23E+09	2.79E+01			2.79E+01					2.68E+04			2.68E+04	2.79E+01 ca

Site-specific

Recreator Screening Levels (RSL) for Soil - Modified for site-specific recreational user
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ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
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Chemical	CAS Number	Mutagen?	VOC ?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)
Bromine	7726-95-6	No	Yes									1		1		
Bromo-2-chloroethane, 1-	107-04-0	No	Yes	2.00E+00	U	6.00E-04	U					1		1	8.17E+03	2.38E+03
Bromo-3-fluorobenzene, 1-	1073-06-9	No	Yes									1		1	9.79E+03	9.07E+02
Bromo-4-Ethylbenzene, 1-	1585-07-5	No	Yes									1		1	1.96E+04	2.06E+02
Bromoacetic acid	79-08-3	No	No									1	0.1	1		
Bromoacetophenone, 3-	2142-63-4	No	No									1	0.1	1		
Bromobenzene	108-86-1	No	Yes					8.00E-03	U	6.00E-02	U	1		1	1.15E+04	6.79E+02
Bromochloromethane	74-97-5	No	Yes							4.00E-02	U	1		1	4.94E+03	4.03E+03
Bromodichloromethane	75-27-4	No	Yes	6.20E-02	U	3.70E-05	U	2.00E-02	U			1		1	5.47E+03	9.31E+02
Bromodiphenyl Ether, p-	101-55-3	No	Yes									1		1	2.57E+05	1.06E+02
Bromofluorobenzene, p-	460-00-4	No	Yes									1		1	9.95E+03	1.06E+03
Bromoform	75-25-2	No	Yes	7.90E-03	U	1.10E-06	U	2.00E-02	U			1		1	1.34E+04	9.14E+02
Bromomethane	74-83-9	No	Yes					1.40E-03	U	5.00E-03	U	1		1	1.93E+03	3.59E+03
Bromophenol, p-	106-41-2	No	No									1	0.1	1		
Bromophenyl-phenyl phthalate, 4-	NA	No	No									1	0.1	1		
Bromophos	2104-96-3	No	Yes					5.00E-03	U			1		1	1.71E+05	
Bromopyridine, 2-	109-04-6	No	No									1	0.1	1		
Bromotrichloromethane	75-62-7	No	Yes									1		1	1.80E+04	4.25E+02
Bromoxynil	1689-84-5	No	No					2.00E-02	U			1	0.1	1		
Bromoxynil Octanoate	1689-99-2	No	Yes					2.00E-02	U			1		1	6.55E+05	
Butadiene, 1,3-	106-99-0	No	Yes	3.40E+00	U	3.00E-05	U			2.00E-03	U	1		1	1.20E+03	6.67E+02
Butanediol, 2,3-	513-85-9	No	No									1	0.1	1		
Butanol	35296-72-1	No	Yes									1		1	4.02E+04	1.47E+04
Butanol, N-	71-36-3	No	Yes					1.00E-01	U			1		1	4.13E+04	7.64E+03
Butanone-2, 4-chloro-4,4-difluoro	NA	No	No									1	0.1	1		
Butyl Alcohol, t-	75-65-0	No	Yes									1		1	3.96E+04	
Butyl Benzyl Phthlate	85-68-7	No	No	1.90E-03	U			2.00E-01	U			1	0.1	1		
Butyl Formate, tert-	762-75-4	No	Yes									1		1	6.00E+03	2.99E+03
Butyl alcohol, sec-	78-92-2	No	Yes					2.00E+00	U	3.00E+01	U	1		1	4.03E+04	2.13E+04
Butylacetate	123-86-4	No	Yes									1		1	1.18E+04	1.79E+03
Butylate	2008-41-5	No	Yes					5.00E-02	U			1		1	1.19E+05	
Butylated hydroxyanisole	25013-16-5	No	No	2.00E-04	U	5.70E-08	U					1	0.1	1		
Butylated hydroxytoluene	128-37-0	No	No	3.60E-03	U			3.00E-01	U			1	0.1	1		
Butylbenzene, n-	104-51-8	No	Yes					5.00E-02	U			1		1	1.12E+04	1.07E+02
Butylbenzene, sec-	135-98-8	No	Yes					1.00E-01	U			1		1	1.01E+04	1.45E+02
Butylbenzene, tert-	98-06-6	No	Yes					1.00E-01	U			1		1	1.01E+04	1.83E+02
Butylchloride, t-	507-20-0	No	Yes									1		1	2.34E+03	1.33E+03
Butylphthalyl Butylglycolate	85-70-1	No	No					1.00E+00	U			1	0.1	1		
Butyltin	NA	No	No									1	0.1	1		
Cacodylic Acid	75-60-5	No	No					2.00E-02	U			1	0.1	1		
Cadmium (Diet)	7440-43-9	No	No			1.80E-03	U	1.00E-03	U	1.00E-05	U	0.025	0.001	1		
Calcium	7440-70-2	No	No									1		1		
Calcium Chlorate	10137-74-3	No	No									1		1		
Calcium Chromate	13765-19-0	Yes	No	5.00E-01	U	1.50E-01	U	2.00E-02	U	2.00E-04	U	0.025		1		
Calcium Cyanide	592-01-8	No	No					1.00E-03	U			1		1		
Calcium pyrophosphate	7790-76-3	No	No					4.86E+01	U			1		1		
Caprolactam	105-60-2	No	No					5.00E-01	U	2.20E-03	U	1	0.1	1		
Captafol	2425-06-1	No	No	1.50E-01	U	4.30E-05	U	2.00E-03	U			1	0.1	1		
Captan	133-06-2	No	No	2.30E-03	U	6.60E-07	U	1.30E-01	U			1	0.1	1		
Carbaryl	63-25-2	No	No					1.00E-01	U			1	0.1	1		
Carbazole	86-74-8	No	No									1	0.1	1		
Carbofuran	1563-66-2	No	No					5.00E-03	U			1	0.1	1		
Carbon Disulfide	75-15-0	No	Yes					1.00E-01	U	7.00E-01	U	1		1	1.61E+03	7.38E+02
Carbon Tetrachloride	56-23-5	No	Yes	7.00E-02	U	6.00E-06	U	4.00E-03	U	1.00E-01	U	1		1	2.06E+03	4.58E+02
Carbosulfan	55285-14-8	No	No					1.00E-02	U			1	0.1	1		
Carboxin	5234-68-4	No	No					1.00E-01	U			1	0.1	1		
Catechol	120-80-9	No	No									1	0.1	1		
Ceric oxide	1306-38-3	No	No							9.00E-04	U	1		1		
Cerium, Stable	7440-45-1	No	No									1		1		
Chloral	75-87-6	No	Yes									1		1	2.14E+05	3.39E+03
Chloral Hydrate	302-17-0	No	Yes					1.00E-01	U			1		1	2.02E+05	
Chloramben	133-90-4	No	No					1.50E-02	U			1	0.1	1		
Chloramine	127-65-1	No	No									1		1		
Chloranil	118-75-2	No	No	4.03E-01	U							1	0.1	1		

Site-specific

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Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Bromine	7726-95-6	3.23E+09													
Bromo-2-chloroethane, 1-	107-04-0	3.23E+09	9.77E+00		3.48E+00	2.57E+00									2.57E+00 ca
Bromo-3-fluorobenzene, 1-	1073-06-9	3.23E+09													
Bromo-4-Ethylbenzene, 1-	1585-07-5	3.23E+09													
Bromoacetic acid	79-08-3	3.23E+09													
Bromoacetophenone, 3-	2142-63-4	3.23E+09													
Bromobenzene	108-86-1	3.23E+09									5.36E+04		6.07E+04	2.85E+04	2.85E+04 sat
Bromochloromethane	74-97-5	3.23E+09											1.73E+04	1.73E+04	1.73E+04 sat
Bromodichloromethane	75-27-4	3.23E+09	3.15E+02		3.77E+01	3.37E+01					1.34E+05			1.34E+05	3.37E+01 ca
Bromodiphenyl Ether, p-	101-55-3	3.23E+09													
Bromofluorobenzene, p-	460-00-4	3.23E+09													
Bromoform	75-25-2	3.23E+09	2.47E+03		3.11E+03	1.38E+03					1.34E+05			1.34E+05	1.38E+03 sat
Bromomethane	74-83-9	3.23E+09									9.38E+03		8.47E+02	7.76E+02	7.76E+02 nc
Bromophenol, p-	106-41-2	3.23E+09													
Bromophenyl-phenyl phthalate, 4-	NA	3.23E+09													
Bromophos	2104-96-3	3.23E+09									3.35E+04			3.35E+04	3.35E+04 nc
Bromopyridine, 2-	109-04-6	3.23E+09													
Bromotrichloromethane	75-62-7	3.23E+09													
Bromoxynil	1689-84-5	3.23E+09									1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Bromoxynil Octanoate	1689-99-2	3.23E+09									1.34E+05			1.34E+05	1.34E+05 max
Butadiene, 1,3-	106-99-0	3.23E+09	5.75E+00		1.02E+01	3.68E+00							2.10E+02	2.10E+02	3.68E+00 ca*
Butanediol, 2,3-	513-85-9	3.23E+09													
Butanol	35296-72-1	3.23E+09													
Butanol, N-	71-36-3	3.23E+09									6.70E+05			6.70E+05	6.70E+05 sat
Butanone-2, 4-chloro-4,4-difluoro	NA	3.23E+09													
Butyl Alcohol, t-	75-65-0	3.23E+09													
Butyl Benzyl Phthlate	85-68-7	3.23E+09	1.03E+04	3.60E+04		8.00E+03					1.34E+06	4.69E+06		1.04E+06	8.00E+03 ca
Butyl Formate, tert-	762-75-4	3.23E+09													
Butyl alcohol, sec-	78-92-2	3.23E+09									1.34E+07		1.06E+08	1.19E+07	1.19E+07 sat
Butylacetate	123-86-4	3.23E+09													
Butylate	2008-41-5	3.23E+09									3.35E+05			3.35E+05	3.35E+05 max
Butylated hydroxyanisole	25013-16-5	3.23E+09	9.77E+04	3.42E+05	1.45E+10	7.60E+04									7.60E+04 ca
Butylated hydroxytoluene	128-37-0	3.23E+09	5.43E+03	1.90E+04		4.22E+03					2.01E+06	7.03E+06		1.56E+06	4.22E+03 ca
Butylbenzene, n-	104-51-8	3.23E+09									3.35E+05			3.35E+05	3.35E+05 sat
Butylbenzene, sec-	135-98-8	3.23E+09									6.70E+05			6.70E+05	6.70E+05 sat
Butylbenzene, tert-	98-06-6	3.23E+09									6.70E+05			6.70E+05	6.70E+05 sat
Butylchloride, t-	507-20-0	3.23E+09													
Butylphthalyl Butylglycolate	85-70-1	3.23E+09									6.70E+06	2.34E+07		5.21E+06	5.21E+06 max
Butyltin	NA	3.23E+09													
Cacodylic Acid	75-60-5	3.23E+09									1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Cadmium (Diet)	7440-43-9	3.23E+09			4.59E+05	4.59E+05					6.70E+03	5.86E+04	2.83E+06	6.00E+03	6.00E+03 nc
Calcium	7440-70-2	3.23E+09													
Calcium Chlorate	10137-74-3	3.23E+09													
Calcium Chromate	13765-19-0	3.23E+09	1.33E+01		3.00E+03	1.32E+01					1.34E+05		5.66E+07	1.34E+05	1.32E+01 ca
Calcium Cyanide	592-01-8	3.23E+09									6.70E+03			6.70E+03	6.70E+03 nc
Calcium pyrophosphate	7790-76-3	3.23E+09									3.26E+08			3.26E+08	3.26E+08 max
Caprolactam	105-60-2	3.23E+09									3.35E+06	1.17E+07	6.23E+08	2.60E+06	2.60E+06 max
Captafol	2425-06-1	3.23E+09	1.30E+02	4.56E+02	1.92E+07	1.01E+02					1.34E+04	4.69E+04		1.04E+04	1.01E+02 ca
Captan	133-06-2	3.23E+09	8.50E+03	2.97E+04	1.25E+09	6.61E+03					8.71E+05	3.05E+06		6.78E+05	6.61E+03 ca
Carbaryl	63-25-2	3.23E+09									6.70E+05	2.34E+06		5.21E+05	5.21E+05 max
Carbazole	86-74-8	3.23E+09													
Carbofuran	1563-66-2	3.23E+09									3.35E+04	1.17E+05		2.61E+04	2.61E+04 nc
Carbon Disulfide	75-15-0	3.23E+09									6.70E+05		9.89E+04	8.61E+04	8.61E+04 sat
Carbon Tetrachloride	56-23-5	3.23E+09	2.79E+02		8.78E+01	6.68E+01					2.68E+04		1.81E+04	1.08E+04	6.68E+01 ca
Carbosulfan	55285-14-8	3.23E+09									6.70E+04	2.34E+05		5.21E+04	5.21E+04 nc
Carboxin	5234-68-4	3.23E+09									6.70E+05	2.34E+06		5.21E+05	5.21E+05 max
Catechol	120-80-9	3.23E+09													
Ceric oxide	1306-38-3	3.23E+09											2.55E+08	2.55E+08	2.55E+08 max
Cerium, Stable	7440-45-1	3.23E+09													
Chloral	75-87-6	3.23E+09													
Chloral Hydrate	302-17-0	3.23E+09									6.70E+05			6.70E+05	6.70E+05 max
Chloramben	133-90-4	3.23E+09									1.01E+05	3.52E+05		7.82E+04	7.82E+04 nc
Chloramine	127-65-1	3.23E+09													
Chloranil	118-75-2	3.23E+09	4.85E+01	1.70E+02		3.77E+01									3.77E+01 ca

Site-specific

Recreator Screening Levels (RSL) for Soil - Modified for site-specific recreational user

ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC ?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)
Chlorate (ClO3) as	14866-68-3	No	No									1		1		
Chlordane	12789-03-6	No	Yes	3.50E-01	U	1.00E-04	U	5.00E-04	U	7.00E-04	U	1	0.04	1	1.49E+06	
Chlordane (alpha)	5103-71-9	No	Yes									1		1	2.05E+06	
Chlordane (gamma)	5103-74-2	No	Yes									1		1	2.05E+06	
Chlordecone (Kepone)	143-50-0	No	No	1.00E+01	U	4.60E-03	U	3.00E-04	U			1	0.1	1		
Chlorfenvinphos	470-90-6	No	No					7.00E-04	U			1	0.1	1		
Chloride	16887-00-6	No	No									1		1		
Chlorimuron, Ethyl-	90982-32-4	No	No					2.00E-02	U			1	0.1	1		
Chlorinated Hydrocarbons (total)	NA	No	No									1	0.1	1		
Chlorine	7782-50-5	No	Yes					1.00E-01	U	1.45E-04	U	1		1	1.69E+03	2.78E+03
Chlorine Dioxide	10049-04-4	No	Yes					3.00E-02	U	2.00E-04	U	1		1		
Chlorite	14998-27-7	No	No									1		1		
Chlorite (Sodium Salt)	7758-19-2	No	No					3.00E-02	U			1		1		
Chloro-1,1-difluoroethane, 1-	75-68-3	No	Yes							5.00E+01	U	1		1	1.42E+03	1.14E+03
Chloro-1,3-butadiene, 2-	126-99-8	No	Yes			3.00E-04	U	2.00E-02	U	2.00E-02	U	1		1	1.49E+03	7.51E+02
Chloro-2-methylaniline HCl, 4-	3165-93-3	No	No	4.60E-01	U							1	0.1	1		
Chloro-2-methylaniline, 4-	95-69-2	No	No	1.00E-01	U	7.70E-05	U	3.00E-03	U			1	0.1	1		
Chloro-2-methylphenol, 4-	1570-64-5	No	No									1	0.1	1		
Chloro-4-methylphenol	35421-08-0	No	No									1	0.1	1		
Chloro-6-fluorophenol, 2-	2040-90-6	No	No									1	0.1	1		
Chloroacetaldehyde, 2-	107-20-0	No	Yes	2.70E-01	U							1		1	2.56E+04	2.83E+04
Chloroacetamide	79-07-2	No	No									1	0.1	1		
Chloroacetic Acid	79-11-8	No	No					2.00E-03	U			1	0.1	1		
Chloroacetophenone, 2-	532-27-4	No	No							3.00E-05	U	1	0.1	1		
Chloroaniline	27134-26-5	No	No									1	0.1	1		
Chloroaniline, 3-	108-42-9	No	No									1	0.1	1		
Chloroaniline, p-	106-47-8	No	No	2.00E-01	U			4.00E-03	U			1	0.1	1		
Chlorobenzene	108-90-7	No	Yes					2.00E-02	U	5.00E-02	U	1		1	8.90E+03	7.61E+02
Chlorobenzene sulfonic acid, p-	98-66-8	No	No									1	0.1	1		
Chlorobenzenes (total)	NA	No	No									1	0.1	1		
Chlorobenzilate	510-15-6	No	No	1.10E-01	U	3.10E-05	U	2.00E-02	U			1	0.1	1		
Chlorobenzoic Acid, p-	74-11-3	No	No					3.00E-02	U			1	0.1	1		
Chlorobenzotrifluoride, 3-nitro-4-	121-17-5	No	Yes									1		1	2.14E+05	9.07E+01
Chlorobenzotrifluoride, 4-	98-56-6	No	Yes					3.00E-03	U	3.00E-01	U	1		1	9.33E+03	1.17E+02
Chlorobiphenyl, p-	2051-62-9	No	Yes									1		1	1.78E+05	
Chlorobutane, 1-	109-69-3	No	Yes					4.00E-02	U			1		1	2.42E+03	7.29E+02
Chlorobutane, 2-	78-86-4	No	Yes									1		1	2.01E+03	6.51E+02
Chlorocyclopentadiene	41851-50-7	No	Yes									1		1	2.60E+03	9.88E+02
Chlorodibromoethane	73506-94-2	No	No									1	0.1	1		
Chlorodifluoromethane	75-45-6	No	Yes							5.00E+01	U	1		1	1.30E+03	1.68E+03
Chloroethanol, 2-	107-07-3	No	Yes					2.00E-02	U			1		1	1.08E+05	1.11E+05
Chloroethylvinyl ether, 2-	110-75-8	No	Yes									1		1	2.21E+03	1.64E+03
Chloroform	67-66-3	No	Yes	3.10E-02	U	2.30E-05	U	1.00E-02	U	9.77E-02	U	1		1	3.62E+03	2.54E+03
Chloromethane	74-87-3	No	Yes							9.00E-02	U	1		1	1.62E+03	1.32E+03
Chloromethyl Methyl Ether	107-30-2	No	Yes	2.40E+00	U	6.90E-04	U					1		1	7.35E+03	2.58E+04
Chloronaphthalene, Beta-	91-58-7	No	Yes					8.00E-02	U			1	0.13	1	1.10E+05	
Chloronaphthalene, alpha-	90-13-1	No	Yes									1		1	1.05E+05	2.66E+02
Chloronitrobenzene, o-	88-73-3	No	No	3.00E-01	U			3.00E-03	U	1.00E-05	U	1	0.1	1		
Chloronitrobenzene, p-	100-00-5	No	No	6.30E-03	U			1.00E-03	U	6.00E-04	U	1	0.1	1		
Chlorophenol, 2-	95-57-8	No	Yes					5.00E-03	U			1		1	1.71E+05	2.19E+04
Chlorophenol, 3-	108-43-0	No	No									1	0.1	1		
Chlorophenol, 4-	106-48-9	No	No									1	0.1	1		
Chlorophenols (each)	NA	No	No									1	0.1	1		
Chlorophenols (total)	NA	No	No									1	0.1	1		
Chlorophenyl Methyl Sulfide, p-	123-09-1	No	Yes									1		1	6.97E+04	2.73E+02
Chlorophenyl Methyl Sulfoxide	934-73-6	No	No									1	0.1	1		
Chlorophenyl phenyl ether, 4-	7005-72-3	No	Yes									1		1	1.83E+05	
Chloropicrin	76-06-2	No	Yes							4.00E-04	U	1		1	6.46E+03	6.17E+02
Chloropropane, 2-	75-29-6	No	Yes									1		1	1.79E+03	1.32E+03
Chlorothalonil	1897-45-6	No	No	3.10E-03	U	8.90E-07	U	1.50E-02	U			1	0.1	1		
Chlorotoluene, o-	95-49-8	No	Yes					2.00E-02	U			1		1	1.12E+04	9.07E+02
Chlorotoluene, p-	106-43-4	No	Yes					2.00E-02	U			1		1	1.01E+04	2.53E+02
Chlorozotocin	54749-90-5	No	No	2.40E+02	U	6.90E-02	U					1	0.1	1		
Chlorpropham	101-21-3	No	No					2.00E-01	U			1	0.1	1		

Site-specific

Recreator Screening Levels (RSL) for Soil - Modified for site-specific recreational user

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ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Chlorate (ClO3) as	14866-68-3	3.23E+09													
Chlordane	12789-03-6	3.23E+09	5.58E+01	4.89E+02	3.81E+03	4.95E+01					3.35E+03	2.93E+04	9.15E+04	2.91E+03	4.95E+01 ca*
Chlordane (alpha)	5103-71-9	3.23E+09													
Chlordane (gamma)	5103-74-2	3.23E+09													
Chlordecone (Kepone)	143-50-0	3.23E+09	1.95E+00	6.84E+00	1.80E+05	1.52E+00					2.01E+03	7.03E+03		1.56E+03	1.52E+00 ca
Chlorfenvinphos	470-90-6	3.23E+09									4.69E+03	1.64E+04		3.65E+03	3.65E+03 nc
Chloride	16887-00-6	3.23E+09													
Chlorimuron, Ethyl-	90982-32-4	3.23E+09									1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Chlorinated Hydrocarbons (total)	NA	3.23E+09													
Chlorine	7782-50-5	3.23E+09									6.70E+05		2.14E+01	2.14E+01	2.14E+01 nc
Chlorine Dioxide	10049-04-4	3.23E+09									2.01E+05		5.66E+07	2.00E+05	2.00E+05 max
Chlorite	14998-27-7	3.23E+09													
Chlorite (Sodium Salt)	7758-19-2	3.23E+09									2.01E+05			2.01E+05	2.01E+05 max
Chloro-1,1-difluoroethane, 1-	75-68-3	3.23E+09											6.21E+06	6.21E+06	6.21E+06 sat
Chloro-1,3-butadiene, 2-	126-99-8	3.23E+09			1.27E+00	1.27E+00					1.34E+05		2.61E+03	2.56E+03	1.27E+00 ca
Chloro-2-methylaniline HCl, 4-	3165-93-3	3.23E+09	4.25E+01	1.49E+02		3.30E+01									3.30E+01 ca
Chloro-2-methylaniline, 4-	95-69-2	3.23E+09	1.95E+02	6.84E+02	1.07E+07	1.52E+02					2.01E+04	7.03E+04		1.56E+04	1.52E+02 ca
Chloro-2-methylphenol, 4-	1570-64-5	3.23E+09													
Chloro-4-methylphenol	35421-08-0	3.23E+09													
Chloro-6-fluorophenol, 2-	2040-90-6	3.23E+09													
Chloroacetaldehyde, 2-	107-20-0	3.23E+09	7.24E+01			7.24E+01									7.24E+01 ca
Chloroacetamide	79-07-2	3.23E+09													
Chloroacetic Acid	79-11-8	3.23E+09									1.34E+04	4.69E+04		1.04E+04	1.04E+04 nc
Chloroacetophenone, 2-	532-27-4	3.23E+09											8.50E+06	8.50E+06	8.50E+06 max
Chloroaniline	27134-26-5	3.23E+09													
Chloroaniline, 3-	108-42-9	3.23E+09													
Chloroaniline, p-	106-47-8	3.23E+09	9.77E+01	3.42E+02		7.60E+01					2.68E+04	9.38E+04		2.08E+04	7.60E+01 ca
Chlorobenzene	108-90-7	3.23E+09									1.34E+05		3.90E+04	3.02E+04	3.02E+04 sat
Chlorobenzene sulfonic acid, p-	98-66-8	3.23E+09													
Chlorobenzenes (total)	NA	3.23E+09													
Chlorobenzilate	510-15-6	3.23E+09	1.78E+02	6.22E+02	2.66E+07	1.38E+02					1.34E+05	4.69E+05		1.04E+05	1.38E+02 ca
Chlorobenzoic Acid, p-	74-11-3	3.23E+09									2.01E+05	7.03E+05		1.56E+05	1.56E+05 max
Chlorobenzotrifluoride, 3-nitro-4-	121-17-5	3.23E+09													
Chlorobenzotrifluoride, 4-	98-56-6	3.23E+09									2.01E+04		2.45E+05	1.86E+04	1.86E+04 sat
Chlorobiphenyl, p-	2051-62-9	3.23E+09													
Chlorobutane, 1-	109-69-3	3.23E+09									2.68E+05			2.68E+05	2.68E+05 sat
Chlorobutane, 2-	78-86-4	3.23E+09													
Chlorocyclopentadiene	41851-50-7	3.23E+09													
Chlorodibromoethane	73506-94-2	3.23E+09													
Chlorodifluoromethane	75-45-6	3.23E+09											5.68E+06	5.68E+06	5.68E+06 sat
Chloroethanol, 2-	107-07-3	3.23E+09									1.34E+05			1.34E+05	1.34E+05 sat
Chloroethylvinyl ether, 2-	110-75-8	3.23E+09													
Chloroform	67-66-3	3.23E+09	6.31E+02		4.03E+01	3.79E+01					6.70E+04		3.10E+04	2.12E+04	3.79E+01 ca
Chloromethane	74-87-3	3.23E+09											1.28E+04	1.28E+04	1.28E+04 sat
Chloromethyl Methyl Ether	107-30-2	3.23E+09	8.14E+00		2.72E+00	2.04E+00									2.04E+00 ca
Chloronaphthalene, Beta-	91-58-7	3.23E+09									5.36E+05	1.44E+06		3.91E+05	3.91E+05 max
Chloronaphthalene, alpha-	90-13-1	3.23E+09													
Chloronitrobenzene, o-	88-73-3	3.23E+09	6.52E+01	2.28E+02		5.07E+01					2.01E+04	7.03E+04	2.83E+06	1.56E+04	5.07E+01 ca
Chloronitrobenzene, p-	100-00-5	3.23E+09	3.10E+03	1.09E+04		2.41E+03					6.70E+03	2.34E+04	1.70E+08	5.21E+03	2.41E+03 ca**
Chlorophenol, 2-	95-57-8	3.23E+09									3.35E+04			3.35E+04	3.35E+04 sat
Chlorophenol, 3-	108-43-0	3.23E+09													
Chlorophenol, 4-	106-48-9	3.23E+09													
Chlorophenols (each)	NA	3.23E+09													
Chlorophenols (total)	NA	3.23E+09													
Chlorophenyl Methyl Sulfide, p-	123-09-1	3.23E+09													
Chlorophenyl Methyl Sulfoxide	934-73-6	3.23E+09													
Chlorophenyl phenyl ether, 4-	7005-72-3	3.23E+09													
Chloropicrin	76-06-2	3.23E+09											2.26E+02	2.26E+02	2.26E+02 nc
Chloropropane, 2-	75-29-6	3.23E+09													
Chlorothalonil	1897-45-6	3.23E+09	6.31E+03	2.21E+04	9.28E+08	4.90E+03					1.01E+05	3.52E+05		7.82E+04	4.90E+03 ca*
Chlorotoluene, o-	95-49-8	3.23E+09									1.34E+05			1.34E+05	1.34E+05 sat
Chlorotoluene, p-	106-43-4	3.23E+09									1.34E+05			1.34E+05	1.34E+05 sat
Chlorozotocin	54749-90-5	3.23E+09	8.14E-02	2.85E-01	1.20E+04	6.33E-02									6.33E-02 ca
Chlorpropham	101-21-3	3.23E+09									1.34E+06	4.69E+06		1.04E+06	1.04E+06 max

Site-specific

Recreator Screening Levels (RSL) for Soil - Modified for site-specific recreational user
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC ?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)
Chlorpyrifos	2921-88-2	No	No					1.00E-03	U			1	0.1	1		
Chlorpyrifos Methyl	5598-13-0	No	No					1.00E-02	U			1	0.1	1		
Chlorsulfuron	64902-72-3	No	No					5.00E-02	U			1	0.1	1		
Chlorthiophos	60238-56-4	No	No					8.00E-04	U			1	0.1	1		
Chromium(III), Insoluble Salts	16065-83-1	No	No					1.50E+00	U			0.013		1		
Chromium(VI)	18540-29-9	Yes	No	5.00E-01	U	8.40E-02	U	3.00E-03	U	1.00E-04	U	0.025		1		
Chromium, Total	7440-47-3	No	No									0.013		1		
Chrysene	218-01-9	Yes	No	7.30E-03	U	1.10E-05	U					1	0.13	1		
Cobalt	7440-48-4	No	No			9.00E-03	U	3.00E-04	U	6.00E-06	U	1		1		
Complex Mixtures of Aliphatic and Aromatic Hydrocarbons	NA	No	No									1	0.1	1		
Copper	7440-50-8	No	No					4.00E-02	U			1		1		
Copper Cyanide	544-92-3	No	No					5.00E-03	U			1		1		
Coronene	191-07-1	No	No									1	0.13	1		
Creosote	8001-58-9	No	No									1	0.1	1		
Cresol, m-	108-39-4	No	No					5.00E-02	U	6.00E-01	U	1	0.1	1		
Cresol, o-	95-48-7	No	No					5.00E-02	U	6.00E-01	U	1	0.1	1		
Cresol, p-	106-44-5	No	No					1.00E-01	U	6.00E-01	U	1	0.1	1		
Cresol, p-chloro-m-	59-50-7	No	No					1.00E-01	U			1	0.1	1		
Cresols	1319-77-3	No	No					1.00E-01	U	6.00E-01	U	1	0.1	1		
Crotonaldehyde	4170-30-3	No	Yes									1		1	2.61E+04	2.00E+04
Crotonaldehyde, trans-	123-73-9	No	Yes	1.90E+00	U			1.00E-03	U			1		1	2.61E+04	1.66E+04
Cumene	98-82-8	No	Yes					1.00E-01	U	4.00E-01	U	1		1	8.56E+03	2.68E+02
Cupferron	135-20-6	No	No	2.20E-01	U	6.30E-05	U					1	0.1	1		
Cyanazine	21725-46-2	No	No	8.40E-01	U			2.00E-03	U			1	0.1	1		
Cyanide (CN-)	57-12-5	No	Yes					6.00E-04	U	8.00E-04	U	1		1	6.42E+04	1.00E+07
Cyanide (total complex)	NA	No	No									1		1		
Cyanogen	460-19-5	No	Yes					1.00E-03	U			1		1		
Cyanogen Bromide	506-68-3	No	Yes					9.00E-02	U			1		1		
Cyanogen Chloride	506-77-4	No	Yes					5.00E-02	U			1		1		
Cyclohexane	110-82-7	No	Yes							6.00E+00	U	1		1	1.44E+03	1.18E+02
Cyclohexane, 1,2,3,4,5-pentabromo-6-chloro-	87-84-3	No	No	2.30E-02	U							1	0.1	1		
Cyclohexanone	108-94-1	No	Yes					5.00E+00	U	7.00E-01	U	1		1	5.75E+04	5.11E+03
Cyclohexene	110-83-8	No	Yes					5.00E-03	U	1.00E+00	U	1		1	2.02E+03	2.83E+02
Cyclohexylamine	108-91-8	No	Yes					2.00E-01	U			1		1	1.03E+05	2.93E+05
Cyclopentadiene	542-92-7	No	Yes									1		1	2.05E+03	1.34E+03
Cyhalothrin/karate	68085-85-8	No	No					5.00E-03	U			1	0.1	1		
Cypermethrin	52315-07-8	No	No					1.00E-02	U			1	0.1	1		
Cyromazine	66215-27-8	No	No					7.50E-03	U			1	0.1	1		
DDD	72-54-8	No	No	2.40E-01	U	6.90E-05	U					1	0.1	1		
DDD, o,p'-	53-19-0	No	No									1	0.1	1		
DDE, p,p'-	72-55-9	No	Yes	3.40E-01	U	9.70E-05	U					1		1	2.91E+06	
DDT	50-29-3	No	No	3.40E-01	U	9.70E-05	U	5.00E-04	U			1	0.03	1		
DDT, o,p'-	789-02-6	No	No									1	0.1	1		
DDT/DDE/DDD (total)	NA	No	No									1	0.1	1		
Dacthal	1861-32-1	No	No					1.00E-02	U			1	0.1	1		
Dalapon	75-99-0	No	No					3.00E-02	U			1	0.1	1		
Decabromodiphenyl ether, 2,2',3,3',4,4',5,5',6,6'- (BDE-209)	1163-19-5	No	No	7.00E-04	U			7.00E-03	U			1	0.1	1		
Decane	124-18-5	No	Yes									1		1	1.56E+03	2.53E+00
Decanol, n-	112-30-1	No	Yes									1		1	8.71E+04	3.19E+01
Deltamethrin	52918-63-5	No	No									1	0.1	1		
Demeton	8065-48-3	No	No					4.00E-05	U			1	0.1	1		
Di(2-ethylhexyl)adipate	103-23-1	No	No	1.20E-03	U			6.00E-01	U			1	0.1	1		
Di-n-butyltin bis(2-ethylhexanoate)	2781-10-4	No	Yes									1		1	1.29E+05	
Di-n-butyltin bis(methyl maleate)	15546-11-9	No	No									1	0.1	1		
Di-n-butyltin bis(n-butyl maleate)	15546-16-4	No	No									1	0.1	1		
Di-n-butyltin dilaurate	77-58-7	No	Yes									1		1	4.40E+05	
Di-n-butyltin distearate	5847-55-2	No	Yes									1		1	2.33E+06	
Di-n-hexylphthalate	84-75-3	No	Yes									1		1	1.33E+06	3.85E+00
Diallate	2303-16-4	No	No	6.10E-02	U							1	0.1	1		
Diammonium phosphate	7783-28-0	No	No					4.86E+01	U			1		1		
Diazinon	333-41-5	No	No					7.00E-04	U			1	0.1	1		
Dibenz[a,h]anthracene	53-70-3	Yes	No	7.30E+00	U	1.20E-03	U					1	0.13	1		
Dibenzo(a,e)pyrene	192-65-4	No	No	1.20E+01	U	1.10E-03	U					1	0.13	1		

Site-specific

Recreator Screening Levels (RSL) for Soil - Modified for site-specific recreational user
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Chlorpyrifos	2921-88-2	3.23E+09									6.70E+03	2.34E+04		5.21E+03	5.21E+03 nc
Chlorpyrifos Methyl	5598-13-0	3.23E+09									6.70E+04	2.34E+05		5.21E+04	5.21E+04 nc
Chlorsulfuron	64902-72-3	3.23E+09									3.35E+05	1.17E+06		2.61E+05	2.61E+05 max
Chlorthiophos	60238-56-4	3.23E+09									5.36E+03	1.88E+04		4.17E+03	4.17E+03 nc
Chromium(III), Insoluble Salts	16065-83-1	3.23E+09									1.01E+07			1.01E+07	1.01E+07 max
Chromium(VI)	18540-29-9	3.23E+09	1.33E+01		5.36E+03	1.33E+01					2.01E+04		2.83E+07	2.01E+04	1.33E+01 ca
Chromium, Total	7440-47-3	3.23E+09													
Chrysene	218-01-9	3.23E+09	9.10E+02	4.74E+03	4.10E+07	7.63E+02									7.63E+02 ca
Cobalt	7440-48-4	3.23E+09			9.18E+04	9.18E+04					2.01E+03		1.70E+06	2.01E+03	2.01E+03 nc
Complex Mixtures of Aliphatic and Aromatic Hydrocarbons	NA	3.23E+09													
Copper	7440-50-8	3.23E+09									2.68E+05			2.68E+05	2.68E+05 max
Copper Cyanide	544-92-3	3.23E+09									3.35E+04			3.35E+04	3.35E+04 nc
Coronene	191-07-1	3.23E+09													
Creosote	8001-58-9	3.23E+09													
Cresol, m-	108-39-4	3.23E+09									3.35E+05	1.17E+06	1.70E+11	2.61E+05	2.61E+05 max
Cresol, o-	95-48-7	3.23E+09									3.35E+05	1.17E+06	1.70E+11	2.61E+05	2.61E+05 max
Cresol, p-	106-44-5	3.23E+09									6.70E+05	2.34E+06	1.70E+11	5.21E+05	5.21E+05 max
Cresol, p-chloro-m-	59-50-7	3.23E+09									6.70E+05	2.34E+06		5.21E+05	5.21E+05 max
Cresols	1319-77-3	3.23E+09									6.70E+05	2.34E+06	1.70E+11	5.21E+05	5.21E+05 max
Crotonaldehyde	4170-30-3	3.23E+09													
Crotonaldehyde, trans-	123-73-9	3.23E+09	1.03E+01			1.03E+01					6.70E+03			6.70E+03	1.03E+01 ca
Cumene	98-82-8	3.23E+09									6.70E+05		3.00E+05	2.07E+05	2.07E+05 sat
Cupferron	135-20-6	3.23E+09	8.89E+01	3.11E+02	1.31E+07	6.91E+01									6.91E+01 ca
Cyanazine	21725-46-2	3.23E+09	2.33E+01	8.14E+01		1.81E+01					1.34E+04	4.69E+04		1.04E+04	1.81E+01 ca
Cyanide (CN-)	57-12-5	3.23E+09									4.02E+03		4.50E+03	2.12E+03	2.12E+03 nc
Cyanide (total complex)	NA	3.23E+09													
Cyanogen	460-19-5	3.23E+09									6.70E+03			6.70E+03	6.70E+03 nc
Cyanogen Bromide	506-68-3	3.23E+09									6.03E+05			6.03E+05	6.03E+05 max
Cyanogen Chloride	506-77-4	3.23E+09									3.35E+05			3.35E+05	3.35E+05 max
Cyclohexane	110-82-7	3.23E+09											7.56E+05	7.56E+05	7.56E+05 sat
Cyclohexane, 1,2,3,4,5-pentabromo-6-chloro-	87-84-3	3.23E+09	8.50E+02	2.97E+03		6.61E+02									6.61E+02 ca
Cyclohexanone	108-94-1	3.23E+09									3.35E+07		3.53E+06	3.19E+06	3.19E+06 sat
Cyclohexene	110-83-8	3.23E+09									3.35E+04		1.77E+05	2.82E+04	2.82E+04 sat
Cyclohexylamine	108-91-8	3.23E+09									1.34E+06			1.34E+06	1.34E+06 sat
Cyclopentadiene	542-92-7	3.23E+09													
Cyhalothrin/karate	68085-85-8	3.23E+09									3.35E+04	1.17E+05		2.61E+04	2.61E+04 nc
Cypermethrin	52315-07-8	3.23E+09									6.70E+04	2.34E+05		5.21E+04	5.21E+04 nc
Cyromazine	66215-27-8	3.23E+09									5.03E+04	1.76E+05		3.91E+04	3.91E+04 nc
DDD	72-54-8	3.23E+09	8.14E+01	2.85E+02	1.20E+07	6.33E+01									6.33E+01 ca
DDD, o,p'-	53-19-0	3.23E+09													
DDE, p,p'-	72-55-9	3.23E+09	5.75E+01		7.65E+03	5.71E+01									5.71E+01 ca
DDT	50-29-3	3.23E+09	5.75E+01	6.71E+02	8.52E+06	5.30E+01					3.35E+03	3.91E+04		3.09E+03	5.30E+01 ca*
DDT, o,p'-	789-02-6	3.23E+09													
DDT/DDE/DDD (total)	NA	3.23E+09													
Dacthal	1861-32-1	3.23E+09									6.70E+04	2.34E+05		5.21E+04	5.21E+04 nc
Dalapon	75-99-0	3.23E+09									2.01E+05	7.03E+05		1.56E+05	1.56E+05 max
Decabromodiphenyl ether, 2,2',3,3',4,4',5,5',6,6'- (BDE-209)	1163-19-5	3.23E+09	2.79E+04	9.77E+04		2.17E+04					4.69E+04	1.64E+05		3.65E+04	2.17E+04 ca**
Decane	124-18-5	3.23E+09													
Decanol, n-	112-30-1	3.23E+09													
Deltamethrin	52918-63-5	3.23E+09													
Demeton	8065-48-3	3.23E+09									2.68E+02	9.38E+02		2.08E+02	2.08E+02 nc
Di(2-ethylhexyl)adipate	103-23-1	3.23E+09	1.63E+04	5.70E+04		1.27E+04					4.02E+06	1.41E+07		3.13E+06	1.27E+04 ca
Di-n-butyltin bis(2-ethylhexanoate)	2781-10-4	3.23E+09													
Di-n-butyltin bis(methyl maleate)	15546-11-9	3.23E+09													
Di-n-butyltin bis(n-butyl maleate)	15546-16-4	3.23E+09													
Di-n-butyltin dilaurate	77-58-7	3.23E+09													
Di-n-butyltin distearate	5847-55-2	3.23E+09													
Di-n-hexylphthalate	84-75-3	3.23E+09													
Diallate	2303-16-4	3.23E+09	3.20E+02	1.12E+03		2.49E+02									2.49E+02 ca
Diammonium phosphate	7783-28-0	3.23E+09									3.26E+08			3.26E+08	3.26E+08 max
Diazinon	333-41-5	3.23E+09									4.69E+03	1.64E+04		3.65E+03	3.65E+03 nc
Dibenz[a,h]anthracene	53-70-3	3.23E+09	9.10E-01	4.74E+00	3.75E+05	7.63E-01									7.63E-01 ca
Dibenzo(a,e)pyrene	192-65-4	3.23E+09	1.63E+00	4.38E+00	7.51E+05	1.19E+00									1.19E+00 ca

Site-specific

Recreator Screening Levels (RSL) for Soil - Modified for site-specific recreational user
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC ?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)
Dibenzofuran	132-64-9	No	Yes					1.00E-03	U			1	0.03	1	2.70E+05	
Dibenzothiophene	132-65-0	No	Yes					1.00E-02	U			1		1	7.24E+05	
Dibromo-3-chloropropane, 1,2-	96-12-8	Yes	Yes	8.00E-01	U	6.00E-03	U	2.00E-04	U	2.00E-04	U	1		1	4.42E+04	9.80E+02
Dibromoacetic acid	631-64-1	No	No									1	0.1	1		
Dibromobenzene, 1,3-	108-36-1	No	Yes					4.00E-04	U			1		1	2.66E+04	1.59E+02
Dibromobenzene, 1,4-	106-37-6	No	Yes					1.00E-02	U			1		1	3.03E+04	
Dibromochloromethane	124-48-1	No	Yes	8.40E-02	U	2.70E-05	U	2.00E-02	U			1		1	1.10E+04	8.02E+02
Dibromodichloromethane	594-18-3	No	Yes									1		1	3.20E+04	
Dibromodiphenyl Ether, p,p'-	2050-47-7	No	Yes									1		1	5.22E+05	
Dibromoethane, 1,2-	106-93-4	No	Yes	2.00E+00	U	6.00E-04	U	9.00E-03	U	9.00E-03	U	1		1	1.19E+04	1.34E+03
Dibromomethane (Methylene Bromide)	74-95-3	No	Yes					1.00E-02	U	4.00E-03	U	1		1	7.79E+03	2.82E+03
Dibutoxy di-n-butyltin	3349-36-8	No	Yes									1		1	8.25E+04	
Dibutyl Phthalate	84-74-2	No	No					1.00E-01	U			1	0.1	1		
Dibutylbis((1-oxoisooctyl)oxy)stannane	85702-74-5	No	No									1	0.1	1		
Dibutylbis(octadeca-9(Z),12(Z),15(Z)-trienoyloxy)stannane	95873-60-2	No	Yes									1		1	3.40E+06	
Dibutylbis(octadeca-9(Z),12(Z)-dienoyloxy)stannane	85391-79-3	No	No									1	0.1	1		
Dibutylbis(palmitoyloxy)stannane	13323-63-2	No	Yes									1		1	1.20E+06	
Dibutyltin Compounds	NA	No	No					3.00E-04	U			1	0.1	1		
Dibutyltin diacetate	1067-33-0	No	Yes									1		1	1.75E+04	1.86E+00
Dibutyltin dichloride	683-18-1	No	Yes									1		1	3.93E+04	
Dibutyltin oxide	818-08-6	No	Yes									1		1		
Dicalcium phosphate	7757-93-9	No	No					4.86E+01	U			1		1		
Dicamba	1918-00-9	No	No					3.00E-02	U			1	0.1	1		
Dichloro-2-butene, 1,4-	764-41-0	No	Yes			4.20E-03	U					1		1	1.54E+04	5.20E+02
Dichloro-2-butene, cis-1,4-	1476-11-5	No	Yes			4.20E-03	U					1		1	1.54E+04	5.20E+02
Dichloro-2-butene, trans-1,4-	110-57-6	No	Yes			4.20E-03	U					1		1	1.54E+04	7.63E+02
Dichloroacetic Acid	79-43-6	No	No	5.00E-02	U			4.00E-03	U			1	0.1	1		
Dichloroaniline, 2,4-	554-00-7	No	No									1	0.1	1		
Dichloroaniline, 3,4-	95-76-1	No	Yes									1		1	1.39E+05	
Dichlorobenzene	25321-22-6	No	Yes									1		1	1.61E+04	1.93E+02
Dichlorobenzene, 1,2-	95-50-1	No	Yes					9.00E-02	U	2.00E-01	U	1		1	1.61E+04	3.76E+02
Dichlorobenzene, 1,3-	541-73-1	No	Yes									1		1	1.37E+04	2.96E+02
Dichlorobenzene, 1,4-	106-46-7	No	Yes	5.40E-03	U	1.10E-05	U	7.00E-02	U	8.00E-01	U	1		1	1.44E+04	
Dichlorobenzidine, 3,3'-	91-94-1	No	No	4.50E-01	U	3.40E-04	U					1	0.1	1		
Dichlorobenzoic acid, -3,5	51-36-5	No	No									1	0.1	1		
Dichlorobenzophenone, 4,4'-	90-98-2	No	No					9.00E-03	U			1	0.1	1		
Dichlorobenzotrifluoride, 3,4-	328-84-7	No	Yes									1		1	1.59E+04	4.57E+01
Dichlorodifluoromethane	75-71-8	No	Yes					2.00E-01	U	1.00E-01	U	1		1	1.16E+03	8.44E+02
Dichlorodiisopropyl ether, 2,2'-	39638-32-9	No	Yes									1		1	1.81E+04	2.35E+02
Dichloroethane, 1,1-	75-34-3	No	Yes	5.70E-03	U	1.60E-06	U	2.00E-01	U			1		1	2.87E+03	1.69E+03
Dichloroethane, 1,2-	107-06-2	No	Yes	9.10E-02	U	2.60E-05	U	6.00E-03	U	7.00E-03	U	1		1	6.31E+03	2.98E+03
Dichloroethylene, 1,1-	75-35-4	No	Yes					5.00E-02	U	2.00E-01	U	1		1	1.59E+03	1.19E+03
Dichloroethylene, 1,2-cis-	156-59-2	No	Yes					2.00E-03	U			1		1	3.45E+03	2.37E+03
Dichloroethylene, 1,2-trans-	156-60-5	No	Yes					2.00E-02	U			1		1	3.46E+03	1.67E+03
Dichlorophenol, 2,3-	576-24-9	No	No									1	0.1	1		
Dichlorophenol, 2,4-	120-83-2	No	No					3.00E-03	U			1	0.1	1		
Dichlorophenol, 2,5-	583-78-8	Yes	No									1	0.1	1		
Dichlorophenol, 2,6-	87-65-0	No	No									1	0.1	1		
Dichlorophenol, 3,4-	95-77-2	No	No									1	0.1	1		
Dichlorophenols (total)	NA	No	No									1	0.1	1		
Dichlorophenoxy Acetic Acid, 2,4-	94-75-7	No	No					1.00E-02	U			1	0.05	1		
Dichlorophenoxy)butyric Acid, 4-(2,4-	94-82-6	No	No					8.00E-03	U			1	0.1	1		
Dichloropropane, 1,2-	78-87-5	No	Yes	3.60E-02	U	1.00E-05	U	9.00E-02	U	4.00E-03	U	1		1	5.23E+03	1.36E+03
Dichloropropane, 1,3-	142-28-9	No	Yes					2.00E-02	U			1		1	9.33E+03	1.49E+03
Dichloropropane, 2,2-	594-20-7	No	Yes									1		1	2.21E+03	5.27E+02
Dichloropropanol, 2,3-	616-23-9	No	No					3.00E-03	U			1	0.1	1		
Dichloropropene, 1,3-	542-75-6	No	Yes	1.00E-01	U	4.00E-06	U	3.00E-02	U	2.00E-02	U	1		1	4.91E+03	1.57E+03
Dichloropropene, 2,3-	78-88-6	No	Yes									1		1	4.27E+03	1.07E+03
Dichloropropene, cis-1,3-	10061-01-5	No	Yes									1		1	4.90E+03	1.22E+03
Dichloropropene, trans-1,3-	10061-02-6	No	Yes									1		1	4.91E+03	1.57E+03
Dichlorvos	62-73-7	No	No	2.90E-01	U	8.30E-05	U	5.00E-04	U	5.00E-04	U	1	0.1	1		
Diclofop-methyl	51338-27-3	No	No									1	0.1	1		

Site-specific

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Chemical	CAS Number	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Dibenzofuran	132-64-9	3.23E+09									6.70E+03	7.82E+04		6.17E+03	6.17E+03 nc
Dibenzothiophene	132-65-0	3.23E+09									6.70E+04			6.70E+04	6.70E+04 nc
Dibromo-3-chloropropane, 1,2-	96-12-8	3.23E+09	8.30E+00		1.03E+00	9.13E-01					1.34E+03		7.74E+02	4.91E+02	9.13E-01 ca
Dibromoacetic acid	631-64-1	3.23E+09													
Dibromobenzene, 1,3-	108-36-1	3.23E+09									2.68E+03			2.68E+03	2.68E+03 sat
Dibromobenzene, 1,4-	106-37-6	3.23E+09									6.70E+04			6.70E+04	6.70E+04 nc
Dibromochloromethane	124-48-1	3.23E+09	2.33E+02		1.04E+02	7.18E+01					1.34E+05			1.34E+05	7.18E+01 ca
Dibromodichloromethane	594-18-3	3.23E+09													
Dibromodiphenyl Ether, p,p'-	2050-47-7	3.23E+09													
Dibromoethane, 1,2-	106-93-4	3.23E+09	9.77E+00		5.08E+00	3.34E+00					6.03E+04		9.40E+03	8.13E+03	3.34E+00 ca
Dibromomethane (Methylene Bromide)	74-95-3	3.23E+09									6.70E+04		2.73E+03	2.62E+03	2.62E+03 nc
Dibutoxy di-n-butyltin	3349-36-8	3.23E+09													
Dibutyl Phthalate	84-74-2	3.23E+09									6.70E+05	2.34E+06		5.21E+05	5.21E+05 max
Dibutylbis((1-oxoisooctyl)oxy)stannane	85702-74-5	3.23E+09													
Dibutylbis(octadeca-9(Z),12(Z),15(Z)-trienoyloxy)stannane	95873-60-2	3.23E+09													
Dibutylbis(octadeca-9(Z),12(Z)-dienoyloxy)stannane	85391-79-3	3.23E+09													
Dibutylbis(palmitoyloxy)stannane	13323-63-2	3.23E+09													
Dibutyltin Compounds	NA	3.23E+09									2.01E+03	7.03E+03		1.56E+03	1.56E+03 nc
Dibutyltin diacetate	1067-33-0	3.23E+09													
Dibutyltin dichloride	683-18-1	3.23E+09													
Dibutyltin oxide	818-08-6	3.23E+09													
Dicalcium phosphate	7757-93-9	3.23E+09									3.26E+08			3.26E+08	3.26E+08 max
Dicamba	1918-00-9	3.23E+09									2.01E+05	7.03E+05		1.56E+05	1.56E+05 max
Dichloro-2-butene, 1,4-	764-41-0	3.23E+09			9.35E-01	9.35E-01									9.35E-01 ca
Dichloro-2-butene, cis-1,4-	1476-11-5	3.23E+09			9.35E-01	9.35E-01									9.35E-01 ca
Dichloro-2-butene, trans-1,4-	110-57-6	3.23E+09			9.36E-01	9.36E-01									9.36E-01 ca
Dichloroacetic Acid	79-43-6	3.23E+09	3.91E+02	1.37E+03		3.04E+02					2.68E+04	9.38E+04		2.08E+04	3.04E+02 ca*
Dichloroaniline, 2,4-	554-00-7	3.23E+09													
Dichloroaniline, 3,4-	95-76-1	3.23E+09													
Dichlorobenzene	25321-22-6	3.23E+09													
Dichlorobenzene, 1,2-	95-50-1	3.23E+09									6.03E+05		2.82E+05	1.92E+05	1.92E+05 sat
Dichlorobenzene, 1,3-	541-73-1	3.23E+09													
Dichlorobenzene, 1,4-	106-46-7	3.23E+09	3.62E+03		3.35E+02	3.06E+02					4.69E+05		1.01E+06	3.20E+05	3.06E+02 ca
Dichlorobenzidine, 3,3'-	91-94-1	3.23E+09	4.34E+01	1.52E+02	2.43E+06	3.38E+01									3.38E+01 ca
Dichlorobenzoic acid, -3,5	51-36-5	3.23E+09													
Dichlorobenzophenone, 4,4'-	90-98-2	3.23E+09									6.03E+04	2.11E+05		4.69E+04	4.69E+04 nc
Dichlorobenzotrifluoride, 3,4-	328-84-7	3.23E+09													
Dichlorodifluoromethane	75-71-8	3.23E+09									1.34E+06		1.02E+04	1.01E+04	1.01E+04 sat
Dichlorodiisopropyl ether, 2,2'-	39638-32-9	3.23E+09													
Dichloroethane, 1,1-	75-34-3	3.23E+09	3.43E+03		4.59E+02	4.05E+02					1.34E+06			1.34E+06	4.05E+02 ca
Dichloroethane, 1,2-	107-06-2	3.23E+09	2.15E+02		6.20E+01	4.81E+01					4.02E+04		3.87E+03	3.53E+03	4.81E+01 ca*
Dichloroethylene, 1,1-	75-35-4	3.23E+09									3.35E+05		2.79E+04	2.58E+04	2.58E+04 sat
Dichloroethylene, 1,2-cis-	156-59-2	3.23E+09									1.34E+04			1.34E+04	1.34E+04 sat
Dichloroethylene, 1,2-trans-	156-60-5	3.23E+09									1.34E+05			1.34E+05	1.34E+05 sat
Dichlorophenol, 2,3-	576-24-9	3.23E+09													
Dichlorophenol, 2,4-	120-83-2	3.23E+09									2.01E+04	7.03E+04		1.56E+04	1.56E+04 nc
Dichlorophenol, 2,5-	583-78-8	3.23E+09													
Dichlorophenol, 2,6-	87-65-0	3.23E+09													
Dichlorophenol, 3,4-	95-77-2	3.23E+09													
Dichlorophenols (total)	NA	3.23E+09													
Dichlorophenoxy Acetic Acid, 2,4-	94-75-7	3.23E+09									6.70E+04	4.69E+05		5.86E+04	5.86E+04 nc
Dichlorophenoxy)butyric Acid, 4-(2,4-	94-82-6	3.23E+09									5.36E+04	1.88E+05		4.17E+04	4.17E+04 nc
Dichloropropane, 1,2-	78-87-5	3.23E+09	5.43E+02		1.34E+02	1.07E+02					6.03E+05		1.83E+03	1.83E+03	1.07E+02 ca*
Dichloropropane, 1,3-	142-28-9	3.23E+09									1.34E+05			1.34E+05	1.34E+05 sat
Dichloropropane, 2,2-	594-20-7	3.23E+09													
Dichloropropanol, 2,3-	616-23-9	3.23E+09									2.01E+04	7.03E+04		1.56E+04	1.56E+04 nc
Dichloropropene, 1,3-	542-75-6	3.23E+09	1.95E+02		3.13E+02	1.20E+02					2.01E+05		8.59E+03	8.24E+03	1.20E+02 ca*
Dichloropropene, 2,3-	78-88-6	3.23E+09													
Dichloropropene, cis-1,3-	10061-01-5	3.23E+09													
Dichloropropene, trans-1,3-	10061-02-6	3.23E+09													
Dichlorvos	62-73-7	3.23E+09	6.74E+01	2.36E+02	9.95E+06	5.24E+01					3.35E+03	1.17E+04	1.42E+08	2.61E+03	5.24E+01 ca*
Diclofop-methyl	51338-27-3	3.23E+09													

Site-specific

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Chemical	CAS Number	Mutagen?	VOC ?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)
Dicofol	115-32-2	No	No									1	0.1	1		
Dicyclohexylamine	101-83-7	No	Yes									1		1	8.62E+04	2.16E+03
Dicyclopentadiene	77-73-6	No	Yes					8.00E-02	U	3.00E-04	U	1		1	5.67E+03	
Didecyl dimethyl ammonium chloride	7173-51-5	No	No									1	0.1	1		
Dieldrin	60-57-1	No	No	1.60E+01	U	4.60E-03	U	5.00E-05	U			1	0.1	1		
Diepoxybutane	1464-53-5	No	Yes									1		1	2.02E+05	1.15E+05
Diethanolamine	111-42-2	No	No					2.00E-03	U	2.00E-04	U	1	0.1	1		
Diethyl Phthalate	84-66-2	No	No					8.00E-01	U			1	0.1	1		
Diethyl sulfate	64-67-5	No	No									1	0.1	1		
Diethyl-p-nitrophenylphosphate	311-45-5	No	No									1	0.1	1		
Diethylene Glycol Dinitrate (DEGDN)	693-21-0	No	No									1	0.1	1		
Diethylene Glycol Monobutyl Ether	112-34-5	No	No					3.00E-02	U	1.00E-04	U	1	0.1	1		
Diethylene Glycol Monoethyl Ether	111-90-0	No	No					6.00E-02	U	3.00E-04	U	1	0.1	1		
Diethylene-glycol	111-46-6	No	No									1	0.1	1		
Diethylformamide	617-84-5	No	Yes					1.00E-03	U			1		1	1.91E+05	1.12E+05
Diethylphosphorodithioate	298-06-6	No	Yes									1		1	1.79E+04	2.15E-02
Diethylstilbestrol	56-53-1	No	No	3.50E+02	U	1.00E-01	U					1	0.1	1		
Difenzoquat	43222-48-6	No	No					8.00E-02	U			1	0.1	1		
Diflubenzuron	35367-38-5	No	No					2.00E-02	U			1	0.1	1		
Difluoroethane, 1,1-	75-37-6	No	Yes							4.00E+01	U	1		1	1.59E+03	1.43E+03
Difluoropropane, 2,2-	420-45-1	No	Yes									1		1	1.01E+03	4.63E+04
Dihydrosafrole	94-58-6	No	Yes	4.40E-02	U	1.30E-05	U					1		1	2.08E+03	
Diisopropyl Ether	108-20-3	No	Yes							7.00E-01	U	1		1	4.21E+03	2.26E+03
Diisopropyl Methylphosphonate	1445-75-6	No	Yes					8.00E-02	U			1		1	5.26E+04	5.30E+02
Dimagnesium phosphate	7782-75-4	No	No					4.86E+01	U			1		1		
Dimethipin	55290-64-7	No	No					2.00E-02	U			1	0.1	1		
Dimethoate	60-51-5	No	No					2.00E-04	U			1	0.1	1		
Dimethoxybenzidine, 3,3'-	119-90-4	No	No	1.60E+00	U							1	0.1	1		
Dimethyl Sulfate	77-78-1	No	No									1	0.1	1		
Dimethyl Sulfide	75-18-3	No	Yes									1		1	4.10E+03	5.34E+03
Dimethyl methylphosphonate	756-79-6	No	No	1.70E-03	U			6.00E-02	U			1	0.1	1		
Dimethylamino azobenzene [p-]	60-11-7	No	No	4.60E+00	U	1.30E-03	U					1	0.1	1		
Dimethylaniline HCl, 2,4-	21436-96-4	No	No	5.80E-01	U							1	0.1	1		
Dimethylaniline, 2,4-	95-68-1	No	No	2.00E-01	U			2.00E-03	U			1	0.1	1		
Dimethylaniline, N,N-	121-69-7	No	Yes					2.00E-03	U			1		1	4.32E+04	8.30E+02
Dimethylbenz(a)anthracene, 7,12-	57-97-6	Yes	No	2.50E+02	U	7.10E-02	U					1	0.13	1		
Dimethylbenzidine, 3,3'-	119-93-7	No	No	1.10E+01	U							1	0.1	1		
Dimethylcyclohexylamine, n,n-	98-94-2	No	Yes									1		1	5.23E+04	
Dimethylethyl Lead	107584-40-7	No	No									1	0.1	1		
Dimethylformamide	68-12-2	No	Yes					1.00E-01	U	3.00E-02	U	1		1	1.76E+05	1.06E+05
Dimethylhydrazine, 1,1-	57-14-7	No	Yes					1.00E-04	U	2.00E-06	U	1		1	2.23E+05	1.72E+05
Dimethylhydrazine, 1,2-	540-73-8	No	Yes	5.50E+02	U	1.60E-01	U					1		1	2.31E+05	1.89E+05
Dimethylmercury	593-74-8	No	Yes									1		1	5.88E+03	4.14E+03
Dimethylphenethylamine	122-09-8	No	No									1	0.1	1		
Dimethylphenol, 2,4-	105-67-9	No	No					2.00E-02	U			1	0.1	1		
Dimethylphenol, 2,6-	576-26-1	No	No					6.00E-04	U			1	0.1	1		
Dimethylphenol, 3,4-	95-65-8	No	No					1.00E-03	U			1	0.1	1		
Dimethylphthalate	131-11-3	No	No									1	0.1	1		
Dimethylterephthalate	120-61-6	No	Yes					1.00E-01	U			1		1	2.95E+04	
Dimethylvinylchloride	513-37-1	No	Yes	4.50E-02	U	1.30E-05	U					1		1	1.39E+03	1.09E+03
Dinitro-o-cresol, 4,6-	534-52-1	No	No					8.00E-05	U			1	0.1	1		
Dinitro-o-cyclohexyl Phenol, 4,6-	131-89-5	No	No					2.00E-03	U			1	0.1	1		
Dinitroaniline, 3,5-	618-87-1	No	No									1	0.1	1		
Dinitrobenzene, 1,2-	528-29-0	No	No					1.00E-04	U			1	0.1	1		
Dinitrobenzene, 1,3-	99-65-0	No	No					1.00E-04	U			1	0.1	1		
Dinitrobenzene, 1,4-	100-25-4	No	No					1.00E-04	U			1	0.1	1		
Dinitrophenol, 2,4-	51-28-5	No	No					2.00E-03	U			1	0.1	1		
Dinitrophenols	25550-58-7	Yes	No									1	0.1	1		
Dinitrosopentamethylenetetramine, N,N-	101-25-7	No	No									1	0.1	1		
Dinitrotoluene Mixture, 2,4/2,6-	NA	No	No	6.80E-01	U							1	0.1	1		
Dinitrotoluene, 2,4-	121-14-2	No	No	3.10E-01	U	8.90E-05	U	2.00E-03	U			1	0.102	1		
Dinitrotoluene, 2,6-	606-20-2	No	No	1.50E+00	U			3.00E-04	U			1	0.099	1		
Dinitrotoluene, 2-Amino-4,6-	35572-78-2	No	No					2.00E-03	U			1	0.006	1		
Dinitrotoluene, 4-Amino-2,6-	19406-51-0	No	No					2.00E-03	U			1	0.009	1		

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Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Dicofol	115-32-2	3.23E+09													
Dicyclohexylamine	101-83-7	3.23E+09													
Dicyclopentadiene	77-73-6	3.23E+09									5.36E+05		1.49E+02	1.49E+02	1.49E+02 nc
Didecyl dimethyl ammonium chloride	7173-51-5	3.23E+09													
Dieldrin	60-57-1	3.23E+09	1.22E+00	4.27E+00	1.80E+05	9.50E-01					3.35E+02	1.17E+03		2.61E+02	9.50E-01 ca
Diepoxybutane	1464-53-5	3.23E+09													
Diethanolamine	111-42-2	3.23E+09									1.34E+04	4.69E+04	5.66E+07	1.04E+04	1.04E+04 nc
Diethyl Phthalate	84-66-2	3.23E+09									5.36E+06	1.88E+07		4.17E+06	4.17E+06 max
Diethyl sulfate	64-67-5	3.23E+09													
Diethyl-p-nitrophenylphosphate	311-45-5	3.23E+09													
Diethylene Glycol Dinitrate (DEGDN)	693-21-0	3.23E+09													
Diethylene Glycol Monobutyl Ether	112-34-5	3.23E+09									2.01E+05	7.03E+05	2.83E+07	1.56E+05	1.56E+05 max
Diethylene Glycol Monoethyl Ether	111-90-0	3.23E+09									4.02E+05	1.41E+06	8.50E+07	3.12E+05	3.12E+05 max
Diethylene-glycol	111-46-6	3.23E+09													
Diethylformamide	617-84-5	3.23E+09									6.70E+03			6.70E+03	6.70E+03 nc
Diethylphosphorodithioate	298-06-6	3.23E+09													
Diethylstilbestrol	56-53-1	3.23E+09	5.58E-02	1.95E-01	8.26E+03	4.34E-02									4.34E-02 ca
Difenzoquat	43222-48-6	3.23E+09									5.36E+05	1.88E+06		4.17E+05	4.17E+05 max
Diflubenzuron	35367-38-5	3.23E+09									1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Difluoroethane, 1,1-	75-37-6	3.23E+09											5.55E+06	5.55E+06	5.55E+06 sat
Difluoropropane, 2,2-	420-45-1	3.23E+09													
Dihydrosafrole	94-58-6	3.23E+09	4.44E+02		4.09E+01	3.74E+01									3.74E+01 ca
Diisopropyl Ether	108-20-3	3.23E+09											2.58E+05	2.58E+05	2.58E+05 sat
Diisopropyl Methylphosphonate	1445-75-6	3.23E+09									5.36E+05			5.36E+05	5.36E+05 sat
Dimagnesium phosphate	7782-75-4	3.23E+09									3.26E+08			3.26E+08	3.26E+08 max
Dimethipin	55290-64-7	3.23E+09									1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Dimethoate	60-51-5	3.23E+09									1.34E+03	4.69E+03		1.04E+03	1.04E+03 nc
Dimethoxybenzidine, 3,3'-	119-90-4	3.23E+09	1.22E+01	4.27E+01		9.50E+00									9.50E+00 ca
Dimethyl Sulfate	77-78-1	3.23E+09													
Dimethyl Sulfide	75-18-3	3.23E+09													
Dimethyl methylphosphonate	756-79-6	3.23E+09	1.15E+04	4.02E+04		8.94E+03					4.02E+05	1.41E+06		3.13E+05	8.94E+03 ca*
Dimethylamino azobenzene [p-]	60-11-7	3.23E+09	4.25E+00	1.49E+01	6.35E+05	3.30E+00									3.30E+00 ca
Dimethylaniline HCl, 2,4-	21436-96-4	3.23E+09	3.37E+01	1.18E+02		2.62E+01									2.62E+01 ca
Dimethylaniline, 2,4-	95-68-1	3.23E+09	9.77E+01	3.42E+02		7.60E+01					1.34E+04	4.69E+04		1.04E+04	7.60E+01 ca
Dimethylaniline, N,N-	121-69-7	3.23E+09									1.34E+04			1.34E+04	1.34E+04 sat
Dimethylbenz(a)anthracene, 7,12-	57-97-6	3.23E+09	2.66E-02	1.38E-01	6.35E+03	2.23E-02									2.23E-02 ca
Dimethylbenzidine, 3,3'-	119-93-7	3.23E+09	1.78E+00	6.22E+00		1.38E+00									1.38E+00 ca
Dimethylcyclohexylamine, n,n-	98-94-2	3.23E+09													
Dimethylethyl Lead	107584-40-7	3.23E+09													
Dimethylformamide	68-12-2	3.23E+09									6.70E+05		4.62E+05	2.74E+05	2.74E+05 sat
Dimethylhydrazine, 1,1-	57-14-7	3.23E+09									6.70E+02		3.91E+01	3.69E+01	3.69E+01 nc
Dimethylhydrazine, 1,2-	540-73-8	3.23E+09	3.55E-02		3.69E-01	3.24E-02									3.24E-02 ca
Dimethylmercury	593-74-8	3.23E+09													
Dimethylphenethylamine	122-09-8	3.23E+09													
Dimethylphenol, 2,4-	105-67-9	3.23E+09									1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Dimethylphenol, 2,6-	576-26-1	3.23E+09									4.02E+03	1.41E+04		3.13E+03	3.13E+03 nc
Dimethylphenol, 3,4-	95-65-8	3.23E+09									6.70E+03	2.34E+04		5.21E+03	5.21E+03 nc
Dimethylphthalate	131-11-3	3.23E+09													
Dimethylterephthalate	120-61-6	3.23E+09									6.70E+05			6.70E+05	6.70E+05 max
Dimethylvinylchloride	513-37-1	3.23E+09	4.34E+02		2.73E+01	2.57E+01									2.57E+01 ca
Dinitro-o-cresol, 4,6-	534-52-1	3.23E+09									5.36E+02	1.88E+03		4.17E+02	4.17E+02 nc
Dinitro-o-cyclohexyl Phenol, 4,6-	131-89-5	3.23E+09									1.34E+04	4.69E+04		1.04E+04	1.04E+04 nc
Dinitroaniline, 3,5-	618-87-1	3.23E+09													
Dinitrobenzene, 1,2-	528-29-0	3.23E+09									6.70E+02	2.34E+03		5.21E+02	5.21E+02 nc
Dinitrobenzene, 1,3-	99-65-0	3.23E+09									6.70E+02	2.34E+03		5.21E+02	5.21E+02 nc
Dinitrobenzene, 1,4-	100-25-4	3.23E+09									6.70E+02	2.34E+03		5.21E+02	5.21E+02 nc
Dinitrophenol, 2,4-	51-28-5	3.23E+09									1.34E+04	4.69E+04		1.04E+04	1.04E+04 nc
Dinitrophenols	25550-58-7	3.23E+09													
Dinitrosopentamethylenetetramine, N,N-	101-25-7	3.23E+09													
Dinitrotoluene Mixture, 2,4/2,6-	NA	3.23E+09	2.87E+01	1.01E+02		2.24E+01									2.24E+01 ca
Dinitrotoluene, 2,4-	121-14-2	3.23E+09	6.31E+01	2.16E+02	9.28E+06	4.88E+01					1.34E+04	4.60E+04		1.04E+04	4.88E+01 ca
Dinitrotoluene, 2,6-	606-20-2	3.23E+09	1.30E+01	4.61E+01		1.02E+01					2.01E+03	7.11E+03		1.57E+03	1.02E+01 ca
Dinitrotoluene, 2-Amino-4,6-	35572-78-2	3.23E+09									1.34E+04	7.82E+05		1.32E+04	1.32E+04 nc
Dinitrotoluene, 4-Amino-2,6-	19406-51-0	3.23E+09									1.34E+04	5.21E+05		1.31E+04	1.31E+04 nc

Site-specific

Recreator Screening Levels (RSL) for Soil - Modified for site-specific recreational user
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC ?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)
Dinitrotoluene, Technical grade	25321-14-6	No	No	4.50E-01	U			9.00E-04	U			1	0.1	1		
Dinoseb	88-85-7	No	No					1.00E-03	U			1	0.1	1		
Dioxane, 1,4-	123-91-1	No	Yes	1.00E-01	U	5.00E-06	U	3.00E-02	U	3.00E-02	U	1		1	5.47E+04	1.16E+05
Diphenamid	957-51-7	No	No					3.00E-02	U			1	0.1	1		
Diphenyl Sulfone	127-63-9	No	No					8.00E-04	U			1	0.1	1		
Diphenylamine	122-39-4	No	No					2.50E-02	U			1	0.1	1		
Diphenylhydrazine, 1,2-	122-66-7	No	No	8.00E-01	U	2.20E-04	U					1	0.1	1		
Dipotassium phosphate	7758-11-4	No	No					4.86E+01	U			1		1		
Diquat	85-00-7	No	No					2.20E-03	U			1	0.1	1		
Direct Black 38	1937-37-7	No	No	7.10E+00	U	1.40E-01	U					1	0.1	1		
Direct Blue 6	2602-46-2	No	No	7.40E+00	U	1.40E-01	U					1	0.1	1		
Direct Brown 95	16071-86-6	No	No	6.70E+00	U	1.40E-01	U					1	0.1	1		
Direct Sky Blue	2610-05-1	No	No									1	0.1	1		
Disodium phosphate	7558-79-4	No	No					4.86E+01	U			1		1		
Disulfoton	298-04-4	No	No					4.00E-05	U			1	0.1	1		
Dithiane, 1,4-	505-29-3	No	Yes					1.00E-02	U			1		1	6.26E+04	
Diuron	330-54-1	No	No					2.00E-03	U			1	0.1	1		
Dodecyl benzenesulfonic acid	27176-87-0	No	No									1	0.1	1		
Dodine	2439-10-3	No	No					4.00E-03	U			1	0.1	1		
EPTC	759-94-4	No	Yes					2.50E-02	U			1		1	1.62E+05	
Endosulfan	115-29-7	No	Yes					6.00E-03	U			1		1	5.65E+05	
Endosulfan I	959-98-8	No	Yes									1		1	5.65E+05	
Endosulfan II	33213-65-9	No	Yes									1		1	5.51E+05	
Endosulfan Sulfate	1031-07-8	No	No									1	0.1	1		
Endothall	145-73-3	No	No					2.00E-02	U			1	0.1	1		
Endrin	72-20-8	No	No					3.00E-04	U			1	0.1	1		
Endrin aldehyde	7421-93-4	No	No									1	0.1	1		
Endrin ketone	53494-70-5	No	No									1	0.1	1		
Epichlorohydrin	106-89-8	No	Yes	9.90E-03	U	1.20E-06	U	6.00E-03	U	1.00E-03	U	1		1	2.61E+04	1.05E+04
Epoxybutane, 1,2-	106-88-7	No	Yes							2.00E-02	U	1		1	1.06E+04	1.53E+04
Ethanol	64-17-5	No	Yes									1		1	4.34E+04	1.06E+05
Ethanol, 2-(2-methoxyethoxy)-	111-77-3	No	No									1	0.1	1		
Ethephon	16672-87-0	No	No					5.00E-03	U			1	0.1	1		
Ethion	563-12-2	No	No					5.00E-04	U			1	0.1	1		
Ethoxy Propanol	52125-53-8	No	Yes									1		1	1.26E+05	8.55E+04
Ethoxyethanol Acetate, 2-	111-15-9	No	Yes					1.00E-01	U	6.00E-02	U	1		1	8.47E+04	3.14E+04
Ethoxyethanol, 2-	110-80-5	No	Yes					9.00E-02	U	2.00E-01	U	1		1	1.36E+05	1.06E+05
Ethyl Acetate	141-78-6	No	Yes					9.00E-01	U	7.00E-02	U	1		1	1.19E+04	1.08E+04
Ethyl Acrylate	140-88-5	No	Yes	4.80E-02	U			5.00E-03	U	8.00E-03	U	1		1	8.74E+03	2.50E+03
Ethyl Chloride	75-00-3	No	Yes							1.00E+01	U	1		1	1.78E+03	2.12E+03
Ethyl Ether	60-29-7	No	Yes					2.00E-01	U			1		1	4.31E+03	1.01E+04
Ethyl Methacrylate	97-63-2	No	Yes					9.00E-02	U	3.00E-01	U	1		1	7.97E+03	1.11E+03
Ethyl methane sulfonate	62-50-0	No	No									1	0.1	1		
Ethyl-p-nitrophenyl Phosphonate	2104-64-5	No	No					1.00E-05	U			1	0.1	1		
Ethylbenzene	100-41-4	No	Yes	1.10E-02	U	2.50E-06	U	1.00E-01	U	1.00E+00	U	1		1	7.82E+03	4.79E+02
Ethylene Cyanohydrin	109-78-4	No	No					7.00E-02	U			1	0.1	1		
Ethylene Diamine	107-15-3	No	Yes					9.00E-02	U			1		1	2.48E+05	1.89E+05
Ethylene Glycol	107-21-1	No	No					2.00E+00	U	4.00E-01	U	1	0.1	1		
Ethylene Glycol Monobutyl Ether	111-76-2	No	No					1.00E-01	U	1.60E+00	U	1	0.1	1		
Ethylene Oxide	75-21-8	No	Yes	3.10E-01	U	8.80E-05	U			3.00E-02	U	1		1	8.40E+03	1.21E+05
Ethylene Thiourea	96-45-7	No	No	4.50E-02	U	1.30E-05	U	8.00E-05	U			1	0.1	1		
Ethyleneimine	151-56-4	No	Yes	6.50E+01	U	1.90E-02	U					1		1	3.29E+04	1.54E+05
Ethylphenol, 4-	123-07-9	No	No									1	0.1	1		
Ethylphthalyl Ethyl Glycolate	84-72-0	No	No					3.00E+00	U			1	0.1	1		
Express	101200-48-0	No	No					8.00E-03	U			1	0.1	1		
Famphur	52-85-7	No	No									1	0.1	1		
Fenamiphos	22224-92-6	No	No					2.50E-04	U			1	0.1	1		
Fenpropathrin	39515-41-8	No	No					2.50E-02	U			1	0.1	1		
Fluometuron	2164-17-2	No	No					1.30E-02	U			1	0.1	1		
Fluoranthene	206-44-0	No	No					4.00E-02	U			1	0.13	1		
Fluorene	86-73-7	No	Yes					4.00E-02	U			1	0.13	1	3.88E+05	
Fluoride	16984-48-8	No	No					4.00E-02	U	1.30E-02	U	1		1		
Fluorine (Soluble Fluoride)	7782-41-4	No	No					6.00E-02	U	1.30E-02	U	1		1		
Fluorobenzene	462-06-6	No	Yes									1		1	6.49E+03	2.39E+03

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Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
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Chemical	CAS Number	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Dinitrotoluene, Technical grade	25321-14-6	3.23E+09	4.34E+01	1.52E+02		3.38E+01					6.03E+03	2.11E+04		4.69E+03	3.38E+01 ca
Dinoseb	88-85-7	3.23E+09									6.70E+03	2.34E+04		5.21E+03	5.21E+03 nc
Dioxane, 1,4-	123-91-1	3.23E+09	1.95E+02		2.80E+03	1.83E+02					2.01E+05		1.44E+05	8.38E+04	1.83E+02 ca
Diphenamid	957-51-7	3.23E+09									2.01E+05	7.03E+05		1.56E+05	1.56E+05 max
Diphenyl Sulfone	127-63-9	3.23E+09									5.36E+03	1.88E+04		4.17E+03	4.17E+03 nc
Diphenylamine	122-39-4	3.23E+09									1.68E+05	5.86E+05		1.30E+05	1.30E+05 max
Diphenylhydrazine, 1,2-	122-66-7	3.23E+09	2.44E+01	8.55E+01	3.75E+06	1.90E+01									1.90E+01 ca
Dipotassium phosphate	7758-11-4	3.23E+09									3.26E+08			3.26E+08	3.26E+08 max
Diquat	85-00-7	3.23E+09									1.47E+04	5.16E+04		1.15E+04	1.15E+04 nc
Direct Black 38	1937-37-7	3.23E+09	2.75E+00	9.63E+00	5.90E+03	2.14E+00									2.14E+00 ca
Direct Blue 6	2602-46-2	3.23E+09	2.64E+00	9.24E+00	5.90E+03	2.05E+00									2.05E+00 ca
Direct Brown 95	16071-86-6	3.23E+09	2.92E+00	1.02E+01	5.90E+03	2.27E+00									2.27E+00 ca
Direct Sky Blue	2610-05-1	3.23E+09													
Disodium phosphate	7558-79-4	3.23E+09									3.26E+08			3.26E+08	3.26E+08 max
Disulfoton	298-04-4	3.23E+09									2.68E+02	9.38E+02		2.08E+02	2.08E+02 nc
Dithiane, 1,4-	505-29-3	3.23E+09									6.70E+04			6.70E+04	6.70E+04 nc
Diuron	330-54-1	3.23E+09									1.34E+04	4.69E+04		1.04E+04	1.04E+04 nc
Dodecyl benzenesulfonic acid	27176-87-0	3.23E+09													
Dodine	2439-10-3	3.23E+09									2.68E+04	9.38E+04		2.08E+04	2.08E+04 nc
EPTC	759-94-4	3.23E+09									1.68E+05			1.68E+05	1.68E+05 max
Endosulfan	115-29-7	3.23E+09									4.02E+04			4.02E+04	4.02E+04 nc
Endosulfan I	959-98-8	3.23E+09													
Endosulfan II	33213-65-9	3.23E+09													
Endosulfan Sulfate	1031-07-8	3.23E+09													
Endothall	145-73-3	3.23E+09									1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Endrin	72-20-8	3.23E+09									2.01E+03	7.03E+03		1.56E+03	1.56E+03 nc
Endrin aldehyde	7421-93-4	3.23E+09													
Endrin ketone	53494-70-5	3.23E+09													
Epichlorohydrin	106-89-8	3.23E+09	1.97E+03		5.55E+03	1.46E+03					4.02E+04		2.28E+03	2.16E+03	1.46E+03 ca**
Epoxybutane, 1,2-	106-88-7	3.23E+09											1.85E+04	1.85E+04	1.85E+04 sat
Ethanol	64-17-5	3.23E+09													
Ethanol, 2-(2-methoxyethoxy)-	111-77-3	3.23E+09													
Ethephon	16672-87-0	3.23E+09									3.35E+04	1.17E+05		2.61E+04	2.61E+04 nc
Ethion	563-12-2	3.23E+09									3.35E+03	1.17E+04		2.61E+03	2.61E+03 nc
Ethoxy Propanol	52125-53-8	3.23E+09													
Ethoxyethanol Acetate, 2-	111-15-9	3.23E+09									6.70E+05		4.45E+05	2.68E+05	2.68E+05 sat
Ethoxyethanol, 2-	110-80-5	3.23E+09									6.03E+05		2.38E+06	4.81E+05	4.81E+05 sat
Ethyl Acetate	141-78-6	3.23E+09									6.03E+06		7.29E+04	7.20E+04	7.20E+04 sat
Ethyl Acrylate	140-88-5	3.23E+09	4.07E+02			4.07E+02					3.35E+04		6.13E+03	5.18E+03	4.07E+02 ca*
Ethyl Chloride	75-00-3	3.23E+09											1.56E+06	1.56E+06	1.56E+06 sat
Ethyl Ether	60-29-7	3.23E+09									1.34E+06			1.34E+06	1.34E+06 sat
Ethyl Methacrylate	97-63-2	3.23E+09									6.03E+05		2.10E+05	1.55E+05	1.55E+05 sat
Ethyl methane sulfonate	62-50-0	3.23E+09													
Ethyl-p-nitrophenyl Phosphonate	2104-64-5	3.23E+09									6.70E+01	2.34E+02		5.21E+01	5.21E+01 nc
Ethylbenzene	100-41-4	3.23E+09	1.78E+03		7.99E+02	5.51E+02					6.70E+05		6.85E+05	3.39E+05	5.51E+02 sat
Ethylene Cyanohydrin	109-78-4	3.23E+09									4.69E+05	1.64E+06		3.65E+05	3.65E+05 max
Ethylene Diamine	107-15-3	3.23E+09									6.03E+05			6.03E+05	6.03E+05 sat
Ethylene Glycol	107-21-1	3.23E+09									1.34E+07	4.69E+07	1.13E+11	1.04E+07	1.04E+07 max
Ethylene Glycol Monobutyl Ether	111-76-2	3.23E+09									6.70E+05	2.34E+06	4.53E+11	5.21E+05	5.21E+05 max
Ethylene Oxide	75-21-8	3.23E+09	6.31E+01		2.44E+01	1.76E+01							2.21E+04	2.21E+04	1.76E+01 ca
Ethylene Thiourea	96-45-7	3.23E+09	4.34E+02	1.52E+03	6.35E+07	3.38E+02					5.36E+02	1.88E+03		4.17E+02	3.38E+02 ca**
Ethyleneimine	151-56-4	3.23E+09	3.01E-01		4.43E-01	1.79E-01									1.79E-01 ca
Ethylphenol, 4-	123-07-9	3.23E+09													
Ethylphthalyl Ethyl Glycolate	84-72-0	3.23E+09									2.01E+07	7.03E+07		1.56E+07	1.56E+07 max
Express	101200-48-0	3.23E+09									5.36E+04	1.88E+05		4.17E+04	4.17E+04 nc
Famphur	52-85-7	3.23E+09													
Fenamiphos	22224-92-6	3.23E+09									1.68E+03	5.86E+03		1.30E+03	1.30E+03 nc
Fenpropathrin	39515-41-8	3.23E+09									1.68E+05	5.86E+05		1.30E+05	1.30E+05 max
Fluometuron	2164-17-2	3.23E+09									8.71E+04	3.05E+05		6.78E+04	6.78E+04 nc
Fluoranthene	206-44-0	3.23E+09									2.68E+05	7.22E+05		1.95E+05	1.95E+05 max
Fluorene	86-73-7	3.23E+09									2.68E+05	7.22E+05		1.95E+05	1.95E+05 max
Fluoride	16984-48-8	3.23E+09									2.68E+05		3.68E+09	2.68E+05	2.68E+05 max
Fluorine (Soluble Fluoride)	7782-41-4	3.23E+09									4.02E+05		3.68E+09	4.02E+05	4.02E+05 max
Fluorobenzene	462-06-6	3.23E+09													

Site-specific

Recreator Screening Levels (RSL) for Soil - Modified for site-specific recreational user
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC ?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)
Fluorobiphenyl, 2-	321-60-8	No	Yes									1		1	1.08E+05	
Fluorophenol, 2-	367-12-4	No	Yes									1		1	2.93E+05	9.21E+04
Fluridone	59756-60-4	No	No					8.00E-02	U			1	0.1	1		
Flurprimidol	56425-91-3	No	No					2.00E-02	U			1	0.1	1		
Flutolanil	66332-96-5	No	No					6.00E-02	U			1	0.1	1		
Fluvalinate	69409-94-5	No	No					1.00E-02	U			1	0.1	1		
Folpet	133-07-3	No	No	3.50E-03	U			1.00E-01	U			1	0.1	1		
Fomesafen	72178-02-0	No	No	1.90E-01	U							1	0.1	1		
Fonofos	944-22-9	No	No					2.00E-03	U			1	0.1	1		
Formaldehyde	50-00-0	No	Yes			1.30E-05	U	2.00E-01	U	9.83E-03	U	1		1	1.07E+05	4.24E+04
Formic Acid	64-18-6	No	Yes					9.00E-01	U	3.00E-04	U	1		1	1.28E+05	1.06E+05
Fosetyl-AL	39148-24-8	No	No					3.00E+00	U			1	0.1	1		
Fuel Oil Number 2	68476-30-2	No	No									1	0.1	1		
Furan	110-00-9	No	Yes					1.00E-03	U			1	0.03	1	3.60E+03	6.22E+03
Furazolidone	67-45-8	No	No	3.80E+00	U							1	0.1	1		
Furfural	98-01-1	No	Yes					3.00E-03	U	5.00E-02	U	1		1	6.71E+04	1.01E+04
Furium	531-82-8	No	No	1.50E+00	U	4.30E-04	U					1	0.1	1		
Furmecyclox	60568-05-0	No	No	3.00E-02	U	8.60E-06	U					1	0.1	1		
Gadolinium	7440-54-2	No	No									1		1		
Gallium	7440-55-3	No	No									1		1		
Germanium	7440-56-4	No	No									1		1		
Glufosinate, Ammonium	77182-82-2	No	No					4.00E-04	U			1	0.1	1		
Glutaraldehyde	111-30-8	No	No							8.00E-05	U	1	0.1	1		
Glycerol	56-81-5	No	No									1	0.1	1		
Glycidyl	765-34-4	No	Yes					4.00E-04	U	1.00E-03	U	1		1	1.01E+05	1.06E+05
Glyphosate	1071-83-6	No	No					1.00E-01	U			1	0.1	1		
Goal	42874-03-3	No	No					3.00E-03	U			1	0.1	1		
Guanidine	113-00-8	No	Yes					1.00E-02	U			1		1	2.00E+05	
Guanidine Chloride	50-01-1	No	No					2.00E-02	U			1	0.1	1		
Guanidine Nitrate	506-93-4	No	No									1	0.1	1		
Guthion	86-50-0	No	No					3.00E-03	U	1.00E-02	U	1	0.1	1		
HCDD, 1,2,3,4,6,7,8,-	35822-46-9	No	Yes	1.30E+03	U	3.80E-01	U	1.00E-06	U	4.00E-06	U	1		1	4.52E+06	
Haloacetic acids	NA	No	No									1	0.1	1		
Haloxyfop, Methyl	69806-40-2	No	No					5.00E-05	U			1	0.1	1		
Harmony	79277-27-3	No	No					1.30E-02	U			1	0.1	1		
Heptachlor	76-44-8	No	Yes	4.50E+00	U	1.30E-03	U	5.00E-04	U			1		1	6.62E+05	
Heptachlor Epoxide	1024-57-3	No	Yes	9.10E+00	U	2.60E-03	U	1.30E-05	U			1		1	1.16E+06	
Heptachlorobiphenyl, 2,3,3',4,4',5,5'- (PCB 189)	39635-31-9	No	Yes	3.90E+00	U	1.14E-03	U	2.33E-05	U	1.33E-03	U	1	0.14	1	2.81E+06	
Heptachlorodibenzofuran, 1,2,3,4,6,7,8-	67562-39-4	No	Yes	1.30E+03	U	3.80E-01	U	7.00E-08	U	4.00E-06	U	1	0.03	1	1.15E+07	
Heptanal, n-	111-71-7	No	Yes									1		1	1.08E+04	2.09E+02
Heptane, N-	142-82-5	No	Yes									1		1	1.23E+03	5.79E+01
Heptanol, n-	111-70-6	No	Yes									1		1	4.73E+04	3.78E+02
Hexabromobenzene	87-82-1	No	Yes					2.00E-03	U			1		1	5.24E+05	
Hexabromodiphenyl ether, 2,2',4,4',5,5'- (BDE-153)	68631-49-2	No	No					2.00E-04	U			1	0.1	1		
Hexachlorobenzene	118-74-1	No	Yes	1.60E+00	U	4.60E-04	U	8.00E-04	U			1		1	9.37E+04	
Hexachlorobiphenyl, 2,3',4,4',5,5'- (PCB 167)	52663-72-6	No	Yes	3.90E+00	U	1.14E-03	U	2.33E-05	U	1.33E-03	U	1	0.14	1	1.98E+06	
Hexachlorobiphenyl, 2,3,3',4,4',5'- (PCB 157)	69782-90-7	No	Yes	3.90E+00	U	1.14E-03	U	2.33E-05	U	1.33E-03	U	1	0.14	1	2.00E+06	
Hexachlorobiphenyl, 2,3,3',4,4',5- (PCB 156)	38380-08-4	No	Yes	3.90E+00	U	1.14E-03	U	2.33E-05	U	1.33E-03	U	1	0.14	1	2.13E+06	
Hexachlorobiphenyl, 3,3',4,4',5,5'- (PCB 169)	32774-16-6	No	Yes	3.90E+03	U	1.14E+00	U	2.33E-08	U	1.33E-06	U	1	0.14	1	1.98E+06	
Hexachlorobutadiene	87-68-3	No	Yes	7.80E-02	U	2.20E-05	U	1.00E-03	U			1		1	1.49E+04	1.68E+01
Hexachlorocyclohexane, Alpha-	319-84-6	No	No	6.30E+00	U	1.80E-03	U	8.00E-03	U			1	0.1	1		
Hexachlorocyclohexane, Beta-	319-85-7	No	No	1.80E+00	U	5.30E-04	U					1	0.1	1		
Hexachlorocyclohexane, Delta-	319-86-8	No	No									1	0.1	1		
Hexachlorocyclohexane, Epsilon	6108-10-7	No	No									1	0.1	1		
Hexachlorocyclohexane, Gamma- (Lindane)	58-89-9	No	No	1.10E+00	U	3.10E-04	U	3.00E-04	U			1	0.04	1		
Hexachlorocyclohexane, Technical	608-73-1	No	No	1.80E+00	U	5.10E-04	U					1	0.1	1		
Hexachlorocyclopentadiene	77-47-4	No	Yes					6.00E-03	U	2.00E-04	U	1		1	1.18E+04	1.57E+01
Hexachlorodibenzo-p-dioxin	34465-46-8	No	No	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1	0.03	1		
Hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8-	39227-28-6	No	Yes	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1	0.03	1	6.59E+06	
Hexachlorodibenzo-p-dioxin, Mixture	NA	No	No	6.20E+03	U	1.30E+00	U					1	0.03	1		
Hexachlorodibenzofuran, 1,2,3,4,7,8-	70648-26-9	No	Yes	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1	0.03	1	5.38E+06	
Hexachloroethane	67-72-1	No	Yes	4.00E-02	U	1.10E-05	U	7.00E-04	U	3.00E-02	U	1		1	1.10E+04	

Site-specific

Recreator Screening Levels (RSL) for Soil - Modified for site-specific recreational user
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ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Fluorobiphenyl, 2-	321-60-8	3.23E+09													
Fluorophenol, 2-	367-12-4	3.23E+09													
Fluridone	59756-60-4	3.23E+09									5.36E+05	1.88E+06		4.17E+05	4.17E+05 max
Flurprimidol	56425-91-3	3.23E+09									1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Flutolanil	66332-96-5	3.23E+09									4.02E+05	1.41E+06		3.13E+05	3.13E+05 max
Fluvalinate	69409-94-5	3.23E+09									6.70E+04	2.34E+05		5.21E+04	5.21E+04 nc
Folpet	133-07-3	3.23E+09	5.58E+03	1.95E+04		4.34E+03					6.70E+05	2.34E+06		5.21E+05	4.34E+03 ca
Fomesafen	72178-02-0	3.23E+09	1.03E+02	3.60E+02		8.00E+01									8.00E+01 ca
Fonofos	944-22-9	3.23E+09									1.34E+04	4.69E+04		1.04E+04	1.04E+04 nc
Formaldehyde	50-00-0	3.23E+09			2.11E+03	2.11E+03					1.34E+06		9.23E+04	8.64E+04	2.11E+03 ca*
Formic Acid	64-18-6	3.23E+09									6.03E+06		3.37E+03	3.37E+03	3.37E+03 nc
Fosetyl-AL	39148-24-8	3.23E+09									2.01E+07	7.03E+07		1.56E+07	1.56E+07 max
Fuel Oil Number 2	68476-30-2	3.23E+09													
Furan	110-00-9	3.23E+09									6.70E+03	7.82E+04		6.17E+03	6.17E+03 nc
Furazolidone	67-45-8	3.23E+09	5.14E+00	1.80E+01		4.00E+00									4.00E+00 ca
Furfural	98-01-1	3.23E+09									2.01E+04		2.94E+05	1.88E+04	1.88E+04 sat
Furium	531-82-8	3.23E+09	1.30E+01	4.56E+01	1.92E+06	1.01E+01									1.01E+01 ca
Furmecyclox	60568-05-0	3.23E+09	6.52E+02	2.28E+03	9.61E+07	5.07E+02									5.07E+02 ca
Gadolinium	7440-54-2	3.23E+09													
Gallium	7440-55-3	3.23E+09													
Germanium	7440-56-4	3.23E+09													
Glufosinate, Ammonium	77182-82-2	3.23E+09									2.68E+03	9.38E+03		2.08E+03	2.08E+03 nc
Glutaraldehyde	111-30-8	3.23E+09											2.27E+07	2.27E+07	2.27E+07 max
Glycerol	56-81-5	3.23E+09													
Glycidyl	765-34-4	3.23E+09									2.68E+03		8.88E+03	2.06E+03	2.06E+03 nc
Glyphosate	1071-83-6	3.23E+09									6.70E+05	2.34E+06		5.21E+05	5.21E+05 max
Goal	42874-03-3	3.23E+09									2.01E+04	7.03E+04		1.56E+04	1.56E+04 nc
Guanidine	113-00-8	3.23E+09									6.70E+04			6.70E+04	6.70E+04 nc
Guanidine Chloride	50-01-1	3.23E+09									1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Guanidine Nitrate	506-93-4	3.23E+09													
Guthion	86-50-0	3.23E+09									2.01E+04	7.03E+04	2.83E+09	1.56E+04	1.56E+04 nc
HCDD, 1,2,3,4,6,7,8,-	35822-46-9	3.23E+09	1.50E-02		3.04E+00	1.50E-02					6.70E+00		1.58E+03	6.67E+00	1.50E-02 ca
Haloacetic acids	NA	3.23E+09													
Haloxyfop, Methyl	69806-40-2	3.23E+09									3.35E+02	1.17E+03		2.61E+02	2.61E+02 nc
Harmony	79277-27-3	3.23E+09									8.71E+04	3.05E+05		6.78E+04	6.78E+04 nc
Heptachlor	76-44-8	3.23E+09	4.34E+00		1.30E+02	4.20E+00					3.35E+03			3.35E+03	4.20E+00 ca
Heptachlor Epoxide	1024-57-3	3.23E+09	2.15E+00		1.14E+02	2.11E+00					8.71E+01			8.71E+01	2.11E+00 ca*
Heptachlorobiphenyl, 2,3,3',4,4',5,5'- (PCB 189)	39635-31-9	3.23E+09	5.01E+00	1.25E+01	6.29E+02	3.56E+00					1.56E+02	3.90E+02	3.27E+05	1.11E+02	3.56E+00 ca*
Heptachlorodibenzofuran, 1,2,3,4,6,7,8-	67562-39-4	3.23E+09	1.50E-02	1.75E-01	7.74E+00	1.38E-02					4.69E-01	5.47E+00	4.03E+03	4.32E-01	1.38E-02 ca*
Heptanal, n-	111-71-7	3.23E+09													
Heptane, N-	142-82-5	3.23E+09													
Heptanol, n-	111-70-6	3.23E+09													
Hexabromobenzene	87-82-1	3.23E+09									1.34E+04			1.34E+04	1.34E+04 nc
Hexabromodiphenyl ether, 2,2',4,4',5,5'- (BDE-153)	68631-49-2	3.23E+09									1.34E+03	4.69E+03		1.04E+03	1.04E+03 nc
Hexachlorobenzene	118-74-1	3.23E+09	1.22E+01		5.21E+01	9.90E+00					5.36E+03			5.36E+03	9.90E+00 ca
Hexachlorobiphenyl, 2,3',4,4',5,5'- (PCB 167)	52663-72-6	3.23E+09	5.01E+00	1.25E+01	4.43E+02	3.55E+00					1.56E+02	3.90E+02	2.30E+05	1.11E+02	3.55E+00 ca*
Hexachlorobiphenyl, 2,3,3',4,4',5'- (PCB 157)	69782-90-7	3.23E+09	5.01E+00	1.25E+01	4.48E+02	3.55E+00					1.56E+02	3.90E+02	2.33E+05	1.11E+02	3.55E+00 ca*
Hexachlorobiphenyl, 2,3,3',4,4',5- (PCB 156)	38380-08-4	3.23E+09	5.01E+00	1.25E+01	4.77E+02	3.55E+00					1.56E+02	3.90E+02	2.48E+05	1.11E+02	3.55E+00 ca*
Hexachlorobiphenyl, 3,3',4,4',5,5'- (PCB 169)	32774-16-6	3.23E+09	5.01E-03	1.25E-02	4.43E-01	3.55E-03					1.56E-01	3.90E-01	2.30E+02	1.11E-01	3.55E-03 ca*
Hexachlorobutadiene	87-68-3	3.23E+09	2.51E+02		1.73E+02	1.02E+02					6.70E+03			6.70E+03	1.02E+02 sat
Hexachlorocyclohexane, Alpha-	319-84-6	3.23E+09	3.10E+00	1.09E+01	4.59E+05	2.41E+00					5.36E+04	1.88E+05		4.17E+04	2.41E+00 ca
Hexachlorocyclohexane, Beta-	319-85-7	3.23E+09	1.09E+01	3.80E+01	1.56E+06	8.45E+00									8.45E+00 ca
Hexachlorocyclohexane, Delta-	319-86-8	3.23E+09													
Hexachlorocyclohexane, Epsilon	6108-10-7	3.23E+09													
Hexachlorocyclohexane, Gamma- (Lindane)	58-89-9	3.23E+09	1.78E+01	1.55E+02	2.66E+06	1.59E+01					2.01E+03	1.76E+04		1.80E+03	1.59E+01 ca
Hexachlorocyclohexane, Technical	608-73-1	3.23E+09	1.09E+01	3.80E+01	1.62E+06	8.45E+00									8.45E+00 ca
Hexachlorocyclopentadiene	77-47-4	3.23E+09									4.02E+04		2.06E+02	2.05E+02	2.05E+02 sat
Hexachlorodibenzo-p-dioxin	34465-46-8	3.23E+09	1.50E-03	1.75E-02	2.17E+02	1.38E-03					4.69E-02	5.47E-01	1.13E+05	4.32E-02	1.38E-03 ca*
Hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8-	39227-28-6	3.23E+09	1.50E-03	1.75E-02	4.42E-01	1.38E-03					4.69E-02	5.47E-01	2.31E+02	4.32E-02	1.38E-03 ca*
Hexachlorodibenzo-p-dioxin, Mixture	NA	3.23E+09	3.15E-03	3.68E-02	6.35E+02	2.90E-03									2.90E-03 ca
Hexachlorodibenzofuran, 1,2,3,4,7,8-	70648-26-9	3.23E+09	1.50E-03	1.75E-02	3.61E-01	1.38E-03					4.69E-02	5.47E-01	1.88E+02	4.32E-02	1.38E-03 ca*
Hexachloroethane	67-72-1	3.23E+09	4.89E+02		2.57E+02	1.68E+02					4.69E+03		2.90E+04	4.04E+03	1.68E+02 ca*

Site-specific

Recreator Screening Levels (RSL) for Soil - Modified for site-specific recreational user
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC ?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)
Hexachlorophene	70-30-4	No	No					3.00E-04	U			1	0.1	1		
Hexachloropropene	1888-71-7	No	Yes									1		1	1.48E+04	4.37E+01
Hexadecanoic Acid	57-10-3	No	Yes									1		1	7.66E+05	
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	121-82-4	No	No	1.10E-01	U			3.00E-03	U			1	0.015	1		
Hexamethylene Diisocyanate, 1,6-	822-06-0	No	Yes							1.00E-05	U	1		1	4.15E+05	5.19E+03
Hexamethylphosphoramide	680-31-9	No	No					4.00E-04	U			1	0.1	1		
Hexane, N-	110-54-3	No	Yes					6.00E-02	U	7.00E-01	U	1		1	1.14E+03	1.41E+02
Hexanedioic Acid	124-04-9	No	No					2.00E+00	U			1	0.1	1		
Hexanol, n-	111-27-3	No	Yes									1		1	4.03E+04	9.98E+02
Hexanone, 2-	591-78-6	No	Yes					5.00E-03	U	3.00E-02	U	1		1	1.83E+04	3.28E+03
Hexazinone	51235-04-2	No	No					3.30E-02	U			1	0.1	1		
HpCDD, 2,3,7,8-	37871-00-4	No	Yes	1.30E+03	U	3.80E-01	U	7.00E-08	U	4.00E-06	U	1	0.03	1	3.36E+06	
HpCDF, 1,2,3,4,7,8,9-	55673-89-7	No	Yes	1.30E+03	U	3.80E-01	U	7.00E-08	U	4.00E-06	U	1	0.03	1	1.15E+07	
HpCDF, 2,3,7,8-	38998-75-3	No	Yes	1.30E+03	U	3.80E-01	U	7.00E-08	U	4.00E-06	U	1	0.03	1	1.15E+07	
HxCDD, 1,2,3,6,7,8-	57653-85-7	No	Yes	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1	0.03	1	6.59E+06	
HxCDD, 1,2,3,7,8,9-	19408-74-3	No	Yes	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1	0.03	1	6.59E+06	
HxCDF, 1,2,3,6,7,8-	57117-44-9	No	Yes	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1	0.03	1	5.38E+06	
HxCDF, 1,2,3,7,8,9-	72918-21-9	No	No	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1	0.03	1		
HxCDF, 2,3,4,6,7,8-	60851-34-5	No	Yes	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1	0.03	1	5.38E+06	
HxCDF, 2,3,7,8-	55684-94-1	No	No	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1	0.03	1		
Hydrazine	302-01-2	No	Yes	3.00E+00	U	4.90E-03	U			3.00E-05	U	1		1		
Hydrazine Sulfate	10034-93-2	No	No	3.00E+00	U	4.90E-03	U					1		1		
Hydrogen Chloride	7647-01-0	No	Yes							2.00E-02	U	1		1		
Hydrogen Cyanide	74-90-8	No	Yes					6.00E-04	U	8.00E-04	U	1		1	7.20E+04	1.00E+07
Hydrogen Fluoride	7664-39-3	No	Yes					4.00E-02	U	1.40E-02	U	1		1		
Hydrogen Selenide	77830-70-5	No	No									1		1		
Hydrogen Sulfate	12143-45-2	No	No									1		1		
Hydrogen Sulfide	7783-06-4	No	Yes							2.00E-03	U	1		1		
Hydroquinone	123-31-9	No	No	6.00E-02	U			4.00E-02	U			1	0.1	1		
Imazalil	35554-44-0	No	No					1.30E-02	U			1	0.1	1		
Imazaquin	81335-37-7	No	No					2.50E-01	U			1	0.1	1		
Indeno[1,2,3-cd]pyrene	193-39-5	Yes	No	7.30E-01	U	1.10E-04	U					1	0.13	1		
Indium	7440-74-6	No	No									1		1		
Iodide	20461-54-5	No	No									1		1		
Iodine	7553-56-2	No	No					1.00E-02	U			1		1		
Iodomethane	74-88-4	No	Yes									1		1	2.55E+03	3.03E+03
Iodopropynyl Butylcarbamate (IPBC)	55406-53-6	No	No									1	0.1	1		
Iprodione	36734-19-7	No	No					4.00E-02	U			1	0.1	1		
Iron	7439-89-6	No	No					7.00E-01	U			1		1		
Iron Sulfide	11126-12-8	No	No									1		1		
Isobutyl Alcohol	78-83-1	No	Yes					3.00E-01	U			1		1	3.88E+04	1.00E+04
Isodrin	465-73-6	No	Yes									1		1	2.32E+06	
Isophorone	78-59-1	No	No	9.50E-04	U			2.00E-01	U	2.00E+00	U	1	0.1	1		
Isopropalin	33820-53-0	No	Yes					1.50E-02	U			1		1	5.78E+05	
Isopropanol	67-63-0	No	Yes					2.00E+00	U	2.00E-01	U	1		1	3.83E+04	1.09E+05
Isopropyl Methyl Phosphonic Acid	1832-54-8	No	No					1.00E-01	U			1	0.1	1		
Isopropyltoluene, p-	99-87-6	No	Yes									1		1	1.18E+04	1.62E+02
Isosafrole	120-58-1	No	Yes									1		1	3.42E+03	2.04E+01
Isoxaben	82558-50-7	No	No					5.00E-02	U			1	0.1	1		
JP-4	50815-00-4	No	Yes									1		1		
JP-5/JP-8	8002-20-6	No	Yes									1		1		
JP-7	NA	No	Yes							3.00E-01	U	1		1		
Kerb	23950-58-5	No	No					7.50E-02	U			1	0.1	1		
Kerosene	8008-20-6	No	Yes									1		1		
Lactofen	77501-63-4	No	No					2.00E-03	U			1	0.1	1		
Lactonitrile	78-97-7	No	No									1	0.1	1		
Lanthanum	7439-91-0	No	No									1		1		
Lead Alkyls	NA	No	No									1	0.1	1		
Lead Chromate	7758-97-6	Yes	No	5.00E-01	U	1.50E-01	U	2.00E-02	U	2.00E-04	U	0.025		1		
Lead Phosphate	7446-27-7	No	No	8.50E-03	U	1.20E-05	U					1		1		
Lead acetate	301-04-2	No	No	2.80E-01	U	8.00E-05	U					1	0.1	1		
Lead and Compounds	7439-92-1	No	No									1		1		
Lead subacetate	1335-32-6	No	No	8.50E-03	U	1.20E-05	U					1	0.1	1		
Linuron	330-55-2	No	No					2.00E-03	U			1	0.1	1		

Site-specific

Recreator Screening Levels (RSL) for Soil - Modified for site-specific recreational user
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ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Hexachlorophene	70-30-4	3.23E+09									2.01E+03	7.03E+03		1.56E+03	1.56E+03 nc
Hexachloropropene	1888-71-7	3.23E+09													
Hexadecanoic Acid	57-10-3	3.23E+09													
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	121-82-4	3.23E+09	1.78E+02	4.15E+03		1.70E+02					2.01E+04	4.69E+05		1.93E+04	1.70E+02 ca
Hexamethylene Diisocyanate, 1,6-	822-06-0	3.23E+09											3.63E+02	3.63E+02	3.63E+02 nc
Hexamethylphosphoramide	680-31-9	3.23E+09									2.68E+03	9.38E+03		2.08E+03	2.08E+03 nc
Hexane, N-	110-54-3	3.23E+09									4.02E+05		7.01E+04	5.97E+04	5.97E+04 sat
Hexanedioic Acid	124-04-9	3.23E+09									1.34E+07	4.69E+07		1.04E+07	1.04E+07 max
Hexanol, n-	111-27-3	3.23E+09													
Hexanone, 2-	591-78-6	3.23E+09									3.35E+04		4.82E+04	1.98E+04	1.98E+04 sat
Hexazinone	51235-04-2	3.23E+09									2.21E+05	7.74E+05		1.72E+05	1.72E+05 max
HpCDD, 2,3,7,8-	37871-00-4	3.23E+09	1.50E-02	1.75E-01	2.26E+00	1.38E-02					4.69E-01	5.47E+00	1.18E+03	4.32E-01	1.38E-02 ca*
HpCDF, 1,2,3,4,7,8,9-	55673-89-7	3.23E+09	1.50E-02	1.75E-01	7.74E+00	1.38E-02					4.69E-01	5.47E+00	4.03E+03	4.32E-01	1.38E-02 ca*
HpCDF, 2,3,7,8-	38998-75-3	3.23E+09	1.50E-02	1.75E-01	7.74E+00	1.38E-02					4.69E-01	5.47E+00	4.03E+03	4.32E-01	1.38E-02 ca*
HxCDD, 1,2,3,6,7,8-	57653-85-7	3.23E+09	1.50E-03	1.75E-02	4.42E-01	1.38E-03					4.69E-02	5.47E-01	2.31E+02	4.32E-02	1.38E-03 ca*
HxCDD, 1,2,3,7,8,9-	19408-74-3	3.23E+09	1.50E-03	1.75E-02	4.42E-01	1.38E-03					4.69E-02	5.47E-01	2.31E+02	4.32E-02	1.38E-03 ca*
HxCDF, 1,2,3,6,7,8-	57117-44-9	3.23E+09	1.50E-03	1.75E-02	3.61E-01	1.38E-03					4.69E-02	5.47E-01	1.88E+02	4.32E-02	1.38E-03 ca*
HxCDF, 1,2,3,7,8,9-	72918-21-9	3.23E+09	1.50E-03	1.75E-02	2.17E+02	1.38E-03					4.69E-02	5.47E-01	1.13E+05	4.32E-02	1.38E-03 ca*
HxCDF, 2,3,4,6,7,8-	60851-34-5	3.23E+09	1.50E-03	1.75E-02	3.61E-01	1.38E-03					4.69E-02	5.47E-01	1.88E+02	4.32E-02	1.38E-03 ca*
HxCDF, 2,3,7,8-	55684-94-1	3.23E+09	1.50E-03	1.75E-02	2.17E+02	1.38E-03					4.69E-02	5.47E-01	1.13E+05	4.32E-02	1.38E-03 ca*
Hydrazine	302-01-2	3.23E+09	6.52E+00		1.69E+05	6.52E+00							8.50E+06	8.50E+06	6.52E+00 ca
Hydrazine Sulfate	10034-93-2	3.23E+09	6.52E+00		1.69E+05	6.52E+00									6.52E+00 ca
Hydrogen Chloride	7647-01-0	3.23E+09											5.66E+09	5.66E+09	5.66E+09 max
Hydrogen Cyanide	74-90-8	3.23E+09									4.02E+03		5.05E+03	2.24E+03	2.24E+03 nc
Hydrogen Fluoride	7664-39-3	3.23E+09									2.68E+05		3.96E+09	2.68E+05	2.68E+05 max
Hydrogen Selenide	77830-70-5	3.23E+09													
Hydrogen Sulfate	12143-45-2	3.23E+09													
Hydrogen Sulfide	7783-06-4	3.23E+09											5.66E+08	5.66E+08	5.66E+08 max
Hydroquinone	123-31-9	3.23E+09	3.26E+02	1.14E+03		2.53E+02					2.68E+05	9.38E+05		2.08E+05	2.53E+02 ca
Imazalil	35554-44-0	3.23E+09									8.71E+04	3.05E+05		6.78E+04	6.78E+04 nc
Imazaquin	81335-37-7	3.23E+09									1.68E+06	5.86E+06		1.30E+06	1.30E+06 max
Indeno[1,2,3-cd]pyrene	193-39-5	3.23E+09	9.10E+00	4.74E+01	4.10E+06	7.63E+00									7.63E+00 ca
Indium	7440-74-6	3.23E+09													
Iodide	20461-54-5	3.23E+09													
Iodine	7553-56-2	3.23E+09									6.70E+04			6.70E+04	6.70E+04 nc
Iodomethane	74-88-4	3.23E+09													
Iodopropynyl Butylcarbamate (IPBC)	55406-53-6	3.23E+09													
Iprodione	36734-19-7	3.23E+09									2.68E+05	9.38E+05		2.08E+05	2.08E+05 max
Iron	7439-89-6	3.23E+09									4.69E+06			4.69E+06	4.69E+06 max
Iron Sulfide	11126-12-8	3.23E+09													
Isobutyl Alcohol	78-83-1	3.23E+09									2.01E+06			2.01E+06	2.01E+06 sat
Isodrin	465-73-6	3.23E+09													
Isophorone	78-59-1	3.23E+09	2.06E+04	7.20E+04		1.60E+04					1.34E+06	4.69E+06	5.66E+11	1.04E+06	1.60E+04 ca*
Isopropalin	33820-53-0	3.23E+09									1.01E+05			1.01E+05	1.01E+05 max
Isopropanol	67-63-0	3.23E+09									1.34E+07		6.70E+05	6.38E+05	6.38E+05 sat
Isopropyl Methyl Phosphonic Acid	1832-54-8	3.23E+09									6.70E+05	2.34E+06		5.21E+05	5.21E+05 max
Isopropyltoluene, p-	99-87-6	3.23E+09													
Isosafrole	120-58-1	3.23E+09													
Isoxaben	82558-50-7	3.23E+09									3.35E+05	1.17E+06		2.61E+05	2.61E+05 max
JP-4	50815-00-4	3.23E+09													
JP-5/JP-8	8002-20-6	3.23E+09													
JP-7	NA	3.23E+09											8.50E+10	8.50E+10	8.50E+10 max
Kerb	23950-58-5	3.23E+09									5.03E+05	1.76E+06		3.91E+05	3.91E+05 max
Kerosene	8008-20-6	3.23E+09													
Lactofen	77501-63-4	3.23E+09									1.34E+04	4.69E+04		1.04E+04	1.04E+04 nc
Lactonitrile	78-97-7	3.23E+09													
Lanthanum	7439-91-0	3.23E+09													
Lead Alkyls	NA	3.23E+09													
Lead Chromate	7758-97-6	3.23E+09	1.33E+01		3.00E+03	1.32E+01					1.34E+05		5.66E+07	1.34E+05	1.32E+01 ca
Lead Phosphate	7446-27-7	3.23E+09	2.30E+03		6.88E+07	2.30E+03									2.30E+03 ca
Lead acetate	301-04-2	3.23E+09	6.98E+01	2.44E+02	1.03E+07	5.43E+01									5.43E+01 ca
Lead and Compounds	7439-92-1	3.23E+09								4.00E+02					4.00E+02 nc
Lead subacetate	1335-32-6	3.23E+09	2.30E+03	8.05E+03	6.88E+07	1.79E+03									1.79E+03 ca
Linuron	330-55-2	3.23E+09									1.34E+04	4.69E+04		1.04E+04	1.04E+04 nc

Site-specific

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ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC ?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)
Lithium	7439-93-2	No	No					2.00E-03	U			1		1		
Lithium Perchlorate	7791-03-9	No	No					7.00E-04	U			1		1		
Londax	83055-99-6	No	No					2.00E-01	U			1	0.1	1		
Lutetium	7439-94-3	No	No									1		1		
MCPA	94-74-6	No	No					5.00E-04	U			1	0.1	1		
MCPB	94-81-5	No	No					1.00E-02	U			1	0.1	1		
MCPP	93-65-2	No	No					1.00E-03	U			1	0.1	1		
Magnesium	7439-95-4	No	No									1		1		
Magnesium Chlorate	10326-21-3	No	No									1		1		
Malathion	121-75-5	No	No					2.00E-02	U			1	0.1	1		
Maleic Anhydride	108-31-6	No	No					1.00E-01	U	7.00E-04	U	1	0.1	1		
Maleic Hydrazide	123-33-1	No	No					5.00E-01	U			1	0.1	1		
Malononitrile	109-77-3	No	No					1.00E-04	U			1	0.1	1		
Mancozeb	8018-01-7	No	No					3.00E-02	U			1	0.1	1		
Maneb	12427-38-2	No	No					5.00E-03	U			1	0.1	1		
Manganese (Non-diet)	7439-96-5	No	No					2.40E-02	U	5.00E-05	U	0.04		1		
Mechlorethamine	51-75-2	No	No									1	0.1	1		
Mephosfolan	950-10-7	No	No					9.00E-05	U			1	0.1	1		
Mepiquat Chloride	24307-26-4	No	No					3.00E-02	U			1	0.1	1		
Mercuric Chloride	7487-94-7	No	No					3.00E-04	U	3.00E-04	U	0.07		1		
Mercury (elemental)	7439-97-6	No	Yes							3.00E-04	U	1		1	4.16E+04	3.13E+00
Merphos	150-50-5	No	Yes					3.00E-05	U			1		1	2.67E+06	
Merphos Oxide	78-48-8	No	No					3.00E-05	U			1	0.1	1		
Metalaxyl	57837-19-1	No	No					6.00E-02	U			1	0.1	1		
Methacrylonitrile	126-98-7	No	Yes					1.00E-04	U	3.00E-02	U	1		1	9.38E+03	4.59E+03
Methamidophos	10265-92-6	No	No					5.00E-05	U			1	0.1	1		
Methanol	67-56-1	No	Yes					2.00E+00	U	2.00E+01	U	1		1	4.01E+04	1.06E+05
Methapyrilene	91-80-5	No	No									1	0.1	1		
Methidathion	950-37-8	No	No					1.00E-03	U			1	0.1	1		
Methomyl	16752-77-5	No	No					2.50E-02	U			1	0.1	1		
Methoxy-5-nitroaniline, 2-	99-59-2	No	No	4.90E-02	U	1.40E-05	U					1	0.1	1		
Methoxychlor	72-43-5	No	No					5.00E-03	U			1	0.1	1		
Methoxyethanol Acetate, 2-	110-49-6	No	Yes					8.00E-03	U	1.00E-03	U	1		1	1.71E+05	1.15E+05
Methoxyethanol, 2-	109-86-4	No	Yes					5.00E-03	U	2.00E-02	U	1		1	1.39E+05	1.06E+05
Methyl Acetate	79-20-9	No	Yes					1.00E+00	U			1		1	1.12E+04	2.90E+04
Methyl Acrylate	96-33-3	No	Yes					3.00E-02	U	2.00E-02	U	1		1	9.62E+03	6.75E+03
Methyl Ethyl Ketone (2-Butanone)	78-93-3	No	Yes					6.00E-01	U	5.00E+00	U	1		1	1.68E+04	2.84E+04
Methyl Hydrazine	60-34-4	No	Yes			1.00E-03	U	1.00E-03	U	2.00E-05	U	1		1	2.16E+05	1.80E+05
Methyl Isobutyl Ketone (4-methyl-2-pentanone)	108-10-1	No	Yes					8.00E-02	U	3.00E+00	U	1		1	1.46E+04	3.36E+03
Methyl Isocyanate	624-83-9	No	Yes							1.00E-03	U	1		1	6.08E+03	1.67E+04
Methyl Mercaptan	74-93-1	No	Yes									1		1	2.46E+03	3.13E+03
Methyl Mercury	22967-92-6	No	No					1.00E-04	U			1		1		
Methyl Methacrylate	80-62-6	No	Yes					1.40E+00	U	7.00E-01	U	1		1	8.75E+03	2.36E+03
Methyl Parathion	298-00-0	No	No					2.50E-04	U			1	0.1	1		
Methyl Phosphonic Acid	993-13-5	No	No					6.00E-02	U			1	0.1	1		
Methyl Styrene (Mixed Isomers)	25013-15-4	No	Yes					6.00E-03	U	4.00E-02	U	1		1	1.65E+04	3.93E+02
Methyl dicyclohexylamine, n-	7560-83-0	No	Yes									1		1	6.54E+04	
Methyl methanesulfonate	66-27-3	No	No	9.90E-02	U	2.80E-05	U					1	0.1	1		
Methyl tert-Butyl Ether (MTBE)	1634-04-4	No	Yes	1.80E-03	U	2.60E-07	U			3.00E+00	U	1		1	6.76E+03	8.88E+03
Methyl-1,4-benzenediamine dihydrochloride, 2-	615-45-2	No	No					3.00E-04	U			1	0.1	1		
Methyl-2-Pentanol, 4-	108-11-2	No	Yes									1		1	2.37E+04	2.45E+03
Methyl-5-Nitroaniline, 2-	99-55-8	No	No	9.00E-03	U			2.00E-02	U			1	0.1	1		
Methyl-N-nitro-N-nitrosoguanidine, N-	70-25-7	No	No	8.30E+00	U	2.40E-03	U					1	0.1	1		
Methylaniline Hydrochloride, 2-	636-21-5	No	No	1.30E-01	U	3.70E-05	U					1	0.1	1		
Methylarsonic acid	124-58-3	No	No					1.00E-02	U			1	0.1	1		
Methylaziridine, 2-	75-55-8	No	Yes									1		1	4.41E+04	1.87E+05
Methylbenzene,1-4-diamine monohydrochloride, 2-	74612-12-7	No	No					2.00E-04	U			1	0.1	1		
Methylbenzene-1,4-diamine sulfate, 2-	615-50-9	No	No	1.00E-01	U			3.00E-04	U			1	0.1	1		
Methylcholanthrene, 3-	56-49-5	Yes	No	2.20E+01	U	6.30E-03	U					1	0.1	1		
Methylcyclohexane	108-87-2	No	Yes									1		1	1.37E+03	6.77E+01
Methylcyclohexylamine, n-	100-60-7	No	Yes									1		1	4.39E+04	2.81E+04
Methylcyclopentane	96-37-7	No	Yes									1		1	1.22E+03	1.54E+02

Site-specific

Recreator Screening Levels (RSL) for Soil - Modified for site-specific recreational user
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Lithium	7439-93-2	3.23E+09									1.34E+04			1.34E+04	1.34E+04 nc
Lithium Perchlorate	7791-03-9	3.23E+09									4.69E+03			4.69E+03	4.69E+03 nc
Londax	83055-99-6	3.23E+09									1.34E+06	4.69E+06		1.04E+06	1.04E+06 max
Lutetium	7439-94-3	3.23E+09													
MCPA	94-74-6	3.23E+09									3.35E+03	1.17E+04		2.61E+03	2.61E+03 nc
MCPB	94-81-5	3.23E+09									6.70E+04	2.34E+05		5.21E+04	5.21E+04 nc
MCPP	93-65-2	3.23E+09									6.70E+03	2.34E+04		5.21E+03	5.21E+03 nc
Magnesium	7439-95-4	3.23E+09													
Magnesium Chlorate	10326-21-3	3.23E+09													
Malathion	121-75-5	3.23E+09									1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Maleic Anhydride	108-31-6	3.23E+09									6.70E+05	2.34E+06	1.98E+08	5.20E+05	5.20E+05 max
Maleic Hydrazide	123-33-1	3.23E+09									3.35E+06	1.17E+07		2.61E+06	2.61E+06 max
Malononitrile	109-77-3	3.23E+09									6.70E+02	2.34E+03		5.21E+02	5.21E+02 nc
Mancozeb	8018-01-7	3.23E+09									2.01E+05	7.03E+05		1.56E+05	1.56E+05 max
Maneb	12427-38-2	3.23E+09									3.35E+04	1.17E+05		2.61E+04	2.61E+04 nc
Manganese (Non-diet)	7439-96-5	3.23E+09									1.61E+05		1.42E+07	1.59E+05	1.59E+05 max
Mechlorethamine	51-75-2	3.23E+09													
Mephosfolan	950-10-7	3.23E+09									6.03E+02	2.11E+03		4.69E+02	4.69E+02 nc
Mepiquat Chloride	24307-26-4	3.23E+09									2.01E+05	7.03E+05		1.56E+05	1.56E+05 max
Mercuric Chloride	7487-94-7	3.23E+09									2.01E+03		8.50E+07	2.01E+03	2.01E+03 nc
Mercury (elemental)	7439-97-6	3.23E+09											1.09E+03	1.09E+03	1.09E+03 sat
Merphos	150-50-5	3.23E+09									2.01E+02			2.01E+02	2.01E+02 nc
Merphos Oxide	78-48-8	3.23E+09									2.01E+02	7.03E+02		1.56E+02	1.56E+02 nc
Metalaxyl	57837-19-1	3.23E+09									4.02E+05	1.41E+06		3.13E+05	3.13E+05 max
Methacrylonitrile	126-98-7	3.23E+09									6.70E+02		2.46E+04	6.52E+02	6.52E+02 nc
Methamidophos	10265-92-6	3.23E+09									3.35E+02	1.17E+03		2.61E+02	2.61E+02 nc
Methanol	67-56-1	3.23E+09									1.34E+07		7.02E+07	1.13E+07	1.13E+07 sat
Methapyrilene	91-80-5	3.23E+09													
Methidathion	950-37-8	3.23E+09									6.70E+03	2.34E+04		5.21E+03	5.21E+03 nc
Methomyl	16752-77-5	3.23E+09									1.68E+05	5.86E+05		1.30E+05	1.30E+05 max
Methoxy-5-nitroaniline, 2-	99-59-2	3.23E+09	3.99E+02	1.40E+03	5.90E+07	3.10E+02									3.10E+02 ca
Methoxychlor	72-43-5	3.23E+09									3.35E+04	1.17E+05		2.61E+04	2.61E+04 nc
Methoxyethanol Acetate, 2-	110-49-6	3.23E+09									5.36E+04		1.50E+04	1.17E+04	1.17E+04 nc
Methoxyethanol, 2-	109-86-4	3.23E+09									3.35E+04		2.44E+05	2.95E+04	2.95E+04 nc
Methyl Acetate	79-20-9	3.23E+09									6.70E+06			6.70E+06	6.70E+06 sat
Methyl Acrylate	96-33-3	3.23E+09									2.01E+05		1.68E+04	1.55E+04	1.55E+04 sat
Methyl Ethyl Ketone (2-Butanone)	78-93-3	3.23E+09									4.02E+06		7.36E+06	2.60E+06	2.60E+06 sat
Methyl Hydrazine	60-34-4	3.23E+09			5.51E+01	5.51E+01					6.70E+03		3.78E+02	3.58E+02	5.51E+01 ca**
Methyl Isobutyl Ketone (4-methyl-2-pentanone)	108-10-1	3.23E+09									5.36E+05		3.83E+06	4.70E+05	4.70E+05 sat
Methyl Isocyanate	624-83-9	3.23E+09											5.32E+02	5.32E+02	5.32E+02 nc
Methyl Mercaptan	74-93-1	3.23E+09													
Methyl Mercury	22967-92-6	3.23E+09									6.70E+02			6.70E+02	6.70E+02 nc
Methyl Methacrylate	80-62-6	3.23E+09									9.38E+06		5.36E+05	5.07E+05	5.07E+05 sat
Methyl Parathion	298-00-0	3.23E+09									1.68E+03	5.86E+03		1.30E+03	1.30E+03 nc
Methyl Phosphonic Acid	993-13-5	3.23E+09									4.02E+05	1.41E+06		3.13E+05	3.13E+05 max
Methyl Styrene (Mixed Isomers)	25013-15-4	3.23E+09									4.02E+04		5.80E+04	2.37E+04	2.37E+04 sat
Methyl dicyclohexylamine, n-	7560-83-0	3.23E+09													
Methyl methanesulfonate	66-27-3	3.23E+09	1.97E+02	6.91E+02	2.95E+07	1.54E+02									1.54E+02 ca
Methyl tert-Butyl Ether (MTBE)	1634-04-4	3.23E+09	1.09E+04		6.65E+03	4.12E+03							1.78E+06	1.78E+06	4.12E+03 ca
Methyl-1,4-benzenediamine dihydrochloride, 2-	615-45-2	3.23E+09									2.01E+03	7.03E+03		1.56E+03	1.56E+03 nc
Methyl-2-Pentanol, 4-	108-11-2	3.23E+09													
Methyl-5-Nitroaniline, 2-	99-55-8	3.23E+09	2.17E+03	7.60E+03		1.69E+03					1.34E+05	4.69E+05		1.04E+05	1.69E+03 ca*
Methyl-N-nitro-N-nitrosoguanidine, N-	70-25-7	3.23E+09	2.36E+00	8.24E+00	3.44E+05	1.83E+00									1.83E+00 ca
Methylaniline Hydrochloride, 2-	636-21-5	3.23E+09	1.50E+02	5.26E+02	2.23E+07	1.17E+02									1.17E+02 ca
Methylarsonic acid	124-58-3	3.23E+09									6.70E+04	2.34E+05		5.21E+04	5.21E+04 nc
Methylaziridine, 2-	75-55-8	3.23E+09													
Methylbenzene,1-4-diamine monohydrochloride, 2-	74612-12-7	3.23E+09									1.34E+03	4.69E+03		1.04E+03	1.04E+03 nc
Methylbenzene-1,4-diamine sulfate, 2-	615-50-9	3.23E+09	1.95E+02	6.84E+02		1.52E+02					2.01E+03	7.03E+03		1.56E+03	1.52E+02 ca*
Methylcholanthrene, 3-	56-49-5	3.23E+09	3.02E-01	2.05E+00	7.15E+04	2.63E-01									2.63E-01 ca
Methylcyclohexane	108-87-2	3.23E+09													
Methylcyclohexylamine, n-	100-60-7	3.23E+09													
Methylcyclopentane	96-37-7	3.23E+09													

Site-specific

Recreator Screening Levels (RSL) for Soil - Modified for site-specific recreational user
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC ?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)
Methylene Chloride	75-09-2	Yes	Yes	2.00E-03	U	1.00E-08	U	6.00E-03	U	6.00E-01	U	1		1	3.02E+03	3.32E+03
Methylene-bis(2-chloroaniline), 4,4'-	101-14-4	Yes	No	1.00E-01	U	4.30E-04	U	2.00E-03	U			1	0.1	1		
Methylene-bis(N,N-dimethyl) Aniline, 4,4'-	101-61-1	No	No	4.60E-02	U	1.30E-05	U					1	0.1	1		
Methylenebisbenzenamine, 4,4'-	101-77-9	No	No	1.60E+00	U	4.60E-04	U			2.00E-02	U	1	0.1	1		
Methylenediphenyl Diisocyanate	101-68-8	No	No							6.00E-04	U	1	0.1	1		
Methylisothiocyanate	556-61-6	No	Yes									1		1	2.04E+04	
Methylnaphthalene	1321-94-4	No	Yes									1		1	8.08E+04	
Methylnaphthalene, 1-	90-12-0	No	Yes	2.90E-02	U			7.00E-02	U			1	0.13	1	8.09E+04	
Methylnaphthalene, 2-	91-57-6	No	Yes					4.00E-03	U			1	0.13	1	8.00E+04	
Methylstyrene, Alpha-	98-83-9	No	Yes					7.00E-02	U			1		1	1.77E+04	5.00E+02
Methyltriethyl Lead	1762-28-3	No	Yes									1		1	2.24E+03	4.81E+03
Metolachlor	51218-45-2	No	No					1.50E-01	U			1	0.1	1		
Metribuzin	21087-64-9	No	No					2.50E-02	U			1	0.1	1		
Mineral oils	8012-95-1	No	Yes					3.00E+00	U			1		1	1.90E+03	3.41E-01
Mirex	2385-85-5	No	Yes	1.80E+01	U	5.10E-03	U	2.00E-04	U			1		1	1.18E+06	
Molinate	2212-67-1	No	No					2.00E-03	U			1	0.1	1		
Molybdenum	7439-98-7	No	No					5.00E-03	U			1		1		
Monoaluminum phosphate	13530-50-2	No	No					4.86E+01	U			1		1		
Monoammonium phosphate	7722-76-1	No	No					4.86E+01	U			1		1		
Monobutyltin Compounds	NA	No	No									1	0.1	1		
Monocalcium phosphate	7758-23-8	No	No					4.86E+01	U			1		1		
Monochloramine	10599-90-3	No	No					1.00E-01	U			1		1		
Monochlorobutanes	25154-42-1	No	No									1	0.1	1		
Monochlorophenols (total)	NA	No	No									1	0.1	1		
Monocyclic aromatic hydrocarbons (total)	NA	No	No									1	0.1	1		
Monomagnesium phosphate	7757-86-0	No	No					4.86E+01	U			1		1		
Monomethylaniline	100-61-8	No	No					2.00E-03	U			1	0.1	1		
Monopotassium phosphate	7778-77-0	No	No					4.86E+01	U			1		1		
Monosodium phosphate	7558-80-7	No	No					4.86E+01	U			1		1		
N,N'-Diphenyl-1,4-benzenediamine	74-31-7	No	No					3.00E-04	U			1	0.1	1		
N-Methyl dithiocarbamate	137-42-8	No	No									1	0.1	1		
Naled	300-76-5	No	Yes					2.00E-03	U			1		1	7.87E+04	
Naphtha, High Flash Aromatic (HFAN)	64742-95-6	No	Yes					3.00E-02	U	1.00E-01	U	1		1		
Naphthalene	91-20-3	No	Yes			3.40E-05	U	2.00E-02	U	3.00E-03	U	1	0.13	1	6.38E+04	
Naphthol, 2-	135-19-3	No	No									1	0.1	1		
Naphthoquinone, 1,4-	130-15-4	No	No									1	0.1	1		
Naphthylamine, 1-	134-32-7	No	No									1	0.1	1		
Naphthylamine, 2-	91-59-8	No	No	1.80E+00	U	0.00E+00	U					1	0.1	1		
Napropamide	15299-99-7	No	No					1.00E-01	U			1	0.1	1		
Neodymium Chloride (Stable, Nonradioactive)	10024-93-8	No	No									1		1		
Niagara Blue 4B	2429-74-5	No	No									1	0.1	1		
Nickel Acetate	373-02-4	No	No			2.60E-04	U	1.10E-02	U	1.40E-05	U	1	0.1	1		
Nickel Carbonate	3333-67-3	No	No			2.60E-04	U	1.10E-02	U	1.40E-05	U	1	0.1	1		
Nickel Carbonyl	13463-39-3	No	Yes			2.60E-04	U	1.10E-02	U	1.40E-05	U	1		1		
Nickel Hydroxide	12054-48-7	No	No			2.60E-04	U	1.10E-02	U	1.40E-05	U	0.04		1		
Nickel Oxide	1313-99-1	No	No			2.60E-04	U	1.10E-02	U	2.00E-05	U	0.04		1		
Nickel Refinery Dust	NA	No	No			2.40E-04	U	1.10E-02	U	1.40E-05	U	0.04		1		
Nickel Soluble Salts	7440-02-0	No	No			2.60E-04	U	2.00E-02	U	9.00E-05	U	0.04		1		
Nickel Subsulfide	12035-72-2	No	No	1.70E+00	U	4.80E-04	U	1.10E-02	U	1.40E-05	U	0.04		1		
Nickelocene	1271-28-9	No	No			2.60E-04	U	1.10E-02	U	1.40E-05	U	1	0.1	1		
Nicotinonitrile	100-54-9	No	No									1	0.1	1		
Niobium	7440-03-1	No	No									1		1		
Nitrapyrin	1929-82-4	No	Yes									1		1	3.05E+05	
Nitrate	14797-55-8	No	No					1.60E+00	U			1		1		
Nitrate + Nitrite (as N)	NA	No	No									1		1		
Nitric Acid	7697-37-2	No	No									1	0.1	1		
Nitric Oxide	10102-43-9	No	Yes									1		1		
Nitrite	14797-65-0	No	No					1.00E-01	U			1		1		
Nitroaniline, 2-	88-74-4	No	No					1.00E-02	U	5.00E-05	U	1	0.1	1		
Nitroaniline, 3-	99-09-2	No	No									1	0.1	1		
Nitroaniline, 4-	100-01-6	No	No	2.00E-02	U			4.00E-03	U	6.00E-03	U	1	0.1	1		
Nitrobenzene	98-95-3	No	Yes			4.00E-05	U	2.00E-03	U	9.00E-03	U	1		1	1.01E+05	3.04E+03
Nitrobiphenyl, 4-	92-93-3	No	No									1	0.1	1		
Nitrocellulose	9004-70-0	No	No					3.00E+03	U			1	0.1	1		

Site-specific

Recreator Screening Levels (RSL) for Soil - Modified for site-specific recreational user
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Methylene Chloride	75-09-2	3.23E+09	3.32E+03		4.21E+04	3.08E+03					4.02E+04		1.59E+05	3.21E+04	3.08E+03 ca*
Methylene-bis(2-chloroaniline), 4,4'-	101-14-4	3.23E+09	6.64E+01	4.50E+02	1.05E+06	5.79E+01					1.34E+04	4.69E+04		1.04E+04	5.79E+01 ca
Methylene-bis(N,N-dimethyl) Aniline, 4,4'-	101-61-1	3.23E+09	4.25E+02	1.49E+03	6.35E+07	3.30E+02									3.30E+02 ca
Methylenebisbenzenamine, 4,4'-	101-77-9	3.23E+09	1.22E+01	4.27E+01	1.80E+06	9.50E+00							5.66E+09	5.66E+09	9.50E+00 ca
Methylenediphenyl Diisocyanate	101-68-8	3.23E+09											1.70E+08	1.70E+08	1.70E+08 max
Methylisothiocyanate	556-61-6	3.23E+09													
Methylnaphthalene	1321-94-4	3.23E+09													
Methylnaphthalene, 1-	90-12-0	3.23E+09	6.74E+02	1.81E+03		4.91E+02					4.69E+05	1.26E+06		3.42E+05	4.91E+02 ca
Methylnaphthalene, 2-	91-57-6	3.23E+09									2.68E+04	7.22E+04		1.95E+04	1.95E+04 nc
Methylstyrene, Alpha-	98-83-9	3.23E+09									4.69E+05			4.69E+05	4.69E+05 sat
Methyltriethyl Lead	1762-28-3	3.23E+09													
Metolachlor	51218-45-2	3.23E+09									1.01E+06	3.52E+06		7.82E+05	7.82E+05 max
Metribuzin	21087-64-9	3.23E+09									1.68E+05	5.86E+05		1.30E+05	1.30E+05 max
Mineral oils	8012-95-1	3.23E+09									2.01E+07			2.01E+07	2.01E+07 sat
Mirex	2385-85-5	3.23E+09	1.09E+00		5.92E+01	1.07E+00					1.34E+03			1.34E+03	1.07E+00 ca
Molinate	2212-67-1	3.23E+09									1.34E+04	4.69E+04		1.04E+04	1.04E+04 nc
Molybdenum	7439-98-7	3.23E+09									3.35E+04			3.35E+04	3.35E+04 nc
Monoaluminum phosphate	13530-50-2	3.23E+09									3.26E+08			3.26E+08	3.26E+08 max
Monoammonium phosphate	7722-76-1	3.23E+09									3.26E+08			3.26E+08	3.26E+08 max
Monobutyltin Compounds	NA	3.23E+09													
Monocalcium phosphate	7758-23-8	3.23E+09									3.26E+08			3.26E+08	3.26E+08 max
Monochloramine	10599-90-3	3.23E+09									6.70E+05			6.70E+05	6.70E+05 max
Monochlorobutanes	25154-42-1	3.23E+09													
Monochlorophenols (total)	NA	3.23E+09													
Monocyclic aromatic hydrocarbons (total)	NA	3.23E+09													
Monomagnesium phosphate	7757-86-0	3.23E+09									3.26E+08			3.26E+08	3.26E+08 max
Monomethylaniline	100-61-8	3.23E+09									1.34E+04	4.69E+04		1.04E+04	1.04E+04 nc
Monopotassium phosphate	7778-77-0	3.23E+09									3.26E+08			3.26E+08	3.26E+08 max
Monosodium phosphate	7558-80-7	3.23E+09									3.26E+08			3.26E+08	3.26E+08 max
N,N'-Diphenyl-1,4-benzenediamine	74-31-7	3.23E+09									2.01E+03	7.03E+03		1.56E+03	1.56E+03 nc
N-Methyl dithiocarbamate	137-42-8	3.23E+09													
Naled	300-76-5	3.23E+09									1.34E+04			1.34E+04	1.34E+04 nc
Naphtha, High Flash Aromatic (HFAN)	64742-95-6	3.23E+09									2.01E+05		2.83E+10	2.01E+05	2.01E+05 max
Naphthalene	91-20-3	3.23E+09			4.79E+02	4.79E+02					1.34E+05	3.61E+05	1.68E+04	1.43E+04	4.79E+02 ca*
Naphthol, 2-	135-19-3	3.23E+09													
Naphthoquinone, 1,4-	130-15-4	3.23E+09													
Naphthylamine, 1-	134-32-7	3.23E+09													
Naphthylamine, 2-	91-59-8	3.23E+09	1.09E+01	3.80E+01		8.45E+00									8.45E+00 ca
Napropamide	15299-99-7	3.23E+09									6.70E+05	2.34E+06		5.21E+05	5.21E+05 max
Neodymium Chloride (Stable, Nonradioactive)	10024-93-8	3.23E+09													
Niagara Blue 4B	2429-74-5	3.23E+09													
Nickel Acetate	373-02-4	3.23E+09			3.18E+06	3.18E+06					7.37E+04	2.58E+05	3.96E+06	5.65E+04	5.65E+04 nc
Nickel Carbonate	3333-67-3	3.23E+09			3.18E+06	3.18E+06					7.37E+04	2.58E+05	3.96E+06	5.65E+04	5.65E+04 nc
Nickel Carbonyl	13463-39-3	3.23E+09			3.18E+06	3.18E+06					7.37E+04		3.96E+06	7.24E+04	7.24E+04 nc
Nickel Hydroxide	12054-48-7	3.23E+09			3.18E+06	3.18E+06					7.37E+04		3.96E+06	7.24E+04	7.24E+04 nc
Nickel Oxide	1313-99-1	3.23E+09			3.18E+06	3.18E+06					7.37E+04		5.66E+06	7.28E+04	7.28E+04 nc
Nickel Refinery Dust	NA	3.23E+09			3.44E+06	3.44E+06					7.37E+04		3.96E+06	7.24E+04	7.24E+04 nc
Nickel Soluble Salts	7440-02-0	3.23E+09			3.18E+06	3.18E+06					1.34E+05		2.55E+07	1.33E+05	1.33E+05 max
Nickel Subsulfide	12035-72-2	3.23E+09	1.15E+01		1.72E+06	1.15E+01					7.37E+04		3.96E+06	7.24E+04	1.15E+01 ca
Nickelocene	1271-28-9	3.23E+09			3.18E+06	3.18E+06					7.37E+04	2.58E+05	3.96E+06	5.65E+04	5.65E+04 nc
Nicotinonitrile	100-54-9	3.23E+09													
Niobium	7440-03-1	3.23E+09													
Nitrapyrin	1929-82-4	3.23E+09													
Nitrate	14797-55-8	3.23E+09									1.07E+07			1.07E+07	1.07E+07 max
Nitrate + Nitrite (as N)	NA	3.23E+09													
Nitric Acid	7697-37-2	3.23E+09													
Nitric Oxide	10102-43-9	3.23E+09													
Nitrite	14797-65-0	3.23E+09									6.70E+05			6.70E+05	6.70E+05 max
Nitroaniline, 2-	88-74-4	3.23E+09									6.70E+04	2.34E+05	1.42E+07	5.19E+04	5.19E+04 nc
Nitroaniline, 3-	99-09-2	3.23E+09													
Nitroaniline, 4-	100-01-6	3.23E+09	9.77E+02	3.42E+03		7.60E+02					2.68E+04	9.38E+04	1.70E+09	2.08E+04	7.60E+02 ca*
Nitrobenzene	98-95-3	3.23E+09			6.44E+02	6.44E+02					1.34E+04		7.95E+04	1.15E+04	6.44E+02 ca*
Nitrobiphenyl, 4-	92-93-3	3.23E+09													
Nitrocellulose	9004-70-0	3.23E+09									2.01E+10	7.03E+10		1.56E+10	1.56E+10 max

Site-specific

Recreator Screening Levels (RSL) for Soil - Modified for site-specific recreational user
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
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Chemical	CAS Number	Mutagen?	VOC ?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)
Nitrodiphenylamine, 2-	119-75-5	No	No									1	0.1	1		
Nitrofurantoin	67-20-9	No	No					7.00E-02	U			1	0.1	1		
Nitrofurazone	59-87-0	No	No	1.30E+00	U	3.70E-04	U					1	0.1	1		
Nitrogen Dioxide	10102-44-0	No	Yes									1		1		
Nitroglycerin	55-63-0	No	No	1.70E-02	U			1.00E-04	U			1	0.1	1		
Nitroguanidine	556-88-7	No	No					1.00E-01	U			1	0.1	1		
Nitromethane	75-52-5	No	Yes			8.80E-06	U			5.00E-03	U	1		1	2.34E+04	1.80E+04
Nitrophenol, 2-	88-75-5	No	Yes									1		1	1.65E+05	
Nitrophenol, 2-amino-4-	99-57-0	No	No									1	0.1	1		
Nitrophenol, 3-	554-84-7	No	No									1	0.1	1		
Nitrophenol, 4-	100-02-7	No	No									1	0.1	1		
Nitrophenol, 4-amino-2-	119-34-6	No	No									1	0.1	1		
Nitropropane, 2-	79-46-9	No	Yes			2.70E-03	U			2.00E-02	U	1		1	1.81E+04	4.86E+03
Nitropyrene, 4-	57835-92-4	No	No	1.20E+00	U	1.10E-04	U					1	0.13	1		
Nitroquinoline-1-oxide, 4-	56-57-5	No	No									1	0.1	1		
Nitroso-N-ethylurea, N-	759-73-9	Yes	No	2.70E+01	U	7.70E-03	U					1	0.1	1		
Nitroso-N-methylurea, N-	684-93-5	Yes	No	1.20E+02	U	3.40E-02	U					1	0.1	1		
Nitroso-di-N-butylamine, N-	924-16-3	No	Yes	5.40E+00	U	1.60E-03	U					1		1	3.35E+05	
Nitroso-di-N-propylamine, N-	621-64-7	No	No	7.00E+00	U	2.00E-03	U					1	0.1	1		
Nitrosodiethanolamine, N-	1116-54-7	No	No	2.80E+00	U	8.00E-04	U					1	0.1	1		
Nitrosodiethylamine, N-	55-18-5	Yes	No	1.50E+02	U	4.30E-02	U					1	0.1	1		
Nitrosodimethylamine, N-	62-75-9	Yes	Yes	5.10E+01	U	1.40E-02	U	8.00E-06	U	4.00E-05	U	1		1	1.14E+05	2.37E+05
Nitrosodiphenylamine, N-	86-30-6	No	No	4.90E-03	U	2.60E-06	U					1	0.1	1		
Nitrosomethylethylamine, N-	10595-95-6	No	Yes	2.20E+01	U	6.30E-03	U					1		1	1.67E+05	1.08E+05
Nitrosomethylvinylamine, N-	4549-40-0	No	Yes									1		1	1.12E+05	1.08E+04
Nitrosomorpholine [N-]	59-89-2	No	No	6.70E+00	U	1.90E-03	U					1	0.1	1		
Nitrosopiperidine [N-]	100-75-4	No	No	9.40E+00	U	2.70E-03	U					1	0.1	1		
Nitrosopyrrolidine, N-	930-55-2	No	No	2.10E+00	U	6.10E-04	U					1	0.1	1		
Nitrotoluene, 4-Amino-2-	119-32-4	No	No									1	0.1	1		
Nitrotoluene, m-	99-08-1	No	No					1.00E-04	U			1	0.1	1		
Nitrotoluene, o-	88-72-2	No	Yes	2.20E-01	U			9.00E-04	U			1		1	1.89E+05	1.51E+03
Nitrotoluene, p-	99-99-0	No	No	1.60E-02	U			4.00E-03	U			1	0.1	1		
Nonachlor, trans-	39765-80-5	No	Yes									1		1	3.73E+06	
Nonane, n-	111-84-2	No	Yes					3.00E-04	U	2.00E-02	U	1		1	1.44E+03	6.86E+00
Nonanol, n-	143-08-8	No	Yes									1		1	6.41E+04	7.27E+01
Norflurazon	27314-13-2	No	No					4.00E-02	U			1	0.1	1		
Nustar	85509-19-9	No	No					7.00E-04	U			1	0.1	1		
OCDD	3268-87-9	No	No	3.90E+01	U	1.14E-02	U	2.33E-06	U	1.33E-04	U	1	0.03	1		
OCDF	39001-02-0	No	No	3.90E+01	U	1.14E-02	U	2.33E-06	U	1.33E-04	U	1	0.03	1		
Octabromodiphenyl Ether	32536-52-0	No	No					3.00E-03	U			1	0.1	1		
Octachlorostyrene	29082-74-4	No	Yes									1		1	8.40E+05	
Octadecanoic Acid	57-11-4	No	No									1	0.1	1		
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	No	No					5.00E-02	U			1	0.006	1		
Octahydrotrimethylmethylethylphenanthrenol	511-15-9	No	No									1	0.1	1		
Octamethylpyrophosphoramide	152-16-9	No	No					2.00E-03	U			1	0.1	1		
Octanol, n-	111-87-5	No	Yes									1		1	5.35E+04	1.78E+02
Octanone, 2-	111-13-7	No	Yes									1		1	2.12E+04	3.60E+02
Octanone, 3-	106-68-3	No	Yes									1		1	2.60E+04	1.08E+03
Octyl Phthalate, di-N-	117-84-0	No	No					1.00E-02	U			1	0.1	1		
Oleic acid	112-80-1	Yes	Yes									1		1	1.43E+06	1.44E+00
Oleum	8014-95-7	No	No									1		1		
Oryzalin	19044-88-3	No	No					5.00E-02	U			1	0.1	1		
Oxadiazon	19666-30-9	No	No					5.00E-03	U			1	0.1	1		
Oxamyl	23135-22-0	No	No					2.50E-02	U			1	0.1	1		
Oxychlordane	27304-13-8	No	No									1	0.1	1		
Ozone	10028-15-6	No	No									1		1		
Paclobutrazol	76738-62-0	No	No					1.30E-02	U			1	0.1	1		
Paraquat Dichloride	1910-42-5	No	No					4.50E-03	U			1	0.1	1		
Parathion	56-38-2	No	No					6.00E-03	U			1	0.1	1		
PeCDD, 2,3,7,8-	36088-22-9	No	No	1.30E+05	U	3.80E+01	U	7.00E-10	U	4.00E-08	U	1	0.03	1		
PeCDF, 1,2,3,7,8-	57117-41-6	No	No	3.90E+03	U	1.14E+00	U	2.33E-08	U	1.33E-06	U	1	0.03	1		
PeCDF, 2,3,4,7,8-	57117-31-4	No	No	3.90E+04	U	1.14E+01	U	2.33E-09	U	1.33E-07	U	1	0.03	1		
Pebulate	1114-71-2	No	Yes					5.00E-02	U			1		1	6.20E+04	

Site-specific

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ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Nitrodiphenylamine, 2-	119-75-5	3.23E+09													
Nitrofurantoin	67-20-9	3.23E+09									4.69E+05	1.64E+06		3.65E+05	3.65E+05 max
Nitrofurazone	59-87-0	3.23E+09	1.50E+01	5.26E+01	2.23E+06	1.17E+01									1.17E+01 ca
Nitrogen Dioxide	10102-44-0	3.23E+09													
Nitroglycerin	55-63-0	3.23E+09	1.15E+03	4.02E+03		8.94E+02					6.70E+02	2.34E+03		5.21E+02	5.21E+02 nc
Nitroguanidine	556-88-7	3.23E+09									6.70E+05	2.34E+06		5.21E+05	5.21E+05 max
Nitromethane	75-52-5	3.23E+09			6.78E+02	6.78E+02							1.02E+04	1.02E+04	6.78E+02 ca*
Nitrophenol, 2-	88-75-5	3.23E+09													
Nitrophenol, 2-amino-4-	99-57-0	3.23E+09													
Nitrophenol, 3-	554-84-7	3.23E+09													
Nitrophenol, 4-	100-02-7	3.23E+09													
Nitrophenol, 4-amino-2-	119-34-6	3.23E+09													
Nitropropane, 2-	79-46-9	3.23E+09			1.71E+00	1.71E+00							3.17E+04	3.17E+04	1.71E+00 ca
Nitropyrene, 4-	57835-92-4	3.23E+09	1.63E+01	4.38E+01	7.51E+06	1.19E+01									1.19E+01 ca
Nitroquinoline-1-oxide, 4-	56-57-5	3.23E+09													
Nitroso-N-ethylurea, N-	759-73-9	3.23E+09	2.46E-01	1.67E+00	5.85E+04	2.14E-01									2.14E-01 ca
Nitroso-N-methylurea, N-	684-93-5	3.23E+09	5.54E-02	3.75E-01	1.33E+04	4.82E-02									4.82E-02 ca
Nitroso-di-N-butylamine, N-	924-16-3	3.23E+09	3.62E+00		5.35E+01	3.39E+00									3.39E+00 ca
Nitroso-di-N-propylamine, N-	621-64-7	3.23E+09	2.79E+00	9.77E+00	4.13E+05	2.17E+00									2.17E+00 ca
Nitrosodiethanolamine, N-	1116-54-7	3.23E+09	6.98E+00	2.44E+01	1.03E+06	5.43E+00									5.43E+00 ca
Nitrosodiethylamine, N-	55-18-5	3.23E+09	4.43E-02	3.00E-01	1.05E+04	3.86E-02									3.86E-02 ca
Nitrosodimethylamine, N-	62-75-9	3.23E+09	1.30E-01		1.13E+00	1.17E-01					5.36E+01		3.98E+02	4.72E+01	1.17E-01 ca
Nitrosodiphenylamine, N-	86-30-6	3.23E+09	3.99E+03	1.40E+04	3.18E+08	3.10E+03									3.10E+03 ca
Nitrosomethylethylamine, N-	10595-95-6	3.23E+09	8.89E-01		6.77E+00	7.85E-01									7.85E-01 ca
Nitrosomethylvinylamine, N-	4549-40-0	3.23E+09													
Nitrosomorpholine [N-]	59-89-2	3.23E+09	2.92E+00	1.02E+01	4.35E+05	2.27E+00									2.27E+00 ca
Nitrosopiperidine [N-]	100-75-4	3.23E+09	2.08E+00	7.28E+00	3.06E+05	1.62E+00									1.62E+00 ca
Nitrosopyrrolidine, N-	930-55-2	3.23E+09	9.31E+00	3.26E+01	1.35E+06	7.24E+00									7.24E+00 ca
Nitrotoluene, 4-Amino-2-	119-32-4	3.23E+09													
Nitrotoluene, m-	99-08-1	3.23E+09									6.70E+02	2.34E+03		5.21E+02	5.21E+02 nc
Nitrotoluene, o-	88-72-2	3.23E+09	8.89E+01			8.89E+01					6.03E+03			6.03E+03	8.89E+01 ca*
Nitrotoluene, p-	99-99-0	3.23E+09	1.22E+03	4.27E+03		9.50E+02					2.68E+04	9.38E+04		2.08E+04	9.50E+02 ca*
Nonachlor, trans-	39765-80-5	3.23E+09													
Nonane, n-	111-84-2	3.23E+09									2.01E+03		2.52E+03	1.12E+03	1.12E+03 sat
Nonanol, n-	143-08-8	3.23E+09													
Norflurazon	27314-13-2	3.23E+09									2.68E+05	9.38E+05		2.08E+05	2.08E+05 max
Nustar	85509-19-9	3.23E+09									4.69E+03	1.64E+04		3.65E+03	3.65E+03 nc
OCDD	3268-87-9	3.23E+09	5.01E-01	5.85E+00	7.25E+04	4.62E-01					1.56E+01	1.82E+02	3.77E+07	1.44E+01	4.62E-01 ca*
OCDF	39001-02-0	3.23E+09	5.01E-01	5.85E+00	7.25E+04	4.62E-01					1.56E+01	1.82E+02	3.77E+07	1.44E+01	4.62E-01 ca*
Octabromodiphenyl Ether	32536-52-0	3.23E+09									2.01E+04	7.03E+04		1.56E+04	1.56E+04 nc
Octachlorostyrene	29082-74-4	3.23E+09													
Octadecanoic Acid	57-11-4	3.23E+09													
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	3.23E+09									3.35E+05	1.95E+07		3.29E+05	3.29E+05 max
Octahydrotrimethylmethylethylphenanthrenol	511-15-9	3.23E+09													
Octamethylpyrophosphoramide	152-16-9	3.23E+09									1.34E+04	4.69E+04		1.04E+04	1.04E+04 nc
Octanol, n-	111-87-5	3.23E+09													
Octanone, 2-	111-13-7	3.23E+09													
Octanone, 3-	106-68-3	3.23E+09													
Octyl Phthalate, di-N-	117-84-0	3.23E+09									6.70E+04	2.34E+05		5.21E+04	5.21E+04 nc
Oleic acid	112-80-1	3.23E+09													
Oleum	8014-95-7	3.23E+09													
Oryzalin	19044-88-3	3.23E+09									3.35E+05	1.17E+06		2.61E+05	2.61E+05 max
Oxadiazon	19666-30-9	3.23E+09									3.35E+04	1.17E+05		2.61E+04	2.61E+04 nc
Oxamyl	23135-22-0	3.23E+09									1.68E+05	5.86E+05		1.30E+05	1.30E+05 max
Oxychlordane	27304-13-8	3.23E+09													
Ozone	10028-15-6	3.23E+09													
Paclobutrazol	76738-62-0	3.23E+09									8.71E+04	3.05E+05		6.78E+04	6.78E+04 nc
Paraquat Dichloride	1910-42-5	3.23E+09									3.02E+04	1.06E+05		2.35E+04	2.35E+04 nc
Parathion	56-38-2	3.23E+09									4.02E+04	1.41E+05		3.13E+04	3.13E+04 nc
PeCDD, 2,3,7,8-	36088-22-9	3.23E+09	1.50E-04	1.75E-03	2.17E+01	1.38E-04					4.69E-03	5.47E-02	1.13E+04	4.32E-03	1.38E-04 ca*
PeCDF, 1,2,3,7,8-	57117-41-6	3.23E+09	5.01E-03	5.85E-02	7.25E+02	4.62E-03					1.56E-01	1.82E+00	3.77E+05	1.44E-01	4.62E-03 ca*
PeCDF, 2,3,4,7,8-	57117-31-4	3.23E+09	5.01E-04	5.85E-03	7.25E+01	4.62E-04					1.56E-02	1.82E-01	3.77E+04	1.44E-02	4.62E-04 ca*
Pebulate	1114-71-2	3.23E+09									3.35E+05			3.35E+05	3.35E+05 max

Site-specific

Recreator Screening Levels (RSL) for Soil - Modified for site-specific recreational user
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC ?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)
Pendimethalin	40487-42-1	No	No					4.00E-02	U			1	0.1	1		
Pentabromodiphenyl Ether	32534-81-9	No	No					2.00E-03	U			1	0.1	1		
Pentabromodiphenyl ether, 2,2',4,4',5- (BDE-99)	60348-60-9	No	No					1.00E-04	U			1	0.1	1		
Pentachloroaniline	527-20-8	No	No									1	0.1	1		
Pentachlorobenzene	608-93-5	No	Yes					8.00E-04	U			1		1	1.12E+05	
Pentachlorobiphenyl, 2',3,4,4',5- (PCB 123)	65510-44-3	No	Yes	3.90E+00	U	1.14E-03	U	2.33E-05	U	1.33E-03	U	1	0.14	1	1.42E+06	
Pentachlorobiphenyl, 2,3',4,4',5- (PCB 118)	31508-00-6	No	Yes	3.90E+00	U	1.14E-03	U	2.33E-05	U	1.33E-03	U	1	0.14	1	1.14E+06	
Pentachlorobiphenyl, 2,3,3',4,4'- (PCB 105)	32598-14-4	No	Yes	3.90E+00	U	1.14E-03	U	2.33E-05	U	1.33E-03	U	1	0.14	1	1.17E+06	
Pentachlorobiphenyl, 2,3,4,4',5- (PCB 114)	74472-37-0	No	Yes	3.90E+00	U	1.14E-03	U	2.33E-05	U	1.33E-03	U	1	0.14	1	1.42E+06	
Pentachlorobiphenyl, 3,3',4,4',5- (PCB 126)	57465-28-8	No	Yes	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1	0.14	1	1.41E+06	
Pentachlorocyclopentadiene	25329-35-5	No	Yes									1		1	1.95E+04	
Pentachlorodibenzo-p-dioxin, 1,2,3,7,8-	40321-76-4	No	Yes	1.30E+05	U	3.80E+01	U	7.00E-10	U	4.00E-08	U	1	0.03	1	4.61E+06	
Pentachloroethane	76-01-7	No	Yes	9.00E-02	U							1		1	1.33E+04	4.47E+02
Pentachloronitrobenzene	82-68-8	No	Yes	2.60E-01	U			3.00E-03	U			1		1	5.95E+05	
Pentachlorophenol	87-86-5	No	No	4.00E-01	U	5.10E-06	U	5.00E-03	U			1	0.25	1		
Pentaerythritol tetranitrate (PETN)	78-11-5	No	No	4.00E-03	U			2.00E-03	U			1	0.1	1		
Pentamethyl dipropylenetriamine	3855-32-1	No	No									1	0.1	1		
Pentane, n-	109-66-0	No	Yes							1.00E+00	U	1		1	1.07E+03	3.88E+02
Pentyl Alcohol, N-	71-41-0	No	Yes									1		1	3.91E+04	3.04E+03
Perchlorate and Perchlorate Salts	14797-73-0	No	No					7.00E-04	U			1		1		
Perfluorobutane Sulfonate	375-73-5	No	Yes					2.00E-02	U			1		1	1.82E+05	
Perfluorooctane Sulphonic Acid	1763-23-1	No	Yes									1		1	1.48E+05	
Perfluorooctanoic acid	335-67-1	No	Yes									1		1	3.00E+04	
Permethrin	52645-53-1	No	No					5.00E-02	U			1	0.1	1		
Perylene	198-55-0	No	No									1	0.13	1		
Pesticides (total)	NA	No	No									1	0.1	1		
Pesticides, organochlorinated (each)	NA	No	No									1	0.1	1		
Pesticides, organochlorinated (total)	NA	No	No									1	0.1	1		
Phenacetin	62-44-2	No	No	2.20E-03	U	6.30E-07	U					1	0.1	1		
Phenanthrene	85-01-8	No	Yes									1	0.13	1	8.87E+05	
Phenmedipham	13684-63-4	No	No					2.50E-01	U			1	0.1	1		
Phenol	108-95-2	No	No					3.00E-01	U	2.00E-01	U	1	0.1	1		
Phenothiazine	92-84-2	No	No					5.00E-04	U			1	0.1	1		
Phenyl Isothiocyanate	103-72-0	No	Yes									1		1	9.76E+03	1.29E+02
Phenylenediamine, m-	108-45-2	No	No					6.00E-03	U			1	0.1	1		
Phenylenediamine, o-	95-54-5	No	No	4.70E-02	U							1	0.1	1		
Phenylenediamine, p-	106-50-3	No	No					1.90E-01	U			1	0.1	1		
Phenylmercuric Acetate	62-38-4	No	No					8.00E-05	U			1	0.1	1		
Phenylphenol, 2-	90-43-7	No	No	1.94E-03	U							1	0.1	1		
Phorate	298-02-2	No	No					2.00E-04	U			1	0.1	1		
Phosgene	75-44-5	No	Yes							3.00E-04	U	1		1	1.35E+03	1.61E+03
Phosmet	732-11-6	No	No					2.00E-02	U			1	0.1	1		
Phosphine	7803-51-2	No	Yes					3.00E-04	U	3.00E-04	U	1		1		
Phosphoric Acid	7664-38-2	No	No					4.86E+01	U	1.00E-02	U	1		1		
Phosphorus (total)	NA	No	No									1		1		
Phosphorus pentoxide	1314-56-3	No	No									1		1		
Phosphorus, White	7723-14-0	No	Yes					2.00E-05	U			1		1	9.55E+03	
Phthalates (total)	NA	No	No									1	0.1	1		
Phthalic Acid, P-	100-21-0	No	No					1.00E+00	U			1	0.1	1		
Phthalic Acid, m-	121-91-5	No	No									1	0.1	1		
Phthalic Acid, o-	88-99-3	No	No									1	0.1	1		
Phthalic Anhydride	85-44-9	No	No					2.00E+00	U	2.00E-02	U	1	0.1	1		
Picloram	1918-02-1	No	No					7.00E-02	U			1	0.1	1		
Picoline, 2-	109-06-8	No	Yes									1		1	1.05E+05	7.90E+05
Picramic Acid (2-Amino-4,6-dinitrophenol)	96-91-3	No	No					1.00E-04	U			1	0.1	1		
Picric Acid (2,4,6-Trinitrophenol)	88-89-1	No	No									1	0.1	1		
Piperidine	110-89-4	Yes	Yes									1		1	1.12E+05	1.96E+05
Pirimiphos, Methyl	29232-93-7	No	No					1.00E-02	U			1	0.1	1		
Polybrominated Biphenyls	59536-65-1	No	No	3.00E+01	U	8.60E-03	U	7.00E-06	U			1	0.1	1		
Polychlorinated Biphenyls (high risk)	1336-36-3	No	Yes	2.00E+00	U	5.71E-04	U					1	0.14	1	1.08E+06	
Polycyclic aromatic hydrocarbons (PAH), Total	NA	No	No									1	0.13	1		
Polycyclic aromatic hydrocarbons (PAH), Total (high molecular weight)	NA	No	No									1	0.13	1		

Site-specific

Recreator Screening Levels (RSL) for Soil - Modified for site-specific recreational user
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Pendimethalin	40487-42-1	3.23E+09									2.68E+05	9.38E+05		2.08E+05	2.08E+05 max
Pentabromodiphenyl Ether	32534-81-9	3.23E+09									1.34E+04	4.69E+04		1.04E+04	1.04E+04 nc
Pentabromodiphenyl ether, 2,2',4,4',5- (BDE-99)	60348-60-9	3.23E+09									6.70E+02	2.34E+03		5.21E+02	5.21E+02 nc
Pentachloroaniline	527-20-8	3.23E+09													
Pentachlorobenzene	608-93-5	3.23E+09									5.36E+03			5.36E+03	5.36E+03 nc
Pentachlorobiphenyl, 2',3,4,4',5- (PCB 123)	65510-44-3	3.23E+09	5.01E+00	1.25E+01	3.19E+02	3.54E+00					1.56E+02	3.90E+02	1.66E+05	1.11E+02	3.54E+00 ca*
Pentachlorobiphenyl, 2,3',4,4',5- (PCB 118)	31508-00-6	3.23E+09	5.01E+00	1.25E+01	2.56E+02	3.53E+00					1.56E+02	3.90E+02	1.33E+05	1.11E+02	3.53E+00 ca*
Pentachlorobiphenyl, 2,3,3',4,4'- (PCB 105)	32598-14-4	3.23E+09	5.01E+00	1.25E+01	2.61E+02	3.53E+00					1.56E+02	3.90E+02	1.36E+05	1.11E+02	3.53E+00 ca*
Pentachlorobiphenyl, 2,3,4,4',5- (PCB 114)	74472-37-0	3.23E+09	5.01E+00	1.25E+01	3.19E+02	3.54E+00					1.56E+02	3.90E+02	1.66E+05	1.11E+02	3.54E+00 ca*
Pentachlorobiphenyl, 3,3',4,4',5- (PCB 126)	57465-28-8	3.23E+09	1.50E-03	3.76E-03	9.46E-02	1.06E-03					4.69E-02	1.17E-01	4.93E+01	3.35E-02	1.06E-03 ca*
Pentachlorocyclopentadiene	25329-35-5	3.23E+09													
Pentachlorodibenzo-p-dioxin, 1,2,3,7,8-	40321-76-4	3.23E+09	1.50E-04	1.75E-03	3.10E-02	1.38E-04					4.69E-03	5.47E-02	1.61E+01	4.32E-03	1.38E-04 ca*
Pentachloroethane	76-01-7	3.23E+09	2.17E+02			2.17E+02									2.17E+02 ca
Pentachloronitrobenzene	82-68-8	3.23E+09	7.52E+01			7.52E+01					2.01E+04			2.01E+04	7.52E+01 ca
Pentachlorophenol	87-86-5	3.23E+09	4.89E+01	6.84E+01	1.62E+08	2.85E+01					3.35E+04	4.69E+04		1.95E+04	2.85E+01 ca
Pentaerythritol tetranitrate (PETN)	78-11-5	3.23E+09	4.89E+03	1.71E+04		3.80E+03					1.34E+04	4.69E+04		1.04E+04	3.80E+03 ca**
Pentamethyl dipropylenetriamine	3855-32-1	3.23E+09													
Pentane, n-	109-66-0	3.23E+09											9.42E+04	9.42E+04	9.42E+04 sat
Pentyl Alcohol, N-	71-41-0	3.23E+09													
Perchlorate and Perchlorate Salts	14797-73-0	3.23E+09									4.69E+03			4.69E+03	4.69E+03 nc
Perfluorobutane Sulfonate	375-73-5	3.23E+09									1.34E+05			1.34E+05	1.34E+05 max
Perfluorooctane Sulphonic Acid	1763-23-1	3.23E+09													
Perfluorooctanoic acid	335-67-1	3.23E+09													
Permethrin	52645-53-1	3.23E+09									3.35E+05	1.17E+06		2.61E+05	2.61E+05 max
Perylene	198-55-0	3.23E+09													
Pesticides (total)	NA	3.23E+09													
Pesticides, organochlorinated (each)	NA	3.23E+09													
Pesticides, organochlorinated (total)	NA	3.23E+09													
Phenacetin	62-44-2	3.23E+09	8.89E+03	3.11E+04	1.31E+09	6.91E+03									6.91E+03 ca
Phenanthrene	85-01-8	3.23E+09													
Phenmedipham	13684-63-4	3.23E+09									1.68E+06	5.86E+06		1.30E+06	1.30E+06 max
Phenol	108-95-2	3.23E+09									2.01E+06	7.03E+06	5.66E+10	1.56E+06	1.56E+06 max
Phenothiazine	92-84-2	3.23E+09									3.35E+03	1.17E+04		2.61E+03	2.61E+03 nc
Phenyl Isothiocyanate	103-72-0	3.23E+09													
Phenylenediamine, m-	108-45-2	3.23E+09									4.02E+04	1.41E+05		3.13E+04	3.13E+04 nc
Phenylenediamine, o-	95-54-5	3.23E+09	4.16E+02	1.46E+03		3.23E+02									3.23E+02 ca
Phenylenediamine, p-	106-50-3	3.23E+09									1.27E+06	4.46E+06		9.90E+05	9.90E+05 max
Phenylmercuric Acetate	62-38-4	3.23E+09									5.36E+02	1.88E+03		4.17E+02	4.17E+02 nc
Phenylphenol, 2-	90-43-7	3.23E+09	1.01E+04	3.53E+04		7.84E+03									7.84E+03 ca
Phorate	298-02-2	3.23E+09									1.34E+03	4.69E+03		1.04E+03	1.04E+03 nc
Phosgene	75-44-5	3.23E+09											3.56E+01	3.56E+01	3.56E+01 nc
Phosmet	732-11-6	3.23E+09									1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Phosphine	7803-51-2	3.23E+09									2.01E+03		8.50E+07	2.01E+03	2.01E+03 nc
Phosphoric Acid	7664-38-2	3.23E+09									3.26E+08		2.83E+09	2.92E+08	2.92E+08 max
Phosphorus (total)	NA	3.23E+09													
Phosphorus pentoxide	1314-56-3	3.23E+09													
Phosphorus, White	7723-14-0	3.23E+09									1.34E+02			1.34E+02	1.34E+02 nc
Phthalates (total)	NA	3.23E+09													
Phthalic Acid, P-	100-21-0	3.23E+09									6.70E+06	2.34E+07		5.21E+06	5.21E+06 max
Phthalic Acid, m-	121-91-5	3.23E+09													
Phthalic Acid, o-	88-99-3	3.23E+09													
Phthalic Anhydride	85-44-9	3.23E+09									1.34E+07	4.69E+07	5.66E+09	1.04E+07	1.04E+07 max
Picloram	1918-02-1	3.23E+09									4.69E+05	1.64E+06		3.65E+05	3.65E+05 max
Picoline, 2-	109-06-8	3.23E+09													
Picramic Acid (2-Amino-4,6-dinitrophenol)	96-91-3	3.23E+09									6.70E+02	2.34E+03		5.21E+02	5.21E+02 nc
Picric Acid (2,4,6-Trinitrophenol)	88-89-1	3.23E+09													
Piperidine	110-89-4	3.23E+09													
Pirimiphos, Methyl	29232-93-7	3.23E+09									6.70E+04	2.34E+05		5.21E+04	5.21E+04 nc
Polybrominated Biphenyls	59536-65-1	3.23E+09	6.52E-01	2.28E+00	9.61E+04	5.07E-01					4.69E+01	1.64E+02		3.65E+01	5.07E-01 ca*
Polychlorinated Biphenyls (high risk)	1336-36-3	3.23E+09	9.77E+00	2.44E+01	4.85E+02	6.88E+00									6.88E+00 ca
Polycyclic aromatic hydrocarbons (PAH), Total	NA	3.23E+09													
Polycyclic aromatic hydrocarbons (PAH), Total (high molecular weight)	NA	3.23E+09													

Site-specific

Recreator Screening Levels (RSL) for Soil - Modified for site-specific recreational user
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC ?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)
Polycyclic aromatic hydrocarbons (PAH), Total (low molecular weight)	NA	No	No									1	0.13	1		
Polycyclic chlorinated hydrocarbons (total)	NA	No	No									1	0.1	1		
Polymeric Methylene Diphenyl Diisocyanate (PMDI)	9016-87-9	No	No							6.00E-04	U	1	0.1	1		
Polyphosphoric acid	8017-16-1	No	No					4.86E+01	U			1		1		
Potassium	7440-09-7	No	No									1		1		
Potassium Cyanide	151-50-8	No	No					2.00E-03	U			1		1		
Potassium Perchlorate	7778-74-7	No	No					7.00E-04	U			1		1		
Potassium Perfluorobutane Sulfonate	29420-49-3	No	No					2.00E-02	U			1	0.1	1		
Potassium Silver Cyanide	506-61-6	No	No					5.00E-03	U			0.04		1		
Potassium chlorate	3811-04-9	No	No									1		1		
Potassium tripolyphosphate	13845-36-8	No	No					4.86E+01	U			1		1		
Praseodymium	7440-10-0	No	No									1		1		
Praseodymium Chloride (Stable, Nonradioactive)	10361-79-2	No	No									1		1		
Prochloraz	67747-09-5	No	No	1.50E-01	U			9.00E-03	U			1	0.1	1		
Profluralin	26399-36-0	No	Yes					6.00E-03	U			1		1	5.78E+05	
Promethium	7440-12-2	No	No									1		1		
Prometon	1610-18-0	No	No					1.50E-02	U			1	0.1	1		
Prometryn	7287-19-6	No	No					4.00E-03	U			1	0.1	1		
Propachlor	1918-16-7	No	No					1.30E-02	U			1	0.1	1		
Propanil	709-98-8	No	No					5.00E-03	U			1	0.1	1		
Propanoic acid, 2-(2,4-dichlorophenoxy)-	120-36-5	No	No									1	0.1	1		
Propargite	2312-35-8	No	No					2.00E-02	U			1	0.1	1		
Propargyl Alcohol	107-19-7	No	Yes					2.00E-03	U			1		1	8.66E+04	1.11E+05
Propazine	139-40-2	No	No					2.00E-02	U			1	0.1	1		
Propham	122-42-9	No	No					2.00E-02	U			1	0.1	1		
Propiconazole	60207-90-1	No	No					1.30E-02	U			1	0.1	1		
Propionaldehyde	123-38-6	No	Yes							8.00E-03	U	1		1	1.24E+04	3.26E+04
Propionitrile	107-12-0	No	Yes									1		1	2.07E+04	1.56E+04
Propionitrile, 3-(NN-dimethylamino)	1738-25-6	No	Yes									1		1	2.62E+05	1.60E+05
Propyl Alcohol, n-	71-23-8	No	Yes									1		1	4.01E+04	1.11E+05
Propyl benzene	103-65-1	No	Yes					1.00E-01	U	1.00E+00	U	1		1	9.64E+03	2.64E+02
Propylene	115-07-1	No	Yes							3.00E+00	U	1		1	9.70E+02	3.49E+02
Propylene Glycol	57-55-6	No	No					2.00E+01	U			1	0.1	1		
Propylene Glycol Dinitrate	6423-43-4	No	No							2.72E-04	U	1	0.1	1		
Propylene Glycol Monoethyl Ether	1569-02-4	No	Yes					7.00E-01	U			1		1	2.14E+05	8.52E+04
Propylene Glycol Monomethyl Ether	107-98-2	No	Yes					7.00E-01	U	2.00E+00	U	1		1	1.08E+05	1.06E+05
Propylene Oxide	75-56-9	No	Yes	2.40E-01	U	3.70E-06	U			3.00E-02	U	1		1	1.42E+04	7.77E+04
Prussian Blue (Ferric Ferrocyanide)	14038-43-8	No	No									1	0.1	1		
Pursuit	81335-77-5	No	No					2.50E-01	U			1	0.1	1		
Pydrin	51630-58-1	No	No					2.50E-02	U			1	0.1	1		
Pyrazinyl phosphorothioate, O,O-diethyl O-2-	297-97-2	No	No									1	0.1	1		
Pyrene	129-00-0	No	Yes					3.00E-02	U			1	0.13	1	3.28E+06	
Pyridine	110-86-1	No	Yes					1.00E-03	U			1		1	7.64E+04	5.30E+05
Quinalphos	13593-03-8	No	No					5.00E-04	U			1	0.1	1		
Quinoline	91-22-5	No	No	3.00E+00	U							1	0.1	1		
Refractory Ceramic Fibers	NA	No	No							3.00E-02	U	1		1		
Resmethrin	10453-86-8	No	No					3.00E-02	U			1	0.1	1		
Resorcinol	108-46-3	No	No									1	0.1	1		
Ronnel	299-84-3	No	Yes					5.00E-02	U			1		1	6.40E+05	
Rotenone	83-79-4	No	No					4.00E-03	U			1	0.1	1		
Safrole	94-59-7	Yes	No	2.20E-01	U	6.30E-05	U					1	0.1	1		
Samarium Chloride (Stable, Nonradioactive)	10361-82-7	No	No									1		1		
Samarium Nitrate (Stable, Nonradioactive)	10361-83-8	No	No									1		1		
Savey	78587-05-0	No	No					2.50E-02	U			1	0.1	1		
Scandium	7440-20-2	No	No									1		1		
Selenious Acid	7783-00-8	No	No					5.00E-03	U			1		1		
Selenite	14124-67-5	No	No									1		1		
Selenium	7782-49-2	No	No					5.00E-03	U	2.00E-02	U	1		1		
Selenium Sulfide	7446-34-6	No	No					5.00E-03	U	2.00E-02	U	1		1		
Selenourea	630-10-4	No	No									1	0.1	1		
Sethoxydim	74051-80-2	No	No					9.00E-02	U			1	0.1	1		
Silica (crystalline, respirable)	7631-86-9	No	No							3.00E-03	U	1		1		

Site-specific

Recreator Screening Levels (RSL) for Soil - Modified for site-specific recreational user
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Polycyclic aromatic hydrocarbons (PAH), Total (low molecular weight)	NA	3.23E+09													
Polycyclic chlorinated hydrocarbons (total)	NA	3.23E+09													
Polymeric Methylene Diphenyl Diisocyanate (PMDI)	9016-87-9	3.23E+09											1.70E+08	1.70E+08	1.70E+08 max
Polyphosphoric acid	8017-16-1	3.23E+09									3.26E+08			3.26E+08	3.26E+08 max
Potassium	7440-09-7	3.23E+09													
Potassium Cyanide	151-50-8	3.23E+09									1.34E+04			1.34E+04	1.34E+04 nc
Potassium Perchlorate	7778-74-7	3.23E+09									4.69E+03			4.69E+03	4.69E+03 nc
Potassium Perfluorobutane Sulfonate	29420-49-3	3.23E+09									1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Potassium Silver Cyanide	506-61-6	3.23E+09									3.35E+04			3.35E+04	3.35E+04 nc
Potassium chlorate	3811-04-9	3.23E+09													
Potassium tripolyphosphate	13845-36-8	3.23E+09									3.26E+08			3.26E+08	3.26E+08 max
Praseodymium	7440-10-0	3.23E+09													
Praseodymium Chloride (Stable, Nonradioactive)	10361-79-2	3.23E+09													
Prochloraz	67747-09-5	3.23E+09	1.30E+02	4.56E+02		1.01E+02					6.03E+04	2.11E+05		4.69E+04	1.01E+02 ca
Profluralin	26399-36-0	3.23E+09									4.02E+04			4.02E+04	4.02E+04 nc
Promethium	7440-12-2	3.23E+09													
Prometon	1610-18-0	3.23E+09									1.01E+05	3.52E+05		7.82E+04	7.82E+04 nc
Prometryn	7287-19-6	3.23E+09									2.68E+04	9.38E+04		2.08E+04	2.08E+04 nc
Propachlor	1918-16-7	3.23E+09									8.71E+04	3.05E+05		6.78E+04	6.78E+04 nc
Propanil	709-98-8	3.23E+09									3.35E+04	1.17E+05		2.61E+04	2.61E+04 nc
Propanoic acid, 2-(2,4-dichlorophenoxy)-	120-36-5	3.23E+09													
Propargite	2312-35-8	3.23E+09									1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Propargyl Alcohol	107-19-7	3.23E+09									1.34E+04			1.34E+04	1.34E+04 nc
Propazine	139-40-2	3.23E+09									1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Propham	122-42-9	3.23E+09									1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Propiconazole	60207-90-1	3.23E+09									8.71E+04	3.05E+05		6.78E+04	6.78E+04 nc
Propionaldehyde	123-38-6	3.23E+09											8.66E+03	8.66E+03	8.66E+03 nc
Propionitrile	107-12-0	3.23E+09													
Propionitrile, 3-(NN-dimethylamino)	1738-25-6	3.23E+09													
Propyl Alcohol, n-	71-23-8	3.23E+09													
Propyl benzene	103-65-1	3.23E+09									6.70E+05		8.45E+05	3.74E+05	3.74E+05 sat
Propylene	115-07-1	3.23E+09											2.55E+05	2.55E+05	2.55E+05 sat
Propylene Glycol	57-55-6	3.23E+09									1.34E+08	4.69E+08		1.04E+08	1.04E+08 max
Propylene Glycol Dinitrate	6423-43-4	3.23E+09											7.70E+07	7.70E+07	7.70E+07 max
Propylene Glycol Monoethyl Ether	1569-02-4	3.23E+09									4.69E+06			4.69E+06	4.69E+06 sat
Propylene Glycol Monomethyl Ether	107-98-2	3.23E+09									4.69E+06		1.89E+07	3.76E+06	3.76E+06 sat
Propylene Oxide	75-56-9	3.23E+09	8.14E+01		9.77E+02	7.52E+01							3.72E+04	3.72E+04	7.52E+01 ca
Prussian Blue (Ferric Ferrocyanide)	14038-43-8	3.23E+09													
Pursuit	81335-77-5	3.23E+09									1.68E+06	5.86E+06		1.30E+06	1.30E+06 max
Pydrin	51630-58-1	3.23E+09									1.68E+05	5.86E+05		1.30E+05	1.30E+05 max
Pyrazinyl phosphorothioate, O,O-diethyl O-2-	297-97-2	3.23E+09													
Pyrene	129-00-0	3.23E+09									2.01E+05	5.41E+05		1.47E+05	1.47E+05 max
Pyridine	110-86-1	3.23E+09									6.70E+03			6.70E+03	6.70E+03 nc
Quinalphos	13593-03-8	3.23E+09									3.35E+03	1.17E+04		2.61E+03	2.61E+03 nc
Quinoline	91-22-5	3.23E+09	6.52E+00	2.28E+01		5.07E+00									5.07E+00 ca
Refractory Ceramic Fibers	NA	3.23E+09											8.50E+09	8.50E+09	8.50E+09 max
Resmethrin	10453-86-8	3.23E+09									2.01E+05	7.03E+05		1.56E+05	1.56E+05 max
Resorcinol	108-46-3	3.23E+09													
Ronnel	299-84-3	3.23E+09									3.35E+05			3.35E+05	3.35E+05 max
Rotenone	83-79-4	3.23E+09									2.68E+04	9.38E+04		2.08E+04	2.08E+04 nc
Safrole	94-59-7	3.23E+09	3.02E+01	2.05E+02	7.15E+06	2.63E+01									2.63E+01 ca
Samarium Chloride (Stable, Nonradioactive)	10361-82-7	3.23E+09													
Samarium Nitrate (Stable, Nonradioactive)	10361-83-8	3.23E+09													
Savey	78587-05-0	3.23E+09									1.68E+05	5.86E+05		1.30E+05	1.30E+05 max
Scandium	7440-20-2	3.23E+09													
Selenious Acid	7783-00-8	3.23E+09									3.35E+04			3.35E+04	3.35E+04 nc
Selenite	14124-67-5	3.23E+09													
Selenium	7782-49-2	3.23E+09									3.35E+04		5.66E+09	3.35E+04	3.35E+04 nc
Selenium Sulfide	7446-34-6	3.23E+09									3.35E+04		5.66E+09	3.35E+04	3.35E+04 nc
Selenourea	630-10-4	3.23E+09													
Sethoxydim	74051-80-2	3.23E+09									6.03E+05	2.11E+06		4.69E+05	4.69E+05 max
Silica (crystalline, respirable)	7631-86-9	3.23E+09											8.50E+08	8.50E+08	8.50E+08 max

Site-specific

Recreator Screening Levels (RSL) for Soil - Modified for site-specific recreational user
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC ?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)
Silicon	7440-21-3	No	No									1		1		
Silver	7440-22-4	No	No					5.00E-03	U			0.04		1		
Silver Cyanide	506-64-9	No	No					1.00E-01	U			0.04		1		
Simazine	122-34-9	No	No	1.20E-01	U			5.00E-03	U			1	0.1	1		
Sodium	7440-23-5	No	No									1		1		
Sodium Acifluorfen	62476-59-9	No	No					1.30E-02	U			1	0.1	1		
Sodium Azide	26628-22-8	No	No					4.00E-03	U			1		1		
Sodium Chlorate	7775-09-9	No	No									1		1		
Sodium Cyanide	143-33-9	No	No					1.00E-03	U			1		1		
Sodium Dichromate	10588-01-9	Yes	No	5.00E-01	U	1.50E-01	U	2.00E-02	U	2.00E-04	U	0.025		1		
Sodium Diethyldithiocarbamate	148-18-5	No	No	2.70E-01	U			3.00E-02	U			1	0.1	1		
Sodium Fluoride	7681-49-4	No	No					5.00E-02	U	1.30E-02	U	1		1		
Sodium Fluoroacetate	62-74-8	No	No					2.00E-05	U			1	0.1	1		
Sodium Hydroxide	1310-73-2	No	No									1		1		
Sodium Metavanadate	13718-26-8	No	No					1.00E-03	U			1		1		
Sodium Perchlorate	7601-89-0	No	No					7.00E-04	U			1		1		
Sodium acid pyrophosphate	7758-16-9	No	No					4.86E+01	U			1		1		
Sodium aluminum phosphate (acidic)	7785-88-8	No	No					4.86E+01	U			1		1		
Sodium aluminum phosphate (anhydrous)	10279-59-1	No	No					4.86E+01	U			1		1		
Sodium aluminum phosphate (tetrahydrate)	10305-76-7	No	No					4.86E+01	U			1		1		
Sodium hexametaphosphate	10124-56-8	No	No					4.86E+01	U			1		1		
Sodium polyphosphate	68915-31-1	No	No					4.86E+01	U			1		1		
Sodium trimetaphosphate	7785-84-4	No	No					4.86E+01	U			1		1		
Sodium tripolyphosphate	7758-29-4	No	No					4.86E+01	U			1		1		
Stearyl Acetate	822-23-1	No	Yes									1		1	8.92E+04	
Stirofos (Tetrachlorovinphos)	961-11-5	No	No	2.40E-02	U			3.00E-02	U			1	0.1	1		
Strontium Chromate	7789-06-2	Yes	No	5.00E-01	U	1.50E-01	U	2.00E-02	U	2.00E-04	U	0.025		1		
Strontium, Stable	7440-24-6	No	No					6.00E-01	U			1		1		
Strychnine	57-24-9	No	No					3.00E-04	U			1	0.1	1		
Styrene	100-42-5	No	Yes					2.00E-01	U	1.00E+00	U	1		1	1.29E+04	8.67E+02
Styrene-Acrylonitrile (SAN) Trimer	NA	No	No					3.00E-03	U			1	0.1	1		
Sulfate	14808-79-8	No	No									1		1		
Sulfide	18496-25-8	No	No									1		1		
Sulfolane	126-33-0	No	No					1.00E-03	U	2.00E-03	U	1	0.1	1		
Sulfonylbis(4-chlorobenzene), 1,1'-	80-07-9	No	No					8.00E-04	U			1	0.1	1		
Sulfur	7704-34-9	No	No									1		1		
Sulfur Dioxide	7446-09-5	No	Yes									1		1		
Sulfur Mustard	505-60-2	No	Yes									1		1	1.21E+05	1.08E+03
Sulfur Trioxide	7446-11-9	No	Yes							1.00E-03	U	1		1		
Sulfuric Acid	7664-93-9	No	No							1.00E-03	U	1		1		
Systhane	88671-89-0	No	No					2.50E-02	U			1	0.1	1		
TCDD, 2,3,7,8-	1746-01-6	No	Yes	1.30E+05	U	3.80E+01	U	7.00E-10	U	4.00E-08	U	1	0.03	1	2.71E+06	
TCDF, 2,3,7,8-	51207-31-9	No	Yes	1.30E+04	U	3.80E+00	U	7.00E-09	U	4.00E-07	U	1	0.03	1	4.72E+06	
TCMTB	21564-17-0	No	No					3.00E-02	U			1	0.1	1		
Tebuthiuron	34014-18-1	No	No					7.00E-02	U			1	0.1	1		
Technetium	7440-26-8	No	No									1		1		
Tellurium	13494-80-9	No	No									1		1		
Temephos	3383-96-8	No	No					2.00E-02	U			1	0.1	1		
Terbacil	5902-51-2	No	No					1.30E-02	U			1	0.1	1		
Terbufos	13071-79-9	No	Yes					2.50E-05	U			1		1	3.64E+05	3.09E+01
Terbutryn	886-50-0	No	No					1.00E-03	U			1	0.1	1		
Tetrabutyl Lead	1920-90-7	No	Yes									1		1	6.41E+03	
Tetrachloroaniline, 2,3,5,6-	3481-20-7	No	No									1	0.1	1		
Tetrachlorobenzene, 1,2,3,4-	634-66-2	No	Yes									1		1	8.26E+04	
Tetrachlorobenzene, 1,2,4,5-	95-94-3	No	Yes					3.00E-04	U			1		1	6.99E+04	
Tetrachlorobiphenyl, 3,3',4,4'- (PCB 77)	32598-13-3	No	No	1.30E+01	U	3.80E-03	U	7.00E-06	U	4.00E-04	U	1	0.14	1		
Tetrachlorobiphenyl, 3,4,4',5- (PCB 81)	70362-50-4	No	Yes	3.90E+01	U	1.14E-02	U	2.33E-06	U	1.33E-04	U	1	0.14	1	1.00E+06	
Tetrachloroethane, 1,1,1,2-	630-20-6	No	Yes	2.60E-02	U	7.40E-06	U	3.00E-02	U			1		1	7.83E+03	6.80E+02
Tetrachloroethane, 1,1,2,2-	79-34-5	No	Yes	2.00E-01	U	5.80E-05	U	2.00E-02	U			1		1	2.08E+04	1.90E+03
Tetrachloroethylene	127-18-4	No	Yes	2.10E-03	U	2.60E-07	U	6.00E-03	U	4.00E-02	U	1		1	3.24E+03	1.66E+02
Tetrachlorophenol, 2,3,4,5-	4901-51-3	No	No									1	0.1	1		
Tetrachlorophenol, 2,3,4,6-	58-90-2	No	No					3.00E-02	U			1	0.1	1		
Tetrachlorophenols (total)	25167-83-3	No	No									1	0.1	1		
Tetrachloroterephthalate, 2,3,5,6-	2136-79-0	No	No									1	0.1	1		

Site-specific

Recreator Screening Levels (RSL) for Soil - Modified for site-specific recreational user
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Silicon	7440-21-3	3.23E+09													
Silver	7440-22-4	3.23E+09									3.35E+04			3.35E+04	3.35E+04 nc
Silver Cyanide	506-64-9	3.23E+09									6.70E+05			6.70E+05	6.70E+05 max
Simazine	122-34-9	3.23E+09	1.63E+02	5.70E+02		1.27E+02					3.35E+04	1.17E+05		2.61E+04	1.27E+02 ca
Sodium	7440-23-5	3.23E+09													
Sodium Acifluorfen	62476-59-9	3.23E+09									8.71E+04	3.05E+05		6.78E+04	6.78E+04 nc
Sodium Azide	26628-22-8	3.23E+09									2.68E+04			2.68E+04	2.68E+04 nc
Sodium Chlorate	7775-09-9	3.23E+09													
Sodium Cyanide	143-33-9	3.23E+09									6.70E+03			6.70E+03	6.70E+03 nc
Sodium Dichromate	10588-01-9	3.23E+09	1.33E+01		3.00E+03	1.32E+01					1.34E+05		5.66E+07	1.34E+05	1.32E+01 ca
Sodium Diethyldithiocarbamate	148-18-5	3.23E+09	7.24E+01	2.53E+02		5.63E+01					2.01E+05	7.03E+05		1.56E+05	5.63E+01 ca
Sodium Fluoride	7681-49-4	3.23E+09									3.35E+05		3.68E+09	3.35E+05	3.35E+05 max
Sodium Fluoroacetate	62-74-8	3.23E+09									1.34E+02	4.69E+02		1.04E+02	1.04E+02 nc
Sodium Hydroxide	1310-73-2	3.23E+09													
Sodium Metavanadate	13718-26-8	3.23E+09									6.70E+03			6.70E+03	6.70E+03 nc
Sodium Perchlorate	7601-89-0	3.23E+09									4.69E+03			4.69E+03	4.69E+03 nc
Sodium acid pyrophosphate	7758-16-9	3.23E+09									3.26E+08			3.26E+08	3.26E+08 max
Sodium aluminum phosphate (acidic)	7785-88-8	3.23E+09									3.26E+08			3.26E+08	3.26E+08 max
Sodium aluminum phosphate (anhydrous)	10279-59-1	3.23E+09									3.26E+08			3.26E+08	3.26E+08 max
Sodium aluminum phosphate (tetrahydrate)	10305-76-7	3.23E+09									3.26E+08			3.26E+08	3.26E+08 max
Sodium hexametaphosphate	10124-56-8	3.23E+09									3.26E+08			3.26E+08	3.26E+08 max
Sodium polyphosphate	68915-31-1	3.23E+09									3.26E+08			3.26E+08	3.26E+08 max
Sodium trimetaphosphate	7785-84-4	3.23E+09									3.26E+08			3.26E+08	3.26E+08 max
Sodium tripolyphosphate	7758-29-4	3.23E+09									3.26E+08			3.26E+08	3.26E+08 max
Stearyl Acetate	822-23-1	3.23E+09													
Stirofos (Tetrachlorovinphos)	961-11-5	3.23E+09	8.14E+02	2.85E+03		6.33E+02					2.01E+05	7.03E+05		1.56E+05	6.33E+02 ca
Strontium Chromate	7789-06-2	3.23E+09	1.33E+01		3.00E+03	1.32E+01					1.34E+05		5.66E+07	1.34E+05	1.32E+01 ca
Strontium, Stable	7440-24-6	3.23E+09									4.02E+06			4.02E+06	4.02E+06 max
Strychnine	57-24-9	3.23E+09									2.01E+03	7.03E+03		1.56E+03	1.56E+03 nc
Styrene	100-42-5	3.23E+09									1.34E+06		1.13E+06	6.14E+05	6.14E+05 sat
Styrene-Acrylonitrile (SAN) Trimer	NA	3.23E+09									2.01E+04	7.03E+04		1.56E+04	1.56E+04 nc
Sulfate	14808-79-8	3.23E+09													
Sulfide	18496-25-8	3.23E+09													
Sulfolane	126-33-0	3.23E+09									6.70E+03	2.34E+04	5.66E+08	5.21E+03	5.21E+03 nc
Sulfonylbis(4-chlorobenzene), 1,1'-	80-07-9	3.23E+09									5.36E+03	1.88E+04		4.17E+03	4.17E+03 nc
Sulfur	7704-34-9	3.23E+09													
Sulfur Dioxide	7446-09-5	3.23E+09													
Sulfur Mustard	505-60-2	3.23E+09													
Sulfur Trioxide	7446-11-9	3.23E+09											2.83E+08	2.83E+08	2.83E+08 max
Sulfuric Acid	7664-93-9	3.23E+09											2.83E+08	2.83E+08	2.83E+08 max
Systhane	88671-89-0	3.23E+09									1.68E+05	5.86E+05		1.30E+05	1.30E+05 max
TCDD, 2,3,7,8-	1746-01-6	3.23E+09	1.50E-04	1.75E-03	1.82E-02	1.37E-04					4.69E-03	5.47E-02	9.48E+00	4.32E-03	1.37E-04 ca*
TCDF, 2,3,7,8-	51207-31-9	3.23E+09	1.50E-03	1.75E-02	3.17E-01	1.38E-03					4.69E-02	5.47E-01	1.65E+02	4.32E-02	1.38E-03 ca*
TCMTB	21564-17-0	3.23E+09									2.01E+05	7.03E+05		1.56E+05	1.56E+05 max
Tebuthiuron	34014-18-1	3.23E+09									4.69E+05	1.64E+06		3.65E+05	3.65E+05 max
Technetium	7440-26-8	3.23E+09													
Tellurium	13494-80-9	3.23E+09													
Temephos	3383-96-8	3.23E+09									1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Terbacil	5902-51-2	3.23E+09									8.71E+04	3.05E+05		6.78E+04	6.78E+04 nc
Terbufos	13071-79-9	3.23E+09									1.68E+02			1.68E+02	1.68E+02 sat
Terbutryn	886-50-0	3.23E+09									6.70E+03	2.34E+04		5.21E+03	5.21E+03 nc
Tetrabutyl Lead	1920-90-7	3.23E+09													
Tetrachloroaniline, 2,3,5,6-	3481-20-7	3.23E+09													
Tetrachlorobenzene, 1,2,3,4-	634-66-2	3.23E+09													
Tetrachlorobenzene, 1,2,4,5-	95-94-3	3.23E+09									2.01E+03			2.01E+03	2.01E+03 nc
Tetrachlorobiphenyl, 3,3',4,4'- (PCB 77)	32598-13-3	3.23E+09	1.50E+00	3.76E+00	2.17E+05	1.07E+00					4.69E+01	1.17E+02	1.13E+08	3.35E+01	1.07E+00 ca*
Tetrachlorobiphenyl, 3,4,4'.5- (PCB 81)	70362-50-4	3.23E+09	5.01E-01	1.25E+00	2.24E+01	3.52E-01					1.56E+01	3.90E+01	1.17E+04	1.11E+01	3.52E-01 ca*
Tetrachloroethane, 1,1,1,2-	630-20-6	3.23E+09	7.52E+02		2.70E+02	1.99E+02					2.01E+05			2.01E+05	1.99E+02 ca
Tetrachloroethane, 1,1,2,2-	79-34-5	3.23E+09	9.77E+01		9.18E+01	4.73E+01					1.34E+05			1.34E+05	4.73E+01 ca
Tetrachloroethylene	127-18-4	3.23E+09	9.31E+03		3.18E+03	2.37E+03					4.02E+04		1.13E+04	8.85E+03	2.37E+03 sat
Tetrachlorophenol, 2,3,4,5-	4901-51-3	3.23E+09													
Tetrachlorophenol, 2,3,4,6-	58-90-2	3.23E+09									2.01E+05	7.03E+05		1.56E+05	1.56E+05 max
Tetrachlorophenols (total)	25167-83-3	3.23E+09													
Tetrachloroterephthalate, 2,3,5,6-	2136-79-0	3.23E+09													

Site-specific

Recreator Screening Levels (RSL) for Soil - Modified for site-specific recreational user
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC ?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)
Tetrachlorotoluene, p- alpha, alpha, alpha-	5216-25-1	No	Yes	2.00E+01	U							1		1	1.46E+05	
Tetraethyl Dithiopyrophosphate	3689-24-5	No	No					5.00E-04	U			1	0.1	1		
Tetraethyl Lead	78-00-2	No	Yes					1.00E-07	U			1		1	2.64E+03	2.43E+00
Tetrafluoroethane, 1,1,1,2-	811-97-2	No	Yes							8.00E+01	U	1		1	1.68E+03	1.09E+03
Tetrahydrofuran	109-99-9	No	Yes					9.00E-01	U	2.00E+00	U	1	0.03	1	1.69E+04	1.65E+05
Tetrahydrothiophene	110-01-0	No	Yes									1		1	1.81E+04	3.44E+03
Tetramethyl Lead	75-74-1	No	Yes									1		1	1.89E+03	3.64E+01
Tetramethylcyclohexane	30501-43-0	No	Yes									1		1		
Tetrapotassium phosphate	7320-34-5	No	No					4.86E+01	U			1		1		
Tetrapropyl Lead	3440-75-3	No	Yes									1		1	3.65E+03	
Tetrasodium pyrophosphate	7722-88-5	No	No					4.86E+01	U			1		1		
Tetryl (Trinitrophenylmethylnitramine)	479-45-8	No	No					2.00E-03	U			1	0.00065	1		
Thallic Oxide	1314-32-5	No	No									1		1		
Thallium (I) Nitrate	10102-45-1	No	No					7.00E-06	U			1		1		
Thallium (Soluble Salts)	7440-28-0	No	No					1.00E-05	U			1		1		
Thallium Acetate	563-68-8	No	No					6.00E-06	U			1	0.1	1		
Thallium Carbonate	6533-73-9	No	No					2.00E-05	U			1	0.1	1		
Thallium Chloride	7791-12-0	No	No					6.00E-06	U			1		1		
Thallium Selenite	12039-52-0	No	No									1		1		
Thallium Sulfate	7446-18-6	No	No					2.00E-05	U			1		1		
Thiobencarb	28249-77-6	No	No					1.00E-02	U			1	0.1	1		
Thiocyanates	NA	No	No					2.00E-04	U			1		1		
Thiocyanic Acid	463-56-9	No	Yes					2.00E-04	U			1		1		
Thiodiglycol	111-48-8	No	No					7.00E-02	U			1	0.0075	1		
Thiofanox	39196-18-4	No	No					3.00E-04	U			1	0.1	1		
Thiophanate, Methyl	23564-05-8	No	No					8.00E-02	U			1	0.1	1		
Thiophene	110-02-1	No	Yes									1		1	5.77E+03	1.80E+03
Thiram	137-26-8	No	No					5.00E-03	U			1	0.1	1		
Thorium	NA	No	No									1		1		
Thymol	89-83-8	No	No									1	0.1	1		
Tin	7440-31-5	No	No					6.00E-01	U			1		1		
Titanium	7440-32-6	No	No									1		1		
Titanium Tetrachloride	7550-45-0	No	Yes							1.00E-04	U	1		1		
Toluene	108-88-3	No	Yes					8.00E-02	U	5.00E+00	U	1		1	5.92E+03	8.18E+02
Toluene-2,5-diamine	95-70-5	No	No	1.80E-01	U			2.00E-04	U			1	0.1	1		
Toluenediamine, 2,3-	2687-25-4	No	No									1	0.1	1		
Toluenediamine, 3,4-	496-72-0	No	No									1	0.1	1		
Toluidine, p-	106-49-0	No	No	3.00E-02	U			4.00E-03	U			1	0.1	1		
Total Petroleum Hydrocarbons (Aliphatic High)	NA	No	Yes					3.00E+00	U			1		1	1.46E+03	3.41E-01
Total Petroleum Hydrocarbons (Aliphatic Low)	NA	No	Yes							6.00E-01	U	1		1	1.14E+03	1.41E+02
Total Petroleum Hydrocarbons (Aliphatic Medium)	NA	No	Yes					1.00E-02	U	1.00E-01	U	1		1	1.44E+03	6.86E+00
Total Petroleum Hydrocarbons (Aromatic High)	NA	No	No					4.00E-02	U			1	0.1	1		
Total Petroleum Hydrocarbons (Aromatic Low)	NA	No	Yes					4.00E-03	U	3.00E-02	U	1		1	4.88E+03	1.82E+03
Total Petroleum Hydrocarbons (Aromatic Medium)	NA	No	Yes					4.00E-03	U	3.00E-03	U	1		1	7.23E+04	
Toxaphene	8001-35-2	No	No	1.10E+00	U	3.20E-04	U					1	0.1	1		
Tralomethrin	66841-25-6	No	No					7.50E-03	U			1	0.1	1		
Tri-n-butyltin	688-73-3	No	Yes					3.00E-04	U			1		1	4.63E+03	
Triacetin	102-76-1	No	No					8.00E+01	U			1	0.1	1		
Triallate	2303-17-5	No	Yes					1.30E-02	U			1		1	5.00E+05	
Trialuminum sodium tetra decahydrogenoctaorthophosphate (dihydrate)	15136-87-5	No	No					4.86E+01	U			1		1		
Triasulfuron	82097-50-5	No	No					1.00E-02	U			1	0.1	1		
Triaziquone	68-76-8	No	No									1	0.1	1		
Tribromobenzene, 1,2,4-	615-54-3	No	Yes					5.00E-03	U			1		1	6.24E+04	
Tribromochloromethane	594-15-0	No	Yes									1		1	5.65E+04	
Tribromodiphenyl Ether	49690-94-0	No	Yes									1		1	1.07E+06	
Tribromophenol, 2,4,6-	118-79-6	No	No									1	0.1	1		
Tributyl Phosphate	126-73-8	No	No	9.00E-03	U			1.00E-02	U			1	0.1	1		
Tributyltin	56573-85-4	No	Yes									1		1	4.95E+04	
Tributyltin Compounds	NA	No	No					3.00E-04	U			1	0.1	1		
Tributyltin Oxide	56-35-9	No	No					3.00E-04	U			1	0.1	1		
Tributyltin chloride	1461-22-9	No	Yes									1		1	5.94E+03	

Site-specific

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Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Tetrachlorotoluene, p- alpha, alpha, alpha-	5216-25-1	3.23E+09	9.77E-01			9.77E-01									9.77E-01 ca
Tetraethyl Dithiopyrophosphate	3689-24-5	3.23E+09									3.35E+03	1.17E+04		2.61E+03	2.61E+03 nc
Tetraethyl Lead	78-00-2	3.23E+09									6.70E-01			6.70E-01	6.70E-01 nc
Tetrafluoroethane, 1,1,1,2-	811-97-2	3.23E+09											1.18E+07	1.18E+07	1.18E+07 sat
Tetrahydrofuran	109-99-9	3.23E+09									6.03E+06	7.03E+07	2.95E+06	1.93E+06	1.93E+06 sat
Tetrahydrothiophene	110-01-0	3.23E+09													
Tetramethyl Lead	75-74-1	3.23E+09													
Tetramethylcyclohexane	30501-43-0	3.23E+09													
Tetrapotassium phosphate	7320-34-5	3.23E+09									3.26E+08			3.26E+08	3.26E+08 max
Tetrapropyl Lead	3440-75-3	3.23E+09													
Tetrasodium pyrophosphate	7722-88-5	3.23E+09									3.26E+08			3.26E+08	3.26E+08 max
Tetryl (Trinitrophenylmethylnitramine)	479-45-8	3.23E+09									1.34E+04	7.22E+06		1.34E+04	1.34E+04 nc
Thallic Oxide	1314-32-5	3.23E+09													
Thallium (I) Nitrate	10102-45-1	3.23E+09									4.69E+01			4.69E+01	4.69E+01 nc
Thallium (Soluble Salts)	7440-28-0	3.23E+09									6.70E+01			6.70E+01	6.70E+01 nc
Thallium Acetate	563-68-8	3.23E+09									4.02E+01	1.41E+02		3.13E+01	3.13E+01 nc
Thallium Carbonate	6533-73-9	3.23E+09									1.34E+02	4.69E+02		1.04E+02	1.04E+02 nc
Thallium Chloride	7791-12-0	3.23E+09									4.02E+01			4.02E+01	4.02E+01 nc
Thallium Selenite	12039-52-0	3.23E+09													
Thallium Sulfate	7446-18-6	3.23E+09									1.34E+02			1.34E+02	1.34E+02 nc
Thiobencarb	28249-77-6	3.23E+09									6.70E+04	2.34E+05		5.21E+04	5.21E+04 nc
Thiocyanates	NA	3.23E+09									1.34E+03			1.34E+03	1.34E+03 nc
Thiocyanic Acid	463-56-9	3.23E+09									1.34E+03			1.34E+03	1.34E+03 nc
Thiodiglycol	111-48-8	3.23E+09									4.69E+05	2.19E+07		4.59E+05	4.59E+05 max
Thiofanox	39196-18-4	3.23E+09									2.01E+03	7.03E+03		1.56E+03	1.56E+03 nc
Thiophanate, Methyl	23564-05-8	3.23E+09									5.36E+05	1.88E+06		4.17E+05	4.17E+05 max
Thiophene	110-02-1	3.23E+09													
Thiram	137-26-8	3.23E+09									3.35E+04	1.17E+05		2.61E+04	2.61E+04 nc
Thorium	NA	3.23E+09													
Thymol	89-83-8	3.23E+09													
Tin	7440-31-5	3.23E+09									4.02E+06			4.02E+06	4.02E+06 max
Titanium	7440-32-6	3.23E+09													
Titanium Tetrachloride	7550-45-0	3.23E+09											2.83E+07	2.83E+07	2.83E+07 max
Toluene	108-88-3	3.23E+09									5.36E+05		2.59E+06	4.44E+05	4.44E+05 sat
Toluene-2,5-diamine	95-70-5	3.23E+09	1.09E+02	3.80E+02		8.45E+01					1.34E+03	4.69E+03		1.04E+03	8.45E+01 ca*
Toluenediamine, 2,3-	2687-25-4	3.23E+09													
Toluenediamine, 3,4-	496-72-0	3.23E+09													
Toluidine, p-	106-49-0	3.23E+09	6.52E+02	2.28E+03		5.07E+02					2.68E+04	9.38E+04		2.08E+04	5.07E+02 ca*
Total Petroleum Hydrocarbons (Aliphatic High)	NA	3.23E+09									2.01E+07			2.01E+07	2.01E+07 sat
Total Petroleum Hydrocarbons (Aliphatic Low)	NA	3.23E+09											6.01E+04	6.01E+04	6.01E+04 sat
Total Petroleum Hydrocarbons (Aliphatic Medium)	NA	3.23E+09									6.70E+04		1.26E+04	1.06E+04	1.06E+04 sat
Total Petroleum Hydrocarbons (Aromatic High)	NA	3.23E+09									2.68E+05	9.38E+05		2.08E+05	2.08E+05 max
Total Petroleum Hydrocarbons (Aromatic Low)	NA	3.23E+09									2.68E+04		1.28E+04	8.67E+03	8.67E+03 sat
Total Petroleum Hydrocarbons (Aromatic Medium)	NA	3.23E+09									2.68E+04		1.90E+04	1.11E+04	1.11E+04 nc
Toxaphene	8001-35-2	3.23E+09	1.78E+01	6.22E+01	2.58E+06	1.38E+01									1.38E+01 ca
Tralomethrin	66841-25-6	3.23E+09									5.03E+04	1.76E+05		3.91E+04	3.91E+04 nc
Tri-n-butyltin	688-73-3	3.23E+09									2.01E+03			2.01E+03	2.01E+03 nc
Triacetin	102-76-1	3.23E+09									5.36E+08	1.88E+09		4.17E+08	4.17E+08 max
Triallate	2303-17-5	3.23E+09									8.71E+04			8.71E+04	8.71E+04 nc
Trialuminum sodium tetra decahydrogenoctaorthophosphate (dihydrate)	15136-87-5	3.23E+09									3.26E+08			3.26E+08	3.26E+08 max
Triasulfuron	82097-50-5	3.23E+09									6.70E+04	2.34E+05		5.21E+04	5.21E+04 nc
Triaziquone	68-76-8	3.23E+09													
Tribromobenzene, 1,2,4-	615-54-3	3.23E+09									3.35E+04			3.35E+04	3.35E+04 nc
Tribromochloromethane	594-15-0	3.23E+09													
Tribromodiphenyl Ether	49690-94-0	3.23E+09													
Tribromophenol, 2,4,6-	118-79-6	3.23E+09													
Tributyl Phosphate	126-73-8	3.23E+09	2.17E+03	7.60E+03		1.69E+03					6.70E+04	2.34E+05		5.21E+04	1.69E+03 ca*
Tributyltin	56573-85-4	3.23E+09													
Tributyltin Compounds	NA	3.23E+09									2.01E+03	7.03E+03		1.56E+03	1.56E+03 nc
Tributyltin Oxide	56-35-9	3.23E+09									2.01E+03	7.03E+03		1.56E+03	1.56E+03 nc
Tributyltin chloride	1461-22-9	3.23E+09													

Site-specific

Recreator Screening Levels (RSL) for Soil - Modified for site-specific recreational user
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC ?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)
Tributyltin fluoride	1983-10-4	No	Yes									1		1	8.59E+03	
Tributyltin linoleate	24124-25-2	No	Yes									1		1	1.67E+05	
Tributyltin methacrylate	2155-70-6	No	Yes									1		1	1.41E+04	
Tributyltin naphthenate	85409-17-2	No	No									1	0.1	1		
Tricaine Methanesulfonate	886-86-2	No	No									1	0.1	1		
Tricalcium phosphate	7758-87-4	No	No					4.86E+01	U			1		1		
Trichloro-1,2,2-trifluoroethane, 1,1,2-	76-13-1	No	Yes					3.00E+01	U	3.00E+01	U	1		1	1.77E+03	9.10E+02
Trichloro-2'-hydroxydiphenylether	3380-34-5	No	No									1	0.1	1		
Trichloroacetic Acid	76-03-9	No	No	7.00E-02	U			2.00E-02	U			1	0.1	1		
Trichloroaniline HCl, 2,4,6-	33663-50-2	No	No	2.90E-02	U							1	0.1	1		
Trichloroaniline, 2,4,5-	636-30-6	No	No									1	0.1	1		
Trichloroaniline, 2,4,6-	634-93-5	No	No	7.00E-03	U			3.00E-05	U			1	0.1	1		
Trichlorobenzene	12002-48-1	No	Yes									1		1	3.55E+04	
Trichlorobenzene, 1,2,3-	87-61-6	No	Yes					8.00E-04	U			1		1	4.44E+04	
Trichlorobenzene, 1,2,4-	120-82-1	No	Yes	2.90E-02	U			1.00E-02	U	2.00E-03	U	1		1	4.13E+04	4.05E+02
Trichloroethane, 1,1,1-	71-55-6	No	Yes					2.00E+00	U	5.00E+00	U	1		1	2.27E+03	6.40E+02
Trichloroethane, 1,1,2-	79-00-5	No	Yes	5.70E-02	U	1.60E-05	U	4.00E-03	U	2.00E-04	U	1		1	9.95E+03	2.16E+03
Trichloroethylene	79-01-6	Yes	Yes	4.60E-02	U	4.10E-06	U	5.00E-04	U	2.00E-03	U	1		1	3.04E+03	6.92E+02
Trichlorofluoromethane	75-69-4	No	Yes					3.00E-01	U	7.00E-01	U	1		1	1.43E+03	1.23E+03
Trichlorophenol, 2,4,5-	95-95-4	No	No					1.00E-01	U			1	0.1	1		
Trichlorophenol, 2,4,6-	88-06-2	No	No	1.10E-02	U	3.10E-06	U	1.00E-03	U			1	0.1	1		
Trichlorophenoxyacetic Acid, 2,4,5-	93-76-5	No	No					1.00E-02	U			1	0.1	1		
Trichlorophenoxyacetic acid, 2,4,5- Amine Salts, PARENT (2,4,5-T)	NA	No	No									1		1		
Trichlorophenoxypropionic acid, -2,4,5	93-72-1	No	No					8.00E-03	U			1	0.1	1		
Trichloropropane, 1,1,2-	598-77-6	No	Yes					5.00E-03	U			1		1	2.07E+04	1.28E+03
Trichloropropane, 1,2,3-	96-18-4	Yes	Yes	3.00E+01	U			4.00E-03	U	3.00E-04	U	1		1	2.17E+04	1.40E+03
Trichloropropene, 1,2,3-	96-19-5	No	Yes					3.00E-03	U	3.00E-04	U	1		1	3.23E+03	4.51E+02
Trichlorotoluene, 2,3,6-	2077-46-5	No	Yes									1		1	5.83E+04	
Trichlorotoluene, alpha 2,6-	2014-83-7	No	Yes									1		1	9.70E+04	
Triclorophenols (total)	NA	No	No									1	0.1	1		
Tricresyl Phosphate (TCP)	1330-78-5	No	No					2.00E-02	U			1	0.1	1		
Tridiphane	58138-08-2	No	No					3.00E-03	U			1	0.1	1		
Tridymite	15468-32-3	Yes	No									1		1		
Triethyl Lead	5224-23-7	No	Yes									1		1	1.80E+03	5.67E+03
Triethyl phosphorothioate [O,O,O-]	126-68-1	No	Yes									1		1	3.87E+04	4.67E+02
Triethylamine	121-44-8	No	Yes							7.00E-03	U	1		1	2.18E+04	2.78E+04
Triethylene Glycol	112-27-6	No	No					2.00E+00	U			1	0.1	1		
Trifluralin	1582-09-8	No	Yes	7.70E-03	U			7.50E-03	U			1		1	7.07E+05	
Trimagnesium phosphate	7757-87-1	No	No					4.86E+01	U			1		1		
Trimethyl Lead	7442-13-9	No	Yes									1		1	1.54E+03	6.92E+04
Trimethyl Phosphate	512-56-1	No	No	2.00E-02	U			1.00E-02	U			1	0.1	1		
Trimethyl-4-Propenylnaphthalene, 1,2,3-	26137-53-1	No	Yes									1		1	6.96E+05	
Trimethylbenzene, 1,2,3-	526-73-8	No	Yes							5.00E-03	U	1		1	1.30E+04	2.93E+02
Trimethylbenzene, 1,2,4-	95-63-6	No	Yes							7.00E-03	U	1		1	1.09E+04	2.18E+02
Trimethylbenzene, 1,3,5-	108-67-8	No	Yes					1.00E-02	U			1		1	9.11E+03	1.82E+02
Trimethylethyl Lead	1762-26-1	No	Yes									1		1	1.98E+03	2.51E+04
Trimethylpentane, 2,2,4-	540-84-1	No	Yes									1		1	1.29E+03	6.10E+01
Trinitrobenzene, 1,3,5-	99-35-4	No	No					3.00E-02	U			1	0.019	1		
Trinitrotoluene, 2,4,6-	118-96-7	No	No	3.00E-02	U			5.00E-04	U			1	0.032	1		
Triphenylphosphine Oxide	791-28-6	No	No					2.00E-02	U			1	0.1	1		
Triphenyltin	668-34-8	No	Yes									1		1	2.79E+06	
Tripotassium phosphate	7778-53-2	No	No					4.86E+01	U			1		1		
Tripropyl Lead	6618-03-7	No	Yes									1		1	2.30E+03	5.57E+02
Tris(1,3-Dichloro-2-propyl) Phosphate	13674-87-8	No	No					2.00E-02	U			1	0.1	1		
Tris(1-chloro-2-propyl)phosphate	13674-84-5	No	No					1.00E-02	U			1	0.1	1		
Tris(2,3-dibromopropyl)phosphate	126-72-7	No	Yes	2.30E+00	U	6.60E-04	U					1		1	1.25E+06	4.67E+02
Tris(2-chloroethyl)phosphate	115-96-8	No	No	2.00E-02	U			7.00E-03	U			1	0.1	1		
Tris(2-ethylhexyl)phosphate	78-42-2	No	No	3.20E-03	U			1.00E-01	U			1	0.1	1		
Trisbutoxyethyl Phosphate	78-51-3	No	No									1	0.1	1		
Trisodium phosphate	7601-54-9	No	No					4.86E+01	U			1		1		
Trithion	786-19-6	No	No									1	0.1	1		
Tungsten	7440-33-7	No	No									1		1		
Uranium (Soluble Salts)	NA	No	No					3.00E-03	U	4.00E-05	U	1		1		

Site-specific

Recreator Screening Levels (RSL) for Soil - Modified for site-specific recreational user
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Gu
Smax=Soil SL exceeds ceiling limit and has been substituted with the max valu
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Tributyltin fluoride	1983-10-4	3.23E+09													
Tributyltin linoleate	24124-25-2	3.23E+09													
Tributyltin methacrylate	2155-70-6	3.23E+09													
Tributyltin naphthenate	85409-17-2	3.23E+09													
Tricaine Methanesulfonate	886-86-2	3.23E+09													
Tricalcium phosphate	7758-87-4	3.23E+09									3.26E+08			3.26E+08	3.26E+08 max
Trichloro-1,2,2-trifluoroethane, 1,1,2-	76-13-1	3.23E+09									2.01E+08		4.66E+06	4.55E+06	4.55E+06 sat
Trichloro-2'-hydroxydiphenylether	3380-34-5	3.23E+09													
Trichloroacetic Acid	76-03-9	3.23E+09	2.79E+02	9.77E+02		2.17E+02					1.34E+05	4.69E+05		1.04E+05	2.17E+02 ca
Trichloroaniline HCl, 2,4,6-	33663-50-2	3.23E+09	6.74E+02	2.36E+03		5.24E+02									5.24E+02 ca
Trichloroaniline, 2,4,5-	636-30-6	3.23E+09													
Trichloroaniline, 2,4,6-	634-93-5	3.23E+09	2.79E+03	9.77E+03		2.17E+03					2.01E+02	7.03E+02		1.56E+02	1.56E+02 nc
Trichlorobenzene	12002-48-1	3.23E+09													
Trichlorobenzene, 1,2,3-	87-61-6	3.23E+09									5.36E+03			5.36E+03	5.36E+03 nc
Trichlorobenzene, 1,2,4-	120-82-1	3.23E+09	6.74E+02			6.74E+02					6.70E+04		7.24E+03	6.53E+03	6.74E+02 sat
Trichloroethane, 1,1,1-	71-55-6	3.23E+09									1.34E+07		9.96E+05	9.27E+05	9.27E+05 sat
Trichloroethane, 1,1,2-	79-00-5	3.23E+09	3.43E+02		1.59E+02	1.09E+02					2.68E+04		1.74E+02	1.73E+02	1.09E+02 ca**
Trichloroethylene	79-01-6	3.23E+09	3.04E+02		1.58E+02	1.04E+02					3.35E+03		5.33E+02	4.60E+02	1.04E+02 ca**
Trichlorofluoromethane	75-69-4	3.23E+09									2.01E+06		8.76E+04	8.39E+04	8.39E+04 sat
Trichlorophenol, 2,4,5-	95-95-4	3.23E+09									6.70E+05	2.34E+06		5.21E+05	5.21E+05 max
Trichlorophenol, 2,4,6-	88-06-2	3.23E+09	1.78E+03	6.22E+03	2.66E+08	1.38E+03					6.70E+03	2.34E+04		5.21E+03	1.38E+03 ca**
Trichlorophenoxyacetic Acid, 2,4,5-	93-76-5	3.23E+09									6.70E+04	2.34E+05		5.21E+04	5.21E+04 nc
Trichlorophenoxyacetic acid, 2,4,5- Amine Salts, PARENT (2,4,5-T)	NA	3.23E+09													
Trichlorophenoxypropionic acid, -2,4,5	93-72-1	3.23E+09									5.36E+04	1.88E+05		4.17E+04	4.17E+04 nc
Trichloropropane, 1,1,2-	598-77-6	3.23E+09									3.35E+04			3.35E+04	3.35E+04 sat
Trichloropropane, 1,2,3-	96-18-4	3.23E+09	2.21E-01			2.21E-01					2.68E+04		5.70E+02	5.58E+02	2.21E-01 ca
Trichloropropene, 1,2,3-	96-19-5	3.23E+09									2.01E+04		8.48E+01	8.44E+01	8.44E+01 nc
Trichlorotoluene, 2,3,6-	2077-46-5	3.23E+09													
Trichlorotoluene, alpha 2,6-	2014-83-7	3.23E+09													
Triclorophenols (total)	NA	3.23E+09													
Tricresyl Phosphate (TCP)	1330-78-5	3.23E+09									1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Tridiphane	58138-08-2	3.23E+09									2.01E+04	7.03E+04		1.56E+04	1.56E+04 nc
Tridymite	15468-32-3	3.23E+09													
Triethyl Lead	5224-23-7	3.23E+09													
Triethyl phosphorothioate [O,O,O-]	126-68-1	3.23E+09													
Triethylamine	121-44-8	3.23E+09											1.34E+04	1.34E+04	1.34E+04 nc
Triethylene Glycol	112-27-6	3.23E+09									1.34E+07	4.69E+07		1.04E+07	1.04E+07 max
Trifluralin	1582-09-8	3.23E+09	2.54E+03			2.54E+03					5.03E+04			5.03E+04	2.54E+03 ca*
Trimagnesium phosphate	7757-87-1	3.23E+09									3.26E+08			3.26E+08	3.26E+08 max
Trimethyl Lead	7442-13-9	3.23E+09													
Trimethyl Phosphate	512-56-1	3.23E+09	9.77E+02	3.42E+03		7.60E+02					6.70E+04	2.34E+05		5.21E+04	7.60E+02 ca*
Trimethyl-4-Propenylnaphthalene, 1,2,3-	26137-53-1	3.23E+09													
Trimethylbenzene, 1,2,3-	526-73-8	3.23E+09											5.70E+03	5.70E+03	5.70E+03 sat
Trimethylbenzene, 1,2,4-	95-63-6	3.23E+09											6.69E+03	6.69E+03	6.69E+03 sat
Trimethylbenzene, 1,3,5-	108-67-8	3.23E+09									6.70E+04			6.70E+04	6.70E+04 sat
Trimethylethyl Lead	1762-26-1	3.23E+09													
Trimethylpentane, 2,2,4-	540-84-1	3.23E+09													
Trinitrobenzene, 1,3,5-	99-35-4	3.23E+09									2.01E+05	3.70E+06		1.91E+05	1.91E+05 max
Trinitrotoluene, 2,4,6-	118-96-7	3.23E+09	6.52E+02	7.12E+03		5.97E+02					3.35E+03	3.66E+04		3.07E+03	5.97E+02 ca**
Triphenylphosphine Oxide	791-28-6	3.23E+09									1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Triphenyltin	668-34-8	3.23E+09													
Tripotassium phosphate	7778-53-2	3.23E+09									3.26E+08			3.26E+08	3.26E+08 max
Tripropyl Lead	6618-03-7	3.23E+09													
Tris(1,3-Dichloro-2-propyl) Phosphate	13674-87-8	3.23E+09									1.34E+05	4.69E+05		1.04E+05	1.04E+05 max
Tris(1-chloro-2-propyl)phosphate	13674-84-5	3.23E+09									6.70E+04	2.34E+05		5.21E+04	5.21E+04 nc
Tris(2,3-dibromopropyl)phosphate	126-72-7	3.23E+09	8.50E+00		4.82E+02	8.35E+00									8.35E+00 ca
Tris(2-chloroethyl)phosphate	115-96-8	3.23E+09	9.77E+02	3.42E+03		7.60E+02					4.69E+04	1.64E+05		3.65E+04	7.60E+02 ca*
Tris(2-ethylhexyl)phosphate	78-42-2	3.23E+09	6.11E+03	2.14E+04		4.75E+03					6.70E+05	2.34E+06		5.21E+05	4.75E+03 ca
Trisbutoxyethyl Phosphate	78-51-3	3.23E+09													
Trisodium phosphate	7601-54-9	3.23E+09									3.26E+08			3.26E+08	3.26E+08 max
Trithion	786-19-6	3.23E+09													
Tungsten	7440-33-7	3.23E+09													
Uranium (Soluble Salts)	NA	3.23E+09									2.01E+04		1.13E+07	2.01E+04	2.01E+04 nc

Site-specific

Recreator Screening Levels (RSL) for Soil - Modified for site-specific recreational user
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC ?	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Inhalation Unit Risk $(ug/m^3)^{-1}$	IUR Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	Chronic RfC (mg/m^3)	Chronic RfC Ref	GIABS	ABS	rba	Volatilization Factor (m^3/kg)	Soil Saturation Concentration (mg/kg)
Urea	57-13-6	No	No									1	0.1	1		
Urethane	51-79-6	Yes	No	1.00E+00	U	2.90E-04	U					1	0.1	1		
Vanadium Pentoxide	1314-62-1	No	No			8.30E-03	U	9.00E-03	U	7.00E-06	U	0.026		1		
Vanadium Sulfate	36907-42-3	No	No									0.026		1		
Vanadium and Compounds	7440-62-2	No	No					5.04E-03	U	1.00E-04	U	0.026		1		
Vanadyl Sulfate	27774-13-6	No	No									1		1		
Vernolate	1929-77-7	No	Yes					1.00E-03	U			1		1	1.70E+05	
Vinclozolin	50471-44-8	No	No					2.50E-02	U			1	0.1	1		
Vinyl Acetate	108-05-4	No	Yes					1.00E+00	U	2.00E-01	U	1		1	6.06E+03	2.75E+03
Vinyl Bromide	593-60-2	No	Yes			3.20E-05	U			3.00E-03	U	1		1	1.89E+03	3.38E+03
Vinyl Chloride	75-01-4	Yes	Yes	7.20E-01	U	4.40E-06	U	3.00E-03	U	1.00E-01	U	1		1	1.32E+03	3.92E+03
Warfarin	81-81-2	No	No					3.00E-04	U			1	0.1	1		
Xylene, P-	106-42-3	No	Yes					2.00E-01	U	1.00E-01	U	1		1	7.70E+03	3.89E+02
Xylene, m-	108-38-3	No	Yes					2.00E-01	U	1.00E-01	U	1		1	7.54E+03	3.87E+02
Xylene, o-	95-47-6	No	Yes					2.00E-01	U	1.00E-01	U	1		1	8.90E+03	4.34E+02
Xylenes	1330-20-7	No	Yes					2.00E-01	U	1.00E-01	U	1		1	8.93E+03	2.58E+02
Ytterbium	7440-64-4	No	No									1		1		
Yttrium	7440-65-5	No	No									1		1		
Zinc Cyanide	557-21-1	No	No					5.00E-02	U			1		1		
Zinc Phosphide	1314-84-7	No	No					3.00E-04	U			1		1		
Zinc and Compounds	7440-66-6	No	No					3.00E-01	U			1		1		
Zineb	12122-67-7	No	No					5.00E-02	U			1	0.1	1		
Zirconium	7440-67-7	No	No					8.00E-05	U			1		1		

Site-specific

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Chemical	CAS Number	Particulate Emission Factor (m^3/kg)	Ingestion SL TR=1.0E-6 (mg/kg)	Dermal SL TR=1.0E-6 (mg/kg)	Inhalation SL TR=1.0E-6 (mg/kg)	Carcinogenic SL TR=1.0E-6 (mg/kg)	Ingestion SL (Child) HQ=1 (mg/kg)	Dermal SL (Child) HQ=1 (mg/kg)	Inhalation SL (Child) HQ=1 (mg/kg)	Noncarcinogenic SL (Child) HI=1 (mg/kg)	Ingestion SL (Adult) HQ=1 (mg/kg)	Dermal SL (Adult) HQ=1 (mg/kg)	Inhalation SL (Adult) HQ=1 (mg/kg)	Noncarcinogenic SL (Adult) HI=1 (mg/kg)	Screening Level (mg/kg)
Urea	57-13-6	3.23E+09													
Urethane	51-79-6	3.23E+09	6.64E+00	4.50E+01	1.55E+06	5.79E+00									5.79E+00 ca
Vanadium Pentoxide	1314-62-1	3.23E+09			9.95E+04	9.95E+04					6.03E+04		1.98E+06	5.85E+04	5.85E+04 nc
Vanadium Sulfate	36907-42-3	3.23E+09													
Vanadium and Compounds	7440-62-2	3.23E+09									3.38E+04		2.83E+07	3.37E+04	3.37E+04 nc
Vanadyl Sulfate	27774-13-6	3.23E+09													
Vernolate	1929-77-7	3.23E+09									6.70E+03			6.70E+03	6.70E+03 nc
Vinclozolin	50471-44-8	3.23E+09									1.68E+05	5.86E+05		1.30E+05	1.30E+05 max
Vinyl Acetate	108-05-4	3.23E+09									6.70E+06		1.06E+05	1.05E+05	1.05E+05 sat
Vinyl Bromide	593-60-2	3.23E+09			1.51E+01	1.51E+01							4.96E+02	4.96E+02	1.51E+01 ca*
Vinyl Chloride	75-01-4	3.23E+09	2.71E+01		2.98E-01	2.95E-01					2.01E+04		1.15E+04	7.33E+03	2.95E-01 ca
Warfarin	81-81-2	3.23E+09									2.01E+03	7.03E+03		1.56E+03	1.56E+03 nc
Xylene, P-	106-42-3	3.23E+09									1.34E+06		6.75E+04	6.42E+04	6.42E+04 sat
Xylene, m-	108-38-3	3.23E+09									1.34E+06		6.60E+04	6.29E+04	6.29E+04 sat
Xylene, o-	95-47-6	3.23E+09									1.34E+06		7.80E+04	7.37E+04	7.37E+04 sat
Xylenes	1330-20-7	3.23E+09									1.34E+06		7.82E+04	7.39E+04	7.39E+04 sat
Ytterbium	7440-64-4	3.23E+09													
Yttrium	7440-65-5	3.23E+09													
Zinc Cyanide	557-21-1	3.23E+09									3.35E+05			3.35E+05	3.35E+05 max
Zinc Phosphide	1314-84-7	3.23E+09									2.01E+03			2.01E+03	2.01E+03 nc
Zinc and Compounds	7440-66-6	3.23E+09									2.01E+06			2.01E+06	2.01E+06 max
Zineb	12122-67-7	3.23E+09									3.35E+05	1.17E+06		2.61E+05	2.61E+05 max
Zirconium	7440-67-7	3.23E+09									5.36E+02			5.36E+02	5.36E+02 nc

Site-specific
Recreator Equation Inputs for Surface Water
MODIFIED FOR UTILITY WORKER

Variable	Value
TR (target cancer risk) unitless	0.000001
ED_{recw} (exposure duration - recreator) year	1
ED_{recwa} (exposure duration - adult) year	1
ED_{recwc} (exposure duration - child) year	0
ED_{0-2} (mutagenic exposure duration) year	0
ED_{2-6} (mutagenic exposure duration) year	0
ED_{6-16} (mutagenic exposure duration) year	0
ED_{16-30} (mutagenic exposure duration) year	1
THQ (target hazard quotient) unitless	1
LT (lifetime - recreator) year	70
EF (exposure frequency) day/year	30
EF_{recwa} (adult exposure frequency) day/year	30
EF_{recwc} (child exposure frequency) day/year	0
EF_{0-2} (mutagenic exposure frequency) day/year	
EF_{2-6} (mutagenic exposure frequency) day/year	
EF_{6-16} (mutagenic exposure frequency) day/year	0
EF_{16-30} (mutagenic exposure frequency) day/year	30
$ET_{recw-adj}$ (age-adjusted exposure time) hour/event	2
$ET_{recw-madj}$ (mutagenic age-adjusted exposure time) hour/event	2
ET_{recwa} (adult exposure time) hour/event	2
ET_{recwc} (child exposure time) hour/event	0
$ET_{recw0-2}$ (mutagenic exposure time) hour/event	
$ET_{recw2-6}$ (mutagenic exposure time) hour/event	
$ET_{recw6-16}$ (mutagenic exposure time) hour/event	0
$ET_{recw16-30}$ (mutagenic exposure time) hour/event	2
EV_{recwa} (adult) events/day	1
EV_{recwc} (child) events/day	0
EV_{0-2} (mutagenic) events/day	0

EV_{2-6} (mutagenic) events/day	0
EV_{6-16} (mutagenic) events/day	0
EV_{16-30} (mutagenic) events/day	1
BW_{recwc} (body weight - child) kg	0
BW_{recwa} (body weight - adult) kg	80
BW_{0-2} (mutagenic body weight) kg	15
BW_{2-6} (mutagenic body weight) kg	15
BW_{6-16} (mutagenic body weight) kg	80
BW_{16-30} (mutagenic body weight) kg	80
SA_{recwc} (skin surface area - child) cm^2	0
SA_{recwa} (skin surface area - adult) cm^2	4840
SA_{0-2} (skin surface area - mutagenic) cm^2	4840
SA_{2-6} (skin surface area - mutagenic) cm^2	4840
SA_{6-16} (skin surface area - mutagenic) cm^2	4840
SA_{16-30} (skin surface area - mutagenic) cm^2	4840
SA_{0-2} (mutagenic skin surface area) cm^2	4840
SA_{2-6} (mutagenic skin surface area) cm^2	4840
SA_{6-16} (mutagenic skin surface area) cm^2	4840
SA_{16-30} (mutagenic skin surface area) cm^2	4840
$IFW_{rec-adj}$ (age-adjusted water intake rate) L/kg	0.008
$IFWM_{rec-adj}$ (mutagenic age-adjusted water intake rate) L/kg	0.008
$DFW_{rec-adj}$ (age-adjusted dermal factor) cm^2-event/kg	1815
$DFWM_{rec-adj}$ (mutagenic age-adjusted dermal factor) cm^2-event/kg	1815
IRW_{recwa} (water intake rate - adult) L/hr	0.01
IRW_{recwc} (water intake rate - child) L/hr	0
IRW_{0-2} (mutagenic water intake rate) L/hr	0.05
IRW_{2-6} (mutagenic water intake rate) L/hr	0.05
IRW_{6-16} (mutagenic water intake rate) L/hr	0.05
IRW_{16-30} (mutagenic water intake rate) L/hr	0.01
l_{sc} (apparent thickness of stratum corneum) cm	0.001

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Site-specific

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Chemical	CAS Number	Mutagen?	VOC?	Chemical Type	Ingestion SF (mg/kg-day)$^{-1}$	SFO Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	RAGSe GIABS (unitless)	K_p (cm/hr)	MW	fa	In EPD?	DAeventc
ALAR	1596-84-5	No	No	Organics	1.80E-02	U	1.50E-01	U	1	0.0000199	160.17	1	Yes	0.7820631
Acenaphthene	83-32-9	No	Yes	Organics			6.00E-02	U	1	0.086	154.21	1	Yes	
Acenaphthylene	208-96-8	No	Yes	Organics					1	0.0911	152.2	1	Yes	
Acephate	30560-19-1	No	No	Organics	8.70E-03	U	4.00E-03	U	1	0.00004	183.16	1	Yes	1.6180615
Acetaldehyde	75-07-0	No	Yes	Organics					1	0.000527	44.05	1	Yes	
Acetochlor	34256-82-1	No	No	Organics			2.00E-02	U	1	0.00495	269.77	0.9	Yes	
Acetone	67-64-1	No	Yes	Organics			9.00E-01	U	1	0.000512	58.08	1	Yes	
Acetone Cyanohydrin	75-86-5	No	Yes	Organics					1	0.000495	85.11	1	Yes	
Acetonitrile	75-05-8	No	Yes	Organics					1	0.000548	41.05	1	Yes	
Acetophenone	98-86-2	No	Yes	Organics			1.00E-01	U	1	0.00372	120.15	1	Yes	
Acetylaminofluorene, 2-	53-96-3	No	No	Organics	3.80E+00	U			1	0.0125	223.28	1	Yes	0.0037045
Acifluorofen	50594-66-6	No	No	Organics					1	0.00421	361.66	0.9	Yes	
Acridine	260-94-6	No	No	Organics					1	0.0281	179.22	1	Yes	
Acrolein	107-02-8	No	Yes	Organics			5.00E-04	U	1	0.000748	56.06	1	Yes	
Acrylamide	79-06-1	Yes	No	Organics	5.00E-01	U	2.00E-03	U	1	0.000224	71.08	1	Yes	0.0281543
Acrylic Acid	79-10-7	No	Yes	Organics			5.00E-01	U	1	0.00105	72.06	1	Yes	
Acrylonitrile	107-13-1	No	Yes	Organics	5.40E-01	U	4.00E-02	U	1	0.00116	53.06	1	Yes	0.0260688
Adiponitrile	111-69-3	No	No	Organics					1	0.000237	108.14	1	Yes	
Alachlor	15972-60-8	No	No	Organics	5.60E-02	U	1.00E-02	U	1	0.0105	269.77	0.9	Yes	0.2513774
Aldicarb	116-06-3	No	No	Organics			1.00E-03	U	1	0.000755	190.26	1	Yes	
Aldicarb Sulfone	1646-88-4	No	No	Organics			1.00E-03	U	1	0.0000371	222.26	1	Yes	
Aldicarb sulfoxide	1646-87-3	No	No	Organics					1	0.0000329	206.26	1	Yes	
Aldrin	309-00-2	No	Yes	Organics	1.70E+01	U	3.00E-05	U	1	0.293	364.92	1	No	
Aliphatic Chlorinated Hydrocarbons (each)	NA	No	No	Organics					1				No	
Aliphatic Chlorinated Hydrocarbons (total)	NA	No	No	Organics					1				No	
Alizarin Red Compounds	NA	No	No	Organics					1				No	
Ally	74223-64-6	No	No	Organics			2.50E-01	U	1	0.000329	381.37	1	Yes	
Allyl Alcohol	107-18-6	No	Yes	Organics			5.00E-03	U	1	0.000959	58.08	1	Yes	
Allyl Chloride	107-05-1	No	Yes	Organics	2.10E-02	U			1	0.0112	76.53	1	Yes	0.6703398
Aluminum	7429-90-5	No	No	Inorganics			1.00E+00	U	1	0.001	26.982	1	Yes	
Aluminum Phosphide	20859-73-8	No	No	Inorganics			4.00E-04	U	1	0.001	57.96	1	Yes	
Aluminum metaphosphate	13776-88-0	No	No	Inorganics			4.86E+01	U	1	0.001	263.9	1	Yes	
Amdro	67485-29-4	No	No	Organics			3.00E-04	U	1	0.0000902	494.49	1	Yes	
Ametryn	834-12-8	No	No	Organics			9.00E-03	U	1	0.00794	227.33	1	Yes	
Amino-4-chlorobenzotrifluoride, 3-	121-50-6	No	Yes	Organics					1	0.0135	195.57	1	Yes	
Aminoazobenzene, p-	60-09-3	No	No	Organics					1	0.00677	197.24	1	Yes	
Aminobiphenyl, 4-	92-67-1	No	No	Organics	2.10E+01	U			1	0.014	169.23	1	Yes	0.0006703
Aminophenol, m-	591-27-5	No	No	Organics			8.00E-02	U	1	0.000527	109.13	1	Yes	
Aminophenol, o-	95-55-6	No	No	Organics					1	0.000988	109.13	1	Yes	
Aminophenol, p-	123-30-8	No	No	Organics			2.00E-02	U	1	0.000407	109.13	1	Yes	
Aminopyridine, 4-	504-24-5	No	No	Organics					1	0.000758	94.12	1	Yes	
Amitraz	33089-61-1	No	No	Organics			2.50E-03	U	1	0.16	293.42	0.9	Yes	
Ammonium Perchlorate	7790-98-9	No	No	Inorganics			7.00E-04	U	1	0.001	117.49	1	Yes	
Ammonium Sulfamate	7773-06-0	No	No	Inorganics			2.00E-01	U	1	0.001	114.124	1	Yes	

Site-specific

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Chemical	CAS Number	DAeventnc	DAeventna	Ingestion SL TR=1.0E-6 (µg/L)	Dermal SL TR=1.0E-6 (µg/L)	Carcinogenic SL TR=1.0E-6 (µg/L)	Ingestion SL (Child) HQ=1 (µg/L)	Dermal SL (Child) HQ=1 (µg/L)	Noncarcinogenic SL (Child) HQ=1 µ(g/L)	Ingestion SL (Adult) HQ=1 (µg/L)	Dermal SL (Adult) HQ=1 (µg/L)	Noncarcinogenic SL (Adult) HQ=1 (µg/L)	Screening Level (µg/L)
ALAR	1596-84-5		30.165289	1.77E+05	1.07E+07	1.75E+05				7.30E+06	4.14E+08	7.17E+06	1.75E+05 ca*
Acenaphthene	83-32-9		12.066116							2.92E+06	3.97E+04	3.92E+04	3.92E+04 nc
Acenaphthylene	208-96-8												
Acephate	30560-19-1		0.8044077	3.67E+05	9.80E+06	3.54E+05				1.95E+05	4.87E+06	1.87E+05	1.87E+05 nc
Acetaldehyde	75-07-0												
Acetochlor	34256-82-1		4.0220386							9.73E+05	1.25E+05	1.11E+05	1.11E+05 nc
Acetone	67-64-1		180.99174							4.38E+07	1.45E+08	3.36E+07	3.36E+07 nc
Acetone Cyanohydrin	75-86-5												
Acetonitrile	75-05-8												
Acetophenone	98-86-2		20.110193							4.87E+06	1.82E+06	1.32E+06	1.32E+06 nc
Acetylaminofluorene, 2-	53-96-3			8.40E+02	5.54E+01	5.20E+01							5.20E+01 ca
Acifluorofen	50594-66-6												
Acridine	260-94-6												
Acrolein	107-02-8		0.100551							2.43E+04	5.53E+04	1.69E+04	1.69E+04 nc
Acrylamide	79-06-1		0.4022039	6.39E+03	4.98E+04	5.66E+03				9.73E+04	7.11E+05	8.56E+04	5.66E+03 ca*
Acrylic Acid	79-10-7		100.55096							2.43E+07	3.79E+07	1.48E+07	1.48E+07 nc
Acrylonitrile	107-13-1		8.0440771	5.91E+03	9.32E+03	3.62E+03				1.95E+06	2.88E+06	1.16E+06	3.62E+03 ca
Adiponitrile	111-69-3												
Alachlor	15972-60-8		2.0110193	5.70E+04	3.69E+03	3.46E+03				4.87E+05	2.95E+04	2.78E+04	3.46E+03 ca**
Aldicarb	116-06-3		0.2011019							4.87E+04	6.16E+04	2.72E+04	2.72E+04 nc
Aldicarb Sulfone	1646-88-4		0.2011019							4.87E+04	1.02E+06	4.65E+04	4.65E+04 nc
Aldicarb sulfoxide	1646-87-3												
Aldrin	309-00-2			1.88E+02		1.88E+02				1.46E+03		1.46E+03	1.88E+02 ca**
Aliphatic Chlorinated Hydrocarbons (each)	NA												
Aliphatic Chlorinated Hydrocarbons (total)	NA												
Alizarin Red Compounds	NA												
Ally	74223-64-6		50.275482							1.22E+07	1.03E+07	5.58E+06	5.58E+06 nc
Allyl Alcohol	107-18-6		1.0055096							2.43E+05	4.30E+05	1.55E+05	1.55E+05 nc
Allyl Chloride	107-05-1			1.52E+05	2.38E+04	2.06E+04							2.06E+04 ca
Aluminum	7429-90-5		201.10193							4.87E+07	1.01E+08	3.28E+07	3.28E+07 nc
Aluminum Phosphide	20859-73-8		0.0804408							1.95E+04	4.02E+04	1.31E+04	1.31E+04 nc
Aluminum metaphosphate	13776-88-0		9773.5537							2.37E+09	4.89E+09	1.59E+09	1.59E+09 nc
Amdro	67485-29-4		0.0603306							1.46E+04	2.18E+04	8.74E+03	8.74E+03 nc
Ametryn	834-12-8		1.8099174							4.38E+05	4.15E+04	3.79E+04	3.79E+04 nc
Amino-4-chlorobenzotrifluoride, 3-	121-50-6												
Aminoazobenzene, p-	60-09-3												
Aminobiphenyl, 4-	92-67-1			1.52E+02	1.27E+01	1.17E+01							1.17E+01 ca
Aminophenol, m-	591-27-5		16.088154							3.89E+06	1.07E+07	2.85E+06	2.85E+06 nc
Aminophenol, o-	95-55-6												
Aminophenol, p-	123-30-8		4.0220386							9.73E+05	3.46E+06	7.60E+05	7.60E+05 nc
Aminopyridine, 4-	504-24-5												
Amitraz	33089-61-1		0.5027548							1.22E+05	4.15E+02	4.14E+02	4.14E+02 nc
Ammonium Perchlorate	7790-98-9		0.1407713							3.41E+04	7.04E+04	2.30E+04	2.30E+04 nc
Ammonium Sulfamate	7773-06-0		40.220386							9.73E+06	2.01E+07	6.56E+06	6.56E+06 nc

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Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Chemical Type	Ingestion SF (mg/kg-day)$^{-1}$	SFO Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	RAGSe GIABS (unitless)	K_p (cm/hr)	MW	fa	In EPD?	DAeventc
Ammonium polyphosphate	68333-79-9	No	No	Inorganics			4.86E+01	U	1	0.001			Yes	
Amyl Alcohol, tert-	75-85-4	No	Yes	Organics					1	0.00196	88.15	1	Yes	
Aniline	62-53-3	No	No	Organics	5.70E-03	U	7.00E-03	U	1	0.00186	93.13	1	Yes	2.4696728
Anilinobenzothiazole	1843-21-6	No	No	Organics					1				No	
Anthracene	120-12-7	No	Yes	Organics			3.00E-01	U	1	0.142	178.24	1	Yes	
Anthraquinone, 9,10-	84-65-1	No	No	Organics	4.00E-02	U	2.00E-03	U	1	0.019	208.22	0.9	Yes	0.3519284
Antimony (metallic)	7440-36-0	No	No	Inorganics			4.00E-04	U	0.15	0.001	121.76	1	Yes	
Antimony Pentoxide	1314-60-9	No	No	Inorganics			5.00E-04	U	0.15	0.001	323.517	1	Yes	
Antimony Potassium Tartrate	11071-15-1	No	No	Inorganics			9.00E-04	U	0.15	0.001	614.84	0.9	Yes	
Antimony Tetroxide	1332-81-6	No	No	Inorganics			4.00E-04	U	0.15	0.001	307.52	1	Yes	
Antimony Trichloride	10025-91-9	No	No	Inorganics					1	0.001	228.12	1	Yes	
Antimony Trioxide	1309-64-4	No	No	Inorganics					0.15	0.001	291.52	1	Yes	
Apollo	74115-24-5	No	No	Organics			1.30E-02	U	1	0.00358	303.15	0.9	Yes	
Aramite	140-57-8	No	No	Organics	2.50E-02	U	5.00E-02	U	1	0.0328	334.86	0.8	Yes	0.5630854
Aroclor 1016	12674-11-2	No	Yes	Organics	7.00E-02	U	7.00E-05	U	1	0.305	257.55	0.9	No	
Aroclor 1221	11104-28-2	No	Yes	Organics	2.00E+00	U			1	0.168	188.66	1	Yes	0.0070386
Aroclor 1232	11141-16-5	No	Yes	Organics	2.00E+00	U			1	0.168	188.66	1	Yes	0.0070386
Aroclor 1242	53469-21-9	No	Yes	Organics	2.00E+00	U			1	0.545	291.99	0.7	No	
Aroclor 1248	12672-29-6	No	Yes	Organics	2.00E+00	U			1	0.475	291.99	0.7	No	
Aroclor 1254	11097-69-1	No	Yes	Organics	2.00E+00	U	2.00E-05	U	1	0.751	326.44	0.5	No	
Aroclor 1260	11096-82-5	No	Yes	Organics	2.00E+00	U			1	0.986	395.33	0	No	
Aroclor 5460	11126-42-4	No	Yes	Organics			6.00E-04	U	1	0.584	291.99	0.7	No	
Arsenic Salts	NA	No	No	Inorganics					1	0.001			Yes	
Arsenic, Inorganic	7440-38-2	No	No	Inorganics	1.50E+00	U	3.00E-04	U	1	0.001	74.922	1	Yes	0.0093848
Arsine	7784-42-1	No	No	Inorganics			3.50E-06	U	1	0.001	77.95	1	Yes	
Assure	76578-14-8	No	No	Organics			9.00E-03	U	1	0.00886	372.81	0.9	Yes	
Asulam	3337-71-1	No	No	Organics			5.00E-02	U	1	0.0000529	230.24	1	Yes	
Atrazine	1912-24-9	No	No	Organics	2.30E-01	U	3.50E-02	U	1	0.00524	215.69	1	Yes	0.0612049
Auramine	492-80-8	No	No	Organics	8.80E-01	U			1	0.0111	267.38	0.9	Yes	0.0159967
Avermectin B1	65195-55-3	No	No	Organics			4.00E-04	U	1	0.0000181	875.12	1	No	
Azobenzene	103-33-3	No	Yes	Organics	1.10E-01	U			1	0.0514	182.23	1	Yes	0.127974
Azodicarbonamide	123-77-3	No	No	Organics			1.00E+00	U	1	0.0000259	116.08	1	Yes	
Barium	7440-39-3	No	No	Inorganics			2.00E-01	U	0.07	0.001	137.33	1	Yes	
Barium Chromate	10294-40-3	Yes	No	Inorganics	5.00E-01	U	2.00E-02	U	0.025	0.001	253.321	1	Yes	0.0007039
Barium Cyanide	542-62-1	No	No	Inorganics					0.07	0.001	189.36	1	Yes	
Baygon	114-26-1	No	No	Organics			4.00E-03	U	1	0.00107	209.25	1	Yes	
Bayleton	43121-43-3	No	No	Organics			3.00E-02	U	1	0.00244	293.76	1	Yes	
Baythroid	68359-37-5	No	No	Organics			2.50E-02	U	1	0.0515	434.3	0.7	Yes	
Benefin	1861-40-1	No	Yes	Organics			3.00E-01	U	1	0.0675	335.29	0.8	Yes	
Benomyl	17804-35-2	No	No	Organics			5.00E-02	U	1	0.000943	290.32	1	Yes	
Bentazon	25057-89-0	No	No	Organics			3.00E-02	U	1	0.00252	240.28	1	Yes	
Benz[a]anthracene	56-55-3	Yes	Yes	Organics	7.30E-01	U			1	0.552	228.3	1	No	
Benzaldehyde	100-52-7	No	Yes	Organics			1.00E-01	U	1	0.00383	106.13	1	Yes	
Benzene	71-43-2	No	Yes	Organics	5.50E-02	U	4.00E-03	U	1	0.0149	78.11	1	Yes	0.2559479

Site-specific

Recreator Screening Levels (RSL) for Surface Water - Modified for Utility Worker Exposure to Groundwater
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Chemical	CAS Number	DAeventnc	DAeventna	Ingestion SL TR=1.0E-6 (µg/L)	Dermal SL TR=1.0E-6 (µg/L)	Carcinogenic SL TR=1.0E-6 (µg/L)	Ingestion SL (Child) HQ=1 (µg/L)	Dermal SL (Child) HQ=1 (µg/L)	Noncarcinogenic SL (Child) HQ=1 µ(g/L)	Ingestion SL (Adult) HQ=1 (µg/L)	Dermal SL (Adult) HQ=1 (µg/L)	Noncarcinogenic SL (Adult) HQ=1 (µg/L)	Screening Level (µg/L)
Ammonium polyphosphate	68333-79-9		9773.5537							2.37E+09	4.89E+09	1.59E+09	1.59E+09 nc
Amyl Alcohol, tert-	75-85-4												
Aniline	62-53-3		1.4077135	5.60E+05	4.94E+05	2.62E+05				3.41E+05	2.81E+05	1.54E+05	1.54E+05 nc
Anilinobenzothiazole	1843-21-6												
Anthracene	120-12-7		60.330579							1.46E+07	1.06E+05	1.05E+05	1.05E+05 nc
Anthraquinone, 9,10-	84-65-1		0.4022039	7.98E+04	4.24E+03	4.03E+03				9.73E+04	4.85E+03	4.62E+03	4.03E+03 ca**
Antimony (metallic)	7440-36-0		0.0120661							1.95E+04	6.03E+03	4.61E+03	4.61E+03 nc
Antimony Pentoxide	1314-60-9		0.0150826							2.43E+04	7.54E+03	5.76E+03	5.76E+03 nc
Antimony Potassium Tartrate	11071-15-1		0.0271488							4.38E+04	1.36E+04	1.04E+04	1.04E+04 nc
Antimony Tetroxide	1332-81-6		0.0120661							1.95E+04	6.03E+03	4.61E+03	4.61E+03 nc
Antimony Trichloride	10025-91-9												
Antimony Trioxide	1309-64-4												
Apollo	74115-24-5		2.6143251							6.33E+05	9.07E+04	7.93E+04	7.93E+04 nc
Aramite	140-57-8		10.055096	1.28E+05	1.95E+03	1.93E+03				2.43E+06	3.49E+04	3.44E+04	1.93E+03 ca*
Aroclor 1016	12674-11-2			4.56E+04		4.56E+04				3.41E+03		3.41E+03	3.41E+03 nc
Aroclor 1221	11104-28-2			1.60E+03	9.79E+00	9.73E+00							9.73E+00 ca
Aroclor 1232	11141-16-5			1.60E+03	9.79E+00	9.73E+00							9.73E+00 ca
Aroclor 1242	53469-21-9			1.60E+03		1.60E+03							1.60E+03 ca
Aroclor 1248	12672-29-6			1.60E+03		1.60E+03							1.60E+03 ca
Aroclor 1254	11097-69-1			1.60E+03		1.60E+03				9.73E+02		9.73E+02	9.73E+02 nc
Aroclor 1260	11096-82-5			1.60E+03		1.60E+03							1.60E+03 ca
Aroclor 5460	11126-42-4									2.92E+04		2.92E+04	2.92E+04 nc
Arsenic Salts	NA												
Arsenic, Inorganic	7440-38-2		0.0603306	2.13E+03	4.69E+03	1.46E+03				1.46E+04	3.02E+04	9.84E+03	1.46E+03 ca**
Arsine	7784-42-1		0.0007039							1.70E+02	3.52E+02	1.15E+02	1.15E+02 nc
Assure	76578-14-8		1.8099174							4.38E+05	1.62E+04	1.56E+04	1.56E+04 nc
Asulam	3337-71-1		10.055096							2.43E+06	3.40E+07	2.27E+06	2.27E+06 nc
Atrazine	1912-24-9		7.0385675	1.39E+04	2.29E+03	1.97E+03				1.70E+06	2.64E+05	2.28E+05	1.97E+03 ca
Auramine	492-80-8			3.63E+03	2.25E+02	2.12E+02							2.12E+02 ca
Avermectin B1	65195-55-3									1.95E+04		1.95E+04	1.95E+04 nc
Azobenzene	103-33-3			2.90E+04	6.07E+02	5.94E+02							5.94E+02 ca
Azodicarbonamide	123-77-3		201.10193							4.87E+07	2.64E+09	4.78E+07	4.78E+07 nc
Barium	7440-39-3		2.815427							9.73E+06	1.41E+06	1.23E+06	1.23E+06 nc
Barium Chromate	10294-40-3		0.100551	6.39E+03	3.52E+02	3.34E+02				9.73E+05	5.03E+04	4.78E+04	3.34E+02 ca
Barium Cyanide	542-62-1												
Baygon	114-26-1		0.8044077							1.95E+05	1.54E+05	8.59E+04	8.59E+04 nc
Bayleton	43121-43-3		6.0330579							1.46E+06	2.94E+05	2.44E+05	2.44E+05 nc
Baythroid	68359-37-5		5.0275482							1.22E+06	6.69E+03	6.65E+03	6.65E+03 nc
Benefin	1861-40-1		60.330579							1.46E+07	1.01E+05	1.01E+05	1.01E+05 nc
Benomyl	17804-35-2		10.055096							2.43E+06	1.29E+06	8.45E+05	8.45E+05 nc
Bentazon	25057-89-0		6.0330579							1.46E+06	4.01E+05	3.15E+05	3.15E+05 nc
Benz[a]anthracene	56-55-3			4.38E+03		4.38E+03							4.38E+03 ca
Benzaldehyde	100-52-7		20.110193							4.87E+06	1.87E+06	1.35E+06	1.35E+06 nc
Benzene	71-43-2		0.8044077	5.81E+04	6.85E+03	6.13E+03				1.95E+05	2.15E+04	1.94E+04	6.13E+03 ca**

Site-specific

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Chemical	CAS Number	Mutagen?	VOC?	Chemical Type	Ingestion SF (mg/kg-day)$^{-1}$	SFO Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	RAGSe GIABS (unitless)	K_p (cm/hr)	MW	fa	In EPD?	DAeventc
Benzene, Ethyldimethyl	29224-55-3	No	Yes	Organics					1	0.212	134.22	1	Yes	
Benzene, Ethylmethyl	25550-14-5	No	Yes	Organics					1	0.0857	120.2	1	Yes	
Benzene, Methylpropenyl	768-00-3	No	Yes	Organics					1	0.103	132.21	1	Yes	
Benzene, Methylpropyl	28729-54-6	No	No	Organics					1				No	
Benzene, Trimethyl	25551-13-7	No	Yes	Organics					1	0.0621	120.2	1	Yes	
Benzenediamine-2-methyl sulfate, 1,4-	6369-59-1	No	No	Organics	1.00E-01	U	3.00E-04	U	1	3.04E-07	220.24	1	No	
Benzenethiol	108-98-5	No	Yes	Organics			1.00E-03	U	1	0.0178	110.17	1	Yes	
Benzidine	92-87-5	Yes	No	Organics	2.30E+02	U	3.00E-03	U	1	0.00113	184.24	1	Yes	0.0000612
Benzo(j)fluoranthene	205-82-3	No	No	Organics	1.20E+00	U			1	0.69	252.32	0.9	No	
Benzo[a]pyrene	50-32-8	Yes	No	Organics	7.30E+00	U			1	0.713	252.32	1	No	
Benzo[b]fluoranthene	205-99-2	Yes	No	Organics	7.30E-01	U			1	0.417	252.32	1	No	
Benzo[g,h,i]perylene	191-24-2	No	No	Organics					1	1.12	276.34	0.7	No	
Benzo[k]fluoranthene	207-08-9	Yes	No	Organics	7.30E-02	U			1	0.691	252.32	0.9	No	
Benzofluoranthenes, total	NA	No	No	Organics					1				No	
Benzofluorene, 2,3-	243-17-4	No	No	Organics					1	0.654	216.28	1	No	
Benzoic Acid	65-85-0	No	No	Organics			4.00E+00	U	1	0.00565	122.12	1	Yes	
Benzoic acid, 3,5-dichloro-	51-36-5	No	No	Organics					1	0.0131	191.01	1	Yes	
Benzoic acid, 4-hydroxy-, methyl ester	99-76-3	No	No	Organics					1	0.0044	152.15	1	Yes	
Benzothiazole	95-16-9	No	No	Organics					1	0.00592	135.18	1	Yes	
Benzotrichloride	98-07-7	No	Yes	Organics	1.30E+01	U			1	0.0487	195.48	1	Yes	0.0010829
Benzyl Alcohol	100-51-6	No	No	Organics			1.00E-01	U	1	0.00209	108.14	1	Yes	
Benzyl Chloride	100-44-7	No	Yes	Organics	1.70E-01	U	2.00E-03	U	1	0.0103	126.59	1	Yes	0.0828067
Beryllium and compounds	7440-41-7	No	No	Inorganics			2.00E-03	U	0.007	0.001	9.01	1	Yes	
Bidrin	141-66-2	No	No	Organics			1.00E-04	U	1	0.0000731	237.19	1	Yes	
Bifenox	42576-02-3	No	No	Organics			9.00E-03	U	1	0.0179	342.14	0.9	Yes	
Biphenthrin	82657-04-3	No	No	Organics			1.50E-02	U	1	1.74	422.88	0	No	
Biphenyl, 1,1'-	92-52-4	No	Yes	Organics	8.00E-03	U	5.00E-01	U	1	0.0943	154.21	1	Yes	1.7596419
Bis(2-chloro-1-methylethyl) ether	108-60-1	No	Yes	Organics	7.00E-02	U	4.00E-02	U	1	0.00764	171.07	1	Yes	0.2011019
Bis(2-chloroethoxy)methane	111-91-1	No	No	Organics			3.00E-03	U	1	0.00122	173.04	1	Yes	
Bis(2-chloroethyl)ether	111-44-4	No	Yes	Organics	1.10E+00	U			1	0.00178	143.01	1	Yes	0.0127974
Bis(2-ethylhexyl)phthalate	117-81-7	No	No	Organics	1.40E-02	U	2.00E-02	U	1	1.13	390.57	0.8	No	
Bis(Octanoyloxy)Di-N-Butyl Stannane	4731-77-5	No	Yes	Organics					1	0.0547	519.36	0.6	No	
Bis(chloromethyl)ether	542-88-1	No	Yes	Organics	2.20E+02	U			1	0.000855	114.96	1	Yes	0.000064
Bis(oleoyloxy)dibutyl tin	13323-62-1	No	Yes	Organics					1	2680	795.87	0	No	
Bisphenol A	80-05-7	No	No	Organics			5.00E-02	U	1	0.0132	228.29	1	Yes	
Boron And Borates Only	7440-42-8	No	No	Inorganics			2.00E-01	U	1	0.001	13.84	1	Yes	
Boron Trichloride	10294-34-5	No	Yes	Inorganics			2.00E+00	U	1	0.001	117.17	1	Yes	
Boron Trifluoride	7637-07-2	No	Yes	Inorganics			4.00E-02	U	1	0.001	67.81	1	Yes	
Bromacil	314-40-9	No	No	Organics					1	0.00135	261.12	1	Yes	
Bromate	15541-45-4	No	No	Inorganics	7.00E-01	U	4.00E-03	U	1	0.001	79.9	1	Yes	0.0201102
Bromine	7726-95-6	No	Yes	Inorganics					1	0.001	159.81	1	Yes	
Bromo-2-chloroethane, 1-	107-04-0	No	Yes	Organics	2.00E+00	U			1	0.00464	143.41	1	Yes	0.0070386
Bromo-3-fluorobenzene, 1-	1073-06-9	No	Yes	Organics					1	0.0142	175	1	Yes	
Bromo-4-Ethylbenzene, 1-	1585-07-5	No	Yes	Organics					1	0.0579	185.06	1	Yes	

Site-specific

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Chemical	CAS Number	DAeventnc	DAeventna	Ingestion SL TR=1.0E-6 (µg/L)	Dermal SL TR=1.0E-6 (µg/L)	Carcinogenic SL TR=1.0E-6 (µg/L)	Ingestion SL (Child) HQ=1 (µg/L)	Dermal SL (Child) HQ=1 (µg/L)	Noncarcinogenic SL (Child) HQ=1 µ(g/L)	Ingestion SL (Adult) HQ=1 (µg/L)	Dermal SL (Adult) HQ=1 (µg/L)	Noncarcinogenic SL (Adult) HQ=1 (µg/L)	Screening Level (µg/L)
Benzene, Ethyldimethyl	29224-55-3												
Benzene, Ethylmethyl	25550-14-5												
Benzene, Methylpropenyl	768-00-3												
Benzene, Methylpropyl	28729-54-6												
Benzene, Trimethyl	25551-13-7												
Benzenediamine-2-methyl sulfate, 1,4-	6369-59-1			3.19E+04		3.19E+04				1.46E+04		1.46E+04	1.46E+04 nc
Benzenethiol	108-98-5		0.2011019							4.87E+04	4.04E+03	3.73E+03	3.73E+03 nc
Benzidine	92-87-5		0.6033058	1.39E+01	1.30E+01	6.72E+00				1.46E+05	1.28E+05	6.83E+04	6.72E+00 ca
Benzo(j)fluoranthene	205-82-3			2.66E+03		2.66E+03							2.66E+03 ca
Benzo[a]pyrene	50-32-8			4.38E+02		4.38E+02							4.38E+02 ca
Benzo[b]fluoranthene	205-99-2			4.38E+03		4.38E+03							4.38E+03 ca
Benzo[g,h,i]perylene	191-24-2												
Benzo[k]fluoranthene	207-08-9			4.38E+04		4.38E+04							4.38E+04 ca
Benzofluoranthenes, total	NA												
Benzofluorene, 2,3-	243-17-4												
Benzoic Acid	65-85-0		804.40771							1.95E+08	4.76E+07	3.82E+07	3.82E+07 nc
Benzoic acid, 3,5-dichloro-	51-36-5												
Benzoic acid, 4-hydroxy-, methyl ester	99-76-3												
Benzothiazole	95-16-9												
Benzotrichloride	98-07-7			2.46E+02	4.97E+00	4.88E+00							4.88E+00 ca
Benzyl Alcohol	100-51-6		20.110193							4.87E+06	3.39E+06	2.00E+06	2.00E+06 nc
Benzyl Chloride	100-44-7		0.4022039	1.88E+04	2.65E+03	2.32E+03				9.73E+04	1.29E+04	1.14E+04	2.32E+03 ca**
Beryllium and compounds	7440-41-7		0.0028154							9.73E+04	1.41E+03	1.39E+03	1.39E+03 nc
Bidrin	141-66-2		0.0201102							4.87E+03	4.70E+04	4.41E+03	4.41E+03 nc
Bifenox	42576-02-3		1.8099174							4.38E+05	9.76E+03	9.55E+03	9.55E+03 nc
Biphenthrin	82657-04-3									7.30E+05		7.30E+05	7.30E+05 nc
Biphenyl, 1,1'-	92-52-4		100.55096	3.99E+05	5.27E+03	5.20E+03				2.43E+07	3.01E+05	2.97E+05	5.20E+03 ca*
Bis(2-chloro-1-methylethyl) ether	108-60-1		8.0440771	4.56E+04	6.89E+03	5.99E+03				1.95E+06	2.76E+05	2.41E+05	5.99E+03 ca*
Bis(2-chloroethoxy)methane	111-91-1		0.6033058							1.46E+05	1.28E+05	6.82E+04	6.82E+04 nc
Bis(2-chloroethyl)ether	111-44-4			2.90E+03	2.16E+03	1.24E+03							1.24E+03 ca
Bis(2-ethylhexyl)phthalate	117-81-7			2.28E+05		2.28E+05				9.73E+05		9.73E+05	2.28E+05 ca**
Bis(Octanoyloxy)Di-N-Butyl Stannane	4731-77-5												
Bis(chloromethyl)ether	542-88-1			1.45E+01	2.56E+01	9.27E+00							9.27E+00 ca
Bis(oleoyloxy)dibutyl tin	13323-62-1												
Bisphenol A	80-05-7		10.055096							2.43E+06	1.38E+05	1.31E+05	1.31E+05 nc
Boron And Borates Only	7440-42-8		40.220386							9.73E+06	2.01E+07	6.56E+06	6.56E+06 nc
Boron Trichloride	10294-34-5		402.20386							9.73E+07	2.01E+08	6.56E+07	6.56E+07 nc
Boron Trifluoride	7637-07-2		8.0440771							1.95E+06	4.02E+06	1.31E+06	1.31E+06 nc
Bromacil	314-40-9												
Bromate	15541-45-4		0.8044077	4.56E+03	1.01E+04	3.14E+03				1.95E+05	4.02E+05	1.31E+05	3.14E+03 ca*
Bromine	7726-95-6												
Bromo-2-chloroethane, 1-	107-04-0			1.60E+03	4.56E+02	3.55E+02							3.55E+02 ca
Bromo-3-fluorobenzene, 1-	1073-06-9												
Bromo-4-Ethylbenzene, 1-	1585-07-5												

Site-specific

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Chemical	CAS Number	Mutagen?	VOC?	Chemical Type	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	RAGSe GIABS (unitless)	K_p (cm/hr)	MW	fa	In EPD?	DAeventc
Bromoacetic acid	79-08-3	No	No	Organics					1	0.000487	138.95	1	Yes	
Bromoacetophenone, 3-	2142-63-4	No	No	Organics					1	0.00524	199.05	1	Yes	
Bromobenzene	108-86-1	No	Yes	Organics			8.00E-03	U	1	0.02	157.01	1	Yes	
Bromochloromethane	74-97-5	No	Yes	Organics					1	0.00255	129.38	1	Yes	
Bromodichloromethane	75-27-4	No	Yes	Organics	6.20E-02	U	2.00E-02	U	1	0.00402	163.83	1	Yes	0.2270506
Bromodiphenyl Ether, p-	101-55-3	No	Yes	Organics					1	0.12	249.11	0.9	Yes	
Bromofluorobenzene, p-	460-00-4	No	Yes	Organics					1	0.0182	175	1	Yes	
Bromoform	75-25-2	No	Yes	Organics	7.90E-03	U	2.00E-02	U	1	0.00235	252.73	1	Yes	1.7819158
Bromomethane	74-83-9	No	Yes	Organics			1.40E-03	U	1	0.00284	94.94	1	Yes	
Bromophenol, p-	106-41-2	No	No	Organics					1	0.00882	173.01	1	Yes	
Bromophenyl-phenyl phthalate, 4-	NA	No	No	Organics					1				No	
Bromophos	2104-96-3	No	Yes	Organics			5.00E-03	U	1	0.0401	365.99	0.8	Yes	
Bromopyridine, 2-	109-04-6	No	No	Organics					1	0.00179	158	1	Yes	
Bromotrichloromethane	75-62-7	No	Yes	Organics					1	0.00582	198.27	1	Yes	
Bromoxynil	1689-84-5	No	No	Organics			2.00E-02	U	1	0.00783	276.92	0.9	Yes	
Bromoxynil Octanoate	1689-99-2	No	Yes	Organics			2.00E-02	U	1	0.0332	403.12	0.8	Yes	
Butadiene, 1,3-	106-99-0	No	Yes	Organics	3.40E+00	U			1	0.0164	54.09	1	Yes	0.0041403
Butanediol, 2,3-	513-85-9	No	No	Organics					1	0.00012	90.12	1	Yes	
Butanol	35296-72-1	No	Yes	Organics					1	0.00153	74.12	1	Yes	
Butanol, N-	71-36-3	No	Yes	Organics			1.00E-01	U	1	0.00231	74.12	1	Yes	
Butanone-2, 4-chloro-4,4-difluoro	NA	No	No	Organics					1				No	
Butyl Alcohol, t-	75-65-0	No	Yes	Organics					1	0.00103	74.12	1	Yes	
Butyl Benzyl Phthlate	85-68-7	No	No	Organics	1.90E-03	U	2.00E-01	U	1	0.0385	312.37	0.9	Yes	7.4090184
Butyl Formate, tert-	762-75-4	No	Yes	Organics					1	0.00258	102.13	1	Yes	
Butyl alcohol, sec-	78-92-2	No	Yes	Organics			2.00E+00	U	1	0.00153	74.12	1	Yes	
Butylacetate	123-86-4	No	Yes	Organics					1	0.00532	116.16	1	Yes	
Butylate	2008-41-5	No	Yes	Organics			5.00E-02	U	1	0.0541	217.37	1	Yes	
Butylated hydroxyanisole	25013-16-5	No	No	Organics	2.00E-04	U			1	0.0325	180.25	1	Yes	70.385675
Butylated hydroxytoluene	128-37-0	No	No	Organics	3.60E-03	U	3.00E-01	U	1	0.223	220.36	1	Yes	3.9103153
Butylbenzene, n-	104-51-8	No	Yes	Organics			5.00E-02	U	1	0.225	134.22	1	No	
Butylbenzene, sec-	135-98-8	No	Yes	Organics			1.00E-01	U	1	0.301	134.22	1	No	
Butylbenzene, tert-	98-06-6	No	Yes	Organics			1.00E-01	U	1	0.149	134.22	1	Yes	
Butylchloride, t-	507-20-0	No	Yes	Organics					1	0.0201	92.57	1	Yes	
Butylphthalyl Butylglycolate	85-70-1	No	No	Organics			1.00E+00	U	1	0.0116	336.39	0.9	Yes	
Butyltin	NA	No	No	Organics					1				No	
Cacodylic Acid	75-60-5	No	No	Organics			2.00E-02	U	1	0.00046	138	1	Yes	
Cadmium (Water)	7440-43-9	No	No	Inorganics			5.00E-04	U	0.05	0.001	112.41	1	Yes	
Calcium	7440-70-2	No	No	Inorganics					1	0.001	40.078	1	Yes	
Calcium Chlorate	10137-74-3	No	No	Inorganics					1	0.001	206.98	1	Yes	
Calcium Chromate	13765-19-0	Yes	No	Inorganics	5.00E-01	U	2.00E-02	U	0.025	0.001	156.072	1	Yes	0.0007039
Calcium Cyanide	592-01-8	No	No	Inorganics			1.00E-03	U	1	0.001	92.11	1	Yes	
Calcium pyrophosphate	7790-76-3	No	No	Inorganics			4.86E+01	U	1	0.001	254.1	1	Yes	
Caprolactam	105-60-2	No	No	Organics			5.00E-01	U	1	0.001	113.16	1	Yes	
Captafol	2425-06-1	No	No	Organics	1.50E-01	U	2.00E-03	U	1	0.00577	349.06	0.9	Yes	0.0938476

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Chemical	CAS Number	DAeventnc	DAeventna	Ingestion SL TR=1.0E-6 (µg/L)	Dermal SL TR=1.0E-6 (µg/L)	Carcinogenic SL TR=1.0E-6 (µg/L)	Ingestion SL (Child) HQ=1 (µg/L)	Dermal SL (Child) HQ=1 (µg/L)	Noncarcinogenic SL (Child) HQ=1 µ(g/L)	Ingestion SL (Adult) HQ=1 (µg/L)	Dermal SL (Adult) HQ=1 (µg/L)	Noncarcinogenic SL (Adult) HQ=1 (µg/L)	Screening Level (µg/L)
Bromoacetic acid	79-08-3												
Bromoacetophenone, 3-	2142-63-4												
Bromobenzene	108-86-1		1.6088154							3.89E+05	2.25E+04	2.13E+04	2.13E+04 nc
Bromochloromethane	74-97-5												
Bromodichloromethane	75-27-4		4.0220386	5.15E+04	1.55E+04	1.19E+04				9.73E+05	2.74E+05	2.14E+05	1.19E+04 ca*
Bromodiphenyl Ether, p-	101-55-3												
Bromofluorobenzene, p-	460-00-4												
Bromoform	75-25-2		4.0220386	4.04E+05	1.17E+05	9.09E+04				9.73E+05	2.65E+05	2.08E+05	9.09E+04 ca**
Bromomethane	74-83-9		0.2815427							6.81E+04	3.67E+04	2.38E+04	2.38E+04 nc
Bromophenol, p-	106-41-2												
Bromophenyl-phenyl phthalate, 4-	NA												
Bromophos	2104-96-3		1.0055096							2.43E+05	2.34E+03	2.31E+03	2.31E+03 nc
Bromopyridine, 2-	109-04-6												
Bromotrichloromethane	75-62-7												
Bromoxynil	1689-84-5		4.0220386							9.73E+05	7.55E+04	7.01E+04	7.01E+04 nc
Bromoxynil Octanoate	1689-99-2		4.0220386							9.73E+05	8.88E+03	8.80E+03	8.80E+03 nc
Butadiene, 1,3-	106-99-0			9.39E+02	1.07E+02	9.63E+01							9.63E+01 ca
Butanediol, 2,3-	513-85-9												
Butanol	35296-72-1												
Butanol, N-	71-36-3		20.110193							4.87E+06	3.43E+06	2.01E+06	2.01E+06 nc
Butanone-2, 4-chloro-4,4-difluoro	NA												
Butyl Alcohol, t-	75-65-0												
Butyl Benzyl Phthlate	85-68-7		40.220386	1.68E+06	2.25E+04	2.22E+04				9.73E+06	1.22E+05	1.21E+05	2.22E+04 ca**
Butyl Formate, tert-	762-75-4												
Butyl alcohol, sec-	78-92-2		402.20386							9.73E+07	1.04E+08	5.02E+07	5.02E+07 nc
Butylacetate	123-86-4												
Butylate	2008-41-5		10.055096							2.43E+06	3.61E+04	3.56E+04	3.56E+04 nc
Butylated hydroxyanisole	25013-16-5			1.60E+07	5.34E+05	5.17E+05							5.17E+05 ca
Butylated hydroxytoluene	128-37-0		60.330579	8.87E+05	3.34E+03	3.33E+03				1.46E+07	5.16E+04	5.14E+04	3.33E+03 ca*
Butylbenzene, n-	104-51-8									2.43E+06		2.43E+06	2.43E+06 nc
Butylbenzene, sec-	135-98-8									4.87E+06		4.87E+06	4.87E+06 nc
Butylbenzene, tert-	98-06-6		20.110193							4.87E+06	4.48E+04	4.44E+04	4.44E+04 nc
Butylchloride, t-	507-20-0												
Butylphthalyl Butylglycolate	85-70-1		201.10193							4.87E+07	1.74E+06	1.68E+06	1.68E+06 nc
Butyltin	NA												
Cacodylic Acid	75-60-5		4.0220386							9.73E+05	2.69E+06	7.15E+05	7.15E+05 nc
Cadmium (Water)	7440-43-9		0.0050275							2.43E+04	2.51E+03	2.28E+03	2.28E+03 nc
Calcium	7440-70-2												
Calcium Chlorate	10137-74-3												
Calcium Chromate	13765-19-0		0.100551	6.39E+03	3.52E+02	3.34E+02				9.73E+05	5.03E+04	4.78E+04	3.34E+02 ca
Calcium Cyanide	592-01-8		0.2011019							4.87E+04	1.01E+05	3.28E+04	3.28E+04 nc
Calcium pyrophosphate	7790-76-3		9773.5537							2.37E+09	4.89E+09	1.59E+09	1.59E+09 nc
Caprolactam	105-60-2		100.55096							2.43E+07	3.47E+07	1.43E+07	1.43E+07 nc
Captafol	2425-06-1		0.4022039	2.13E+04	1.50E+03	1.40E+03				9.73E+04	6.44E+03	6.04E+03	1.40E+03 ca**

Site-specific

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Chemical	CAS Number	Mutagen?	VOC?	Chemical Type	Ingestion SF (mg/kg-day)$^{-1}$	SFO Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	RAGSe GIABS (unitless)	K_p (cm/hr)	MW	fa	In EPD?	DAeventc
Captan	133-06-2	No	No	Organics	2.30E-03	U	1.30E-01	U	1	0.00234	300.59	1	Yes	6.1204935
Carbaryl	63-25-2	No	No	Organics			1.00E-01	U	1	0.00431	201.23	1	Yes	
Carbazole	86-74-8	No	No	Organics					1	0.0536	167.21	1	Yes	
Carbofuran	1563-66-2	No	No	Organics			5.00E-03	U	1	0.00313	221.26	1	Yes	
Carbon Disulfide	75-15-0	No	Yes	Organics			1.00E-01	U	1	0.0114	76.13	1	Yes	
Carbon Tetrachloride	56-23-5	No	Yes	Organics	7.00E-02	U	4.00E-03	U	1	0.0163	153.82	1	Yes	0.2011019
Carbosulfan	55285-14-8	No	No	Organics			1.00E-02	U	1	0.0579	380.55	0.8	Yes	
Carboxin	5234-68-4	No	No	Organics			1.00E-01	U	1	0.00198	235.3	1	Yes	
Catechol	120-80-9	No	No	Organics					1	0.00145	110.11	1	Yes	
Ceric oxide	1306-38-3	No	No	Inorganics					1	0.001	172.115	1	Yes	
Cerium, Stable	7440-45-1	No	No	Inorganics					1	0.001	140.12	1	Yes	
Chloral	75-87-6	No	Yes	Organics					1	0.00106	147.39	1	Yes	
Chloral Hydrate	302-17-0	No	Yes	Organics			1.00E-01	U	1	0.000841	165.4	1	Yes	
Chloramben	133-90-4	No	No	Organics			1.50E-02	U	1	0.00201	206.03	1	Yes	
Chloramine	127-65-1	No	No	Inorganics					1	0.0000344	227.64	1	Yes	
Chloranil	118-75-2	No	No	Organics	4.03E-01	U			1	0.00194	245.88	1	Yes	0.0349309
Chlorate (ClO3) as	14866-68-3	No	No	Inorganics					1	0.001			Yes	
Chlordane	12789-03-6	No	Yes	Organics	3.50E-01	U	5.00E-04	U	1	0.107	409.78	0.7	No	
Chlordane (alpha)	5103-71-9	No	Yes	Organics					1	0.0338	409.78	0.7	Yes	
Chlordane (gamma)	5103-74-2	No	Yes	Organics					1	0.0338	409.78	0.7	No	
Chlordecone (Kepone)	143-50-0	No	No	Organics	1.00E+01	U	3.00E-04	U	1	0.0109	490.64	0.8	Yes	0.0014077
Chlorfenvinphos	470-90-6	No	No	Organics			7.00E-04	U	1	0.00512	359.58	0.9	Yes	
Chloride	16887-00-6	No	No	Inorganics					1	0.001	35.45	1	Yes	
Chlorimuron, Ethyl-	90982-32-4	No	No	Organics			2.00E-02	U	1	0.000338	414.82	1	Yes	
Chlorinated Hydrocarbons (total)	NA	No	No	Organics					1				No	
Chlorine	7782-50-5	No	Yes	Inorganics			1.00E-01	U	1	0.001	70.91	1	Yes	
Chlorine Dioxide	10049-04-4	No	Yes	Inorganics			3.00E-02	U	1	0.001	67.45	1	Yes	
Chlorite	14998-27-7	No	No	Inorganics					1	0.001			Yes	
Chlorite (Sodium Salt)	7758-19-2	No	No	Inorganics			3.00E-02	U	1	0.001	90.44	1	Yes	
Chloro-1,1-difluoroethane, 1-	75-68-3	No	Yes	Organics					1	0.00989	100.5	1	Yes	
Chloro-1,3-butadiene, 2-	126-99-8	No	Yes	Organics			2.00E-02	U	1	0.0238	88.54	1	Yes	
Chloro-2-methylaniline HCl, 4-	3165-93-3	No	No	Organics	4.60E-01	U			1	0.000018	178.06	1	Yes	0.0306025
Chloro-2-methylaniline, 4-	95-69-2	No	No	Organics	1.00E-01	U	3.00E-03	U	1	0.00808	141.6	1	Yes	0.1407713
Chloro-2-methylphenol, 4-	1570-64-5	No	No	Organics					1	0.0175	142.59	1	Yes	
Chloro-4-methylphenol	35421-08-0	No	No	Organics					1				No	
Chloro-6-fluorophenol, 2-	2040-90-6	No	No	Organics					1		146.55		No	
Chloroacetaldehyde, 2-	107-20-0	No	Yes	Organics	2.70E-01	U			1	0.00065	78.5	1	Yes	0.0521375
Chloroacetamide	79-07-2	No	No	Organics					1	0.000208	93.51	1	Yes	
Chloroacetic Acid	79-11-8	No	No	Organics			2.00E-03	U	1	0.000647	94.5	1	Yes	
Chloroacetophenone, 2-	532-27-4	No	No	Organics					1	0.00406	154.6	1	Yes	
Chloroaniline	27134-26-5	No	No	Organics					1	0.00552	127.57	1	Yes	
Chloroaniline, 3-	108-42-9	No	No	Organics					1	0.00535	127.57	1	Yes	
Chloroaniline, p-	106-47-8	No	No	Organics	2.00E-01	U	4.00E-03	U	1	0.00496	127.57	1	Yes	0.0703857
Chlorobenzene	108-90-7	No	Yes	Organics			2.00E-02	U	1	0.0282	112.56	1	Yes	

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Chemical	CAS Number	DAeventnc	DAeventna	Ingestion SL TR=1.0E-6 (µg/L)	Dermal SL TR=1.0E-6 (µg/L)	Carcinogenic SL TR=1.0E-6 (µg/L)	Ingestion SL (Child) HQ=1 (µg/L)	Dermal SL (Child) HQ=1 (µg/L)	Noncarcinogenic SL (Child) HQ=1 µ(g/L)	Ingestion SL (Adult) HQ=1 (µg/L)	Dermal SL (Adult) HQ=1 (µg/L)	Noncarcinogenic SL (Adult) HQ=1 (µg/L)	Screening Level (µg/L)
Captan	133-06-2		26.143251	1.39E+06	2.97E+05	2.45E+05				6.33E+06	1.27E+06	1.06E+06	2.45E+05 ca**
Carbaryl	63-25-2		20.110193							4.87E+06	1.01E+06	8.34E+05	8.34E+05 nc
Carbazole	86-74-8												
Carbofuran	1563-66-2		1.0055096							2.43E+05	6.09E+04	4.87E+04	4.87E+04 nc
Carbon Disulfide	75-15-0		20.110193							4.87E+06	7.03E+05	6.14E+05	6.14E+05 nc
Carbon Tetrachloride	56-23-5		0.8044077	4.56E+04	3.52E+03	3.27E+03				1.95E+05	1.41E+04	1.31E+04	3.27E+03 ca**
Carbosulfan	55285-14-8		2.0110193							4.87E+05	2.95E+03	2.93E+03	2.93E+03 nc
Carboxin	5234-68-4		20.110193							4.87E+06	1.76E+06	1.29E+06	1.29E+06 nc
Catechol	120-80-9												
Ceric oxide	1306-38-3												
Cerium, Stable	7440-45-1												
Chloral	75-87-6												
Chloral Hydrate	302-17-0		20.110193							4.87E+06	6.49E+06	2.78E+06	2.78E+06 nc
Chloramben	133-90-4		3.0165289							7.30E+05	3.14E+05	2.19E+05	2.19E+05 nc
Chloramine	127-65-1												
Chloranil	118-75-2			7.92E+03	2.91E+03	2.13E+03							2.13E+03 ca
Chlorate (ClO3) as	14866-68-3												
Chlordane	12789-03-6			9.13E+03		9.13E+03				2.43E+04		2.43E+04	9.13E+03 ca**
Chlordane (alpha)	5103-71-9												
Chlordane (gamma)	5103-74-2												
Chlordecone (Kepone)	143-50-0		0.0603306	3.19E+02	5.39E+00	5.30E+00				1.46E+04	2.31E+02	2.27E+02	5.30E+00 ca*
Chlorfenvinphos	470-90-6		0.1407713							3.41E+04	2.37E+03	2.22E+03	2.22E+03 nc
Chloride	16887-00-6												
Chlorimuron, Ethyl-	90982-32-4		4.0220386							9.73E+05	6.47E+05	3.89E+05	3.89E+05 nc
Chlorinated Hydrocarbons (total)	NA												
Chlorine	7782-50-5		20.110193							4.87E+06	1.01E+07	3.28E+06	3.28E+06 nc
Chlorine Dioxide	10049-04-4		6.0330579							1.46E+06	3.02E+06	9.84E+05	9.84E+05 nc
Chlorite	14998-27-7												
Chlorite (Sodium Salt)	7758-19-2		6.0330579							1.46E+06	3.02E+06	9.84E+05	9.84E+05 nc
Chloro-1,1-difluoroethane, 1-	75-68-3												
Chloro-1,3-butadiene, 2-	126-99-8		4.0220386							9.73E+05	6.61E+04	6.19E+04	6.19E+04 nc
Chloro-2-methylaniline HCl, 4-	3165-93-3			6.94E+03	4.26E+05	6.83E+03							6.83E+03 ca
Chloro-2-methylaniline, 4-	95-69-2		0.6033058	3.19E+04	5.31E+03	4.55E+03				1.46E+05	2.27E+04	1.97E+04	4.55E+03 ca**
Chloro-2-methylphenol, 4-	1570-64-5												
Chloro-4-methylphenol	35421-08-0												
Chloro-6-fluorophenol, 2-	2040-90-6												
Chloroacetaldehyde, 2-	107-20-0			1.18E+04	3.11E+04	8.57E+03							8.57E+03 ca
Chloroacetamide	79-07-2												
Chloroacetic Acid	79-11-8		0.4022039							9.73E+04	2.30E+05	6.84E+04	6.84E+04 nc
Chloroacetophenone, 2-	532-27-4												
Chloroaniline	27134-26-5												
Chloroaniline, 3-	108-42-9												
Chloroaniline, p-	106-47-8		0.8044077	1.60E+04	4.62E+03	3.58E+03				1.95E+05	5.28E+04	4.15E+04	3.58E+03 ca*
Chlorobenzene	108-90-7		4.0220386							9.73E+05	5.11E+04	4.85E+04	4.85E+04 nc

Site-specific

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Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Chemical Type	Ingestion SF (mg/kg-day)$^{-1}$	SFO Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	RAGSe GIABS (unitless)	K_p (cm/hr)	MW	fa	In EPD?	DAeventc
Chlorobenzene sulfonic acid, p-	98-66-8	No	No	Organics					1	0.0000586	192.62	1	Yes	
Chlorobenzenes (total)	NA	No	No	Organics					1				No	
Chlorobenzilate	510-15-6	No	No	Organics	1.10E-01	U	2.00E-02	U	1	0.0331	325.19	0.8	Yes	0.127974
Chlorobenzoic Acid, p-	74-11-3	No	No	Organics			3.00E-02	U	1	0.012	156.57	1	Yes	
Chlorobenzotrifluoride, 3-nitro-4-	121-17-5	No	Yes	Organics					1	0.0159	225.56	0.9	Yes	
Chlorobenzotrifluoride, 4-	98-56-6	No	Yes	Organics			3.00E-03	U	1	0.0375	180.56	1	Yes	
Chlorobiphenyl, p-	2051-62-9	No	Yes	Organics					1	0.752	188.66	0.6	Yes	
Chlorobutane, 1-	109-69-3	No	Yes	Organics			4.00E-02	U	1	0.0269	92.57	1	Yes	
Chlorobutane, 2-	78-86-4	No	Yes	Organics					1	0.0167	92.57	1	Yes	
Chlorocyclopentadiene	41851-50-7	No	Yes	Organics					1	0.0177	100.55	1	Yes	
Chlorodibromoethane	73506-94-2	No	No	Organics					1				No	
Chlorodifluoromethane	75-45-6	No	Yes	Organics					1	0.00268	86.47	1	Yes	
Chloroethanol, 2-	107-07-3	No	Yes	Organics			2.00E-02	U	1	0.000579	80.51	1	Yes	
Chloroethylvinyl ether, 2-	110-75-8	No	Yes	Organics					1	0.00236	106.55	1	Yes	
Chloroform	67-66-3	No	Yes	Organics	3.10E-02	U	1.00E-02	U	1	0.00683	119.38	1	Yes	0.4541011
Chloromethane	74-87-3	No	Yes	Organics					1	0.00328	50.49	1	Yes	
Chloromethyl Methyl Ether	107-30-2	No	Yes	Organics	2.40E+00	U			1	0.000905	80.51	1	Yes	0.0058655
Chloronaphthalene, Beta-	91-58-7	No	Yes	Organics			8.00E-02	U	1	0.0749	162.62	1	Yes	
Chloronaphthalene, alpha-	90-13-1	No	Yes	Organics					1	0.0872	162.62	1	Yes	
Chloronitrobenzene, o-	88-73-3	No	No	Organics	3.00E-01	U	3.00E-03	U	1	0.0063	157.56	1	Yes	0.0469238
Chloronitrobenzene, p-	100-00-5	No	No	Organics	6.30E-03	U	1.00E-03	U	1	0.00793	157.56	1	Yes	2.2344659
Chlorophenol, 2-	95-57-8	No	Yes	Organics			5.00E-03	U	1	0.00799	128.56	1	Yes	
Chlorophenol, 3-	108-43-0	No	No	Organics					1	0.0136	128.56	1	Yes	
Chlorophenol, 4-	106-48-9	No	No	Organics					1	0.0115	128.56	1	Yes	
Chlorophenols (each)	NA	No	No	Organics					1				No	
Chlorophenols (total)	NA	No	No	Organics					1				No	
Chlorophenyl Methyl Sulfide, p-	123-09-1	No	Yes	Organics					1	0.0286	158.65	1	Yes	
Chlorophenyl Methyl Sulfoxide	934-73-6	No	No	Organics					1	0.000849	174.65	1	Yes	
Chlorophenyl phenyl ether, 4-	7005-72-3	No	Yes	Organics					1	0.148	204.66	1	Yes	
Chloropicrin	76-06-2	No	Yes	Organics					1	0.00459	164.38	1	Yes	
Chloropropane, 2-	75-29-6	No	Yes	Organics					1	0.0104	78.54	1	Yes	
Chlorothalonil	1897-45-6	No	No	Organics	3.10E-03	U	1.50E-02	U	1	0.00537	265.91	0.9	Yes	4.5410113
Chlorotoluene, o-	95-49-8	No	Yes	Organics			2.00E-02	U	1	0.0572	126.59	1	Yes	
Chlorotoluene, p-	106-43-4	No	Yes	Organics			2.00E-02	U	1	0.0498	126.59	1	Yes	
Chlorozotocin	54749-90-5	No	No	Organics	2.40E+02	U			1	9.91E-06	313.7	1	Yes	0.0000587
Chlorpropham	101-21-3	No	No	Organics			2.00E-01	U	1	0.0213	213.67	0.9	Yes	
Chlorpyrifos	2921-88-2	No	No	Organics			1.00E-03	U	1	0.0334	350.59	0.8	Yes	
Chlorpyrifos Methyl	5598-13-0	No	No	Organics			1.00E-02	U	1	0.0178	322.53	0.9	Yes	
Chlorsulfuron	64902-72-3	No	No	Organics			5.00E-02	U	1	0.000328	357.77	1	Yes	
Chlorthiophos	60238-56-4	No	No	Organics			8.00E-04	U	1	0.106	361.24	0.8	Yes	
Chromium(III), Insoluble Salts	16065-83-1	No	No	Inorganics			1.50E+00	U	0.013	0.001	52	1	Yes	
Chromium(VI)	18540-29-9	Yes	No	Inorganics	5.00E-01	U	3.00E-03	U	0.025	0.002	52	1	Yes	0.0007039
Chromium, Total	7440-47-3	No	No	Inorganics					0.013	0.001	52	1	Yes	
Chrysene	218-01-9	Yes	No	Organics	7.30E-03	U			1	0.596	228.3	1	No	

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Chemical	CAS Number	DAeventnc	DAeventna	Ingestion SL TR=1.0E-6 (µg/L)	Dermal SL TR=1.0E-6 (µg/L)	Carcinogenic SL TR=1.0E-6 (µg/L)	Ingestion SL (Child) HQ=1 (µg/L)	Dermal SL (Child) HQ=1 (µg/L)	Noncarcinogenic SL (Child) HQ=1 µ(g/L)	Ingestion SL (Adult) HQ=1 (µg/L)	Dermal SL (Adult) HQ=1 (µg/L)	Noncarcinogenic SL (Adult) HQ=1 (µg/L)	Screening Level (µg/L)
Chlorobenzene sulfonic acid, p-	98-66-8												
Chlorobenzenes (total)	NA												
Chlorobenzilate	510-15-6		4.0220386	2.90E+04	4.68E+02	4.61E+02				9.73E+05	1.47E+04	1.45E+04	4.61E+02 ca*
Chlorobenzoic Acid, p-	74-11-3		6.0330579							1.46E+06	1.41E+05	1.29E+05	1.29E+05 nc
Chlorobenzotrifluoride, 3-nitro-4-	121-17-5												
Chlorobenzotrifluoride, 4-	98-56-6		0.6033058							1.46E+05	3.96E+03	3.86E+03	3.86E+03 nc
Chlorobiphenyl, p-	2051-62-9												
Chlorobutane, 1-	109-69-3		8.0440771							1.95E+06	1.16E+05	1.09E+05	1.09E+05 nc
Chlorobutane, 2-	78-86-4												
Chlorocyclopentadiene	41851-50-7												
Chlorodibromoethane	73506-94-2												
Chlorodifluoromethane	75-45-6												
Chloroethanol, 2-	107-07-3		4.0220386							9.73E+05	2.68E+06	7.14E+05	7.14E+05 nc
Chloroethylvinyl ether, 2-	110-75-8												
Chloroform	67-66-3		2.0110193	1.03E+05	2.25E+04	1.85E+04				4.87E+05	9.97E+04	8.28E+04	1.85E+04 ca**
Chloromethane	74-87-3												
Chloromethyl Methyl Ether	107-30-2			1.33E+03	2.50E+03	8.69E+02							8.69E+02 ca
Chloronaphthalene, Beta-	91-58-7		16.088154							3.89E+06	5.94E+04	5.85E+04	5.85E+04 nc
Chloronaphthalene, alpha-	90-13-1												
Chloronitrobenzene, o-	88-73-3		0.6033058	1.06E+04	2.07E+03	1.73E+03				1.46E+05	2.66E+04	2.25E+04	1.73E+03 ca*
Chloronitrobenzene, p-	100-00-5		0.2011019	5.07E+05	7.85E+04	6.79E+04				4.87E+04	7.06E+03	6.17E+03	6.17E+03 nc
Chlorophenol, 2-	95-57-8		1.0055096							2.43E+05	4.09E+04	3.50E+04	3.50E+04 nc
Chlorophenol, 3-	108-43-0												
Chlorophenol, 4-	106-48-9												
Chlorophenols (each)	NA												
Chlorophenols (total)	NA												
Chlorophenyl Methyl Sulfide, p-	123-09-1												
Chlorophenyl Methyl Sulfoxide	934-73-6												
Chlorophenyl phenyl ether, 4-	7005-72-3												
Chloropicrin	76-06-2												
Chloropropane, 2-	75-29-6												
Chlorothalonil	1897-45-6		3.0165289	1.03E+06	1.33E+05	1.18E+05				7.30E+05	8.87E+04	7.91E+04	7.91E+04 nc
Chlorotoluene, o-	95-49-8		4.0220386							9.73E+05	2.40E+04	2.34E+04	2.34E+04 nc
Chlorotoluene, p-	106-43-4		4.0220386							9.73E+05	2.74E+04	2.67E+04	2.67E+04 nc
Chlorozotocin	54749-90-5			1.33E+01	6.18E+02	1.30E+01							1.30E+01 ca
Chlorpropham	101-21-3		40.220386							9.73E+06	4.17E+05	4.00E+05	4.00E+05 nc
Chlorpyrifos	2921-88-2		0.2011019							4.87E+04	6.19E+02	6.12E+02	6.12E+02 nc
Chlorpyrifos Methyl	5598-13-0		2.0110193							4.87E+05	1.24E+04	1.21E+04	1.21E+04 nc
Chlorsulfuron	64902-72-3		10.055096							2.43E+06	2.41E+06	1.21E+06	1.21E+06 nc
Chlorthiophos	60238-56-4		0.1608815							3.89E+04	1.46E+02	1.45E+02	1.45E+02 nc
Chromium(III), Insoluble Salts	16065-83-1		3.9214876							7.30E+07	1.96E+06	1.91E+06	1.91E+06 nc
Chromium(VI)	18540-29-9		0.0150826	6.39E+03	1.76E+02	1.71E+02				1.46E+05	3.77E+03	3.68E+03	1.71E+02 ca*
Chromium, Total	7440-47-3												
Chrysene	218-01-9			4.38E+05		4.38E+05							4.38E+05 ca

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Chemical	CAS Number	Mutagen?	VOC?	Chemical Type	Ingestion SF (mg/kg-day)$^{-1}$	SFO Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	RAGSe GIABS (unitless)	K_p (cm/hr)	MW	fa	In EPD?	DAeventc
Cobalt	7440-48-4	No	No	Inorganics			3.00E-04	U	1	0.0004	58.93	1	Yes	
Complex Mixtures of Aliphatic and Aromatic Hydrocarbons	NA	No	No	Organics					1				No	
Copper	7440-50-8	No	No	Inorganics			4.00E-02	U	1	0.001	63.55	1	Yes	
Copper Cyanide	544-92-3	No	No	Inorganics			5.00E-03	U	1	0.001	89.56	1	Yes	
Coronene	191-07-1	No	No	Organics					1	3.86	300.36	0.3	No	
Creosote	8001-58-9	No	No	Organics					1				No	
Cresol, m-	108-39-4	No	No	Organics			5.00E-02	U	1	0.00777	108.14	1	Yes	
Cresol, o-	95-48-7	No	No	Organics			5.00E-02	U	1	0.00766	108.14	1	Yes	
Cresol, p-	106-44-5	No	No	Organics			1.00E-01	U	1	0.00754	108.14	1	Yes	
Cresol, p-chloro-m-	59-50-7	No	No	Organics			1.00E-01	U	1	0.0285	142.59	1	Yes	
Cresols	1319-77-3	No	No	Organics			1.00E-01	U	1	0.00766	108.14	1	Yes	
Crotonaldehyde	4170-30-3	No	Yes	Organics					1	0.00159	70.09	1	Yes	
Crotonaldehyde, trans-	123-73-9	No	Yes	Organics	1.90E+00	U	1.00E-03	U	1	0.00159	70.09	1	Yes	0.007409
Cumene	98-82-8	No	Yes	Organics			1.00E-01	U	1	0.0897	120.2	1	Yes	
Cupferron	135-20-6	No	No	Organics	2.20E-01	U			1	1.67E-06	155.16	1	No	
Cyanazine	21725-46-2	No	No	Organics	8.40E-01	U	2.00E-03	U	1	0.00209	240.7	1	Yes	0.0167585
Cyanide (CN-)	57-12-5	No	Yes	Inorganics			6.00E-04	U	1	0.001	26.018	1	Yes	
Cyanide (total complex)	NA	No	No	Inorganics					1	0.001			Yes	
Cyanogen	460-19-5	No	Yes	Inorganics			1.00E-03	U	1	0.00089	52.04	1	Yes	
Cyanogen Bromide	506-68-3	No	Yes	Inorganics			9.00E-02	U	1	0.000255	105.92	1	Yes	
Cyanogen Chloride	506-77-4	No	Yes	Inorganics			5.00E-02	U	1	0.000394	61.47	1	Yes	
Cyclohexane	110-82-7	No	Yes	Organics					1	0.102	84.16	1	Yes	
Cyclohexane, 1,2,3,4,5-pentabromo-6-chloro-	87-84-3	No	No	Organics	2.30E-02	U			1	0.00283	513.09	0.9	Yes	0.6120493
Cyclohexanone	108-94-1	No	Yes	Organics			5.00E+00	U	1	0.00152	98.15	1	Yes	
Cyclohexene	110-83-8	No	Yes	Organics			5.00E-03	U	1	0.0431	82.15	1	Yes	
Cyclohexylamine	108-91-8	No	Yes	Organics			2.00E-01	U	1	0.00425	99.18	1	Yes	
Cyclopentadiene	542-92-7	No	Yes	Organics					1	0.021	66.1	1	Yes	
Cyhalothrin/karate	68085-85-8	No	No	Organics			5.00E-03	U	1	0.21	449.86	0.5	No	
Cypermethrin	52315-07-8	No	No	Organics			1.00E-02	U	1	0.0769	416.31	0.7	No	
Cyromazine	66215-27-8	No	No	Organics			7.50E-03	U	1	0.000797	166.19	1	Yes	
DDD	72-54-8	No	No	Organics	2.40E-01	U			1	0.251	320.05	0.8	Yes	0.0586547
DDD, o,p'-	53-19-0	No	No	Organics					1	0.201	320.05	0.8	Yes	
DDE, p,p'-	72-55-9	No	Yes	Organics	3.40E-01	U			1	0.545	318.03	0.8	No	
DDT	50-29-3	No	No	Organics	3.40E-01	U	5.00E-04	U	1	0.628	354.49	0.7	No	
DDT, o,p'-	789-02-6	No	No	Organics					1	0.526	354.49	0.4	No	
DDT/DDE/DDD (total)	NA	No	No	Organics					1				No	
Dacthal	1861-32-1	No	No	Organics			1.00E-02	U	1	0.015	331.97	0.9	Yes	
Dalapon	75-99-0	No	No	Organics			3.00E-02	U	1	0.000815	142.97	1	Yes	
Decabromodiphenyl ether, 2,2',3,3',4,4',5,5',6,6'- (BDE-209)	1163-19-5	No	No	Organics	7.00E-04	U	7.00E-03	U	1	0.725	959.17	0	No	
Decane	124-18-5	No	Yes	Organics					1	0.532	142.29	1	No	
Decanol, n-	112-30-1	No	Yes	Organics					1	0.221	158.29	1	No	
Deltamethrin	52918-63-5	No	No	Organics					1	0.0302	505.21	0.7	No	

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Chemical	CAS Number	DAeventnc	DAeventna	Ingestion SL TR=1.0E-6 (µg/L)	Dermal SL TR=1.0E-6 (µg/L)	Carcinogenic SL TR=1.0E-6 (µg/L)	Ingestion SL (Child) HQ=1 (µg/L)	Dermal SL (Child) HQ=1 (µg/L)	Noncarcinogenic SL (Child) HQ=1 µ(g/L)	Ingestion SL (Adult) HQ=1 (µg/L)	Dermal SL (Adult) HQ=1 (µg/L)	Noncarcinogenic SL (Adult) HQ=1 (µg/L)	Screening Level (µg/L)
Cobalt	7440-48-4		0.0603306							1.46E+04	7.54E+04	1.22E+04	1.22E+04 nc
Complex Mixtures of Aliphatic and Aromatic Hydrocarbons	NA												
Copper	7440-50-8		8.0440771							1.95E+06	4.02E+06	1.31E+06	1.31E+06 nc
Copper Cyanide	544-92-3		1.0055096							2.43E+05	5.03E+05	1.64E+05	1.64E+05 nc
Coronene	191-07-1												
Creosote	8001-58-9												
Cresol, m-	108-39-4		10.055096							2.43E+06	4.60E+05	3.87E+05	3.87E+05 nc
Cresol, o-	95-48-7		10.055096							2.43E+06	4.66E+05	3.91E+05	3.91E+05 nc
Cresol, p-	106-44-5		20.110193							4.87E+06	9.47E+05	7.93E+05	7.93E+05 nc
Cresol, p-chloro-m-	59-50-7		20.110193							4.87E+06	2.16E+05	2.07E+05	2.07E+05 nc
Cresols	1319-77-3		20.110193							4.87E+06	9.33E+05	7.83E+05	7.83E+05 nc
Crotonaldehyde	4170-30-3												
Crotonaldehyde, trans-	123-73-9		0.2011019	1.68E+03	1.86E+03	8.82E+02				4.87E+04	5.04E+04	2.47E+04	8.82E+02 ca*
Cumene	98-82-8		20.110193							4.87E+06	8.04E+04	7.91E+04	7.91E+04 nc
Cupferron	135-20-6			1.45E+04		1.45E+04							1.45E+04 ca
Cyanazine	21725-46-2		0.4022039	3.80E+03	1.34E+03	9.91E+02				9.73E+04	3.22E+04	2.42E+04	9.91E+02 ca*
Cyanide (CN-)	57-12-5		0.1206612							2.92E+04	6.03E+04	1.97E+04	1.97E+04 nc
Cyanide (total complex)	NA												
Cyanogen	460-19-5		0.2011019							4.87E+04	1.13E+05	3.40E+04	3.40E+04 nc
Cyanogen Bromide	506-68-3		18.099174							4.38E+06	3.55E+07	3.90E+06	3.90E+06 nc
Cyanogen Chloride	506-77-4		10.055096							2.43E+06	1.28E+07	2.04E+06	2.04E+06 nc
Cyclohexane	110-82-7												
Cyclohexane, 1,2,3,4,5-pentabromo-6-chloro-	87-84-3			1.39E+05	6.94E+03	6.61E+03							6.61E+03 ca
Cyclohexanone	108-94-1		1005.5096							2.43E+08	2.42E+08	1.21E+08	1.21E+08 nc
Cyclohexene	110-83-8		1.0055096							2.43E+05	9.58E+03	9.22E+03	9.22E+03 nc
Cyclohexylamine	108-91-8		40.220386							9.73E+06	3.46E+06	2.55E+06	2.55E+06 nc
Cyclopentadiene	542-92-7												
Cyhalothrin/karate	68085-85-8									2.43E+05		2.43E+05	2.43E+05 nc
Cypermethrin	52315-07-8									4.87E+05		4.87E+05	4.87E+05 nc
Cyromazine	66215-27-8		1.5082645							3.65E+05	5.11E+05	2.13E+05	2.13E+05 nc
DDD	72-54-8			1.33E+04	2.93E+01	2.92E+01							2.92E+01 ca
DDD, o,p'-	53-19-0												
DDE, p,p'-	72-55-9			9.39E+03		9.39E+03							9.39E+03 ca
DDT	50-29-3			9.39E+03		9.39E+03				2.43E+04		2.43E+04	9.39E+03 ca**
DDT, o,p'-	789-02-6												
DDT/DDE/DDD (total)	NA												
Dacthal	1861-32-1		2.0110193							4.87E+05	1.38E+04	1.34E+04	1.34E+04 nc
Dalapon	75-99-0		6.0330579							1.46E+06	2.23E+06	8.82E+05	8.82E+05 nc
Decabromodiphenyl ether, 2,2',3,3',4,4',5,5',6,6'- (BDE-209)	1163-19-5			4.56E+06		4.56E+06				3.41E+05		3.41E+05	3.41E+05 nc
Decane	124-18-5												
Decanol, n-	112-30-1												
Deltamethrin	52918-63-5												

Site-specific

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Chemical	CAS Number	Mutagen?	VOC?	Chemical Type	Ingestion SF (mg/kg-day)$^{-1}$	SFO Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	RAGSe GIABS (unitless)	K_p (cm/hr)	MW	fa	In EPD?	DAeventc
Demeton	8065-48-3	No	No	Organics			4.00E-05	U	1	0.00761	258.33	0.9	Yes	
Di(2-ethylhexyl)adipate	103-23-1	No	No	Organics	1.20E-03	U	6.00E-01	U	1	3.23	370.58	0	No	
Di-n-butyltin bis(2-ethylhexanoate)	2781-10-4	No	Yes	Organics					1	0.0772	533.39	0.5	No	
Di-n-butyltin bis(methyl maleate)	15546-11-9	No	No	Organics					1	0.000125	491.13	1	Yes	
Di-n-butyltin bis(n-butyl maleate)	15546-16-4	No	No	Organics					1	0.00382	575.29	0.8	No	
Di-n-butyltin dilaurate	77-58-7	No	Yes	Organics					1	0.000053	631.57	1	Yes	
Di-n-butyltin distearate	5847-55-2	No	Yes	Organics					1	4910	799.9	0	No	
Di-n-hexylphthalate	84-75-3	No	Yes	Organics					1	0.709	334.46	0.4	No	
Diallate	2303-16-4	No	No	Organics	6.10E-02	U			1	0.046	270.22	0.9	Yes	0.2307727
Diammonium phosphate	7783-28-0	No	No	Inorganics			4.86E+01	U	1	0.001	132.06	1	Yes	
Diazinon	333-41-5	No	No	Organics			7.00E-04	U	1	0.0104	304.35	0.9	Yes	
Dibenz[a,h]anthracene	53-70-3	Yes	No	Organics	7.30E+00	U			1	0.953	278.36	0.6	No	
Dibenzo(a,e)pyrene	192-65-4	No	No	Organics	1.20E+01	U			1	4.19	302.38	0.3	No	
Dibenzofuran	132-64-9	No	Yes	Organics			1.00E-03	U	1	0.0975	168.2	1	Yes	
Dibenzothiophene	132-65-0	No	Yes	Organics			1.00E-02	U	1	0.118	184.26	1	Yes	
Dibromo-3-chloropropane, 1,2-	96-12-8	Yes	Yes	Organics	8.00E-01	U	2.00E-04	U	1	0.00685	236.33	1	Yes	0.0175964
Dibromoacetic acid	631-64-1	No	No	Organics					1	0.000274	217.85	1	Yes	
Dibromobenzene, 1,3-	108-36-1	No	Yes	Organics			4.00E-04	U	1	0.0231	235.91	0.9	Yes	
Dibromobenzene, 1,4-	106-37-6	No	Yes	Organics			1.00E-02	U	1	0.0245	235.91	0.9	Yes	
Dibromochloromethane	124-48-1	No	Yes	Organics	8.40E-02	U	2.00E-02	U	1	0.00289	208.28	1	Yes	0.1675849
Dibromodichloromethane	594-18-3	No	Yes	Organics					1	0.00376	242.73	1	Yes	
Dibromodiphenyl Ether, p,p'-	2050-47-7	No	Yes	Organics					1	0.169	328	0.8	Yes	
Dibromoethane, 1,2-	106-93-4	No	Yes	Organics	2.00E+00	U	9.00E-03	U	1	0.00278	187.86	1	Yes	0.0070386
Dibromomethane (Methylene Bromide)	74-95-3	No	Yes	Organics			1.00E-02	U	1	0.00223	173.84	1	Yes	
Dibutoxy di-n-butyltin	3349-36-8	No	Yes	Organics					1	0.00144	379.17	0.9	Yes	
Dibutyl Phthalate	84-74-2	No	No	Organics			1.00E-01	U	1	0.042	278.35	0.9	Yes	
Dibutylbis((1-oxoisooctyl)oxy)stannane	85702-74-5	No	No	Organics					1				No	
Dibutylbis(octadeca-9(Z),12(Z),15(Z)-trienoyloxy)stannane	95873-60-2	No	Yes	Organics					1	797	787.8	0	No	
Dibutylbis(octadeca-9(Z),12(Z)-dienoyloxy)stannane	85391-79-3	No	No	Organics					1				No	
Dibutylbis(palmitoyloxy)stannane	13323-63-2	No	Yes	Organics					1	502	743.79	0	No	
Dibutyltin Compounds	NA	No	No	Organics			3.00E-04	U	1				No	
Dibutyltin diacetate	1067-33-0	No	Yes	Organics					1	0.0000583	351.03	1	Yes	
Dibutyltin dichloride	683-18-1	No	Yes	Organics					1	0.000336	303.85	1	Yes	
Dibutyltin oxide	818-08-6	No	Yes	Organics					1	0.219	248.94	0.9	Yes	
Dicalcium phosphate	7757-93-9	No	No	Inorganics			4.86E+01	U	1	0.001	136.06	1	Yes	
Dicamba	1918-00-9	No	No	Organics			3.00E-02	U	1	0.00265	221.04	1	Yes	
Dichloro-2-butene, 1,4-	764-41-0	No	Yes	Organics					1	0.0166	125	1	Yes	
Dichloro-2-butene, cis-1,4-	1476-11-5	No	Yes	Organics					1	0.0166	125	1	Yes	
Dichloro-2-butene, trans-1,4-	110-57-6	No	Yes	Organics					1	0.0166	125	1	Yes	
Dichloroacetic Acid	79-43-6	No	No	Organics	5.00E-02	U	4.00E-03	U	1	0.00121	128.94	1	Yes	0.2815427
Dichloroaniline, 2,4-	554-00-7	No	No	Organics					1	0.0136	162.02	1	Yes	
Dichloroaniline, 3,4-	95-76-1	No	Yes	Organics					1	0.0118	162.02	1	Yes	

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Chemical	CAS Number	DAeventnc	DAeventna	Ingestion SL TR=1.0E-6 (µg/L)	Dermal SL TR=1.0E-6 (µg/L)	Carcinogenic SL TR=1.0E-6 (µg/L)	Ingestion SL (Child) HQ=1 (µg/L)	Dermal SL (Child) HQ=1 (µg/L)	Noncarcinogenic SL (Child) HQ=1 µ(g/L)	Ingestion SL (Adult) HQ=1 (µg/L)	Dermal SL (Adult) HQ=1 (µg/L)	Noncarcinogenic SL (Adult) HQ=1 (µg/L)	Screening Level (µg/L)
Demeton	8065-48-3		0.0080441							1.95E+03	1.75E+02	1.61E+02	1.61E+02 nc
Di(2-ethylhexyl)adipate	103-23-1			2.66E+06		2.66E+06				2.92E+07		2.92E+07	2.66E+06 ca*
Di-n-butyltin bis(2-ethylhexanoate)	2781-10-4												
Di-n-butyltin bis(methyl maleate)	15546-11-9												
Di-n-butyltin bis(n-butyl maleate)	15546-16-4												
Di-n-butyltin dilaurate	77-58-7												
Di-n-butyltin distearate	5847-55-2												
Di-n-hexylphthalate	84-75-3												
Diallate	2303-16-4			5.24E+04	7.70E+02	7.59E+02							7.59E+02 ca
Diammonium phosphate	7783-28-0		9773.5537							2.37E+09	4.89E+09	1.59E+09	1.59E+09 nc
Diazinon	333-41-5		0.1407713							3.41E+04	1.67E+03	1.59E+03	1.59E+03 nc
Dibenz[a,h]anthracene	53-70-3			4.38E+02		4.38E+02							4.38E+02 ca
Dibenzo(a,e)pyrene	192-65-4			2.66E+02		2.66E+02							2.66E+02 ca
Dibenzofuran	132-64-9		0.2011019							4.87E+04	5.50E+02	5.44E+02	5.44E+02 nc
Dibenzothiophene	132-65-0		2.0110193							4.87E+05	4.10E+03	4.06E+03	4.06E+03 nc
Dibromo-3-chloropropane, 1,2-	96-12-8		0.0402204	3.99E+03	4.42E+02	3.98E+02				9.73E+03	1.01E+03	9.15E+02	3.98E+02 ca**
Dibromoacetic acid	631-64-1												
Dibromobenzene, 1,3-	108-36-1		0.0804408							1.95E+04	6.67E+02	6.45E+02	6.45E+02 nc
Dibromobenzene, 1,4-	106-37-6		2.0110193							4.87E+05	1.57E+04	1.52E+04	1.52E+04 nc
Dibromochloromethane	124-48-1		4.0220386	3.80E+04	1.19E+04	9.09E+03				9.73E+05	2.87E+05	2.21E+05	9.09E+03 ca*
Dibromodichloromethane	594-18-3												
Dibromodiphenyl Ether, p,p'-	2050-47-7												
Dibromoethane, 1,2-	106-93-4		1.8099174	1.60E+03	5.95E+02	4.33E+02				4.38E+05	1.53E+05	1.13E+05	4.33E+02 ca
Dibromomethane (Methylene Bromide)	74-95-3		2.0110193							4.87E+05	2.32E+05	1.57E+05	1.57E+05 nc
Dibutoxy di-n-butyltin	3349-36-8												
Dibutyl Phthalate	84-74-2		20.110193							4.87E+06	6.98E+04	6.88E+04	6.88E+04 nc
Dibutylbis((1-oxoisooctyl)oxy)stannane	85702-74-5												
Dibutylbis(octadeca-9(Z),12(Z),15(Z)-trienoyloxy)stannane	95873-60-2												
Dibutylbis(octadeca-9(Z),12(Z)-dienoyloxy)stannane	85391-79-3												
Dibutylbis(palmitoyloxy)stannane	13323-63-2												
Dibutyltin Compounds	NA									1.46E+04		1.46E+04	1.46E+04 nc
Dibutyltin diacetate	1067-33-0												
Dibutyltin dichloride	683-18-1												
Dibutyltin oxide	818-08-6												
Dicalcium phosphate	7757-93-9		9773.5537							2.37E+09	4.89E+09	1.59E+09	1.59E+09 nc
Dicamba	1918-00-9		6.0330579							1.46E+06	4.32E+05	3.33E+05	3.33E+05 nc
Dichloro-2-butene, 1,4-	764-41-0												
Dichloro-2-butene, cis-1,4-	1476-11-5												
Dichloro-2-butene, trans-1,4-	110-57-6												
Dichloroacetic Acid	79-43-6		0.8044077	6.39E+04	7.50E+04	3.45E+04				1.95E+05	2.14E+05	1.02E+05	3.45E+04 ca**
Dichloroaniline, 2,4-	554-00-7												
Dichloroaniline, 3,4-	95-76-1												

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Chemical	CAS Number	Mutagen?	VOC?	Chemical Type	Ingestion SF (mg/kg-day)$^{-1}$	SFO Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	RAGSe GIABS (unitless)	K_p (cm/hr)	MW	fa	In EPD?	DAeventc
Dichlorobenzene	25321-22-6	No	Yes	Organics					1	0.0446	147	1	Yes	
Dichlorobenzene, 1,2-	95-50-1	No	Yes	Organics			9.00E-02	U	1	0.0446	147	1	Yes	
Dichlorobenzene, 1,3-	541-73-1	No	Yes	Organics					1	0.052	147	1	Yes	
Dichlorobenzene, 1,4-	106-46-7	No	Yes	Organics	5.40E-03	U	7.00E-02	U	1	0.0453	147	1	Yes	2.6068768
Dichlorobenzidine, 3,3'-	91-94-1	No	No	Organics	4.50E-01	U			1	0.0128	253.13	1	Yes	0.0312825
Dichlorobenzoic acid, -3,5	51-36-5	No	No	Organics					1	0.0131	191.01	1	Yes	
Dichlorobenzophenone, 4,4'-	90-98-2	No	No	Organics			9.00E-03	U	1	0.0542	251.11	0.9	Yes	
Dichlorobenzotrifluoride, 3,4-	328-84-7	No	Yes	Organics					1	0.0645	215	1	Yes	
Dichlorodifluoromethane	75-71-8	No	Yes	Organics			2.00E-01	U	1	0.00895	120.91	1	Yes	
Dichlorodiisopropyl ether, 2,2'-	39638-32-9	No	Yes	Organics					1	0.0515	171.07	1	Yes	
Dichloroethane, 1,1-	75-34-3	No	Yes	Organics	5.70E-03	U	2.00E-01	U	1	0.00675	98.96	1	Yes	2.4696728
Dichloroethane, 1,2-	107-06-2	No	Yes	Organics	9.10E-02	U	6.00E-03	U	1	0.0042	98.96	1	Yes	0.1546938
Dichloroethylene, 1,1-	75-35-4	No	Yes	Organics			5.00E-02	U	1	0.0117	96.94	1	Yes	
Dichloroethylene, 1,2-cis-	156-59-2	No	Yes	Organics			2.00E-03	U	1	0.011	96.94	1	Yes	
Dichloroethylene, 1,2-trans-	156-60-5	No	Yes	Organics			2.00E-02	U	1	0.011	96.94	1	Yes	
Dichlorophenol, 2,3-	576-24-9	Yes	No	Organics					1	0.0147	163	1	Yes	
Dichlorophenol, 2,4-	120-83-2	No	No	Organics			3.00E-03	U	1	0.0206	163	1	Yes	
Dichlorophenol, 2,5-	583-78-8	No	No	Organics					1	0.0206	163	1	Yes	
Dichlorophenol, 2,6-	87-65-0	No	No	Organics					1	0.0128	163	1	Yes	
Dichlorophenol, 3,4-	95-77-2	No	No	Organics					1	0.0311	163	1	Yes	
Dichlorophenols (total)	NA	No	No	Organics					1				No	
Dichlorophenoxy Acetic Acid, 2,4-	94-75-7	No	No	Organics			1.00E-02	U	1	0.00664	221.04	1	Yes	
Dichlorophenoxy)butyric Acid, 4-(2,4-	94-82-6	No	No	Organics			8.00E-03	U	1	0.0139	249.1	0.9	Yes	
Dichloropropane, 1,2-	78-87-5	No	Yes	Organics	3.60E-02	U	9.00E-02	U	1	0.00753	112.99	1	Yes	0.3910315
Dichloropropane, 1,3-	142-28-9	No	Yes	Organics			2.00E-02	U	1	0.00776	112.99	1	Yes	
Dichloropropane, 2,2-	594-20-7	No	Yes	Organics					1	0.0316	112.99	1	Yes	
Dichloropropanol, 2,3-	616-23-9	No	No	Organics			3.00E-03	U	1	0.000983	128.99	1	Yes	
Dichloropropene, 1,3-	542-75-6	No	Yes	Organics	1.00E-01	U	3.00E-02	U	1	0.00834	110.97	1	Yes	0.1407713
Dichloropropene, 2,3-	78-88-6	No	Yes	Organics					1	0.0153	110.97	1	Yes	
Dichloropropene, cis-1,3-	10061-01-5	No	Yes	Organics					1	0.00834	110.97	1	Yes	
Dichloropropene, trans-1,3-	10061-02-6	No	Yes	Organics					1	0.00834	110.97	1	Yes	
Dichlorvos	62-73-7	No	No	Organics	2.90E-01	U	5.00E-04	U	1	0.000804	220.98	1	Yes	0.0485418
Diclofop-methyl	51338-27-3	No	No	Organics					1	0.0224	341.19	0.8	Yes	
Dicofol	115-32-2	No	No	Organics					1	0.0283	370.49	0.8	Yes	
Dicyclohexylamine	101-83-7	No	Yes	Organics					1	0.12	181.32	1	Yes	
Dicyclopentadiene	77-73-6	No	Yes	Organics			8.00E-02	U	1	0.036	132.21	1	Yes	
Didecyl dimethyl ammonium chloride	7173-51-5	No	No	Organics					1	0.0181	362.09	0.8	Yes	
Dieldrin	60-57-1	No	No	Organics	1.60E+01	U	5.00E-05	U	1	0.0326	380.91	0.8	Yes	0.0008798
Diepoxybutane	1464-53-5	No	Yes	Organics					1	0.0000308	86.09	1	Yes	
Diethanolamine	111-42-2	No	No	Organics			2.00E-03	U	1	0.0000451	105.14	1	Yes	
Diethyl Phthalate	84-66-2	No	No	Organics			8.00E-01	U	1	0.0036	222.24	1	Yes	
Diethyl sulfate	64-67-5	No	No	Organics					1	0.00123	154.18	1	Yes	
Diethyl-p-nitrophenylphosphate	311-45-5	No	No	Organics					1	0.000926	275.2	1	Yes	
Diethylene Glycol Dinitrate (DEGDN)	693-21-0	No	No	Organics					1	0.000557	196.12	1	Yes	

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Chemical	CAS Number	DAeventnc	DAeventna	Ingestion SL TR=1.0E-6 (µg/L)	Dermal SL TR=1.0E-6 (µg/L)	Carcinogenic SL TR=1.0E-6 (µg/L)	Ingestion SL (Child) HQ=1 (µg/L)	Dermal SL (Child) HQ=1 (µg/L)	Noncarcinogenic SL (Child) HQ=1 µ(g/L)	Ingestion SL (Adult) HQ=1 (µg/L)	Dermal SL (Adult) HQ=1 (µg/L)	Noncarcinogenic SL (Adult) HQ=1 (µg/L)	Screening Level (µg/L)
Dichlorobenzene	25321-22-6												
Dichlorobenzene, 1,2-	95-50-1		18.099174							4.38E+06	1.22E+05	1.18E+05	1.18E+05 nc
Dichlorobenzene, 1,3-	541-73-1												
Dichlorobenzene, 1,4-	106-46-7		14.077135	5.91E+05	1.72E+04	1.68E+04				3.41E+06	9.31E+04	9.06E+04	1.68E+04 ca**
Dichlorobenzidine, 3,3'-	91-94-1			7.10E+03	3.77E+02	3.58E+02							3.58E+02 ca
Dichlorobenzoic acid, -3,5	51-36-5												
Dichlorobenzophenone, 4,4'-	90-98-2		1.8099174							4.38E+05	5.80E+03	5.72E+03	5.72E+03 nc
Dichlorobenzotrifluoride, 3,4-	328-84-7												
Dichlorodifluoromethane	75-71-8		40.220386							9.73E+06	1.52E+06	1.31E+06	1.31E+06 nc
Dichlorodiisopropyl ether, 2,2'-	39638-32-9												
Dichloroethane, 1,1-	75-34-3		40.220386	5.60E+05	1.34E+05	1.08E+05				9.73E+06	2.19E+06	1.79E+06	1.08E+05 ca*
Dichloroethane, 1,2-	107-06-2		1.2066116	3.51E+04	1.35E+04	9.74E+03				2.92E+05	1.05E+05	7.73E+04	9.74E+03 ca**
Dichloroethylene, 1,1-	75-35-4		10.055096							2.43E+06	3.20E+05	2.83E+05	2.83E+05 nc
Dichloroethylene, 1,2-cis-	156-59-2		0.4022039							9.73E+04	1.36E+04	1.19E+04	1.19E+04 nc
Dichloroethylene, 1,2-trans-	156-60-5		4.0220386							9.73E+05	1.36E+05	1.19E+05	1.19E+05 nc
Dichlorophenol, 2,3-	576-24-9												
Dichlorophenol, 2,4-	120-83-2		0.6033058							1.46E+05	8.08E+03	7.65E+03	7.65E+03 nc
Dichlorophenol, 2,5-	583-78-8												
Dichlorophenol, 2,6-	87-65-0												
Dichlorophenol, 3,4-	95-77-2												
Dichlorophenols (total)	NA												
Dichlorophenoxy Acetic Acid, 2,4-	94-75-7		2.0110193							4.87E+05	5.75E+04	5.14E+04	5.14E+04 nc
Dichlorophenoxy)butyric Acid, 4-(2,4-	94-82-6		1.6088154							3.89E+05	2.04E+04	1.93E+04	1.93E+04 nc
Dichloropropane, 1,2-	78-87-5		18.099174	8.87E+04	1.81E+04	1.50E+04				4.38E+06	8.37E+05	7.03E+05	1.50E+04 ca*
Dichloropropane, 1,3-	142-28-9		4.0220386							9.73E+05	1.81E+05	1.52E+05	1.52E+05 nc
Dichloropropane, 2,2-	594-20-7												
Dichloropropanol, 2,3-	616-23-9		0.6033058							1.46E+05	1.98E+05	8.40E+04	8.40E+04 nc
Dichloropropene, 1,3-	542-75-6		6.0330579	3.19E+04	5.94E+03	5.00E+03				1.46E+06	2.54E+05	2.17E+05	5.00E+03 ca*
Dichloropropene, 2,3-	78-88-6												
Dichloropropene, cis-1,3-	10061-01-5												
Dichloropropene, trans-1,3-	10061-02-6												
Dichlorvos	62-73-7		0.100551	1.10E+04	1.15E+04	5.62E+03				2.43E+04	2.37E+04	1.20E+04	5.62E+03 ca**
Diclofop-methyl	51338-27-3												
Dicofol	115-32-2												
Dicyclohexylamine	101-83-7												
Dicyclopentadiene	77-73-6		16.088154							3.89E+06	1.46E+05	1.41E+05	1.41E+05 nc
Didecyl dimethyl ammonium chloride	7173-51-5												
Dieldrin	60-57-1		0.0100551	2.00E+02	2.28E+00	2.26E+00				2.43E+03	2.61E+01	2.58E+01	2.26E+00 ca*
Diepoxybutane	1464-53-5												
Diethanolamine	111-42-2		0.4022039							9.73E+04	3.17E+06	9.44E+04	9.44E+04 nc
Diethyl Phthalate	84-66-2		160.88154							3.89E+07	8.41E+06	6.92E+06	6.92E+06 nc
Diethyl sulfate	64-67-5												
Diethyl-p-nitrophenylphosphate	311-45-5												
Diethylene Glycol Dinitrate (DEGDN)	693-21-0												

Site-specific

Recreator Screening Levels (RSL) for Surface Water - Modified for Utility Worker Exposure to Groundwater
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ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Chemical Type	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	RAGSe GIABS (unitless)	K_p (cm/hr)	MW	fa	In EPD?	DAeventc
Diethylene Glycol Monobutyl Ether	112-34-5	No	No	Organics			3.00E-02	U	1	0.000454	162.23	1	Yes	
Diethylene Glycol Monoethyl Ether	111-90-0	No	No	Organics			6.00E-02	U	1	0.000121	134.18	1	Yes	
Diethylene-glycol	111-46-6	No	No	Organics					1	0.0000417	106.12	1	Yes	
Diethylformamide	617-84-5	No	Yes	Organics			1.00E-03	U	1	0.000457	101.15	1	Yes	
Diethylphosphorodithioate	298-06-6	No	Yes	Organics					1	0.00436	186.23	1	Yes	
Diethylstilbestrol	56-53-1	No	No	Organics	3.50E+02	U			1	0.114	268.36	0.9	Yes	0.0000402
Difenzoquat	43222-48-6	No	No	Organics			8.00E-02	U	1	0.0000402	360.43	1	Yes	
Diflubenzuron	35367-38-5	No	No	Organics			2.00E-02	U	1	0.0107	310.69	0.9	Yes	
Difluoroethane, 1,1-	75-37-6	No	Yes	Organics					1	0.0021	66.05	1	Yes	
Difluoropropane, 2,2-	420-45-1	No	Yes	Organics					1	0.0185	80.08	1	Yes	
Dihydrosafrole	94-58-6	No	Yes	Organics	4.40E-02	U			1	0.0452	164.21	1	Yes	0.3199349
Diisopropyl Ether	108-20-3	No	Yes	Organics					1	0.00428	102.18	1	Yes	
Diisopropyl Methylphosphonate	1445-75-6	No	Yes	Organics			8.00E-02	U	1	0.000738	180.19	1	Yes	
Dimagnesium phosphate	7782-75-4	No	No	Inorganics			4.86E+01	U	1	0.001	174.33	1	Yes	
Dimethipin	55290-64-7	No	No	Organics			2.00E-02	U	1	0.0000798	210.26	1	Yes	
Dimethoate	60-51-5	No	No	Organics			2.00E-04	U	1	0.000267	229.25	1	Yes	
Dimethoxybenzidine, 3,3'-	119-90-4	No	No	Organics	1.60E+00	U			1	0.00106	244.3	1	Yes	0.0087982
Dimethyl Sulfate	77-78-1	No	No	Organics					1	0.000392	126.13	1	Yes	
Dimethyl Sulfide	75-18-3	No	Yes	Organics					1	0.00286	62.13	1	Yes	
Dimethyl methylphosphonate	756-79-6	No	No	Organics	1.70E-03	U	6.00E-02	U	1	0.000124	124.08	1	Yes	8.2806676
Dimethylamino azobenzene [p-]	60-11-7	No	No	Organics	4.60E+00	U			1	0.0943	225.3	1	Yes	0.0030602
Dimethylaniline HCl, 2,4-	21436-96-4	No	No	Organics	5.80E-01	U			1	0.0000202	157.64	1	Yes	0.0242709
Dimethylaniline, 2,4-	95-68-1	No	No	Organics	2.00E-01	U	2.00E-03	U	1	0.00428	121.18	1	Yes	0.0703857
Dimethylaniline, N,N-	121-69-7	No	Yes	Organics			2.00E-03	U	1	0.0112	121.18	1	Yes	
Dimethylbenz(a)anthracene, 7,12-	57-97-6	Yes	No	Organics	2.50E+02	U			1	0.408	256.35	0.9	No	
Dimethylbenzidine, 3,3'-	119-93-7	No	No	Organics	1.10E+01	U			1	0.00362	212.3	1	Yes	0.0012797
Dimethylcyclohexylamine, n,n-	98-94-2	No	Yes	Organics					1	0.0103	127.23	1	Yes	
Dimethylethyl Lead	107584-40-7	No	No	Organics					1				No	
Dimethylformamide	68-12-2	No	Yes	Organics			1.00E-01	U	1	0.00013	73.1	1	Yes	
Dimethylhydrazine, 1,1-	57-14-7	No	Yes	Organics			1.00E-04	U	1	0.0000727	60.1	1	Yes	
Dimethylhydrazine, 1,2-	540-73-8	No	Yes	Organics	5.50E+02	U			1	0.000317	60.1	1	Yes	0.0000256
Dimethylmercury	593-74-8	No	Yes	Organics					1	0.00419	230.66	1	Yes	
Dimethylphenethylamine	122-09-8	No	No	Organics					1	0.00417	149.24	1	Yes	
Dimethylphenol, 2,4-	105-67-9	No	No	Organics			2.00E-02	U	1	0.0109	122.17	1	Yes	
Dimethylphenol, 2,6-	576-26-1	No	No	Organics			6.00E-04	U	1	0.012	122.17	1	Yes	
Dimethylphenol, 3,4-	95-65-8	No	No	Organics			1.00E-03	U	1	0.0098	122.17	1	Yes	
Dimethylphthalate	131-11-3	No	No	Organics					1	0.00147	194.19	1	Yes	
Dimethylterephthalate	120-61-6	No	Yes	Organics			1.00E-01	U	1	0.00399	194.19	1	Yes	
Dimethylvinylchloride	513-37-1	No	Yes	Organics	4.50E-02	U			1	0.0253	90.55	1	Yes	0.3128252
Dinitro-o-cresol, 4,6-	534-52-1	No	No	Organics			8.00E-05	U	1	0.00315	198.14	1	Yes	
Dinitro-o-cyclohexyl Phenol, 4,6-	131-89-5	No	No	Organics			2.00E-03	U	1	0.0275	266.26	0.9	Yes	
Dinitroaniline, 3,5-	618-87-1	No	No	Organics					1	0.00265	183.12	1	Yes	
Dinitrobenzene, 1,2-	528-29-0	No	No	Organics			1.00E-04	U	1	0.00237	168.11	1	Yes	
Dinitrobenzene, 1,3-	99-65-0	No	No	Organics			1.00E-04	U	1	0.00174	168.11	1	Yes	

Site-specific

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Chemical	CAS Number	DAeventnc	DAeventna	Ingestion SL TR=1.0E-6 (µg/L)	Dermal SL TR=1.0E-6 (µg/L)	Carcinogenic SL TR=1.0E-6 (µg/L)	Ingestion SL (Child) HQ=1 (µg/L)	Dermal SL (Child) HQ=1 (µg/L)	Noncarcinogenic SL (Child) HQ=1 µ(g/L)	Ingestion SL (Adult) HQ=1 (µg/L)	Dermal SL (Adult) HQ=1 (µg/L)	Noncarcinogenic SL (Adult) HQ=1 (µg/L)	Screening Level (µg/L)
Diethylene Glycol Monobutyl Ether	112-34-5		6.0330579							1.46E+06	3.68E+06	1.05E+06	1.05E+06 nc
Diethylene Glycol Monoethyl Ether	111-90-0		12.066116							2.92E+06	3.13E+07	2.67E+06	2.67E+06 nc
Diethylene-glycol	111-46-6												
Diethylformamide	617-84-5		0.2011019							4.87E+04	1.59E+05	3.72E+04	3.72E+04 nc
Diethylphosphorodithioate	298-06-6												
Diethylstilbestrol	56-53-1			9.13E+00	5.48E-02	5.45E-02							5.45E-02 ca
Difenzoquat	43222-48-6		16.088154							3.89E+06	3.09E+07	3.46E+06	3.46E+06 nc
Diflubenzuron	35367-38-5		4.0220386							9.73E+05	4.45E+04	4.25E+04	4.25E+04 nc
Difluoroethane, 1,1-	75-37-6												
Difluoropropane, 2,2-	420-45-1												
Dihydrosafrole	94-58-6			7.26E+04	1.94E+03	1.89E+03							1.89E+03 ca
Diisopropyl Ether	108-20-3												
Diisopropyl Methylphosphonate	1445-75-6		16.088154							3.89E+06	5.38E+06	2.26E+06	2.26E+06 nc
Dimagnesium phosphate	7782-75-4		9773.5537							2.37E+09	4.89E+09	1.59E+09	1.59E+09 nc
Dimethipin	55290-64-7		4.0220386							9.73E+05	1.03E+07	8.89E+05	8.89E+05 nc
Dimethoate	60-51-5		0.0402204							9.73E+03	2.71E+04	7.16E+03	7.16E+03 nc
Dimethoxybenzidine, 3,3'-	119-90-4			2.00E+03	1.36E+03	8.07E+02							8.07E+02 ca
Dimethyl Sulfate	77-78-1												
Dimethyl Sulfide	75-18-3												
Dimethyl methylphosphonate	756-79-6		12.066116	1.88E+06	2.20E+07	1.73E+06				2.92E+06	3.20E+07	2.68E+06	1.73E+06 ca**
Dimethylamino azobenzene [p-]	60-11-7			6.94E+02	5.99E+00	5.94E+00							5.94E+00 ca
Dimethylaniline HCl, 2,4-	21436-96-4			5.51E+03	3.33E+05	5.42E+03							5.42E+03 ca
Dimethylaniline, 2,4-	95-68-1		0.4022039	1.60E+04	5.51E+03	4.10E+03				9.73E+04	3.15E+04	2.38E+04	4.10E+03 ca**
Dimethylaniline, N,N-	121-69-7		0.4022039							9.73E+04	1.21E+04	1.08E+04	1.08E+04 nc
Dimethylbenz(a)anthracene, 7,12-	57-97-6			1.28E+01		1.28E+01							1.28E+01 ca
Dimethylbenzidine, 3,3'-	119-93-7			2.90E+02	7.10E+01	5.70E+01							5.70E+01 ca
Dimethylcyclohexylamine, n,n-	98-94-2												
Dimethylethyl Lead	107584-40-7												
Dimethylformamide	68-12-2		20.110193							4.87E+06	6.09E+07	4.51E+06	4.51E+06 nc
Dimethylhydrazine, 1,1-	57-14-7		0.0201102							4.87E+03	1.13E+05	4.67E+03	4.67E+03 nc
Dimethylhydrazine, 1,2-	540-73-8			5.81E+00	3.29E+01	4.94E+00							4.94E+00 ca
Dimethylmercury	593-74-8												
Dimethylphenethylamine	122-09-8												
Dimethylphenol, 2,4-	105-67-9		4.0220386							9.73E+05	1.24E+05	1.10E+05	1.10E+05 nc
Dimethylphenol, 2,6-	576-26-1		0.1206612							2.92E+04	3.38E+03	3.03E+03	3.03E+03 nc
Dimethylphenol, 3,4-	95-65-8		0.2011019							4.87E+04	6.89E+03	6.04E+03	6.04E+03 nc
Dimethylphthalate	131-11-3												
Dimethylterephthalate	120-61-6		20.110193							4.87E+06	1.14E+06	9.22E+05	9.22E+05 nc
Dimethylvinylchloride	513-37-1			7.10E+04	4.81E+03	4.51E+03							4.51E+03 ca
Dinitro-o-cresol, 4,6-	534-52-1		0.0160882							3.89E+03	1.12E+03	8.72E+02	8.72E+02 nc
Dinitro-o-cyclohexyl Phenol, 4,6-	131-89-5		0.4022039							9.73E+04	2.30E+03	2.25E+03	2.25E+03 nc
Dinitroaniline, 3,5-	618-87-1												
Dinitrobenzene, 1,2-	528-29-0		0.0201102							4.87E+03	2.26E+03	1.55E+03	1.55E+03 nc
Dinitrobenzene, 1,3-	99-65-0		0.0201102							4.87E+03	3.08E+03	1.89E+03	1.89E+03 nc

Site-specific

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Chemical	CAS Number	Mutagen?	VOC?	Chemical Type	Ingestion SF (mg/kg-day)$^{-1}$	SFO Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	RAGSe GIABS (unitless)	K_p (cm/hr)	MW	fa	In EPD?	DAeventc
Dinitrobenzene, 1,4-	100-25-4	No	No	Organics			1.00E-04	U	1	0.00167	168.11	1	Yes	
Dinitrophenol, 2,4-	51-28-5	No	No	Organics			2.00E-03	U	1	0.00187	184.11	1	Yes	
Dinitrophenols	25550-58-7	No	No	Organics					1	0.00118	184.11	1	Yes	
Dinitrosopentamethylenetetramine, N,N-	101-25-7	No	No	Organics					1	0.0000104	186.17	1	Yes	
Dinitrotoluene Mixture, 2,4/2,6-	NA	No	No	Organics	6.80E-01	U			1	0.00416	182.14	1	Yes	0.0207017
Dinitrotoluene, 2,4-	121-14-2	No	No	Organics	3.10E-01	U	2.00E-03	U	1	0.00308	182.14	1	Yes	0.0454101
Dinitrotoluene, 2,6-	606-20-2	No	No	Organics	1.50E+00	U	3.00E-04	U	1	0.0037	182.14	1	Yes	0.0093848
Dinitrotoluene, 2-Amino-4,6-	35572-78-2	No	No	Organics			2.00E-03	U	1	0.00204	197.15	1	Yes	
Dinitrotoluene, 4-Amino-2,6-	19406-51-0	No	No	Organics			2.00E-03	U	1	0.00204	197.15	1	Yes	
Dinitrotoluene, Technical grade	25321-14-6	No	No	Organics	4.50E-01	U	9.00E-04	U	1	0.00416	182.14	1	Yes	0.0312825
Dinoseb	88-85-7	No	No	Organics			1.00E-03	U	1	0.0163	240.22	0.9	Yes	
Dioxane, 1,4-	123-91-1	No	Yes	Organics	1.00E-01	U	3.00E-02	U	1	0.000332	88.11	1	Yes	0.1407713
Diphenamid	957-51-7	No	No	Organics			3.00E-02	U	1	0.00563	239.32	1	Yes	
Diphenyl Sulfone	127-63-9	No	No	Organics			8.00E-04	U	1	0.00367	218.27	1	Yes	
Diphenylamine	122-39-4	No	No	Organics			2.50E-02	U	1	0.0373	169.23	1	Yes	
Diphenylhydrazine, 1,2-	122-66-7	No	No	Organics	8.00E-01	U			1	0.013	184.24	1	Yes	0.0175964
Dipotassium phosphate	7758-11-4	No	No	Inorganics			4.86E+01	U	1	0.001	174.18	1	Yes	
Diquat	85-00-7	No	No	Organics			2.20E-03	U	1	2.44E-07	344.05	1	No	
Direct Black 38	1937-37-7	No	No	Organics	7.10E+00	U			1	0.000205	737.77	1	No	
Direct Blue 6	2602-46-2	No	No	Organics	7.40E+00	U			1	1.73E-09	821.67	1	No	
Direct Brown 95	16071-86-6	No	No	Organics	6.70E+00	U			1	3.87E-12	760.11	1	No	
Direct Sky Blue	2610-05-1	No	No	Organics					1	3.69E-07	730.75	1	No	
Disodium phosphate	7558-79-4	No	No	Inorganics			4.86E+01	U	1	0.001	141.96	1	Yes	
Disulfoton	298-04-4	No	No	Organics			4.00E-05	U	1	0.0212	274.39	0.9	Yes	
Dithiane, 1,4-	505-29-3	No	Yes	Organics			1.00E-02	U	1	0.00108	120.23	1	Yes	
Diuron	330-54-1	No	No	Organics			2.00E-03	U	1	0.00466	233.1	1	Yes	
Dodecyl benzenesulfonic acid	27176-87-0	No	No	Organics					1	0.0349	326.5	0.8	Yes	
Dodine	2439-10-3	No	No	Organics			4.00E-03	U	1	0.000222	287.45	1	Yes	
EPTC	759-94-4	No	Yes	Organics			2.50E-02	U	1	0.0184	189.32	1	Yes	
Endosulfan	115-29-7	No	Yes	Organics			6.00E-03	U	1	0.00286	406.92	0.9	Yes	
Endosulfan I	959-98-8	No	Yes	Organics					1	0.00286	406.92	0.9	Yes	
Endosulfan II	33213-65-9	No	Yes	Organics					1	0.00286	406.92	0.9	Yes	
Endosulfan Sulfate	1031-07-8	No	No	Organics					1	0.00179	422.92	0.9	Yes	
Endothall	145-73-3	No	No	Organics			2.00E-02	U	1	0.00263	186.17	1	Yes	
Endrin	72-20-8	No	No	Organics			3.00E-04	U	1	0.0326	380.91	0.8	Yes	
Endrin aldehyde	7421-93-4	No	No	Organics					1	0.0178	380.91	0.8	Yes	
Endrin ketone	53494-70-5	No	No	Organics					1	0.0235	380.91	0.8	Yes	
Epichlorohydrin	106-89-8	No	Yes	Organics	9.90E-03	U	6.00E-03	U	1	0.000944	92.53	1	Yes	1.4219328
Epoxybutane, 1,2-	106-88-7	No	Yes	Organics					1	0.00231	72.11	1	Yes	
Ethanol	64-17-5	No	Yes	Organics					1	0.000538	46.07	1	Yes	
Ethanol, 2-(2-methoxyethoxy)-	111-77-3	No	No	Organics					1	0.000175	120.15	1	Yes	
Ethephon	16672-87-0	No	No	Organics			5.00E-03	U	1	0.000173	144.5	1	Yes	
Ethion	563-12-2	No	No	Organics			5.00E-04	U	1	0.0255	384.46	0.8	Yes	
Ethoxy Propanol	52125-53-8	No	Yes	Organics					1	0.000409	104.15	1	Yes	

Site-specific

Recreator Screening Levels (RSL) for Surface Water - Modified for Utility Worker Exposure to Groundwater
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ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	DAeventnc	DAeventna	Ingestion SL TR=1.0E-6 (µg/L)	Dermal SL TR=1.0E-6 (µg/L)	Carcinogenic SL TR=1.0E-6 (µg/L)	Ingestion SL (Child) HQ=1 (µg/L)	Dermal SL (Child) HQ=1 (µg/L)	Noncarcinogenic SL (Child) HQ=1 µ(g/L)	Ingestion SL (Adult) HQ=1 (µg/L)	Dermal SL (Adult) HQ=1 (µg/L)	Noncarcinogenic SL (Adult) HQ=1 (µg/L)	Screening Level (µg/L)
Dinitrobenzene, 1,4-	100-25-4		0.0201102							4.87E+03	3.21E+03	1.94E+03	1.94E+03 nc
Dinitrophenol, 2,4-	51-28-5		0.4022039							9.73E+04	5.18E+04	3.38E+04	3.38E+04 nc
Dinitrophenols	25550-58-7												
Dinitrosopentamethylenetetramine, N,N-	101-25-7												
Dinitrotoluene Mixture, 2,4/2,6-	NA			4.70E+03	1.21E+03	9.64E+02							9.64E+02 ca
Dinitrotoluene, 2,4-	121-14-2		0.4022039	1.03E+04	3.59E+03	2.66E+03				9.73E+04	3.18E+04	2.40E+04	2.66E+03 ca**
Dinitrotoluene, 2,6-	606-20-2		0.0603306	2.13E+03	6.18E+02	4.79E+02				1.46E+04	3.98E+03	3.12E+03	4.79E+02 ca**
Dinitrotoluene, 2-Amino-4,6-	35572-78-2		0.4022039							9.73E+04	4.36E+04	3.01E+04	3.01E+04 nc
Dinitrotoluene, 4-Amino-2,6-	19406-51-0		0.4022039							9.73E+04	4.36E+04	3.01E+04	3.01E+04 nc
Dinitrotoluene, Technical grade	25321-14-6		0.1809917	7.10E+03	1.83E+03	1.46E+03				4.38E+04	1.06E+04	8.54E+03	1.46E+03 ca**
Dinoseb	88-85-7		0.2011019							4.87E+04	2.30E+03	2.19E+03	2.19E+03 nc
Dioxane, 1,4-	123-91-1		6.0330579	3.19E+04	1.60E+05	2.66E+04				1.46E+06	6.85E+06	1.20E+06	2.66E+04 ca*
Diphenamid	957-51-7		6.0330579							1.46E+06	1.81E+05	1.61E+05	1.61E+05 nc
Diphenyl Sulfone	127-63-9		0.1608815							3.89E+04	8.47E+03	6.95E+03	6.95E+03 nc
Diphenylamine	122-39-4		5.0275482							1.22E+06	3.57E+04	3.47E+04	3.47E+04 nc
Diphenylhydrazine, 1,2-	122-66-7			3.99E+03	3.26E+02	3.01E+02							3.01E+02 ca
Dipotassium phosphate	7758-11-4		9773.5537							2.37E+09	4.89E+09	1.59E+09	1.59E+09 nc
Diquat	85-00-7									1.07E+05		1.07E+05	1.07E+05 nc
Direct Black 38	1937-37-7			4.50E+02		4.50E+02							4.50E+02 ca
Direct Blue 6	2602-46-2			4.32E+02		4.32E+02							4.32E+02 ca
Direct Brown 95	16071-86-6			4.77E+02		4.77E+02							4.77E+02 ca
Direct Sky Blue	2610-05-1												
Disodium phosphate	7558-79-4		9773.5537							2.37E+09	4.89E+09	1.59E+09	1.59E+09 nc
Disulfoton	298-04-4		0.0080441							1.95E+03	5.67E+01	5.51E+01	5.51E+01 nc
Dithiane, 1,4-	505-29-3		2.0110193							4.87E+05	6.23E+05	2.73E+05	2.73E+05 nc
Diuron	330-54-1		0.4022039							9.73E+04	1.51E+04	1.31E+04	1.31E+04 nc
Dodecyl benzenesulfonic acid	27176-87-0												
Dodine	2439-10-3		0.8044077							1.95E+05	4.48E+05	1.36E+05	1.36E+05 nc
EPTC	759-94-4		5.0275482							1.22E+06	6.36E+04	6.04E+04	6.04E+04 nc
Endosulfan	115-29-7		1.2066116							2.92E+05	2.68E+04	2.46E+04	2.46E+04 nc
Endosulfan I	959-98-8												
Endosulfan II	33213-65-9												
Endosulfan Sulfate	1031-07-8												
Endothall	145-73-3		4.0220386							9.73E+05	3.63E+05	2.65E+05	2.65E+05 nc
Endrin	72-20-8		0.0603306							1.46E+04	1.57E+02	1.55E+02	1.55E+02 nc
Endrin aldehyde	7421-93-4												
Endrin ketone	53494-70-5												
Epichlorohydrin	106-89-8		1.2066116	3.23E+05	5.60E+05	2.05E+05				2.92E+05	4.75E+05	1.81E+05	1.81E+05 nc
Epoxybutane, 1,2-	106-88-7												
Ethanol	64-17-5												
Ethanol, 2-(2-methoxyethoxy)-	111-77-3												
Ethephon	16672-87-0		1.0055096							2.43E+05	1.73E+06	2.13E+05	2.13E+05 nc
Ethion	563-12-2		0.100551							2.43E+04	3.26E+02	3.22E+02	3.22E+02 nc
Ethoxy Propanol	52125-53-8												

Site-specific

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Chemical	CAS Number	Mutagen?	VOC?	Chemical Type	Ingestion SF (mg/kg-day)$^{-1}$	SFO Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	RAGSe GIABS (unitless)	K_p (cm/hr)	MW	fa	In EPD?	DAeventc
Ethoxyethanol Acetate, 2-	111-15-9	No	Yes	Organics			1.00E-01	U	1	0.0007	132.16	1	Yes	
Ethoxyethanol, 2-	110-80-5	No	Yes	Organics			9.00E-02	U	1	0.0003	90.12	1	Yes	
Ethyl Acetate	141-78-6	No	Yes	Organics			9.00E-01	U	1	0.00153	88.11	1	Yes	
Ethyl Acrylate	140-88-5	No	Yes	Organics	4.80E-02	U	5.00E-03	U	1	0.00324	100.12	1	Yes	0.2932736
Ethyl Chloride	75-00-3	No	Yes	Organics					1	0.00607	64.52	1	Yes	
Ethyl Ether	60-29-7	No	Yes	Organics			2.00E-01	U	1	0.00235	74.12	1	Yes	
Ethyl Methacrylate	97-63-2	No	Yes	Organics			9.00E-02	U	1	0.00698	114.15	1	Yes	
Ethyl methane sulfonate	62-50-0	No	No	Organics					1	0.000244	124.16	1	Yes	
Ethyl-p-nitrophenyl Phosphonate	2104-64-5	No	No	Organics			1.00E-05	U	1	0.0361	323.31	0.8	Yes	
Ethylbenzene	100-41-4	No	Yes	Organics	1.10E-02	U	1.00E-01	U	1	0.0493	106.17	1	Yes	1.2797395
Ethylene Cyanohydrin	109-78-4	No	No	Organics			7.00E-02	U	1	0.000148	71.08	1	Yes	
Ethylene Diamine	107-15-3	No	Yes	Organics			9.00E-02	U	1	0.0000318	60.1	1	No	
Ethylene Glycol	107-21-1	No	No	Organics			2.00E+00	U	1	0.0000877	62.07	1	Yes	
Ethylene Glycol Monobutyl Ether	111-76-2	No	No	Organics			1.00E-01	U	1	0.00121	118.18	1	Yes	
Ethylene Oxide	75-21-8	No	Yes	Organics	3.10E-01	U			1	0.00056	44.05	1	Yes	0.0454101
Ethylene Thiourea	96-45-7	No	No	Organics	4.50E-02	U	8.00E-05	U	1	0.000152	102.15	1	Yes	0.3128252
Ethyleneimine	151-56-4	No	Yes	Organics	6.50E+01	U			1	0.000581	43.07	1	Yes	0.0002166
Ethylphenol, 4-	123-07-9	No	No	Organics					1	0.0167	122.17	1	Yes	
Ethylphthalyl Ethyl Glycolate	84-72-0	No	No	Organics			3.00E+00	U	1	0.00119	280.28	1	Yes	
Express	101200-48-0	No	No	Organics			8.00E-03	U	1	0.000468	395.39	1	Yes	
Famphur	52-85-7	No	No	Organics					1	0.00071	325.34	1	Yes	
Fenamiphos	22224-92-6	No	No	Organics			2.50E-04	U	1	0.00436	303.36	0.9	Yes	
Fenpropathrin	39515-41-8	No	No	Organics			2.50E-02	U	1	0.167	349.43	0.8	Yes	
Fluometuron	2164-17-2	No	No	Organics			1.30E-02	U	1	0.00316	232.21	1	Yes	
Fluoranthene	206-44-0	No	No	Organics			4.00E-02	U	1	0.308	202.26	1	No	
Fluorene	86-73-7	No	Yes	Organics			4.00E-02	U	1	0.11	166.22	1	Yes	
Fluoride	16984-48-8	No	No	Inorganics			4.00E-02	U	1	0.001	38	1	Yes	
Fluorine (Soluble Fluoride)	7782-41-4	No	No	Inorganics			6.00E-02	U	1	0.001	38	1	Yes	
Fluorobenzene	462-06-6	No	Yes	Organics					1	0.0146	96.11	1	Yes	
Fluorobiphenyl, 2-	321-60-8	No	Yes	Organics					1	0.0722	172.2	1	Yes	
Fluorophenol, 2-	367-12-4	No	Yes	Organics					1	0.00504	112.1	1	Yes	
Fluridone	59756-60-4	No	No	Organics			8.00E-02	U	1	0.0028	329.32	0.9	Yes	
Flurprimidol	56425-91-3	No	No	Organics			2.00E-02	U	1	0.00459	312.29	0.9	Yes	
Flutolanil	66332-96-5	No	No	Organics			6.00E-02	U	1	0.00691	323.32	0.9	Yes	
Fluvalinate	69409-94-5	No	No	Organics			1.00E-02	U	1	0.0792	502.92	0.6	No	
Folpet	133-07-3	No	No	Organics	3.50E-03	U	1.00E-01	U	1	0.00266	296.56	1	Yes	4.0220386
Fomesafen	72178-02-0	No	No	Organics	1.90E-01	U			1	0.000457	438.76	1	Yes	0.0740902
Fonofos	944-22-9	No	No	Organics			2.00E-03	U	1	0.027	246.32	0.9	Yes	
Formaldehyde	50-00-0	No	Yes	Organics			2.00E-01	U	1	0.00182	30.03	1	Yes	
Formic Acid	64-18-6	No	Yes	Organics			9.00E-01	U	1	0.000378	46.03	1	Yes	
Fosetyl-AL	39148-24-8	No	No	Organics			3.00E+00	U	1	4.10E-07	354.11	1	No	
Fuel Oil Number 2	68476-30-2	No	No	Organics					1				No	
Furan	110-00-9	No	Yes	Organics			1.00E-03	U	1	0.00505	68.08	1	Yes	
Furazolidone	67-45-8	No	No	Organics	3.80E+00	U			1	0.0000803	225.16	1	Yes	0.0037045

Site-specific

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Chemical	CAS Number	DAeventnc	DAeventna	Ingestion SL TR=1.0E-6 (µg/L)	Dermal SL TR=1.0E-6 (µg/L)	Carcinogenic SL TR=1.0E-6 (µg/L)	Ingestion SL (Child) HQ=1 (µg/L)	Dermal SL (Child) HQ=1 (µg/L)	Noncarcinogenic SL (Child) HQ=1 µ(g/L)	Ingestion SL (Adult) HQ=1 (µg/L)	Dermal SL (Adult) HQ=1 (µg/L)	Noncarcinogenic SL (Adult) HQ=1 (µg/L)	Screening Level (µg/L)
Ethoxyethanol Acetate, 2-	111-15-9		20.110193							4.87E+06	9.11E+06	3.17E+06	3.17E+06 nc
Ethoxyethanol, 2-	110-80-5		18.099174							4.38E+06	2.26E+07	3.67E+06	3.67E+06 nc
Ethyl Acetate	141-78-6		180.99174							4.38E+07	4.47E+07	2.21E+07	2.21E+07 nc
Ethyl Acrylate	140-88-5		1.0055096	6.65E+04	3.29E+04	2.20E+04				2.43E+05	1.13E+05	7.71E+04	2.20E+04 ca**
Ethyl Chloride	75-00-3												
Ethyl Ether	60-29-7		40.220386							9.73E+06	6.75E+06	3.99E+06	3.99E+06 nc
Ethyl Methacrylate	97-63-2		18.099174							4.38E+06	8.98E+05	7.45E+05	7.45E+05 nc
Ethyl methane sulfonate	62-50-0												
Ethyl-p-nitrophenyl Phosphonate	2104-64-5		0.002011							4.87E+02	6.83E+00	6.74E+00	6.74E+00 nc
Ethylbenzene	100-41-4		20.110193	2.90E+05	9.77E+03	9.45E+03				4.87E+06	1.54E+05	1.49E+05	9.45E+03 ca*
Ethylene Cyanohydrin	109-78-4		14.077135							3.41E+06	3.77E+07	3.12E+06	3.12E+06 nc
Ethylene Diamine	107-15-3									4.38E+06		4.38E+06	4.38E+06 nc
Ethylene Glycol	107-21-1		402.20386							9.73E+07	1.86E+09	9.25E+07	9.25E+07 nc
Ethylene Glycol Monobutyl Ether	111-76-2		20.110193							4.87E+06	5.61E+06	2.61E+06	2.61E+06 nc
Ethylene Oxide	75-21-8			1.03E+04	3.42E+04	7.92E+03							7.92E+03 ca
Ethylene Thiourea	96-45-7		0.0160882	7.10E+04	7.39E+05	6.48E+04				3.89E+03	3.80E+04	3.53E+03	3.53E+03 nc
Ethyleneimine	151-56-4			4.91E+01	1.58E+02	3.75E+01							3.75E+01 ca
Ethylphenol, 4-	123-07-9												
Ethylphthalyl Ethyl Glycolate	84-72-0		603.30579							1.46E+08	6.57E+07	4.53E+07	4.53E+07 nc
Express	101200-48-0		1.6088154							3.89E+05	2.12E+05	1.37E+05	1.37E+05 nc
Famphur	52-85-7												
Fenamiphos	22224-92-6		0.0502755							1.22E+04	1.43E+03	1.28E+03	1.28E+03 nc
Fenpropathrin	39515-41-8		5.0275482							1.22E+06	3.12E+03	3.11E+03	3.11E+03 nc
Fluometuron	2164-17-2		2.6143251							6.33E+05	1.46E+05	1.19E+05	1.19E+05 nc
Fluoranthene	206-44-0									1.95E+06		1.95E+06	1.95E+06 nc
Fluorene	86-73-7		8.0440771							1.95E+06	1.98E+04	1.96E+04	1.96E+04 nc
Fluoride	16984-48-8		8.0440771							1.95E+06	4.02E+06	1.31E+06	1.31E+06 nc
Fluorine (Soluble Fluoride)	7782-41-4		12.066116							2.92E+06	6.03E+06	1.97E+06	1.97E+06 nc
Fluorobenzene	462-06-6												
Fluorobiphenyl, 2-	321-60-8												
Fluorophenol, 2-	367-12-4												
Fluridone	59756-60-4		16.088154							3.89E+06	6.03E+05	5.22E+05	5.22E+05 nc
Flurprimidol	56425-91-3		4.0220386							9.73E+05	1.03E+05	9.28E+04	9.28E+04 nc
Flutolanil	66332-96-5		12.066116							2.92E+06	1.90E+05	1.79E+05	1.79E+05 nc
Fluvalinate	69409-94-5									4.87E+05		4.87E+05	4.87E+05 nc
Folpet	133-07-3		20.110193	9.13E+05	1.76E+05	1.48E+05				4.87E+06	8.81E+05	7.46E+05	1.48E+05 ca**
Fomesafen	72178-02-0			1.68E+04	7.56E+03	5.21E+03							5.21E+03 ca
Fonofos	944-22-9		0.4022039							9.73E+04	2.67E+03	2.60E+03	2.60E+03 nc
Formaldehyde	50-00-0		40.220386							9.73E+06	9.59E+06	4.83E+06	4.83E+06 nc
Formic Acid	64-18-6		180.99174							4.38E+07	2.01E+08	3.60E+07	3.60E+07 nc
Fosetyl-AL	39148-24-8									1.46E+08		1.46E+08	1.46E+08 nc
Fuel Oil Number 2	68476-30-2												
Furan	110-00-9		0.2011019							4.87E+04	1.60E+04	1.21E+04	1.21E+04 nc
Furazolidone	67-45-8			8.40E+02	8.52E+03	7.65E+02							7.65E+02 ca

Site-specific

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Chemical	CAS Number	Mutagen?	VOC?	Chemical Type	Ingestion SF (mg/kg-day)$^{-1}$	SFO Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	RAGSe GIABS (unitless)	K_p (cm/hr)	MW	fa	In EPD?	DAeventc
Furfural	98-01-1	No	Yes	Organics			3.00E-03	U	1	0.000848	96.09	1	Yes	
Furium	531-82-8	No	No	Organics	1.50E+00	U			1	0.000935	253.23	1	Yes	0.0093848
Furmecyclox	60568-05-0	No	No	Organics	3.00E-02	U			1	0.0499	251.33	0.9	Yes	0.4692378
Gadolinium	7440-54-2	No	No	Inorganics					1	0.001	157.25	1	Yes	
Gallium	7440-55-3	No	No	Inorganics					1	0.001	69.72	1	Yes	
Germanium	7440-56-4	No	No	Inorganics					1	0.001	72.64	1	Yes	
Glufosinate, Ammonium	77182-82-2	No	No	Organics			4.00E-04	U	1	3.42E-08	198.16	1	No	
Glutaraldehyde	111-30-8	No	No	Organics					1	0.000325	100.12	1	Yes	
Glycerol	56-81-5	No	No	Organics					1	0.0000322	92.1	1	Yes	
Glycidyl	765-34-4	No	Yes	Organics			4.00E-04	U	1	0.000516	72.06	1	Yes	
Glyphosate	1071-83-6	No	No	Organics			1.00E-01	U	1	4.54E-08	169.07	1	No	
Goal	42874-03-3	No	No	Organics			3.00E-03	U	1	0.0204	361.71	0.8	Yes	
Guanidine	113-00-8	No	Yes	Organics			1.00E-02	U	1	0.0000603	59.07	1	Yes	
Guanidine Chloride	50-01-1	No	No	Organics			2.00E-02	U	1	3.86E-08	95.53	1	No	
Guanidine Nitrate	506-93-4	No	No	Organics					1	2.65E-08	122.08	1	No	
Guthion	86-50-0	No	No	Organics			3.00E-03	U	1	0.00175	317.32	1	Yes	
HCDD, 1,2,3,4,6,7,8,-	35822-46-9	No	Yes	Organics	1.30E+03	U	1.00E-06	U	1	1.33	425.31	0	No	
Haloacetic acids	NA	No	No	Organics					1				No	
Haloxyfop, Methyl	69806-40-2	No	No	Organics			5.00E-05	U	1	0.006	375.73	0.9	Yes	
Harmony	79277-27-3	No	No	Organics			1.30E-02	U	1	0.000114	387.39	1	Yes	
Heptachlor	76-44-8	No	Yes	Organics	4.50E+00	U	5.00E-04	U	1	0.143	373.32	0.8	Yes	0.0031283
Heptachlor Epoxide	1024-57-3	No	Yes	Organics	9.10E+00	U	1.30E-05	U	1	0.0209	389.32	0.8	Yes	0.0015469
Heptachlorobiphenyl, 2,3,3',4,4',5,5'- (PCB 189)	39635-31-9	No	Yes	Organics	3.90E+00	U	2.33E-05	U	1	2.96	395.33	0	No	
Heptachlorodibenzofuran, 1,2,3,4,6,7,8-	67562-39-4	No	Yes	Organics	1.30E+03	U	7.00E-08	U	1	1.45	409.31	0	No	
Heptanal, n-	111-71-7	No	Yes	Organics					1	0.0119	114.19	1	Yes	
Heptane, N-	142-82-5	No	Yes	Organics					1	0.537	100.21	1	No	
Heptanol, n-	111-70-6	No	Yes	Organics					1	0.0192	116.21	1	Yes	
Hexabromobenzene	87-82-1	No	Yes	Organics			2.00E-03	U	1	0.0136	551.49	0.7	No	
Hexabromodiphenyl ether, 2,2',4,4',5,5'- (BDE-153)	68631-49-2	No	No	Organics			2.00E-04	U	1		643.58356		No	
Hexachlorobenzene	118-74-1	No	Yes	Organics	1.60E+00	U	8.00E-04	U	1	0.254	284.78	0.9	No	
Hexachlorobiphenyl, 2,3',4,4',5,5'- (PCB 167)	52663-72-6	No	Yes	Organics	3.90E+00	U	2.33E-05	U	1	1.43	360.88	0	No	
Hexachlorobiphenyl, 2,3,3',4,4',5'- (PCB 157)	69782-90-7	No	Yes	Organics	3.90E+00	U	2.33E-05	U	1	1.66	360.88	0	No	
Hexachlorobiphenyl, 2,3,3',4,4',5- (PCB 156)	38380-08-4	No	Yes	Organics	3.90E+00	U	2.33E-05	U	1	1.66	360.88	0	No	
Hexachlorobiphenyl, 3,3',4,4',5,5'- (PCB 169)	32774-16-6	No	Yes	Organics	3.90E+03	U	2.33E-08	U	1	1.24	360.88	0.1	No	
Hexachlorobutadiene	87-68-3	No	Yes	Organics	7.80E-02	U	1.00E-03	U	1	0.081	260.76	0.9	Yes	0.1804761
Hexachlorocyclohexane, Alpha-	319-84-6	No	No	Organics	6.30E+00	U	8.00E-03	U	1	0.0206	290.83	0.9	Yes	0.0022345
Hexachlorocyclohexane, Beta-	319-85-7	No	No	Organics	1.80E+00	U			1	0.0206	290.83	0.9	Yes	0.0078206
Hexachlorocyclohexane, Delta-	319-86-8	No	No	Organics					1	0.0206	290.83	0.9	Yes	
Hexachlorocyclohexane, Epsilon	6108-10-7	No	No	Organics					1	0.0206	290.83	0.9	Yes	
Hexachlorocyclohexane, Gamma- (Lindane)	58-89-9	No	No	Organics	1.10E+00	U	3.00E-04	U	1	0.0206	290.83	0.9	Yes	0.0127974
Hexachlorocyclohexane, Technical	608-73-1	No	No	Organics	1.80E+00	U			1	0.0206	290.83	0.9	Yes	0.0078206
Hexachlorocyclopentadiene	77-47-4	No	Yes	Organics			6.00E-03	U	1	0.103	272.77	0.9	Yes	

Site-specific

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Smax=Soil SL exceeds ceiling limit and has been substituted with the max value
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	DAeventnc	DAeventna	Ingestion SL TR=1.0E-6 (µg/L)	Dermal SL TR=1.0E-6 (µg/L)	Carcinogenic SL TR=1.0E-6 (µg/L)	Ingestion SL (Child) HQ=1 (µg/L)	Dermal SL (Child) HQ=1 (µg/L)	Noncarcinogenic SL (Child) HQ=1 µ(g/L)	Ingestion SL (Adult) HQ=1 (µg/L)	Dermal SL (Adult) HQ=1 (µg/L)	Noncarcinogenic SL (Adult) HQ=1 (µg/L)	Screening Level (µg/L)
Furfural	98-01-1		0.6033058							1.46E+05	2.61E+05	9.37E+04	9.37E+04 nc
Furium	531-82-8			2.13E+03	1.55E+03	8.96E+02							8.96E+02 ca
Furmecyclox	60568-05-0			1.06E+05	1.63E+03	1.61E+03							1.61E+03 ca
Gadolinium	7440-54-2												
Gallium	7440-55-3												
Germanium	7440-56-4												
Glufosinate, Ammonium	77182-82-2									1.95E+04		1.95E+04	1.95E+04 nc
Glutaraldehyde	111-30-8												
Glycerol	56-81-5												
Glycidyl	765-34-4		0.0804408							1.95E+04	6.16E+04	1.48E+04	1.48E+04 nc
Glyphosate	1071-83-6									4.87E+06		4.87E+06	4.87E+06 nc
Goal	42874-03-3		0.6033058							1.46E+05	2.83E+03	2.78E+03	2.78E+03 nc
Guanidine	113-00-8		2.0110193							4.87E+05	1.36E+07	4.70E+05	4.70E+05 nc
Guanidine Chloride	50-01-1									9.73E+05		9.73E+05	9.73E+05 nc
Guanidine Nitrate	506-93-4												
Guthion	86-50-0		0.6033058							1.46E+05	3.52E+04	2.83E+04	2.83E+04 nc
HCDD, 1,2,3,4,6,7,8,-	35822-46-9			2.46E+00		2.46E+00				4.87E+01		4.87E+01	2.46E+00 ca*
Haloacetic acids	NA												
Haloxyfop, Methyl	69806-40-2		0.0100551							2.43E+03	1.30E+02	1.24E+02	1.24E+02 nc
Harmony	79277-27-3		2.6143251							6.33E+05	1.49E+06	4.44E+05	4.44E+05 nc
Heptachlor	76-44-8		0.100551	7.10E+02	1.94E+00	1.94E+00				2.43E+04	6.25E+01	6.23E+01	1.94E+00 ca*
Heptachlor Epoxide	1024-57-3		0.0026143	3.51E+02	5.93E+00	5.83E+00				6.33E+02	1.00E+01	9.87E+00	5.83E+00 ca**
Heptachlorobiphenyl, 2,3,3',4,4',5,5'- (PCB 189)	39635-31-9			8.19E+02		8.19E+02				1.13E+03		1.13E+03	8.19E+02 ca**
Heptachlorodibenzofuran, 1,2,3,4,6,7,8-	67562-39-4			2.46E+00		2.46E+00				3.41E+00		3.41E+00	2.46E+00 ca**
Heptanal, n-	111-71-7												
Heptane, N-	142-82-5												
Heptanol, n-	111-70-6												
Hexabromobenzene	87-82-1									9.73E+04		9.73E+04	9.73E+04 nc
Hexabromodiphenyl ether, 2,2',4,4',5,5'- (BDE-153)	68631-49-2									9.73E+03		9.73E+03	9.73E+03 nc
Hexachlorobenzene	118-74-1			2.00E+03		2.00E+03				3.89E+04		3.89E+04	2.00E+03 ca*
Hexachlorobiphenyl, 2,3',4,4',5,5'- (PCB 167)	52663-72-6			8.19E+02		8.19E+02				1.13E+03		1.13E+03	8.19E+02 ca**
Hexachlorobiphenyl, 2,3,3',4,4',5'- (PCB 157)	69782-90-7			8.19E+02		8.19E+02				1.13E+03		1.13E+03	8.19E+02 ca**
Hexachlorobiphenyl, 2,3,3',4,4',5- (PCB 156)	38380-08-4			8.19E+02		8.19E+02				1.13E+03		1.13E+03	8.19E+02 ca**
Hexachlorobiphenyl, 3,3',4,4',5,5'- (PCB 169)	32774-16-6			8.19E-01		8.19E-01				1.13E+00		1.13E+00	8.19E-01 ca**
Hexachlorobutadiene	87-68-3		0.2011019	4.09E+04	3.64E+02	3.60E+02				4.87E+04	4.05E+02	4.02E+02	3.60E+02 ca**
Hexachlorocyclohexane, Alpha-	319-84-6		1.6088154	5.07E+02	1.46E+01	1.42E+01				3.89E+05	1.05E+04	1.02E+04	1.42E+01 ca
Hexachlorocyclohexane, Beta-	319-85-7			1.77E+03	5.10E+01	4.96E+01							4.96E+01 ca
Hexachlorocyclohexane, Delta-	319-86-8												
Hexachlorocyclohexane, Epsilon	6108-10-7												
Hexachlorocyclohexane, Gamma- (Lindane)	58-89-9		0.0603306	2.90E+03	8.35E+01	8.12E+01				1.46E+04	3.94E+02	3.83E+02	8.12E+01 ca**
Hexachlorocyclohexane, Technical	608-73-1			1.77E+03	5.10E+01	4.96E+01							4.96E+01 ca
Hexachlorocyclopentadiene	77-47-4		1.2066116							2.92E+05	1.77E+03	1.76E+03	1.76E+03 nc

Site-specific

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ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Chemical Type	Ingestion SF (mg/kg-day)$^{-1}$	SFO Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	RAGSe GIABS (unitless)	K_p (cm/hr)	MW	fa	In EPD?	DAeventc
Hexachlorodibenzo-p-dioxin	34465-46-8	No	No	Organics	1.30E+04	U	7.00E-09	U	1	2.86	390.87	0	No	
Hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8-	39227-28-6	No	Yes	Organics	1.30E+04	U	7.00E-09	U	1	1.53	390.87	0	No	
Hexachlorodibenzo-p-dioxin, Mixture	NA	No	No	Organics	6.20E+03	U			1	2.86	390.87	0	No	
Hexachlorodibenzofuran, 1,2,3,4,7,8-	70648-26-9	No	Yes	Organics	1.30E+04	U	7.00E-09	U	1	2.25	374.87	0	No	
Hexachloroethane	67-72-1	No	Yes	Organics	4.00E-02	U	7.00E-04	U	1	0.0415	236.74	1	Yes	0.3519284
Hexachlorophene	70-30-4	No	No	Organics			3.00E-04	U	1	0.836	406.91	0	No	
Hexachloropropene	1888-71-7	No	Yes	Organics					1	0.051	248.75	0.9	Yes	
Hexadecanoic Acid	57-10-3	No	Yes	Organics					1	3.32	256.43	0.8	No	
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	121-82-4	No	No	Organics	1.10E-01	U	3.00E-03	U	1	0.000336	222.12	1	Yes	0.127974
Hexamethylene Diisocyanate, 1,6-	822-06-0	No	Yes	Organics					1	0.0237	168.2	1	Yes	
Hexamethylphosphoramide	680-31-9	No	No	Organics			4.00E-04	U	1	0.000237	179.2	1	Yes	
Hexane, N-	110-54-3	No	Yes	Organics			6.00E-02	U	1	0.201	86.18	1	Yes	
Hexanedioic Acid	124-04-9	No	No	Organics			2.00E+00	U	1	0.000268	146.14	1	Yes	
Hexanol, n-	111-27-3	No	Yes	Organics					1	0.00935	102.18	1	Yes	
Hexanone, 2-	591-78-6	No	Yes	Organics			5.00E-03	U	1	0.00355	100.16	1	Yes	
Hexazinone	51235-04-2	No	No	Organics			3.30E-02	U	1	0.00102	252.32	1	Yes	
HpCDD, 2,3,7,8-	37871-00-4	No	Yes	Organics	1.30E+03	U	7.00E-08	U	1	1.33	425.31	0	No	
HpCDF, 1,2,3,4,7,8,9-	55673-89-7	No	Yes	Organics	1.30E+03	U	7.00E-08	U	1	1.45	409.31	0	No	
HpCDF, 2,3,7,8-	38998-75-3	No	Yes	Organics	1.30E+03	U	7.00E-08	U	1	1.45	409.31	0	No	
HxCDD, 1,2,3,6,7,8-	57653-85-7	No	Yes	Organics	1.30E+04	U	7.00E-09	U	1	2.86	390.87	0	No	
HxCDD, 1,2,3,7,8,9-	19408-74-3	No	Yes	Organics	1.30E+04	U	7.00E-09	U	1	2.86	390.87	0	No	
HxCDF, 1,2,3,6,7,8-	57117-44-9	No	Yes	Organics	1.30E+04	U	7.00E-09	U	1	2.25	374.87	0	No	
HxCDF, 1,2,3,7,8,9-	72918-21-9	No	No	Organics	1.30E+04	U	7.00E-09	U	1	1.35	374.87	0	No	
HxCDF, 2,3,4,6,7,8-	60851-34-5	No	Yes	Organics	1.30E+04	U	7.00E-09	U	1	2.25	374.87	0	No	
HxCDF, 2,3,7,8-	55684-94-1	No	No	Organics	1.30E+04	U	7.00E-09	U	1	1.35	374.87	0	No	
Hydrazine	302-01-2	No	Yes	Inorganics	3.00E+00	U			1	0.0000436	32.05	1	Yes	0.0046924
Hydrazine Sulfate	10034-93-2	No	No	Inorganics	3.00E+00	U			1	0.001	128.1	1	Yes	0.0046924
Hydrogen Chloride	7647-01-0	No	Yes	Inorganics					1	0.001	35.45	1	Yes	
Hydrogen Cyanide	74-90-8	No	Yes	Inorganics			6.00E-04	U	1	0.001	27.03	1	Yes	
Hydrogen Fluoride	7664-39-3	No	Yes	Inorganics			4.00E-02	U	1	0.001	20.006	1	Yes	
Hydrogen Selenide	77830-70-5	No	No	Inorganics					1	0.001			Yes	
Hydrogen Sulfate	12143-45-2	No	No	Inorganics					1	0.001	128.1	1	Yes	
Hydrogen Sulfide	7783-06-4	No	Yes	Inorganics					1	0.001	34.081	1	Yes	
Hydroquinone	123-31-9	No	No	Organics	6.00E-02	U	4.00E-02	U	1	0.000931	110.11	1	Yes	0.2346189
Imazalil	35554-44-0	No	No	Organics			1.30E-02	U	1	0.0116	297.19	0.9	Yes	
Imazaquin	81335-37-7	No	No	Organics			2.50E-01	U	1	0.000483	311.34	1	Yes	
Indeno[1,2,3-cd]pyrene	193-39-5	Yes	No	Organics	7.30E-01	U			1	1.04	276.34	0.6	No	
Indium	7440-74-6	No	No	Inorganics					1	0.001	114.82	1	Yes	
Iodide	20461-54-5	No	No	Inorganics					1	0.001	126.9	1	Yes	
Iodine	7553-56-2	No	No	Inorganics			1.00E-02	U	1	0.001	253.81	1	Yes	
Iodomethane	74-88-4	No	Yes	Organics					1	0.00252	141.94	1	Yes	
Iodopropynyl Butylcarbamate (IPBC)	55406-53-6	No	No	Organics					1	0.00177	281.09	1	Yes	
Iprodione	36734-19-7	No	No	Organics			4.00E-02	U	1	0.00217	330.17	0.9	Yes	
Iron	7439-89-6	No	No	Inorganics			7.00E-01	U	1	0.001	55.85	1	Yes	

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Smax=Soil SL exceeds ceiling limit and has been substituted with the max value
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Chemical	CAS Number	DAeventnc	DAeventna	Ingestion SL TR=1.0E-6 (µg/L)	Dermal SL TR=1.0E-6 (µg/L)	Carcinogenic SL TR=1.0E-6 (µg/L)	Ingestion SL (Child) HQ=1 (µg/L)	Dermal SL (Child) HQ=1 (µg/L)	Noncarcinogenic SL (Child) HQ=1 µ(g/L)	Ingestion SL (Adult) HQ=1 (µg/L)	Dermal SL (Adult) HQ=1 (µg/L)	Noncarcinogenic SL (Adult) HQ=1 (µg/L)	Screening Level (µg/L)
Hexachlorodibenzo-p-dioxin	34465-46-8			2.46E-01		2.46E-01				3.41E-01		3.41E-01	2.46E-01 ca**
Hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8-	39227-28-6			2.46E-01		2.46E-01				3.41E-01		3.41E-01	2.46E-01 ca**
Hexachlorodibenzo-p-dioxin, Mixture	NA			5.15E-01		5.15E-01							5.15E-01 ca
Hexachlorodibenzofuran, 1,2,3,4,7,8-	70648-26-9			2.46E-01		2.46E-01				3.41E-01		3.41E-01	2.46E-01 ca**
Hexachloroethane	67-72-1		0.1407713	7.98E+04	1.45E+03	1.43E+03				3.41E+04	5.82E+02	5.72E+02	5.72E+02 nc
Hexachlorophene	70-30-4									1.46E+04		1.46E+04	1.46E+04 nc
Hexachloropropene	1888-71-7												
Hexadecanoic Acid	57-10-3												
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	121-82-4		0.6033058	2.90E+04	7.18E+04	2.07E+04				1.46E+05	3.38E+05	1.02E+05	2.07E+04 ca**
Hexamethylene Diisocyanate, 1,6-	822-06-0												
Hexamethylphosphoramide	680-31-9		0.0804408							1.95E+04	8.43E+04	1.58E+04	1.58E+04 nc
Hexane, N-	110-54-3		12.066116							2.92E+06	2.75E+04	2.73E+04	2.73E+04 nc
Hexanedioic Acid	124-04-9		402.20386							9.73E+07	4.44E+08	7.98E+07	7.98E+07 nc
Hexanol, n-	111-27-3												
Hexanone, 2-	591-78-6		1.0055096							2.43E+05	1.03E+05	7.24E+04	7.24E+04 nc
Hexazinone	51235-04-2		6.6363636							1.61E+06	1.01E+06	6.20E+05	6.20E+05 nc
HpCDD, 2,3,7,8-	37871-00-4			2.46E+00		2.46E+00				3.41E+00		3.41E+00	2.46E+00 ca**
HpCDF, 1,2,3,4,7,8,9-	55673-89-7			2.46E+00		2.46E+00				3.41E+00		3.41E+00	2.46E+00 ca**
HpCDF, 2,3,7,8-	38998-75-3			2.46E+00		2.46E+00				3.41E+00		3.41E+00	2.46E+00 ca**
HxCDD, 1,2,3,6,7,8-	57653-85-7			2.46E-01		2.46E-01				3.41E-01		3.41E-01	2.46E-01 ca**
HxCDD, 1,2,3,7,8,9-	19408-74-3			2.46E-01		2.46E-01				3.41E-01		3.41E-01	2.46E-01 ca**
HxCDF, 1,2,3,6,7,8-	57117-44-9			2.46E-01		2.46E-01				3.41E-01		3.41E-01	2.46E-01 ca**
HxCDF, 1,2,3,7,8,9-	72918-21-9			2.46E-01		2.46E-01				3.41E-01		3.41E-01	2.46E-01 ca**
HxCDF, 2,3,4,6,7,8-	60851-34-5			2.46E-01		2.46E-01				3.41E-01		3.41E-01	2.46E-01 ca**
HxCDF, 2,3,7,8-	55684-94-1			2.46E-01		2.46E-01				3.41E-01		3.41E-01	2.46E-01 ca**
Hydrazine	302-01-2			1.06E+03	5.38E+04	1.04E+03							1.04E+03 ca
Hydrazine Sulfate	10034-93-2			1.06E+03	2.35E+03	7.32E+02							7.32E+02 ca
Hydrogen Chloride	7647-01-0												
Hydrogen Cyanide	74-90-8		0.1206612							2.92E+04	6.03E+04	1.97E+04	1.97E+04 nc
Hydrogen Fluoride	7664-39-3		8.0440771							1.95E+06	4.02E+06	1.31E+06	1.31E+06 nc
Hydrogen Selenide	77830-70-5												
Hydrogen Sulfate	12143-45-2												
Hydrogen Sulfide	7783-06-4												
Hydroquinone	123-31-9		8.0440771	5.32E+04	8.79E+04	3.32E+04				1.95E+06	3.02E+06	1.18E+06	3.32E+04 ca*
Imazalil	35554-44-0		2.6143251							6.33E+05	2.91E+04	2.78E+04	2.78E+04 nc
Imazaquin	81335-37-7		50.275482							1.22E+07	1.10E+07	5.79E+06	5.79E+06 nc
Indeno[1,2,3-cd]pyrene	193-39-5			4.38E+03		4.38E+03							4.38E+03 ca
Indium	7440-74-6												
Iodide	20461-54-5												
Iodine	7553-56-2		2.0110193							4.87E+05	1.01E+06	3.28E+05	3.28E+05 nc
Iodomethane	74-88-4												
Iodopropynyl Butylcarbamate (IPBC)	55406-53-6												
Iprodione	36734-19-7		8.0440771							1.95E+06	3.87E+05	3.23E+05	3.23E+05 nc
Iron	7439-89-6		140.77135							3.41E+07	7.04E+07	2.30E+07	2.30E+07 nc

Site-specific

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Chemical	CAS Number	Mutagen?	VOC?	Chemical Type	Ingestion SF (mg/kg-day)$^{-1}$	SFO Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	RAGSe GIABS (unitless)	K_p (cm/hr)	MW	fa	In EPD?	DAeventc
Iron Sulfide	11126-12-8	No	No	Inorganics					1	0.001			Yes	
Isobutyl Alcohol	78-83-1	No	Yes	Organics			3.00E-01	U	1	0.00192	74.12	1	Yes	
Isodrin	465-73-6	No	Yes	Organics					1	0.293	364.92	0.6	No	
Isophorone	78-59-1	No	No	Organics	9.50E-04	U	2.00E-01	U	1	0.00354	138.21	1	Yes	14.818037
Isopropalin	33820-53-0	No	Yes	Organics			1.50E-02	U	1	0.207	309.37	0.8	Yes	
Isopropanol	67-63-0	No	Yes	Organics			2.00E+00	U	1	0.000778	60.1	1	Yes	
Isopropyl Methyl Phosphonic Acid	1832-54-8	No	No	Organics			1.00E-01	U	1	0.000396	138.1	1	Yes	
Isopropyltoluene, p-	99-87-6	No	Yes	Organics					1	0.147	134.22	1	Yes	
Isosafrole	120-58-1	No	Yes	Organics					1	0.0334	162.19	1	Yes	
Isoxaben	82558-50-7	No	No	Organics			5.00E-02	U	1	0.00887	332.4	0.9	Yes	
JP-4	50815-00-4	No	Yes	Organics					1				No	
JP-5/JP-8	8002-20-6	No	Yes	Organics					1				No	
JP-7	NA	No	Yes	Organics					1				No	
Kerb	23950-58-5	No	No	Organics			7.50E-02	U	1	0.0109	256.13	0.9	Yes	
Kerosene	8008-20-6	No	Yes	Organics					1			1	No	
Lactofen	77501-63-4	No	No	Organics			2.00E-03	U	1	0.00631	461.78	0.9	Yes	
Lactonitrile	78-97-7	No	No	Organics					1	0.000148	71.08	1	Yes	
Lanthanum	7439-91-0	No	No	Inorganics					1	0.001	138.91	1	Yes	
Lead Alkyls	NA	No	No	Organics					1				No	
Lead Chromate	7758-97-6	Yes	No	Inorganics	5.00E-01	U	2.00E-02	U	0.025	0.001	323.2	1	Yes	0.0007039
Lead Phosphate	7446-27-7	No	No	Inorganics	8.50E-03	U			1	0.001	811.5	0.8	Yes	1.6561335
Lead acetate	301-04-2	No	No	Organics	2.80E-01	U			1	0.0000208	325.29	1	Yes	0.0502755
Lead and Compounds	7439-92-1	No	No	Inorganics					1	0.0001	207.2	1	Yes	
Lead subacetate	1335-32-6	No	No	Organics	8.50E-03	U			1	1.03E-10	805.7	1	No	
Linuron	330-55-2	No	No	Organics			2.00E-03	U	1	0.00839	249.1	0.9	Yes	
Lithium	7439-93-2	No	No	Inorganics			2.00E-03	U	1	0.001	6.94	1	Yes	
Lithium Perchlorate	7791-03-9	No	No	Inorganics			7.00E-04	U	1	0.001	106.392	1	Yes	
Londax	83055-99-6	No	No	Organics			2.00E-01	U	1	0.000219	410.4	1	Yes	
Lutetium	7439-94-3	No	No	Inorganics					1	0.000237	174.97	1	Yes	
MCPA	94-74-6	No	No	Organics			5.00E-04	U	1	0.0169	200.62	1	Yes	
MCPB	94-81-5	No	No	Organics			1.00E-02	U	1	0.0173	228.68	0.9	Yes	
MCPP	93-65-2	No	No	Organics			1.00E-03	U	1	0.0131	214.65	1	Yes	
Magnesium	7439-95-4	No	No	Inorganics					1	0.001	24.305	1	Yes	
Magnesium Chlorate	10326-21-3	No	No	Inorganics					1	0.001	191.21	1	Yes	
Malathion	121-75-5	No	No	Organics			2.00E-02	U	1	0.000812	330.35	1	Yes	
Maleic Anhydride	108-31-6	No	No	Organics			1.00E-01	U	1	0.00525	98.06	1	Yes	
Maleic Hydrazide	123-33-1	No	No	Organics			5.00E-01	U	1	0.000102	112.09	1	Yes	
Malononitrile	109-77-3	No	No	Organics			1.00E-04	U	1	0.000266	66.06	1	Yes	
Mancozeb	8018-01-7	No	No	Organics			3.00E-02	U	1	0.000771	212.36	1	Yes	
Maneb	12427-38-2	No	No	Organics			5.00E-03	U	1	0.000771	212.36	1	Yes	
Manganese (Non-diet)	7439-96-5	No	No	Inorganics			2.40E-02	U	0.04	0.001	54.94	1	Yes	
Mechlorethamine	51-75-2	No	No	Organics					1	0.00107	156.06	1	Yes	
Mephosfolan	950-10-7	No	No	Organics			9.00E-05	U	1	0.000237	269.32	1	Yes	
Mepiquat Chloride	24307-26-4	No	No	Organics			3.00E-02	U	1	3.03E-06	149.67	1	No	

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Chemical	CAS Number	DAeventnc	DAeventna	Ingestion SL TR=1.0E-6 (µg/L)	Dermal SL TR=1.0E-6 (µg/L)	Carcinogenic SL TR=1.0E-6 (µg/L)	Ingestion SL (Child) HQ=1 (µg/L)	Dermal SL (Child) HQ=1 (µg/L)	Noncarcinogenic SL (Child) HQ=1 µ(g/L)	Ingestion SL (Adult) HQ=1 (µg/L)	Dermal SL (Adult) HQ=1 (µg/L)	Noncarcinogenic SL (Adult) HQ=1 (µg/L)	Screening Level (µg/L)
Iron Sulfide	11126-12-8												
Isobutyl Alcohol	78-83-1		60.330579							1.46E+07	1.24E+07	6.70E+06	6.70E+06 nc
Isodrin	465-73-6												
Isophorone	78-59-1		40.220386	3.36E+06	1.29E+06	9.34E+05				9.73E+06	3.51E+06	2.58E+06	9.34E+05 ca**
Isopropalin	33820-53-0		3.0165289							7.30E+05	1.96E+03	1.95E+03	1.95E+03 nc
Isopropanol	67-63-0		402.20386							9.73E+07	2.11E+08	6.66E+07	6.66E+07 nc
Isopropyl Methyl Phosphonic Acid	1832-54-8		20.110193							4.87E+06	1.56E+07	3.71E+06	3.71E+06 nc
Isopropyltoluene, p-	99-87-6												
Isosafrole	120-58-1												
Isoxaben	82558-50-7		10.055096							2.43E+06	1.17E+05	1.11E+05	1.11E+05 nc
JP-4	50815-00-4												
JP-5/JP-8	8002-20-6												
JP-7	NA												
Kerb	23950-58-5		15.082645							3.65E+06	2.33E+05	2.19E+05	2.19E+05 nc
Kerosene	8008-20-6												
Lactofen	77501-63-4		0.4022039							9.73E+04	2.85E+03	2.77E+03	2.77E+03 nc
Lactonitrile	78-97-7												
Lanthanum	7439-91-0												
Lead Alkyls	NA												
Lead Chromate	7758-97-6		0.100551	6.39E+03	3.52E+02	3.34E+02				9.73E+05	5.03E+04	4.78E+04	3.34E+02 ca
Lead Phosphate	7446-27-7			3.76E+05	8.28E+05	2.58E+05							2.58E+05 ca
Lead acetate	301-04-2			1.14E+04	2.34E+05	1.09E+04							1.09E+04 ca
Lead and Compounds	7439-92-1												
Lead subacetate	1335-32-6			3.76E+05		3.76E+05							3.76E+05 ca
Linuron	330-55-2		0.4022039							9.73E+04	8.43E+03	7.76E+03	7.76E+03 nc
Lithium	7439-93-2		0.4022039							9.73E+04	2.01E+05	6.56E+04	6.56E+04 nc
Lithium Perchlorate	7791-03-9		0.1407713							3.41E+04	7.04E+04	2.30E+04	2.30E+04 nc
Londax	83055-99-6		40.220386							9.73E+06	1.03E+07	5.00E+06	5.00E+06 nc
Lutetium	7439-94-3												
MCPA	94-74-6		0.100551							2.43E+04	1.29E+03	1.22E+03	1.22E+03 nc
MCPB	94-81-5		2.0110193							4.87E+05	2.33E+04	2.23E+04	2.23E+04 nc
MCPP	93-65-2		0.2011019							4.87E+04	3.03E+03	2.86E+03	2.86E+03 nc
Magnesium	7439-95-4												
Magnesium Chlorate	10326-21-3												
Malathion	121-75-5		4.0220386							9.73E+05	4.64E+05	3.14E+05	3.14E+05 nc
Maleic Anhydride	108-31-6		20.110193							4.87E+06	1.41E+06	1.09E+06	1.09E+06 nc
Maleic Hydrazide	123-33-1		100.55096							2.43E+07	3.41E+08	2.27E+07	2.27E+07 nc
Malononitrile	109-77-3		0.0201102							4.87E+03	3.03E+04	4.19E+03	4.19E+03 nc
Mancozeb	8018-01-7		6.0330579							1.46E+06	1.57E+06	7.57E+05	7.57E+05 nc
Maneb	12427-38-2		1.0055096							2.43E+05	2.62E+05	1.26E+05	1.26E+05 nc
Manganese (Non-diet)	7439-96-5		0.1930579							1.17E+06	9.65E+04	8.92E+04	8.92E+04 nc
Mechlorethamine	51-75-2												
Mephosfolan	950-10-7		0.0180992							4.38E+03	1.06E+04	3.10E+03	3.10E+03 nc
Mepiquat Chloride	24307-26-4									1.46E+06		1.46E+06	1.46E+06 nc

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Chemical	CAS Number	Mutagen?	VOC?	Chemical Type	Ingestion SF (mg/kg-day)$^{-1}$	SFO Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	RAGSe GIABS (unitless)	K_p (cm/hr)	MW	fa	In EPD?	DAeventc
Mercuric Chloride	7487-94-7	No	No	Inorganics			3.00E-04	U	0.07	0.001	271.5	1	Yes	
Mercury (elemental)	7439-97-6	No	Yes	Inorganics					1	0.001	200.59	1	Yes	
Merphos	150-50-5	No	Yes	Organics			3.00E-05	U	1	4.15	298.5	0.3	No	
Merphos Oxide	78-48-8	No	No	Organics			3.00E-05	U	1	0.165	314.5	0.9	Yes	
Metalaxyl	57837-19-1	No	No	Organics			6.00E-02	U	1	0.00058	279.34	1	Yes	
Methacrylonitrile	126-98-7	No	Yes	Organics			1.00E-04	U	1	0.00186	67.09	1	Yes	
Methamidophos	10265-92-6	No	No	Organics			5.00E-05	U	1	0.0000744	141.13	1	Yes	
Methanol	67-56-1	No	Yes	Organics			2.00E+00	U	1	0.000319	32.04	1	Yes	
Methapyrilene	91-80-5	No	No	Organics					1	0.00432	261.39	1	Yes	
Methidathion	950-37-8	No	No	Organics			1.00E-03	U	1	0.000913	302.32	1	Yes	
Methomyl	16752-77-5	No	No	Organics			2.50E-02	U	1	0.000482	162.21	1	Yes	
Methoxy-5-nitroaniline, 2-	99-59-2	No	No	Organics	4.90E-02	U			1	0.00169	168.15	1	Yes	0.2872885
Methoxychlor	72-43-5	No	No	Organics			5.00E-03	U	1	0.0428	345.66	0.8	Yes	
Methoxyethanol Acetate, 2-	110-49-6	No	Yes	Organics			8.00E-03	U	1	0.000396	118.13	1	Yes	
Methoxyethanol, 2-	109-86-4	No	Yes	Organics			5.00E-03	U	1	0.00018	76.1	1	Yes	
Methyl Acetate	79-20-9	No	Yes	Organics			1.00E+00	U	1	0.000792	74.08	1	Yes	
Methyl Acrylate	96-33-3	No	Yes	Organics			3.00E-02	U	1	0.00175	86.09	1	Yes	
Methyl Ethyl Ketone (2-Butanone)	78-93-3	No	Yes	Organics			6.00E-01	U	1	0.000962	72.11	1	Yes	
Methyl Hydrazine	60-34-4	No	Yes	Organics			1.00E-03	U	1	0.000173	46.07	1	Yes	
Methyl Isobutyl Ketone (4-methyl-2-pentanone)	108-10-1	No	Yes	Organics			8.00E-02	U	1	0.00319	100.16	1	Yes	
Methyl Isocyanate	624-83-9	No	Yes	Organics					1	0.0025	57.05	1	Yes	
Methyl Mercaptan	74-93-1	No	Yes	Organics					1	0.00276	48.1	1	Yes	
Methyl Mercury	22967-92-6	No	No	Inorganics			1.00E-04	U	1	0.001	216.6326	1	Yes	
Methyl Methacrylate	80-62-6	No	Yes	Organics			1.40E+00	U	1	0.00355	100.12	1	Yes	
Methyl Parathion	298-00-0	No	No	Organics			2.50E-04	U	1	0.00416	263.21	1	Yes	
Methyl Phosphonic Acid	993-13-5	No	No	Organics			6.00E-02	U	1	0.0000984	96.02	1	Yes	
Methyl Styrene (Mixed Isomers)	25013-15-4	No	Yes	Organics			6.00E-03	U	1	0.066	118.18	1	Yes	
Methyl dicyclohexylamine, n-	7560-83-0	No	Yes	Organics					1	0.0367	195.35	1	Yes	
Methyl methanesulfonate	66-27-3	No	No	Organics	9.90E-02	U			1	0.000138	110.13	1	Yes	0.1421933
Methyl tert-Butyl Ether (MTBE)	1634-04-4	No	Yes	Organics	1.80E-03	U			1	0.00211	88.15	1	Yes	7.8206305
Methyl-1,4-benzenediamine dihydrochloride, 2-	615-45-2	No	No	Organics			3.00E-04	U	1	5.39E-06	195.09	1	Yes	
Methyl-2-Pentanol, 4-	108-11-2	No	Yes	Organics					1	0.00544	102.18	1	Yes	
Methyl-5-Nitroaniline, 2-	99-55-8	No	No	Organics	9.00E-03	U	2.00E-02	U	1	0.00384	152.15	1	Yes	1.5641261
Methyl-N-nitro-N-nitrosoguanidine, N-	70-25-7	No	No	Organics	8.30E+00	U			1	0.0000572	147.09	1	Yes	0.001696
Methylaniline Hydrochloride, 2-	636-21-5	No	No	Organics	1.30E-01	U			1	0.00296	143.62	1	Yes	0.1082857
Methylarsonic acid	124-58-3	No	No	Organics			1.00E-02	U	1	0.0000419	139.97	1	Yes	
Methylaziridine, 2-	75-55-8	No	Yes	Organics					1	0.000299	57.1	1	Yes	
Methylbenzene,1-4-diamine monohydrochloride, 2-	74612-12-7	No	No	Organics			2.00E-04	U	1		158.62864		No	
Methylbenzene-1,4-diamine sulfate, 2-	615-50-9	No	No	Organics	1.00E-01	U	3.00E-04	U	1		220.25		No	
Methylcholanthrene, 3-	56-49-5	Yes	No	Organics	2.20E+01	U			1	0.903	268.36	0.8	No	
Methylcyclohexane	108-87-2	No	Yes	Organics					1	0.11	98.19	1	Yes	
Methylcyclohexylamine, n-	100-60-7	No	Yes	Organics					1	0.00898	113.2	1	Yes	
Methylcyclopentane	96-37-7	No	Yes	Organics					1	0.0917	84.16	1	Yes	

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Chemical	CAS Number	DAeventnc	DAeventna	Ingestion SL TR=1.0E-6 (µg/L)	Dermal SL TR=1.0E-6 (µg/L)	Carcinogenic SL TR=1.0E-6 (µg/L)	Ingestion SL (Child) HQ=1 (µg/L)	Dermal SL (Child) HQ=1 (µg/L)	Noncarcinogenic SL (Child) HQ=1 µ(g/L)	Ingestion SL (Adult) HQ=1 (µg/L)	Dermal SL (Adult) HQ=1 (µg/L)	Noncarcinogenic SL (Adult) HQ=1 (µg/L)	Screening Level (µg/L)
Mercuric Chloride	7487-94-7		0.0042231							1.46E+04	2.11E+03	1.84E+03	1.84E+03 nc
Mercury (elemental)	7439-97-6												
Merphos	150-50-5									1.46E+03		1.46E+03	1.46E+03 nc
Merphos Oxide	78-48-8		0.0060331							1.46E+03	4.22E+00	4.21E+00	4.21E+00 nc
Metalaxyl	57837-19-1		12.066116							2.92E+06	2.71E+06	1.41E+06	1.41E+06 nc
Methacrylonitrile	126-98-7		0.0201102							4.87E+03	4.34E+03	2.29E+03	2.29E+03 nc
Methamidophos	10265-92-6		0.0100551							2.43E+03	4.10E+04	2.30E+03	2.30E+03 nc
Methanol	67-56-1		402.20386							9.73E+07	5.44E+08	8.26E+07	8.26E+07 nc
Methapyrilene	91-80-5												
Methidathion	950-37-8		0.2011019							4.87E+04	2.47E+04	1.64E+04	1.64E+04 nc
Methomyl	16752-77-5		5.0275482							1.22E+06	2.89E+06	8.56E+05	8.56E+05 nc
Methoxy-5-nitroaniline, 2-	99-59-2			6.52E+04	4.54E+04	2.67E+04							2.67E+04 ca
Methoxychlor	72-43-5		1.0055096							2.43E+05	2.49E+03	2.47E+03	2.47E+03 nc
Methoxyethanol Acetate, 2-	110-49-6		1.6088154							3.89E+05	1.37E+06	3.03E+05	3.03E+05 nc
Methoxyethanol, 2-	109-86-4		1.0055096							2.43E+05	2.18E+06	2.19E+05	2.19E+05 nc
Methyl Acetate	79-20-9		201.10193							4.87E+07	9.99E+07	3.27E+07	3.27E+07 nc
Methyl Acrylate	96-33-3		6.0330579							1.46E+06	1.31E+06	6.91E+05	6.91E+05 nc
Methyl Ethyl Ketone (2-Butanone)	78-93-3		120.66116							2.92E+07	4.96E+07	1.84E+07	1.84E+07 nc
Methyl Hydrazine	60-34-4		0.2011019							4.87E+04	4.88E+05	4.43E+04	4.43E+04 nc
Methyl Isobutyl Ketone (4-methyl-2-pentanone)	108-10-1		16.088154							3.89E+06	1.83E+06	1.25E+06	1.25E+06 nc
Methyl Isocyanate	624-83-9												
Methyl Mercaptan	74-93-1												
Methyl Mercury	22967-92-6		0.0201102							4.87E+03	1.01E+04	3.28E+03	3.28E+03 nc
Methyl Methacrylate	80-62-6		281.5427							6.81E+07	2.89E+07	2.03E+07	2.03E+07 nc
Methyl Parathion	298-00-0		0.0502755							1.22E+04	1.75E+03	1.53E+03	1.53E+03 nc
Methyl Phosphonic Acid	993-13-5		12.066116							2.92E+06	4.50E+07	2.74E+06	2.74E+06 nc
Methyl Styrene (Mixed Isomers)	25013-15-4		1.2066116							2.92E+05	6.56E+03	6.42E+03	6.42E+03 nc
Methyl dicyclohexylamine, n-	7560-83-0												
Methyl methanesulfonate	66-27-3			3.23E+04	3.59E+05	2.96E+04							2.96E+04 ca
Methyl tert-Butyl Ether (MTBE)	1634-04-4			1.77E+06	1.40E+06	7.83E+05							7.83E+05 ca
Methyl-1,4-benzenediamine dihydrochloride, 2-	615-45-2		0.0603306							1.46E+04	2.51E+06	1.45E+04	1.45E+04 nc
Methyl-2-Pentanol, 4-	108-11-2												
Methyl-5-Nitroaniline, 2-	99-55-8		4.0220386	3.55E+05	1.17E+05	8.79E+04				9.73E+05	3.00E+05	2.30E+05	8.79E+04 ca**
Methyl-N-nitro-N-nitrosoguanidine, N-	70-25-7			3.85E+02	8.72E+03	3.69E+02							3.69E+02 ca
Methylaniline Hydrochloride, 2-	636-21-5			2.46E+04	1.10E+04	7.59E+03							7.59E+03 ca
Methylarsonic acid	124-58-3		2.0110193							4.87E+05	1.46E+07	4.71E+05	4.71E+05 nc
Methylaziridine, 2-	75-55-8												
Methylbenzene,1-4-diamine monohydrochloride, 2-	74612-12-7									9.73E+03		9.73E+03	9.73E+03 nc
Methylbenzene-1,4-diamine sulfate, 2-	615-50-9			3.19E+04		3.19E+04				1.46E+04		1.46E+04	1.46E+04 nc
Methylcholanthrene, 3-	56-49-5			1.45E+02		1.45E+02							1.45E+02 ca
Methylcyclohexane	108-87-2												
Methylcyclohexylamine, n-	100-60-7												
Methylcyclopentane	96-37-7												

Site-specific

Recreator Screening Levels (RSL) for Surface Water - Modified for Utility Worker Exposure to Groundwater

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Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
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Chemical	CAS Number	Mutagen?	VOC?	Chemical Type	Ingestion SF (mg/kg-day)$^{-1}$	SFO Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	RAGSe GIABS (unitless)	K_p (cm/hr)	MW	fa	In EPD?	DAeventc
Methylene Chloride	75-09-2	Yes	Yes	Organics	2.00E-03	U	6.00E-03	U	1	0.00354	84.93	1	Yes	7.0385675
Methylene-bis(2-chloroaniline), 4,4'-	101-14-4	Yes	No	Organics	1.00E-01	U	2.00E-03	U	1	0.0197	267.16	0.9	Yes	0.1407713
Methylene-bis(N,N-dimethyl) Aniline, 4,4'-	101-61-1	No	No	Organics	4.60E-02	U			1	0.0844	254.38	1	Yes	0.3060247
Methylenebisbenzenamine, 4,4'-	101-77-9	No	No	Organics	1.60E+00	U			1	0.00138	198.27	1	Yes	0.0087982
Methylenediphenyl Diisocyanate	101-68-8	No	No	Organics					1	0.181	250.26	0.9	Yes	
Methylisothiocyanate	556-61-6	No	Yes	Organics					1	0.00257	73.11	1	Yes	
Methylnaphthalene	1321-94-4	No	Yes	Organics					1	0.0931	142.2	1	Yes	
Methylnaphthalene, 1-	90-12-0	No	Yes	Organics	2.90E-02	U	7.00E-02	U	1	0.0931	142.2	1	Yes	0.4854184
Methylnaphthalene, 2-	91-57-6	No	Yes	Organics			4.00E-03	U	1	0.0917	142.2	1	Yes	
Methylstyrene, Alpha-	98-83-9	No	Yes	Organics			7.00E-02	U	1	0.0699	118.18	1	Yes	
Methyltriethyl Lead	1762-28-3	No	Yes	Organics					1	0.0238	309.42	0.9	Yes	
Metolachlor	51218-45-2	No	No	Organics			1.50E-01	U	1	0.00339	283.8	1	Yes	
Metribuzin	21087-64-9	No	No	Organics			2.50E-02	U	1	0.00132	214.29	1	Yes	
Mineral oils	8012-95-1	No	Yes	Organics			3.00E+00	U	1	1.96	170.34	1	No	
Mirex	2385-85-5	No	Yes	Organics	1.80E+01	U	2.00E-04	U	1	0.0516	545.55	0.5	No	
Molinate	2212-67-1	No	No	Organics			2.00E-03	U	1	0.0189	187.3	1	Yes	
Molybdenum	7439-98-7	No	No	Inorganics			5.00E-03	U	1	0.001	95.94	1	Yes	
Monoaluminum phosphate	13530-50-2	No	No	Inorganics			4.86E+01	U	1	0.001	317.94	1	Yes	
Monoammonium phosphate	7722-76-1	No	No	Inorganics			4.86E+01	U	1	0.001	115.03	1	Yes	
Monobutyltin Compounds	NA	No	No	Organics					1				No	
Monocalcium phosphate	7758-23-8	No	No	Inorganics			4.86E+01	U	1	0.001	234.05	1	Yes	
Monochloramine	10599-90-3	No	No	Inorganics			1.00E-01	U	1	0.001	51.48	1	Yes	
Monochlorobutanes	25154-42-1	No	No	Organics					1				No	
Monochlorophenols (total)	NA	No	No	Organics					1				No	
Monocyclic aromatic hydrocarbons (total)	NA	No	No	Organics					1				No	
Monomagnesium phosphate	7757-86-0	No	No	Inorganics			4.86E+01	U	1	0.001	120.28	1	Yes	
Monomethylaniline	100-61-8	No	No	Organics			2.00E-03	U	1	0.00498	107.16	1	Yes	
Monopotassium phosphate	7778-77-0	No	No	Inorganics			4.86E+01	U	1	0.001	136.09	1	Yes	
Monosodium phosphate	7558-80-7	No	No	Inorganics			4.86E+01	U	1	0.001	119.98	1	Yes	
N,N'-Diphenyl-1,4-benzenediamine	74-31-7	No	No	Organics			3.00E-04	U	1	0.0262	260.34	0.9	Yes	
N-Methyl dithiocarbamate	137-42-8	No	No	Organics					1	5.32E-06	129.17	1	No	
Naled	300-76-5	No	Yes	Organics			2.00E-03	U	1	0.0000944	380.79	1	Yes	
Naphtha, High Flash Aromatic (HFAN)	64742-95-6	No	Yes	Organics			3.00E-02	U	1				No	
Naphthalene	91-20-3	No	Yes	Organics			2.00E-02	U	1	0.0466	128.18	1	Yes	
Naphthol, 2-	135-19-3	No	No	Organics					1	0.0188	144.17	1	Yes	
Naphthoquinone, 1,4-	130-15-4	No	No	Organics					1	0.00278	158.16	1	Yes	
Naphthylamine, 1-	134-32-7	No	No	Organics					1	0.0077	143.19	1	Yes	
Naphthylamine, 2-	91-59-8	No	No	Organics	1.80E+00	U			1	0.00807	143.19	1	Yes	0.0078206
Napropamide	15299-99-7	No	No	Organics			1.00E-01	U	1	0.00804	271.36	0.9	Yes	
Neodymium Chloride (Stable, Nonradioactive)	10024-93-8	No	No	Inorganics					1	0.001	250.6	1	Yes	
Niagara Blue 4B	2429-74-5	No	No	Organics					1	3.69E-07	730.75	1	No	
Nickel Acetate	373-02-4	No	No	Organics			1.10E-02	U	1		176.78	1	Yes	
Nickel Carbonate	3333-67-3	No	No	Organics			1.10E-02	U	1		118.7	1	Yes	
Nickel Carbonyl	13463-39-3	No	Yes	Organics			1.10E-02	U	1		170.734	1	Yes	

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Chemical	CAS Number	DAeventnc	DAeventna	Ingestion SL TR=1.0E-6 (µg/L)	Dermal SL TR=1.0E-6 (µg/L)	Carcinogenic SL TR=1.0E-6 (µg/L)	Ingestion SL (Child) HQ=1 (µg/L)	Dermal SL (Child) HQ=1 (µg/L)	Noncarcinogenic SL (Child) HQ=1 µ(g/L)	Ingestion SL (Adult) HQ=1 (µg/L)	Dermal SL (Adult) HQ=1 (µg/L)	Noncarcinogenic SL (Adult) HQ=1 (µg/L)	Screening Level (µg/L)
Methylene Chloride	75-09-2		1.2066116	1.60E+06	7.61E+05	5.16E+05				2.92E+05	1.31E+05	9.02E+04	9.02E+04 nc
Methylene-bis(2-chloroaniline), 4,4'-	101-14-4		0.4022039	3.19E+04	1.12E+03	1.08E+03				9.73E+04	3.20E+03	3.10E+03	1.08E+03 ca**
Methylene-bis(N,N-dimethyl) Aniline, 4,4'-	101-61-1			6.94E+04	5.55E+02	5.50E+02							5.50E+02 ca
Methylenebisbenzenamine, 4,4'-	101-77-9			2.00E+03	1.40E+03	8.23E+02							8.23E+02 ca
Methylenediphenyl Diisocyanate	101-68-8												
Methylisothiocyanate	556-61-6												
Methylnaphthalene	1321-94-4												
Methylnaphthalene, 1-	90-12-0		14.077135	1.10E+05	1.61E+03	1.59E+03				3.41E+06	4.68E+04	4.62E+04	1.59E+03 ca*
Methylnaphthalene, 2-	91-57-6		0.8044077							1.95E+05	2.72E+03	2.68E+03	2.68E+03 nc
Methylstyrene, Alpha-	98-83-9		14.077135							3.41E+06	7.24E+04	7.09E+04	7.09E+04 nc
Methyltriethyl Lead	1762-28-3												
Metolachlor	51218-45-2		30.165289							7.30E+06	1.13E+06	9.76E+05	9.76E+05 nc
Metribuzin	21087-64-9		5.0275482							1.22E+06	7.55E+05	4.66E+05	4.66E+05 nc
Mineral oils	8012-95-1									1.46E+08		1.46E+08	1.46E+08 nc
Mirex	2385-85-5			1.77E+02		1.77E+02				9.73E+03		9.73E+03	1.77E+02 ca*
Molinate	2212-67-1		0.4022039							9.73E+04	5.02E+03	4.77E+03	4.77E+03 nc
Molybdenum	7439-98-7		1.0055096							2.43E+05	5.03E+05	1.64E+05	1.64E+05 nc
Monoaluminum phosphate	13530-50-2		9773.5537							2.37E+09	4.89E+09	1.59E+09	1.59E+09 nc
Monoammonium phosphate	7722-76-1		9773.5537							2.37E+09	4.89E+09	1.59E+09	1.59E+09 nc
Monobutyltin Compounds	NA												
Monocalcium phosphate	7758-23-8		9773.5537							2.37E+09	4.89E+09	1.59E+09	1.59E+09 nc
Monochloramine	10599-90-3		20.110193							4.87E+06	1.01E+07	3.28E+06	3.28E+06 nc
Monochlorobutanes	25154-42-1												
Monochlorophenols (total)	NA												
Monocyclic aromatic hydrocarbons (total)	NA												
Monomagnesium phosphate	7757-86-0		9773.5537							2.37E+09	4.89E+09	1.59E+09	1.59E+09 nc
Monomethylaniline	100-61-8		0.4022039							9.73E+04	2.87E+04	2.22E+04	2.22E+04 nc
Monopotassium phosphate	7778-77-0		9773.5537							2.37E+09	4.89E+09	1.59E+09	1.59E+09 nc
Monosodium phosphate	7558-80-7		9773.5537							2.37E+09	4.89E+09	1.59E+09	1.59E+09 nc
N,N'-Diphenyl-1,4-benzenediamine	74-31-7		0.0603306							1.46E+04	3.77E+02	3.67E+02	3.67E+02 nc
N-Methyl dithiocarbamate	137-42-8												
Naled	300-76-5		0.4022039							9.73E+04	2.89E+05	7.28E+04	7.28E+04 nc
Naphtha, High Flash Aromatic (HFAN)	64742-95-6									1.46E+06		1.46E+06	1.46E+06 nc
Naphthalene	91-20-3		4.0220386							9.73E+05	2.90E+04	2.82E+04	2.82E+04 nc
Naphthol, 2-	135-19-3												
Naphthoquinone, 1,4-	130-15-4												
Naphthylamine, 1-	134-32-7												
Naphthylamine, 2-	91-59-8			1.77E+03	2.93E+02	2.51E+02							2.51E+02 ca
Napropamide	15299-99-7		20.110193							4.87E+06	3.81E+05	3.53E+05	3.53E+05 nc
Neodymium Chloride (Stable, Nonradioactive)	10024-93-8												
Niagara Blue 4B	2429-74-5												
Nickel Acetate	373-02-4		2.2121212							5.35E+05		5.35E+05	5.35E+05 nc
Nickel Carbonate	3333-67-3		2.2121212							5.35E+05		5.35E+05	5.35E+05 nc
Nickel Carbonyl	13463-39-3		2.2121212							5.35E+05		5.35E+05	5.35E+05 nc

Site-specific

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Chemical	CAS Number	Mutagen?	VOC?	Chemical Type	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	RAGSe GIABS (unitless)	K_p (cm/hr)	MW	fa	In EPD?	DAeventc
Nickel Hydroxide	12054-48-7	No	No	Inorganics			1.10E-02	U	0.04	0.001	92.7081	1	Yes	
Nickel Oxide	1313-99-1	No	No	Inorganics			1.10E-02	U	0.04	0.001	74.69	1	Yes	
Nickel Refinery Dust	NA	No	No	Inorganics			1.10E-02	U	0.04	0.0002			Yes	
Nickel Soluble Salts	7440-02-0	No	No	Inorganics			2.00E-02	U	0.04	0.0002	58.69	1	Yes	
Nickel Subsulfide	12035-72-2	No	No	Inorganics	1.70E+00	U	1.10E-02	U	0.04	0.0002	240.21	1	Yes	0.0003312
Nickelocene	1271-28-9	No	No	Organics			1.10E-02	U	1		188.879	1	Yes	
Nicotinonitrile	100-54-9	No	No	Organics					1	0.000708	104.11	1	Yes	
Niobium	7440-03-1	No	No	Inorganics					1	0.001	92.91	1	Yes	
Nitrapyrin	1929-82-4	No	Yes	Organics					1	0.0146	230.91	0.9	Yes	
Nitrate	14797-55-8	No	No	Inorganics			1.60E+00	U	1	0.001	62	1	Yes	
Nitrate + Nitrite (as N)	NA	No	No	Inorganics					1	0.001			Yes	
Nitric Acid	7697-37-2	No	No	Inorganics					1	0.001	63.02	1	Yes	
Nitric Oxide	10102-43-9	No	Yes	Inorganics					1	0.001	31.01	1	Yes	
Nitrite	14797-65-0	No	No	Inorganics			1.00E-01	U	1	0.001	47.01	1	Yes	
Nitroaniline, 2-	88-74-4	No	No	Organics			1.00E-02	U	1	0.00446	138.13	1	Yes	
Nitroaniline, 3-	99-09-2	No	No	Organics					1	0.00214	138.13	1	Yes	
Nitroaniline, 4-	100-01-6	No	No	Organics	2.00E-02	U	4.00E-03	U	1	0.00221	138.13	1	Yes	0.7038567
Nitrobenzene	98-95-3	No	Yes	Organics			2.00E-03	U	1	0.00541	123.11	1	Yes	
Nitrobiphenyl, 4-	92-93-3	No	No	Organics					1	0.0382	199.21	1	Yes	
Nitrocellulose	9004-70-0	No	No	Organics			3.00E+03	U	1	9.86E-09	387.3	1	No	
Nitrodiphenylamine, 2-	119-75-5	No	No	Organics					1	0.0266	214.23	0.9	Yes	
Nitrofurantoin	67-20-9	No	No	Organics			7.00E-02	U	1	0.0000352	238.16	1	Yes	
Nitrofurazone	59-87-0	No	No	Organics	1.30E+00	U			1	0.000172	198.14	1	Yes	0.0108286
Nitrogen Dioxide	10102-44-0	No	Yes	Inorganics					1	0.001	46.01	1	Yes	
Nitroglycerin	55-63-0	No	No	Organics	1.70E-02	U	1.00E-04	U	1	0.000994	227.09	1	Yes	0.8280668
Nitroguanidine	556-88-7	No	No	Organics			1.00E-01	U	1	0.000105	104.07	1	Yes	
Nitromethane	75-52-5	No	Yes	Organics					1	0.000417	61.04	1	Yes	
Nitrophenol, 2-	88-75-5	No	Yes	Organics					1	0.00402	139.11	1	Yes	
Nitrophenol, 2-amino-4-	99-57-0	No	No	Organics					1	0.00171	154.13	1	Yes	
Nitrophenol, 3-	554-84-7	No	No	Organics					1	0.00554	139.11	1	Yes	
Nitrophenol, 4-	100-02-7	No	No	Organics					1	0.00483	139.11	1	Yes	
Nitrophenol, 4-amino-2-	119-34-6	No	No	Organics					1	0.000929	154.13	1	Yes	
Nitropropane, 2-	79-46-9	No	Yes	Organics					1	0.00206	89.09	1	Yes	
Nitropyrene, 4-	57835-92-4	No	No	Organics	1.20E+00	U			1	0.0922	247.26	0.9	Yes	0.0117309
Nitroquinoline-1-oxide. 4-	56-57-5	No	No	Organics					1	0.000712	190.16	1	Yes	
Nitroso-N-ethylurea, N-	759-73-9	Yes	No	Organics	2.70E+01	U			1	0.00049	117.11	1	Yes	0.0005214
Nitroso-N-methylurea, N-	684-93-5	Yes	No	Organics	1.20E+02	U			1	0.000395	103.08	1	Yes	0.0001173
Nitroso-di-N-butylamine, N-	924-16-3	No	Yes	Organics	5.40E+00	U			1	0.0113	158.25	1	Yes	0.0026069
Nitroso-di-N-propylamine, N-	621-64-7	No	No	Organics	7.00E+00	U			1	0.00233	130.19	1	Yes	0.002011
Nitrosodiethanolamine, N-	1116-54-7	No	No	Organics	2.80E+00	U			1	0.0000247	134.14	1	Yes	0.0050275
Nitrosodiethylamine, N-	55-18-5	Yes	No	Organics	1.50E+02	U			1	0.000872	102.14	1	Yes	0.0000938
Nitrosodimethylamine, N-	62-75-9	Yes	Yes	Organics	5.10E+01	U	8.00E-06	U	1	0.000251	74.08	1	Yes	0.000276
Nitrosodiphenylamine, N-	86-30-6	No	No	Organics	4.90E-03	U			1	0.0145	198.23	1	Yes	2.8728847
Nitrosomethylethylamine, N-	10595-95-6	No	Yes	Organics	2.20E+01	U			1	0.000533	88.11	1	Yes	0.0006399

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Chemical	CAS Number	DAeventnc	DAeventna	Ingestion SL TR=1.0E-6 (µg/L)	Dermal SL TR=1.0E-6 (µg/L)	Carcinogenic SL TR=1.0E-6 (µg/L)	Ingestion SL (Child) HQ=1 (µg/L)	Dermal SL (Child) HQ=1 (µg/L)	Noncarcinogenic SL (Child) HQ=1 µ(g/L)	Ingestion SL (Adult) HQ=1 (µg/L)	Dermal SL (Adult) HQ=1 (µg/L)	Noncarcinogenic SL (Adult) HQ=1 (µg/L)	Screening Level (µg/L)
Nickel Hydroxide	12054-48-7		0.0884848							5.35E+05	4.42E+04	4.09E+04	4.09E+04 nc
Nickel Oxide	1313-99-1		0.0884848							5.35E+05	4.42E+04	4.09E+04	4.09E+04 nc
Nickel Refinery Dust	NA		0.0884848							5.35E+05	2.21E+05	1.57E+05	1.57E+05 nc
Nickel Soluble Salts	7440-02-0		0.1608815							9.73E+05	4.02E+05	2.85E+05	2.85E+05 nc
Nickel Subsulfide	12035-72-2		0.0884848	1.88E+03	8.28E+02	5.75E+02				5.35E+05	2.21E+05	1.57E+05	5.75E+02 ca
Nickelocene	1271-28-9		2.2121212							5.35E+05		5.35E+05	5.35E+05 nc
Nicotinonitrile	100-54-9												
Niobium	7440-03-1												
Nitrapyrin	1929-82-4												
Nitrate	14797-55-8		321.76309							7.79E+07	1.61E+08	5.25E+07	5.25E+07 nc
Nitrate + Nitrite (as N)	NA												
Nitric Acid	7697-37-2												
Nitric Oxide	10102-43-9												
Nitrite	14797-65-0		20.110193							4.87E+06	1.01E+07	3.28E+06	3.28E+06 nc
Nitroaniline, 2-	88-74-4		2.0110193							4.87E+05	1.39E+05	1.08E+05	1.08E+05 nc
Nitroaniline, 3-	99-09-2												
Nitroaniline, 4-	100-01-6		0.8044077	1.60E+05	9.83E+04	6.08E+04				1.95E+05	1.12E+05	7.12E+04	6.08E+04 ca**
Nitrobenzene	98-95-3		0.4022039							9.73E+04	2.47E+04	1.97E+04	1.97E+04 nc
Nitrobiphenyl, 4-	92-93-3												
Nitrocellulose	9004-70-0									1.46E+11		1.46E+11	1.46E+11 nc
Nitrodiphenylamine, 2-	119-75-5												
Nitrofurantoin	67-20-9		14.077135							3.41E+06	6.79E+07	3.24E+06	3.24E+06 nc
Nitrofurazone	59-87-0			2.46E+03	1.38E+04	2.09E+03							2.09E+03 ca
Nitrogen Dioxide	10102-44-0												
Nitroglycerin	55-63-0		0.0201102	1.88E+05	1.52E+05	8.40E+04				4.87E+03	3.69E+03	2.10E+03	2.10E+03 nc
Nitroguanidine	556-88-7		20.110193							4.87E+06	6.83E+07	4.54E+06	4.54E+06 nc
Nitromethane	75-52-5												
Nitrophenol, 2-	88-75-5												
Nitrophenol, 2-amino-4-	99-57-0												
Nitrophenol, 3-	554-84-7												
Nitrophenol, 4-	100-02-7												
Nitrophenol, 4-amino-2-	119-34-6												
Nitropropane, 2-	79-46-9												
Nitropyrene, 4-	57835-92-4			2.66E+03	2.26E+01	2.25E+01							2.25E+01 ca
Nitroquinoline-1-oxide. 4-	56-57-5												
Nitroso-N-ethylurea, N-	759-73-9			1.18E+02	3.61E+02	8.91E+01							8.91E+01 ca
Nitroso-N-methylurea, N-	684-93-5			2.66E+01	1.06E+02	2.13E+01							2.13E+01 ca
Nitroso-di-N-butylamine, N-	924-16-3			5.91E+02	6.40E+01	5.78E+01							5.78E+01 ca
Nitroso-di-N-propylamine, N-	621-64-7			4.56E+02	2.77E+02	1.72E+02							1.72E+02 ca
Nitrosodiethanolamine, N-	1116-54-7			1.14E+03	6.39E+04	1.12E+03							1.12E+03 ca
Nitrosodiethylamine, N-	55-18-5			2.13E+01	3.87E+01	1.37E+01							1.37E+01 ca
Nitrosodimethylamine, N-	62-75-9		0.0016088	6.26E+01	4.32E+02	5.47E+01				3.89E+02	2.52E+03	3.37E+02	5.47E+01 ca**
Nitrosodiphenylamine, N-	86-30-6			6.52E+05	4.35E+04	4.08E+04							4.08E+04 ca
Nitrosomethylethylamine, N-	10595-95-6			1.45E+02	4.53E+02	1.10E+02							1.10E+02 ca

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Chemical	CAS Number	Mutagen?	VOC?	Chemical Type	Ingestion SF (mg/kg-day)$^{-1}$	SFO Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	RAGSe GIABS (unitless)	K_p (cm/hr)	MW	fa	In EPD?	DAeventc
Nitrosomethylvinylamine, N-	4549-40-0	No	Yes	Organics					1	0.000515	86.09	1	Yes	
Nitrosomorpholine [N-]	59-89-2	No	No	Organics	6.70E+00	U			1	0.000178	116.12	1	Yes	0.0021011
Nitrosopiperidine [N-]	100-75-4	No	No	Organics	9.40E+00	U			1	0.000622	114.15	1	Yes	0.0014976
Nitrosopyrrolidine, N-	930-55-2	No	No	Organics	2.10E+00	U			1	0.000321	100.12	1	Yes	0.0067034
Nitrotoluene, 4-Amino-2-	119-32-4	No	No	Organics					1	0.00482	152.15	1	Yes	
Nitrotoluene, m-	99-08-1	No	No	Organics			1.00E-04	U	1	0.0113	137.14	1	Yes	
Nitrotoluene, o-	88-72-2	No	Yes	Organics	2.20E-01	U	9.00E-04	U	1	0.00899	137.14	1	Yes	0.063987
Nitrotoluene, p-	99-99-0	No	No	Organics	1.60E-02	U	4.00E-03	U	1	0.01	137.14	1	Yes	0.8798209
Nonachlor, trans-	39765-80-5	No	Yes	Organics					1	0.0836	444.23	0.6	No	
Nonane, n-	111-84-2	No	Yes	Organics			3.00E-04	U	1	1.7	128.26	1	No	
Nonanol, n-	143-08-8	No	Yes	Organics					1	0.0778	144.26	1	Yes	
Norflurazon	27314-13-2	No	No	Organics			4.00E-02	U	1	0.00105	303.67	1	Yes	
Nustar	85509-19-9	No	No	Organics			7.00E-04	U	1	0.00766	315.4	0.9	Yes	
OCDD	3268-87-9	No	No	Organics	3.90E+01	U	2.33E-06	U	1	1.16	459.76	0	No	
OCDF	39001-02-0	No	No	Organics	3.90E+01	U	2.33E-06	U	1	2.63	443.76	0	No	
Octabromodiphenyl Ether	32536-52-0	No	No	Organics			3.00E-03	U	1	0.0306	801.38	0.3	No	
Octachlorostyrene	29082-74-4	No	Yes	Organics					1	1.05	379.71	0	No	
Octadecanoic Acid	57-11-4	No	No	Organics					1	11.7	284.49	0.3	No	
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	No	No	Organics			5.00E-02	U	1	0.0000436	296.16	1	Yes	
Octahydrotrimethylmethylethylphenanthrenol	511-15-9	No	No	Organics					1	2.66	286.46	0.5	No	
Octamethylpyrophosphoramide	152-16-9	No	No	Organics			2.00E-03	U	1	8.30E-06	286.25	1	Yes	
Octanol, n-	111-87-5	No	Yes	Organics					1	0.0274	130.23	1	Yes	
Octanone, 2-	111-13-7	No	Yes	Organics					1	0.0112	128.22	1	Yes	
Octanone, 3-	106-68-3	No	Yes	Organics					1	0.00894	128.22	1	Yes	
Octyl Phthalate, di-N-	117-84-0	No	No	Organics			1.00E-02	U	1	2.43	390.57	0	No	
Oleic acid	112-80-1	No	Yes	Organics					1	4.87	282.47	0.5	No	
Oleum	8014-95-7	No	No	Inorganics					1	0.001			Yes	
Oryzalin	19044-88-3	No	No	Organics			5.00E-02	U	1	0.00537	346.36	0.9	Yes	
Oxadiazon	19666-30-9	No	No	Organics			5.00E-03	U	1	0.028	345.23	0.8	Yes	
Oxamyl	23135-22-0	No	No	Organics			2.50E-02	U	1	0.0000449	219.26	1	Yes	
Oxychlordane	27304-13-8	No	No	Organics					1	0.029	423.77	0.8	Yes	
Ozone	10028-15-6	No	No	Inorganics					1	0.001	48	1	Yes	
Paclobutrazol	76738-62-0	No	No	Organics			1.30E-02	U	1	0.00471	293.8	0.9	Yes	
Paraquat Dichloride	1910-42-5	No	No	Organics			4.50E-03	U	1	5.77E-08	257.16	1	No	
Parathion	56-38-2	No	No	Organics			6.00E-03	U	1	0.0128	291.26	0.9	Yes	
PeCDD, 2,3,7,8-	36088-22-9	No	No	Organics	1.30E+05	U	7.00E-10	U	1	0.241	356.42	0.7	No	
PeCDF, 1,2,3,7,8-	57117-41-6	No	No	Organics	3.90E+03	U	2.33E-08	U	1	0.627	340.42	0.4	No	
PeCDF, 2,3,4,7,8-	57117-31-4	No	No	Organics	3.90E+04	U	2.33E-09	U	1	0.627	340.42	0.4	No	
Pebulate	1114-71-2	No	Yes	Organics			5.00E-02	U	1	0.0397	203.35	1	Yes	
Pendimethalin	40487-42-1	No	No	Organics			4.00E-02	U	1	0.115	281.31	0.9	Yes	
Pentabromodiphenyl Ether	32534-81-9	No	No	Organics			2.00E-03	U	1	0.0373	564.69	0.6	No	
Pentabromodiphenyl ether, 2,2',4,4',5- (BDE-99)	60348-60-9	No	No	Organics			1.00E-04	U	1	0.0373	564.69	0.6	No	

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Chemical	CAS Number	DAeventnc	DAeventna	Ingestion SL TR=1.0E-6 (µg/L)	Dermal SL TR=1.0E-6 (µg/L)	Carcinogenic SL TR=1.0E-6 (µg/L)	Ingestion SL (Child) HQ=1 (µg/L)	Dermal SL (Child) HQ=1 (µg/L)	Noncarcinogenic SL (Child) HQ=1 µ(g/L)	Ingestion SL (Adult) HQ=1 (µg/L)	Dermal SL (Adult) HQ=1 (µg/L)	Noncarcinogenic SL (Adult) HQ=1 (µg/L)	Screening Level (µg/L)
Nitrosomethylvinylamine, N-	4549-40-0												
Nitrosomorpholine [N-]	59-89-2			4.77E+02	4.02E+03	4.26E+02							4.26E+02 ca
Nitrosopiperidine [N-]	100-75-4			3.40E+02	8.26E+02	2.41E+02							2.41E+02 ca
Nitrosopyrrolidine, N-	930-55-2			1.52E+03	7.56E+03	1.27E+03							1.27E+03 ca
Nitrotoluene, 4-Amino-2-	119-32-4												
Nitrotoluene, m-	99-08-1		0.0201102							4.87E+03	5.56E+02	4.99E+02	4.99E+02 nc
Nitrotoluene, o-	88-72-2		0.1809917	1.45E+04	2.22E+03	1.93E+03				4.38E+04	6.28E+03	5.49E+03	1.93E+03 ca**
Nitrotoluene, p-	99-99-0		0.8044077	2.00E+05	2.75E+04	2.42E+04				1.95E+05	2.51E+04	2.23E+04	2.23E+04 nc
Nonachlor, trans-	39765-80-5												
Nonane, n-	111-84-2									1.46E+04		1.46E+04	1.46E+04 nc
Nonanol, n-	143-08-8												
Norflurazon	27314-13-2		8.0440771							1.95E+06	8.53E+05	5.93E+05	5.93E+05 nc
Nustar	85509-19-9		0.1407713							3.41E+04	2.11E+03	1.99E+03	1.99E+03 nc
OCDD	3268-87-9			8.19E+01		8.19E+01				1.13E+02		1.13E+02	8.19E+01 ca**
OCDF	39001-02-0			8.19E+01		8.19E+01				1.13E+02		1.13E+02	8.19E+01 ca**
Octabromodiphenyl Ether	32536-52-0									1.46E+05		1.46E+05	1.46E+05 nc
Octachlorostyrene	29082-74-4												
Octadecanoic Acid	57-11-4												
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0		10.055096							2.43E+06	2.70E+07	2.23E+06	2.23E+06 nc
Octahydrotrimethylmethylethylphenanthrenol	511-15-9												
Octamethylpyrophosphoramide	152-16-9		0.4022039							9.73E+04	6.04E+06	9.58E+04	9.58E+04 nc
Octanol, n-	111-87-5												
Octanone, 2-	111-13-7												
Octanone, 3-	106-68-3												
Octyl Phthalate, di-N-	117-84-0									4.87E+05		4.87E+05	4.87E+05 nc
Oleic acid	112-80-1												
Oleum	8014-95-7												
Oryzalin	19044-88-3		10.055096							2.43E+06	1.76E+05	1.64E+05	1.64E+05 nc
Oxadiazon	19666-30-9		1.0055096							2.43E+05	3.82E+03	3.76E+03	3.76E+03 nc
Oxamyl	23135-22-0		5.0275482							1.22E+06	2.15E+07	1.15E+06	1.15E+06 nc
Oxychlordane	27304-13-8												
Ozone	10028-15-6												
Paclobutrazol	76738-62-0		2.6143251							6.33E+05	7.32E+04	6.56E+04	6.56E+04 nc
Paraquat Dichloride	1910-42-5									2.19E+05		2.19E+05	2.19E+05 nc
Parathion	56-38-2		1.2066116							2.92E+05	1.26E+04	1.21E+04	1.21E+04 nc
PeCDD, 2,3,7,8-	36088-22-9			2.46E-02		2.46E-02				3.41E-02		3.41E-02	2.46E-02 ca**
PeCDF, 1,2,3,7,8-	57117-41-6			8.19E-01		8.19E-01				1.13E+00		1.13E+00	8.19E-01 ca**
PeCDF, 2,3,4,7,8-	57117-31-4			8.19E-02		8.19E-02				1.13E-01		1.13E-01	8.19E-02 ca**
Pebulate	1114-71-2		10.055096							2.43E+06	5.39E+04	5.27E+04	5.27E+04 nc
Pendimethalin	40487-42-1		8.0440771							1.95E+06	1.00E+04	9.95E+03	9.95E+03 nc
Pentabromodiphenyl Ether	32534-81-9									9.73E+04		9.73E+04	9.73E+04 nc
Pentabromodiphenyl ether, 2,2',4,4',5- (BDE-99)	60348-60-9									4.87E+03		4.87E+03	4.87E+03 nc

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Chemical	CAS Number	Mutagen?	VOC?	Chemical Type	Ingestion SF (mg/kg-day)$^{-1}$	SFO Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	RAGSe GIABS (unitless)	K_p (cm/hr)	MW	fa	In EPD?	DAeventc
Pentachloroaniline	527-20-8	No	No	Organics					1	0.0811	265.35	0.9	Yes	
Pentachlorobenzene	608-93-5	No	Yes	Organics			8.00E-04	U	1	0.168	250.34	0.9	Yes	
Pentachlorobiphenyl, 2',3,4,4',5- (PCB 123)	65510-44-3	No	Yes	Organics	3.90E+00	U	2.33E-05	U	1	1	326.44	0.4	No	
Pentachlorobiphenyl, 2,3',4,4',5- (PCB 118)	31508-00-6	No	Yes	Organics	3.90E+00	U	2.33E-05	U	1	1.24	326.44	0.3	No	
Pentachlorobiphenyl, 2,3,3',4,4'- (PCB 105)	32598-14-4	No	Yes	Organics	3.90E+00	U	2.33E-05	U	1	0.751	326.44	0.5	No	
Pentachlorobiphenyl, 2,3,4,4',5- (PCB 114)	74472-37-0	No	Yes	Organics	3.90E+00	U	2.33E-05	U	1	1	326.44	0.4	No	
Pentachlorobiphenyl, 3,3',4,4',5- (PCB 126)	57465-28-8	No	Yes	Organics	1.30E+04	U	7.00E-09	U	1	1	326.44	0.4	No	
Pentachlorocyclopentadiene	25329-35-5	No	Yes	Organics					1	0.0609	238.33	0.9	Yes	
Pentachlorodibenzo-p-dioxin, 1,2,3,7,8-	40321-76-4	No	Yes	Organics	1.30E+05	U	7.00E-10	U	1	0.405	356.42	0.5	No	
Pentachloroethane	76-01-7	No	Yes	Organics	9.00E-02	U			1	0.0158	202.3	1	Yes	0.1564126
Pentachloronitrobenzene	82-68-8	No	Yes	Organics	2.60E-01	U	3.00E-03	U	1	0.0418	295.34	0.9	Yes	0.0541428
Pentachlorophenol	87-86-5	No	No	Organics	4.00E-01	U	5.00E-03	U	1	0.127	266.34	0.9	Yes	0.0351928
Pentaerythritol tetranitrate (PETN)	78-11-5	No	No	Organics	4.00E-03	U	2.00E-03	U	1	0.00101	316.14	1	Yes	3.5192837
Pentamethyl dipropylenetriamine	3855-32-1	No	No	Organics					1	0.000219	201.36	1	Yes	
Pentane, n-	109-66-0	No	Yes	Organics					1	0.11	72.15	1	Yes	
Pentyl Alcohol, N-	71-41-0	No	Yes	Organics					1	0.00506	88.15	1	Yes	
Perchlorate and Perchlorate Salts	14797-73-0	No	No	Inorganics			7.00E-04	U	1	0.001	117.49	1	Yes	
Perfluorobutane Sulfonate	375-73-5	No	Yes	Organics			2.00E-02	U	1	0.0013	300.1	1	Yes	
Perfluorooctane Sulphonic Acid	1763-23-1	No	Yes	Organics					1	0.0362	500.13	0.6	No	
Perfluorooctanoic acid	335-67-1	No	Yes	Organics					1	0.114	414.07	0.7	No	
Permethrin	52645-53-1	No	No	Organics			5.00E-02	U	1	0.208	391.3	0.6	No	
Perylene	198-55-0	No	No	Organics					1	0.856	252.32	0.9	No	
Pesticides (total)	NA	No	No	Organics					1				No	
Pesticides, organochlorinated (each)	NA	No	No	Organics					1				No	
Pesticides, organochlorinated (total)	NA	No	No	Organics					1				No	
Phenacetin	62-44-2	No	No	Organics	2.20E-03	U			1	0.00173	179.22	1	Yes	6.3986977
Phenanthrene	85-01-8	No	Yes	Organics					1	0.144	178.24	1	Yes	
Phenmedipham	13684-63-4	No	No	Organics			2.50E-01	U	1	0.00786	300.32	0.9	Yes	
Phenol	108-95-2	No	No	Organics			3.00E-01	U	1	0.00434	94.11	1	Yes	
Phenothiazine	92-84-2	No	No	Organics			5.00E-04	U	1	0.0683	199.27	1	Yes	
Phenyl Isothiocyanate	103-72-0	No	Yes	Organics					1	0.0413	135.18	1	Yes	
Phenylenediamine, m-	108-45-2	No	No	Organics			6.00E-03	U	1	0.000234	108.14	1	Yes	
Phenylenediamine, o-	95-54-5	No	No	Organics	4.70E-02	U			1	0.000487	108.14	1	Yes	0.2995135
Phenylenediamine, p-	106-50-3	No	No	Organics			1.90E-01	U	1	0.000245	108.14	1	Yes	
Phenylmercuric Acetate	62-38-4	No	No	Organics			8.00E-05	U	1	0.0000599	336.74	1	Yes	
Phenylphenol, 2-	90-43-7	No	No	Organics	1.94E-03	U			1	0.0196	170.21	1	Yes	7.2562551
Phorate	298-02-2	No	No	Organics			2.00E-04	U	1	0.0126	260.37	0.9	Yes	
Phosmet	732-11-6	No	No	Organics			2.00E-02	U	1	0.00183	317.32	1	Yes	
Phosphine	7803-51-2	No	Yes	Inorganics			3.00E-04	U	1	0.001	34	1	Yes	
Phosphoric Acid	7664-38-2	No	No	Inorganics			4.86E+01	U	1	0.001	98	1	Yes	
Phosphorus (total)	NA	No	No	Inorganics					1	0.001			Yes	
Phosphorus pentoxide	1314-56-3	No	No	Inorganics					1	0.001	141.94	1	Yes	
Phosphorus, White	7723-14-0	No	Yes	Inorganics			2.00E-05	U	1	0.001	30.974	1	Yes	
Phthalates (total)	NA	No	No	Organics					1				No	

Site-specific

Recreator Screening Levels (RSL) for Surface Water - Modified for Utility Worker Exposure to Groundwater
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	DAeventnc	DAeventna	Ingestion SL TR=1.0E-6 (µg/L)	Dermal SL TR=1.0E-6 (µg/L)	Carcinogenic SL TR=1.0E-6 (µg/L)	Ingestion SL (Child) HQ=1 (µg/L)	Dermal SL (Child) HQ=1 (µg/L)	Noncarcinogenic SL (Child) HQ=1 µ(g/L)	Ingestion SL (Adult) HQ=1 (µg/L)	Dermal SL (Adult) HQ=1 (µg/L)	Noncarcinogenic SL (Adult) HQ=1 (µg/L)	Screening Level (µg/L)
Pentachloroaniline	527-20-8												
Pentachlorobenzene	608-93-5		0.1608815							3.89E+04	1.67E+02	1.66E+02	1.66E+02 nc
Pentachlorobiphenyl, 2',3,4,4',5- (PCB 123)	65510-44-3			8.19E+02		8.19E+02				1.13E+03		1.13E+03	8.19E+02 ca**
Pentachlorobiphenyl, 2,3',4,4',5- (PCB 118)	31508-00-6			8.19E+02		8.19E+02				1.13E+03		1.13E+03	8.19E+02 ca**
Pentachlorobiphenyl, 2,3,3',4,4'- (PCB 105)	32598-14-4			8.19E+02		8.19E+02				1.13E+03		1.13E+03	8.19E+02 ca**
Pentachlorobiphenyl, 2,3,4,4',5- (PCB 114)	74472-37-0			8.19E+02		8.19E+02				1.13E+03		1.13E+03	8.19E+02 ca**
Pentachlorobiphenyl, 3,3',4,4',5- (PCB 126)	57465-28-8			2.46E-01		2.46E-01				3.41E-01		3.41E-01	2.46E-01 ca**
Pentachlorocyclopentadiene	25329-35-5												
Pentachlorodibenzo-p-dioxin, 1,2,3,7,8-	40321-76-4			2.46E-02		2.46E-02				3.41E-02		3.41E-02	2.46E-02 ca**
Pentachloroethane	76-01-7			3.55E+04	2.12E+03	2.00E+03							2.00E+03 ca
Pentachloronitrobenzene	82-68-8		0.6033058	1.23E+04	1.69E+02	1.67E+02				1.46E+05	1.88E+03	1.86E+03	1.67E+02 ca*
Pentachlorophenol	87-86-5		1.0055096	7.98E+03	4.36E+01	4.34E+01				2.43E+05	1.25E+03	1.24E+03	4.34E+01 ca*
Pentaerythritol tetranitrate (PETN)	78-11-5		0.4022039	7.98E+05	3.58E+05	2.47E+05				9.73E+04	4.09E+04	2.88E+04	2.88E+04 nc
Pentamethyl dipropylenetriamine	3855-32-1												
Pentane, n-	109-66-0												
Pentyl Alcohol, N-	71-41-0												
Perchlorate and Perchlorate Salts	14797-73-0		0.1407713							3.41E+04	7.04E+04	2.30E+04	2.30E+04 nc
Perfluorobutane Sulfonate	375-73-5		4.0220386							9.73E+05	3.53E+05	2.59E+05	2.59E+05 nc
Perfluorooctane Sulphonic Acid	1763-23-1												
Perfluorooctanoic acid	335-67-1												
Permethrin	52645-53-1									2.43E+06		2.43E+06	2.43E+06 nc
Perylene	198-55-0												
Pesticides (total)	NA												
Pesticides, organochlorinated (each)	NA												
Pesticides, organochlorinated (total)	NA												
Phenacetin	62-44-2			1.45E+06	9.19E+05	5.63E+05							5.63E+05 ca
Phenanthrene	85-01-8												
Phenmedipham	13684-63-4		50.275482							1.22E+07	8.09E+05	7.58E+05	7.58E+05 nc
Phenol	108-95-2		60.330579							1.46E+07	5.17E+06	3.82E+06	3.82E+06 nc
Phenothiazine	92-84-2		0.100551							2.43E+04	3.21E+02	3.17E+02	3.17E+02 nc
Phenyl Isothiocyanate	103-72-0												
Phenylenediamine, m-	108-45-2		1.2066116							2.92E+05	1.81E+06	2.51E+05	2.51E+05 nc
Phenylenediamine, o-	95-54-5			6.80E+04	2.16E+05	5.17E+04							5.17E+04 ca
Phenylenediamine, p-	106-50-3		38.209366							9.25E+06	5.48E+07	7.91E+06	7.91E+06 nc
Phenylmercuric Acetate	62-38-4		0.0160882							3.89E+03	2.42E+04	3.35E+03	3.35E+03 nc
Phenylphenol, 2-	90-43-7			1.65E+06	9.75E+04	9.20E+04							9.20E+04 ca
Phorate	298-02-2		0.0402204							9.73E+03	5.22E+02	4.96E+02	4.96E+02 nc
Phosmet	732-11-6		4.0220386							9.73E+05	2.24E+05	1.82E+05	1.82E+05 nc
Phosphine	7803-51-2		0.0603306							1.46E+04	3.02E+04	9.84E+03	9.84E+03 nc
Phosphoric Acid	7664-38-2		9773.5537							2.37E+09	4.89E+09	1.59E+09	1.59E+09 nc
Phosphorus (total)	NA												
Phosphorus pentoxide	1314-56-3												
Phosphorus, White	7723-14-0		0.004022							9.73E+02	2.01E+03	6.56E+02	6.56E+02 nc
Phthalates (total)	NA												

Site-specific

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Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Chemical Type	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	RAGSe GIABS (unitless)	K_p (cm/hr)	MW	fa	In EPD?	DAeventc
Phthalic Acid, P-	100-21-0	No	No	Organics			1.00E+00	U	1	0.00391	166.13	1	Yes	
Phthalic Acid, m-	121-91-5	No	No	Organics					1	0.00232	166.13	1	Yes	
Phthalic Acid, o-	88-99-3	No	No	Organics					1	0.000559	166.13	1	Yes	
Phthalic Anhydride	85-44-9	No	No	Organics			2.00E+00	U	1	0.00267	148.12	1	Yes	
Picloram	1918-02-1	No	No	Organics			7.00E-02	U	1	0.00127	241.46	1	Yes	
Picoline, 2-	109-06-8	No	Yes	Organics					1	0.00257	93.13	1	Yes	
Picramic Acid (2-Amino-4,6-dinitrophenol)	96-91-3	No	No	Organics			1.00E-04	U	1	0.000496	199.12	1	Yes	
Picric Acid (2,4,6-Trinitrophenol)	88-89-1	No	No	Organics					1	0.000621	229.11	1	Yes	
Piperidine	110-89-4	No	Yes	Organics					1	0.00189	85.15	1	Yes	
Pirimiphos, Methyl	29232-93-7	No	No	Organics			1.00E-02	U	1	0.0187	305.33	0.9	Yes	
Polybrominated Biphenyls	59536-65-1	No	No	Organics	3.00E+01	U	7.00E-06	U	1				No	
Polychlorinated Biphenyls (low risk)	1336-36-3	No	Yes	Organics	4.00E-01	U			1	0.545	291.99	0.7	No	
Polycyclic aromatic hydrocarbons (PAH), Total	NA	No	No	Organics					1				No	
Polycyclic aromatic hydrocarbons (PAH), Total (high molecular weight)	NA	No	No	Organics					1				No	
Polycyclic aromatic hydrocarbons (PAH), Total (low molecular weight)	NA	No	No	Organics					1				No	
Polycyclic chlorinated hydrocarbons (total)	NA	No	No	Organics					1				No	
Polymeric Methylene Diphenyl Diisocyanate (PMDI)	9016-87-9	No	No	Organics					1	18.6	512.53	0	No	
Polyphosphoric acid	8017-16-1	No	No	Inorganics			4.86E+01	U	1	0.001	257.96	1	Yes	
Potassium	7440-09-7	No	No	Inorganics					1	0.002	39.1	1	Yes	
Potassium Cyanide	151-50-8	No	No	Inorganics			2.00E-03	U	1	0.002	65.12	1	Yes	
Potassium Perchlorate	7778-74-7	No	No	Inorganics			7.00E-04	U	1	0.002	138.55	1	Yes	
Potassium Perfluorobutane Sulfonate	29420-49-3	No	No	Organics			2.00E-02	U	1	0.0000297	338.19	1	Yes	
Potassium Silver Cyanide	506-61-6	No	No	Inorganics			5.00E-03	U	0.04	0.002	199	1	Yes	
Potassium chlorate	3811-04-9	No	No	Inorganics					1	0.001	122.55	1	Yes	
Potassium tripolyphosphate	13845-36-8	No	No	Inorganics			4.86E+01	U	1	0.001	448.40679	0.9	Yes	
Praseodymium	7440-10-0	No	No	Inorganics					1	0.001	140.91	1	Yes	
Praseodymium Chloride (Stable, Nonradioactive)	10361-79-2	No	No	Inorganics					1	0.001	247.27	1	Yes	
Prochloraz	67747-09-5	No	No	Organics	1.50E-01	U	9.00E-03	U	1	0.0064	376.67	0.9	Yes	0.0938476
Profluralin	26399-36-0	No	Yes	Organics			6.00E-03	U	1	0.09	347.3	0.8	Yes	
Promethium	7440-12-2	No	No	Inorganics					1	0.001	145	1	Yes	
Prometon	1610-18-0	No	No	Organics			1.50E-02	U	1	0.00827	225.3	1	Yes	
Prometryn	7287-19-6	No	No	Organics			4.00E-03	U	1	0.0149	241.36	0.9	Yes	
Propachlor	1918-16-7	No	No	Organics			1.30E-02	U	1	0.00286	211.69	1	Yes	
Propanil	709-98-8	No	No	Organics			5.00E-03	U	1	0.0103	218.08	1	Yes	
Propanoic acid, 2-(2,4-dichlorophenoxy)-	120-36-5	No	No	Organics					1	0.0000512	235.07	1	Yes	
Propargite	2312-35-8	No	No	Organics			2.00E-02	U	1	0.0356	350.48	0.8	Yes	
Propargyl Alcohol	107-19-7	No	Yes	Organics			2.00E-03	U	1	0.000424	56.06	1	Yes	
Propazine	139-40-2	No	No	Organics			2.00E-02	U	1	0.00713	229.71	1	Yes	
Propham	122-42-9	No	No	Organics			2.00E-02	U	1	0.00826	179.22	1	Yes	
Propiconazole	60207-90-1	No	No	Organics			1.30E-02	U	1	0.00558	342.23	0.9	Yes	

Site-specific

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Smax=Soil SL exceeds ceiling limit and has been substituted with the max value
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	DAeventnc	DAeventna	Ingestion SL TR=1.0E-6 (µg/L)	Dermal SL TR=1.0E-6 (µg/L)	Carcinogenic SL TR=1.0E-6 (µg/L)	Ingestion SL (Child) HQ=1 (µg/L)	Dermal SL (Child) HQ=1 (µg/L)	Noncarcinogenic SL (Child) HQ=1 µ(g/L)	Ingestion SL (Adult) HQ=1 (µg/L)	Dermal SL (Adult) HQ=1 (µg/L)	Noncarcinogenic SL (Adult) HQ=1 (µg/L)	Screening Level (µg/L)
Phthalic Acid, P-	100-21-0		201.10193							4.87E+07	1.39E+07	1.08E+07	1.08E+07 nc
Phthalic Acid, m-	121-91-5												
Phthalic Acid, o-	88-99-3												
Phthalic Anhydride	85-44-9		402.20386							9.73E+07	4.41E+07	3.04E+07	3.04E+07 nc
Picloram	1918-02-1		14.077135							3.41E+06	1.84E+06	1.20E+06	1.20E+06 nc
Picoline, 2-	109-06-8												
Picramic Acid (2-Amino-4,6-dinitrophenol)	96-91-3		0.0201102							4.87E+03	8.86E+03	3.14E+03	3.14E+03 nc
Picric Acid (2,4,6-Trinitrophenol)	88-89-1												
Piperidine	110-89-4												
Pirimiphos, Methyl	29232-93-7		2.0110193							4.87E+05	1.32E+04	1.28E+04	1.28E+04 nc
Polybrominated Biphenyls	59536-65-1			1.06E+02		1.06E+02				3.41E+02		3.41E+02	1.06E+02 ca**
Polychlorinated Biphenyls (low risk)	1336-36-3			7.98E+03		7.98E+03							7.98E+03 ca
Polycyclic aromatic hydrocarbons (PAH), Total	NA												
Polycyclic aromatic hydrocarbons (PAH), Total (high molecular weight)	NA												
Polycyclic aromatic hydrocarbons (PAH), Total (low molecular weight)	NA												
Polycyclic chlorinated hydrocarbons (total)	NA												
Polymeric Methylene Diphenyl Diisocyanate (PMDI)	9016-87-9												
Polyphosphoric acid	8017-16-1		9773.5537							2.37E+09	4.89E+09	1.59E+09	1.59E+09 nc
Potassium	7440-09-7												
Potassium Cyanide	151-50-8		0.4022039							9.73E+04	1.01E+05	4.95E+04	4.95E+04 nc
Potassium Perchlorate	7778-74-7		0.1407713							3.41E+04	3.52E+04	1.73E+04	1.73E+04 nc
Potassium Perfluorobutane Sulfonate	29420-49-3		4.0220386							9.73E+05	1.21E+07	9.01E+05	9.01E+05 nc
Potassium Silver Cyanide	506-61-6		0.0402204							2.43E+05	1.01E+04	9.66E+03	9.66E+03 nc
Potassium chlorate	3811-04-9												
Potassium tripolyphosphate	13845-36-8		9773.5537							2.37E+09	4.89E+09	1.59E+09	1.59E+09 nc
Praseodymium	7440-10-0												
Praseodymium Chloride (Stable, Nonradioactive)	10361-79-2												
Prochloraz	67747-09-5		1.8099174	2.13E+04	1.13E+03	1.08E+03				4.38E+05	2.19E+04	2.08E+04	1.08E+03 ca*
Profluralin	26399-36-0		1.2066116							2.92E+05	1.41E+03	1.40E+03	1.40E+03 nc
Promethium	7440-12-2												
Prometon	1610-18-0		3.0165289							7.30E+05	6.73E+04	6.16E+04	6.16E+04 nc
Prometryn	7287-19-6		0.8044077							1.95E+05	9.98E+03	9.50E+03	9.50E+03 nc
Propachlor	1918-16-7		2.6143251							6.33E+05	1.84E+05	1.43E+05	1.43E+05 nc
Propanil	709-98-8		1.0055096							2.43E+05	1.89E+04	1.75E+04	1.75E+04 nc
Propanoic acid, 2-(2,4-dichlorophenoxy)-	120-36-5												
Propargite	2312-35-8		4.0220386							9.73E+05	1.16E+04	1.15E+04	1.15E+04 nc
Propargyl Alcohol	107-19-7		0.4022039							9.73E+04	3.90E+05	7.79E+04	7.79E+04 nc
Propazine	139-40-2		4.0220386							9.73E+05	1.01E+05	9.17E+04	9.17E+04 nc
Propham	122-42-9		4.0220386							9.73E+05	1.21E+05	1.08E+05	1.08E+05 nc
Propiconazole	60207-90-1		2.6143251							6.33E+05	4.52E+04	4.22E+04	4.22E+04 nc

Site-specific

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Chemical	CAS Number	Mutagen?	VOC?	Chemical Type	Ingestion SF (mg/kg-day)$^{-1}$	SFO Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	RAGSe GIABS (unitless)	K_p (cm/hr)	MW	fa	In EPD?	DAeventc
Propionaldehyde	123-38-6	No	Yes	Organics					1	0.00182	58.08	1	Yes	
Propionitrile	107-12-0	No	Yes	Organics					1	0.000982	55.08	1	Yes	
Propionitrile, 3-(NN-dimethylamino)	1738-25-6	No	Yes	Organics					1	0.000222	98.15	1	Yes	
Propyl Alcohol, n-	71-23-8	No	Yes	Organics					1	0.00106	60.1	1	Yes	
Propyl benzene	103-65-1	No	Yes	Organics			1.00E-01	U	1	0.0939	120.2	1	Yes	
Propylene	115-07-1	No	Yes	Organics					1	0.0136	42.08	1	Yes	
Propylene Glycol	57-55-6	No	No	Organics			2.00E+01	U	1	0.000143	76.1	1	Yes	
Propylene Glycol Dinitrate	6423-43-4	No	No	Organics					1	0.00208	166.09	1	Yes	
Propylene Glycol Monoethyl Ether	1569-02-4	No	Yes	Organics			7.00E-01	U	1	0.000409	104.15	1	Yes	
Propylene Glycol Monomethyl Ether	107-98-2	No	Yes	Organics			7.00E-01	U	1	0.000372	90.12	1	Yes	
Propylene Oxide	75-56-9	No	Yes	Organics	2.40E-01	U			1	0.000774	58.08	1	Yes	0.0586547
Prussian Blue (Ferric Ferrocyanide)	14038-43-8	No	No	Organics					1		859.229		No	
Pursuit	81335-77-5	No	No	Organics			2.50E-01	U	1	0.002	289.34	1	Yes	
Pydrin	51630-58-1	No	No	Organics			2.50E-02	U	1	0.0938	419.91	0.7	No	
Pyrazinyl phosphorothioate, O,O-diethyl O-2-	297-97-2	No	No	Organics					1	0.00109	248.24	1	Yes	
Pyrene	129-00-0	No	Yes	Organics			3.00E-02	U	1	0.201	202.26	1	Yes	
Pyridine	110-86-1	No	Yes	Organics			1.00E-03	U	1	0.00152	79.1	1	Yes	
Quinalphos	13593-03-8	No	No	Organics			5.00E-04	U	1	0.0296	298.3	0.9	Yes	
Quinoline	91-22-5	No	No	Organics	3.00E+00	U			1	0.00659	129.16	1	Yes	0.0046924
Resmethrin	10453-86-8	No	No	Organics			3.00E-02	U	1	0.238	338.45	0.7	Yes	
Resorcinol	108-46-3	No	No	Organics					1	0.00128	110.11	1	Yes	
Ronnel	299-84-3	No	Yes	Organics			5.00E-02	U	1	0.043	321.54	0.8	Yes	
Rotenone	83-79-4	No	No	Organics			4.00E-03	U	1	0.00509	394.43	0.9	Yes	
Safrole	94-59-7	Yes	No	Organics	2.20E-01	U			1	0.0113	162.19	1	Yes	0.063987
Samarium Chloride (Stable, Nonradioactive)	10361-82-7	No	No	Inorganics					1	0.001	256.72	1	Yes	
Samarium Nitrate (Stable, Nonradioactive)	10361-83-8	No	No	Inorganics					1	0.001	336.38	1	Yes	
Savey	78587-05-0	No	No	Organics			2.50E-02	U	1	0.0828	352.88	0.8	Yes	
Scandium	7440-20-2	No	No	Inorganics					1	0.001	44.96	1	Yes	
Selenious Acid	7783-00-8	No	No	Inorganics			5.00E-03	U	1	0.001	128.97	1	Yes	
Selenite	14124-67-5	No	No	Inorganics					1	0.001	128.97	1	Yes	
Selenium	7782-49-2	No	No	Inorganics			5.00E-03	U	1	0.001	78.96	1	Yes	
Selenium Sulfide	7446-34-6	No	No	Inorganics			5.00E-03	U	1	0.001	111.02	1	Yes	
Selenourea	630-10-4	No	No	Organics					1		123.02	1	No	
Sethoxydim	74051-80-2	No	No	Organics			9.00E-02	U	1	0.0185	327.49	0.9	Yes	
Silica (crystalline, respirable)	7631-86-9	No	No	Inorganics					1	0.001	60.08	1	Yes	
Silicon	7440-21-3	No	No	Inorganics					1	0.001	28.086	1	Yes	
Silver	7440-22-4	No	No	Inorganics			5.00E-03	U	0.04	0.0006	107.87	1	Yes	
Silver Cyanide	506-64-9	No	No	Inorganics			1.00E-01	U	0.04	0.001	133.89	1	Yes	
Simazine	122-34-9	No	No	Organics	1.20E-01	U	5.00E-03	U	1	0.00325	201.66	1	Yes	0.1173095
Sodium	7440-23-5	No	No	Inorganics					1	0.001	22.99	1	Yes	
Sodium Acifluorfen	62476-59-9	No	No	Organics			1.30E-02	U	1	0.0000195	383.65	1	Yes	
Sodium Azide	26628-22-8	No	No	Inorganics			4.00E-03	U	1	0.001	65.01	1	Yes	
Sodium Chlorate	7775-09-9	No	No	Inorganics					1	0.001	106.44	1	Yes	
Sodium Cyanide	143-33-9	No	No	Inorganics			1.00E-03	U	1	0.001	49.01	1	Yes	

Site-specific

Recreator Screening Levels (RSL) for Surface Water - Modified for Utility Worker Exposure to Groundwater
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	DAeventnc	DAeventna	Ingestion SL TR=1.0E-6 (µg/L)	Dermal SL TR=1.0E-6 (µg/L)	Carcinogenic SL TR=1.0E-6 (µg/L)	Ingestion SL (Child) HQ=1 (µg/L)	Dermal SL (Child) HQ=1 (µg/L)	Noncarcinogenic SL (Child) HQ=1 µ(g/L)	Ingestion SL (Adult) HQ=1 (µg/L)	Dermal SL (Adult) HQ=1 (µg/L)	Noncarcinogenic SL (Adult) HQ=1 (µg/L)	Screening Level (µg/L)
Propionaldehyde	123-38-6												
Propionitrile	107-12-0												
Propionitrile, 3-(NN-dimethylamino)	1738-25-6												
Propyl Alcohol, n-	71-23-8												
Propyl benzene	103-65-1		20.110193							4.87E+06	7.69E+04	7.57E+04	7.57E+04 nc
Propylene	115-07-1												
Propylene Glycol	57-55-6		4022.0386							9.73E+08	1.10E+10	8.94E+08	8.94E+08 nc
Propylene Glycol Dinitrate	6423-43-4												
Propylene Glycol Monoethyl Ether	1569-02-4		140.77135							3.41E+07	1.23E+08	2.67E+07	2.67E+07 nc
Propylene Glycol Monomethyl Ether	107-98-2		140.77135							3.41E+07	1.42E+08	2.75E+07	2.75E+07 nc
Propylene Oxide	75-56-9			1.33E+04	3.10E+04	9.31E+03							9.31E+03 ca
Prussian Blue (Ferric Ferrocyanide)	14038-43-8												
Pursuit	81335-77-5		50.275482							1.22E+07	3.07E+06	2.45E+06	2.45E+06 nc
Pydrin	51630-58-1									1.22E+06		1.22E+06	1.22E+06 nc
Pyrazinyl phosphorothioate, O,O-diethyl O-2-	297-97-2												
Pyrene	129-00-0		6.0330579							1.46E+06	6.43E+03	6.40E+03	6.40E+03 nc
Pyridine	110-86-1		0.2011019							4.87E+04	5.14E+04	2.50E+04	2.50E+04 nc
Quinalphos	13593-03-8		0.100551							2.43E+04	4.35E+02	4.28E+02	4.28E+02 nc
Quinoline	91-22-5			1.06E+03	2.31E+02	1.90E+02							1.90E+02 ca
Resmethrin	10453-86-8		6.0330579							1.46E+06	3.22E+03	3.22E+03	3.22E+03 nc
Resorcinol	108-46-3												
Ronnel	299-84-3		10.055096							2.43E+06	2.90E+04	2.87E+04	2.87E+04 nc
Rotenone	83-79-4		0.8044077							1.95E+05	1.09E+04	1.03E+04	1.03E+04 nc
Safrole	94-59-7			1.45E+04	1.57E+03	1.42E+03							1.42E+03 ca
Samarium Chloride (Stable, Nonradioactive)	10361-82-7												
Samarium Nitrate (Stable, Nonradioactive)	10361-83-8												
Savey	78587-05-0		5.0275482							1.22E+06	6.15E+03	6.12E+03	6.12E+03 nc
Scandium	7440-20-2												
Selenious Acid	7783-00-8		1.0055096							2.43E+05	5.03E+05	1.64E+05	1.64E+05 nc
Selenite	14124-67-5												
Selenium	7782-49-2		1.0055096							2.43E+05	5.03E+05	1.64E+05	1.64E+05 nc
Selenium Sulfide	7446-34-6		1.0055096							2.43E+05	5.03E+05	1.64E+05	1.64E+05 nc
Selenourea	630-10-4												
Sethoxydim	74051-80-2		18.099174							4.38E+06	1.04E+05	1.01E+05	1.01E+05 nc
Silica (crystalline, respirable)	7631-86-9												
Silicon	7440-21-3												
Silver	7440-22-4		0.0402204							2.43E+05	3.35E+04	2.95E+04	2.95E+04 nc
Silver Cyanide	506-64-9		0.8044077							4.87E+06	4.02E+05	3.72E+05	3.72E+05 nc
Simazine	122-34-9		1.0055096	2.66E+04	7.76E+03	6.01E+03				2.43E+05	6.65E+04	5.22E+04	6.01E+03 ca**
Sodium	7440-23-5												
Sodium Acifluorfen	62476-59-9		2.6143251							6.33E+05	8.92E+06	5.91E+05	5.91E+05 nc
Sodium Azide	26628-22-8		0.8044077							1.95E+05	4.02E+05	1.31E+05	1.31E+05 nc
Sodium Chlorate	7775-09-9												
Sodium Cyanide	143-33-9		0.2011019							4.87E+04	1.01E+05	3.28E+04	3.28E+04 nc

Site-specific

Recreator Screening Levels (RSL) for Surface Water - Modified for Utility Worker Exposure to Groundwater
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Chemical Type	Ingestion SF (mg/kg-day)$^{-1}$	SFO Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	RAGSe GIABS (unitless)	K_p (cm/hr)	MW	fa	In EPD?	DAeventc
Sodium Dichromate	10588-01-9	Yes	No	Inorganics	5.00E-01	U	2.00E-02	U	0.025	0.001	261.968	1	Yes	0.0007039
Sodium Diethyldithiocarbamate	148-18-5	No	No	Organics	2.70E-01	U	3.00E-02	U	1	0.0000192	171.25	1	Yes	0.0521375
Sodium Fluoride	7681-49-4	No	No	Inorganics			5.00E-02	U	1	0.001	41.99	1	Yes	
Sodium Fluoroacetate	62-74-8	No	No	Organics			2.00E-05	U	1	1.32E-06	100.03	1	No	
Sodium Hydroxide	1310-73-2	No	No	Inorganics					1	0.001	40	1	Yes	
Sodium Metavanadate	13718-26-8	No	No	Inorganics			1.00E-03	U	1	0.001	121.93	1	Yes	
Sodium Perchlorate	7601-89-0	No	No	Inorganics			7.00E-04	U	1	0.001	122.44	1	Yes	
Sodium acid pyrophosphate	7758-16-9	No	No	Inorganics			4.86E+01	U	1	0.001	221.94	1	Yes	
Sodium aluminum phosphate (acidic)	7785-88-8	No	No	Inorganics			4.86E+01	U	1	0.001	144.94267	1	Yes	
Sodium aluminum phosphate (anhydrous)	10279-59-1	No	No	Inorganics			4.86E+01	U	1	0.001			Yes	
Sodium aluminum phosphate (tetrahydrate)	10305-76-7	No	No	Inorganics			4.86E+01	U	1	0.001	949.88	0.8	Yes	
Sodium hexametaphosphate	10124-56-8	No	No	Inorganics			4.86E+01	U	1	0.001	611.17	0.9	Yes	
Sodium polyphosphate	68915-31-1	No	No	Inorganics			4.86E+01	U	1	0.001	359.92	1	Yes	
Sodium trimetaphosphate	7785-84-4	No	No	Inorganics			4.86E+01	U	1	0.001	305.89	1	Yes	
Sodium tripolyphosphate	7758-29-4	No	No	Inorganics			4.86E+01	U	1	0.001	367.86	1	Yes	
Stearyl Acetate	822-23-1	No	Yes	Organics					1	17.3	312.54	0	No	
Stirofos (Tetrachlorovinphos)	961-11-5	No	No	Organics	2.40E-02	U	3.00E-02	U	1	0.00307	365.97	0.9	Yes	0.5865473
Strontium Chromate	7789-06-2	Yes	No	Inorganics	5.00E-01	U	2.00E-02	U	0.025	0.001	203.61	1	Yes	0.0007039
Strontium, Stable	7440-24-6	No	No	Inorganics			6.00E-01	U	1	0.001	87.62	1	Yes	
Strychnine	57-24-9	No	No	Organics			3.00E-04	U	1	0.000399	334.42	1	Yes	
Styrene	100-42-5	No	Yes	Organics			2.00E-01	U	1	0.0372	104.15	1	Yes	
Styrene-Acrylonitrile (SAN) Trimer	NA	No	No	Organics			3.00E-03	U	1	0.0119	210	1	Yes	
Sulfate	14808-79-8	No	No	Inorganics					1	0.001	98.07	1	Yes	
Sulfide	18496-25-8	No	No	Inorganics					1	0.001	34.08	1	Yes	
Sulfolane	126-33-0	No	No	Organics			1.00E-03	U	1	0.000102	120.17	1	Yes	
Sulfonylbis(4-chlorobenzene), 1,1'-	80-07-9	No	No	Organics			8.00E-04	U	1	0.0149	287.16	0.9	Yes	
Sulfur	7704-34-9	No	No	Inorganics					1	0.001	32.065	1	Yes	
Sulfur Dioxide	7446-09-5	No	Yes	Inorganics					1	0.001	64.06	1	Yes	
Sulfur Mustard	505-60-2	No	Yes	Organics					1	0.00448	159.07	1	Yes	
Sulfur Trioxide	7446-11-9	No	Yes	Inorganics					1	0.001	80.063	1	Yes	
Sulfuric Acid	7664-93-9	No	No	Inorganics					1	0.001	98.07	1	Yes	
Systhane	88671-89-0	No	No	Organics			2.50E-02	U	1	0.00337	288.78	0.9	Yes	
TCDD, 2,3,7,8-	1746-01-6	No	Yes	Organics	1.30E+05	U	7.00E-10	U	1	0.808	321.98	0.5	No	
TCDF, 2,3,7,8-	51207-31-9	No	Yes	Organics	1.30E+04	U	7.00E-09	U	1	0.657	305.98	0.6	No	
TCMTB	21564-17-0	No	No	Organics			3.00E-02	U	1	0.0112	238.34	0.9	Yes	
Tebuthiuron	34014-18-1	No	No	Organics			7.00E-02	U	1	0.00127	228.31	1	Yes	
Technetium	7440-26-8	No	No	Inorganics					1	0.001	97.91	1	Yes	
Tellurium	13494-80-9	No	No	Inorganics					1	0.001	127.6	1	Yes	
Temephos	3383-96-8	No	No	Organics			2.00E-02	U	1	0.0345	466.46	0.7	No	
Terbacil	5902-51-2	No	No	Organics			1.30E-02	U	1	0.00172	216.67	1	Yes	
Terbufos	13071-79-9	No	Yes	Organics			2.50E-05	U	1	0.0358	288.42	0.9	Yes	
Terbutryn	886-50-0	No	No	Organics			1.00E-03	U	1	0.0212	241.36	0.9	Yes	
Tetrabutyl Lead	1920-90-7	No	Yes	Organics					1	4.04	435.67	0	No	
Tetrachloroaniline, 2,3,5,6-	3481-20-7	No	No	Organics					1	0.0421	230.91	0.9	Yes	

Site-specific

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Chemical	CAS Number	DAeventnc	DAeventna	Ingestion SL TR=1.0E-6 (µg/L)	Dermal SL TR=1.0E-6 (µg/L)	Carcinogenic SL TR=1.0E-6 (µg/L)	Ingestion SL (Child) HQ=1 (µg/L)	Dermal SL (Child) HQ=1 (µg/L)	Noncarcinogenic SL (Child) HQ=1 µ(g/L)	Ingestion SL (Adult) HQ=1 (µg/L)	Dermal SL (Adult) HQ=1 (µg/L)	Noncarcinogenic SL (Adult) HQ=1 (µg/L)	Screening Level (µg/L)
Sodium Dichromate	10588-01-9		0.100551	6.39E+03	3.52E+02	3.34E+02				9.73E+05	5.03E+04	4.78E+04	3.34E+02 ca
Sodium Diethyldithiocarbamate	148-18-5		6.0330579	1.18E+04	7.10E+05	1.16E+04				1.46E+06	8.22E+07	1.43E+06	1.16E+04 ca
Sodium Fluoride	7681-49-4		10.055096							2.43E+06	5.03E+06	1.64E+06	1.64E+06 nc
Sodium Fluoroacetate	62-74-8									9.73E+02		9.73E+02	9.73E+02 nc
Sodium Hydroxide	1310-73-2												
Sodium Metavanadate	13718-26-8		0.2011019							4.87E+04	1.01E+05	3.28E+04	3.28E+04 nc
Sodium Perchlorate	7601-89-0		0.1407713							3.41E+04	7.04E+04	2.30E+04	2.30E+04 nc
Sodium acid pyrophosphate	7758-16-9		9773.5537							2.37E+09	4.89E+09	1.59E+09	1.59E+09 nc
Sodium aluminum phosphate (acidic)	7785-88-8		9773.5537							2.37E+09	4.89E+09	1.59E+09	1.59E+09 nc
Sodium aluminum phosphate (anhydrous)	10279-59-1		9773.5537							2.37E+09	4.89E+09	1.59E+09	1.59E+09 nc
Sodium aluminum phosphate (tetrahydrate)	10305-76-7		9773.5537							2.37E+09	4.89E+09	1.59E+09	1.59E+09 nc
Sodium hexametaphosphate	10124-56-8		9773.5537							2.37E+09	4.89E+09	1.59E+09	1.59E+09 nc
Sodium polyphosphate	68915-31-1		9773.5537							2.37E+09	4.89E+09	1.59E+09	1.59E+09 nc
Sodium trimetaphosphate	7785-84-4		9773.5537							2.37E+09	4.89E+09	1.59E+09	1.59E+09 nc
Sodium tripolyphosphate	7758-29-4		9773.5537							2.37E+09	4.89E+09	1.59E+09	1.59E+09 nc
Stearyl Acetate	822-23-1												
Stirofos (Tetrachlorovinphos)	961-11-5		6.0330579	1.33E+05	1.58E+04	1.41E+04				1.46E+06	1.63E+05	1.46E+05	1.41E+04 ca*
Strontium Chromate	7789-06-2		0.100551	6.39E+03	3.52E+02	3.34E+02				9.73E+05	5.03E+04	4.78E+04	3.34E+02 ca
Strontium, Stable	7440-24-6		120.66116							2.92E+07	6.03E+07	1.97E+07	1.97E+07 nc
Strychnine	57-24-9		0.0603306							1.46E+04	1.38E+04	7.10E+03	7.10E+03 nc
Styrene	100-42-5		40.220386							9.73E+06	4.05E+05	3.89E+05	3.89E+05 nc
Styrene-Acrylonitrile (SAN) Trimer	NA		0.6033058							1.46E+05	1.03E+04	9.65E+03	9.65E+03 nc
Sulfate	14808-79-8												
Sulfide	18496-25-8												
Sulfolane	126-33-0		0.2011019							4.87E+04	6.59E+05	4.53E+04	4.53E+04 nc
Sulfonylbis(4-chlorobenzene), 1,1'-	80-07-9		0.1608815							3.89E+04	1.49E+03	1.43E+03	1.43E+03 nc
Sulfur	7704-34-9												
Sulfur Dioxide	7446-09-5												
Sulfur Mustard	505-60-2												
Sulfur Trioxide	7446-11-9												
Sulfuric Acid	7664-93-9												
Systhane	88671-89-0		5.0275482							1.22E+06	2.03E+05	1.74E+05	1.74E+05 nc
TCDD, 2,3,7,8-	1746-01-6			2.46E-02		2.46E-02				3.41E-02		3.41E-02	2.46E-02 ca**
TCDF, 2,3,7,8-	51207-31-9			2.46E-01		2.46E-01				3.41E-01		3.41E-01	2.46E-01 ca**
TCMTB	21564-17-0		6.0330579							1.46E+06	1.02E+05	9.50E+04	9.50E+04 nc
Tebuthiuron	34014-18-1		14.077135							3.41E+06	2.01E+06	1.26E+06	1.26E+06 nc
Technetium	7440-26-8												
Tellurium	13494-80-9												
Temephos	3383-96-8									9.73E+05		9.73E+05	9.73E+05 nc
Terbacil	5902-51-2		2.6143251							6.33E+05	2.97E+05	2.02E+05	2.02E+05 nc
Terbufos	13071-79-9		0.0050275							1.22E+03	1.92E+01	1.89E+01	1.89E+01 nc
Terbutryn	886-50-0		0.2011019							4.87E+04	1.75E+03	1.69E+03	1.69E+03 nc
Tetrabutyl Lead	1920-90-7												
Tetrachloroaniline, 2,3,5,6-	3481-20-7												

Site-specific

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ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
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Chemical	CAS Number	Mutagen?	VOC?	Chemical Type	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	RAGSe GIABS (unitless)	K_p (cm/hr)	MW	fa	In EPD?	DAeventc
Tetrachlorobenzene, 1,2,3,4-	634-66-2	No	Yes	Organics					1	0.11	215.89	1	Yes	
Tetrachlorobenzene, 1,2,4,5-	95-94-3	No	Yes	Organics			3.00E-04	U	1	0.117	215.89	1	Yes	
Tetrachlorobiphenyl, 3,3',4,4'- (PCB 77)	32598-13-3	No	No	Organics	1.30E+01	U	7.00E-06	U	1	0.917	291.99	0.6	No	
Tetrachlorobiphenyl, 3,4,4',5- (PCB 81)	70362-50-4	No	Yes	Organics	3.90E+01	U	2.33E-06	U	1	0.584	291.99	0.7	No	
Tetrachloroethane, 1,1,1,2-	630-20-6	No	Yes	Organics	2.60E-02	U	3.00E-02	U	1	0.0159	167.85	1	Yes	0.5414283
Tetrachloroethane, 1,1,2,2-	79-34-5	No	Yes	Organics	2.00E-01	U	2.00E-02	U	1	0.00694	167.85	1	Yes	0.0703857
Tetrachloroethylene	127-18-4	No	Yes	Organics	2.10E-03	U	6.00E-03	U	1	0.0334	165.83	1	Yes	6.7033976
Tetrachlorophenol, 2,3,4,5-	4901-51-3	No	No	Organics					1	0.0491	231.89	0.9	Yes	
Tetrachlorophenol, 2,3,4,6-	58-90-2	No	No	Organics			3.00E-02	U	1	0.071	231.89	0.9	Yes	
Tetrachlorophenols (total)	25167-83-3	No	No	Organics					1	0.071	231.89	0.9	Yes	
Tetrachloroterephthalate, 2,3,5,6-	2136-79-0	No	No	Organics					1	0.000808	303.91	1	Yes	
Tetrachlorotoluene, p- alpha, alpha, alpha-	5216-25-1	No	Yes	Organics	2.00E+01	U			1	0.0836	229.92	0.9	Yes	0.0007039
Tetraethyl Dithiopyrophosphate	3689-24-5	No	No	Organics			5.00E-04	U	1	0.0109	322.31	0.9	Yes	
Tetraethyl Lead	78-00-2	No	Yes	Organics			1.00E-07	U	1	0.0137	323.45	0.9	Yes	
Tetrafluoroethane, 1,1,1,2-	811-97-2	No	Yes	Organics					1	0.00548	102.03	1	Yes	
Tetrahydrofuran	109-99-9	No	Yes	Organics			9.00E-01	U	1	0.00125	72.11	1	Yes	
Tetrahydrothiophene	110-01-0	No	Yes	Organics					1	0.00775	88.17	1	Yes	
Tetramethyl Lead	75-74-1	No	Yes	Organics					1	0.00466	267.34	1	Yes	
Tetramethylcyclohexane	30501-43-0	No	Yes	Organics					1		140.2658		No	
Tetrapotassium phosphate	7320-34-5	No	No	Inorganics			4.86E+01	U	1	0.001	330.34	1	Yes	
Tetrapropyl Lead	3440-75-3	No	Yes	Organics					1	0.412	379.56	0.4	No	
Tetrasodium pyrophosphate	7722-88-5	No	No	Inorganics			4.86E+01	U	1	0.001	265.9	1	Yes	
Tetryl (Trinitrophenylmethylnitramine)	479-45-8	No	No	Organics			2.00E-03	U	1	0.000474	287.15	1	Yes	
Thallic Oxide	1314-32-5	No	No	Inorganics					1	0.001	456.765	0.9	Yes	
Thallium (I) Nitrate	10102-45-1	No	No	Inorganics			7.00E-06	U	1	0.001	266.39	1	Yes	
Thallium (Soluble Salts)	7440-28-0	No	No	Inorganics			1.00E-05	U	1	0.001	204.38	1	Yes	
Thallium Acetate	563-68-8	No	No	Organics			6.00E-06	U	1		263.427	1	Yes	
Thallium Carbonate	6533-73-9	No	No	Organics			2.00E-05	U	1	0.001	468.78	0.9	Yes	
Thallium Chloride	7791-12-0	No	No	Inorganics			6.00E-06	U	1	0.001	239.84	1	Yes	
Thallium Selenite	12039-52-0	No	No	Inorganics					1	0.001	283.34	1	Yes	
Thallium Sulfate	7446-18-6	No	No	Inorganics			2.00E-05	U	1	0.001	504.82	0.9	Yes	
Thiobencarb	28249-77-6	No	No	Organics			1.00E-02	U	1	0.0102	257.78	0.9	Yes	
Thiocyanates	NA	No	No	Inorganics			2.00E-04	U	1	0.001			Yes	
Thiocyanic Acid	463-56-9	No	Yes	Inorganics			2.00E-04	U	1	0.001	59.09	1	Yes	
Thiodiglycol	111-48-8	No	No	Organics			7.00E-02	U	1	0.000123	122.18	1	Yes	
Thiofanox	39196-18-4	No	No	Organics			3.00E-04	U	1	0.00627	218.32	1	Yes	
Thiophanate, Methyl	23564-05-8	No	No	Organics			8.00E-02	U	1	0.00016	342.39	1	Yes	
Thiophene	110-02-1	No	Yes	Organics					1	0.00843	84.14	1	Yes	
Thiram	137-26-8	No	No	Organics			5.00E-03	U	1	0.00099	240.42	1	Yes	
Thorium	NA	No	No	Inorganics					1	0.001	232.038	1	Yes	
Thymol	89-83-8	No	No	Organics					1	0.0373	150.22	1	Yes	
Tin	7440-31-5	No	No	Inorganics			6.00E-01	U	1	0.001	118.71	1	Yes	
Titanium	7440-32-6	No	No	Inorganics					1	0.001	47.87	1	Yes	
Titanium Tetrachloride	7550-45-0	No	Yes	Inorganics					1	0.001	189.679	1	Yes	

Site-specific

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Smax=Soil SL exceeds ceiling limit and has been substituted with the max value
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Chemical	CAS Number	DAeventnc	DAeventna	Ingestion SL TR=1.0E-6 (µg/L)	Dermal SL TR=1.0E-6 (µg/L)	Carcinogenic SL TR=1.0E-6 (µg/L)	Ingestion SL (Child) HQ=1 (µg/L)	Dermal SL (Child) HQ=1 (µg/L)	Noncarcinogenic SL (Child) HQ=1 µ(g/L)	Ingestion SL (Adult) HQ=1 (µg/L)	Dermal SL (Adult) HQ=1 (µg/L)	Noncarcinogenic SL (Adult) HQ=1 (µg/L)	Screening Level (µg/L)
Tetrachlorobenzene, 1,2,3,4-	634-66-2												
Tetrachlorobenzene, 1,2,4,5-	95-94-3		0.0603306							1.46E+04	1.01E+02	1.00E+02	1.00E+02 nc
Tetrachlorobiphenyl, 3,3',4,4'- (PCB 77)	32598-13-3			2.46E+02		2.46E+02				3.41E+02		3.41E+02	2.46E+02 ca**
Tetrachlorobiphenyl, 3,4,4',5- (PCB 81)	70362-50-4			8.19E+01		8.19E+01				1.13E+02		1.13E+02	8.19E+01 ca**
Tetrachloroethane, 1,1,1,2-	630-20-6		6.0330579	1.23E+05	9.10E+03	8.48E+03				1.46E+06	1.01E+05	9.48E+04	8.48E+03 ca*
Tetrachloroethane, 1,1,2,2-	79-34-5		4.0220386	1.60E+04	2.71E+03	2.32E+03				9.73E+05	1.55E+05	1.34E+05	2.32E+03 ca*
Tetrachloroethylene	127-18-4		1.2066116	1.52E+06	5.44E+04	5.25E+04				2.92E+05	9.78E+03	9.47E+03	9.47E+03 nc
Tetrachlorophenol, 2,3,4,5-	4901-51-3												
Tetrachlorophenol, 2,3,4,6-	58-90-2		6.0330579							1.46E+06	1.67E+04	1.65E+04	1.65E+04 nc
Tetrachlorophenols (total)	25167-83-3												
Tetrachloroterephthalate, 2,3,5,6-	2136-79-0												
Tetrachlorotoluene, p- alpha, alpha, alpha-	5216-25-1			1.60E+02	1.68E+00	1.66E+00							1.66E+00 ca
Tetraethyl Dithiopyrophosphate	3689-24-5		0.100551							2.43E+04	1.01E+03	9.72E+02	9.72E+02 nc
Tetraethyl Lead	78-00-2		0.0000201							4.87E+00	1.60E-01	1.55E-01	1.55E-01 nc
Tetrafluoroethane, 1,1,1,2-	811-97-2												
Tetrahydrofuran	109-99-9		180.99174							4.38E+07	5.73E+07	2.48E+07	2.48E+07 nc
Tetrahydrothiophene	110-01-0												
Tetramethyl Lead	75-74-1												
Tetramethylcyclohexane	30501-43-0												
Tetrapotassium phosphate	7320-34-5		9773.5537							2.37E+09	4.89E+09	1.59E+09	1.59E+09 nc
Tetrapropyl Lead	3440-75-3												
Tetrasodium pyrophosphate	7722-88-5		9773.5537							2.37E+09	4.89E+09	1.59E+09	1.59E+09 nc
Tetryl (Trinitrophenylmethylnitramine)	479-45-8		0.4022039							9.73E+04	1.05E+05	5.05E+04	5.05E+04 nc
Thallic Oxide	1314-32-5												
Thallium (I) Nitrate	10102-45-1		0.0014077							3.41E+02	7.04E+02	2.30E+02	2.30E+02 nc
Thallium (Soluble Salts)	7440-28-0		0.002011							4.87E+02	1.01E+03	3.28E+02	3.28E+02 nc
Thallium Acetate	563-68-8		0.0012066							2.92E+02		2.92E+02	2.92E+02 nc
Thallium Carbonate	6533-73-9		0.004022							9.73E+02	1.72E+02	1.46E+02	1.46E+02 nc
Thallium Chloride	7791-12-0		0.0012066							2.92E+02	6.03E+02	1.97E+02	1.97E+02 nc
Thallium Selenite	12039-52-0												
Thallium Sulfate	7446-18-6		0.004022							9.73E+02	2.01E+03	6.56E+02	6.56E+02 nc
Thiobencarb	28249-77-6		2.0110193							4.87E+05	3.28E+04	3.07E+04	3.07E+04 nc
Thiocyanates	NA		0.0402204							9.73E+03	2.01E+04	6.56E+03	6.56E+03 nc
Thiocyanic Acid	463-56-9		0.0402204							9.73E+03	2.01E+04	6.56E+03	6.56E+03 nc
Thiodiglycol	111-48-8		14.077135							3.41E+06	3.79E+07	3.13E+06	3.13E+06 nc
Thiofanox	39196-18-4		0.0603306							1.46E+04	1.86E+03	1.65E+03	1.65E+03 nc
Thiophanate, Methyl	23564-05-8		16.088154							3.89E+06	8.72E+06	2.69E+06	2.69E+06 nc
Thiophene	110-02-1												
Thiram	137-26-8		1.0055096							2.43E+05	1.70E+05	1.00E+05	1.00E+05 nc
Thorium	NA												
Thymol	89-83-8												
Tin	7440-31-5		120.66116							2.92E+07	6.03E+07	1.97E+07	1.97E+07 nc
Titanium	7440-32-6												
Titanium Tetrachloride	7550-45-0												

Site-specific

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Chemical	CAS Number	Mutagen?	VOC?	Chemical Type	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	RAGSe GIABS (unitless)	K_p (cm/hr)	MW	fa	In EPD?	DAeventc
Toluene	108-88-3	No	Yes	Organics			8.00E-02	U	1	0.0311	92.14	1	Yes	
Toluene-2,5-diamine	95-70-5	No	No	Organics	1.80E-01	U	2.00E-04	U	1	0.00041	122.17	1	Yes	0.0782063
Toluenediamine, 2,3-	2687-25-4	No	No	Organics					1	0.000952	122.17	1	Yes	
Toluenediamine, 3,4-	496-72-0	No	No	Organics					1	0.000887	122.17	1	Yes	
Toluidine, p-	106-49-0	No	No	Organics	3.00E-02	U	4.00E-03	U	1	0.00329	107.16	1	Yes	0.4692378
Total Petroleum Hydrocarbons (Aliphatic High)	NA	No	Yes	Organics			3.00E+00	U	1	1.96	170.34	1	No	
Total Petroleum Hydrocarbons (Aliphatic Low)	NA	No	Yes	Organics					1	0.201	86.18	1	Yes	
Total Petroleum Hydrocarbons (Aliphatic Medium)	NA	No	Yes	Organics			1.00E-02	U	1	1.7	128.26	1	No	
Total Petroleum Hydrocarbons (Aromatic High)	NA	No	No	Organics			4.00E-02	U	1	0.308	202.26	1	No	
Total Petroleum Hydrocarbons (Aromatic Low)	NA	No	Yes	Organics			4.00E-03	U	1	0.0149	78.11	1	Yes	
Total Petroleum Hydrocarbons (Aromatic Medium)	NA	No	Yes	Organics			4.00E-03	U	1	0.0692	135.19	1	Yes	
Toxaphene	8001-35-2	No	No	Organics	1.10E+00	U			1	0.0518	413.82	0.8	Yes	0.0127974
Tralomethrin	66841-25-6	No	No	Organics			7.50E-03	U	1	0.0305	665.02	0.5	No	
Tri-n-butyltin	688-73-3	No	Yes	Organics			3.00E-04	U	1	0.0193	291.07	0.9	Yes	
Triacetin	102-76-1	No	No	Organics			8.00E+01	U	1	0.000137	218.21	1	Yes	
Triallate	2303-17-5	No	Yes	Organics			1.30E-02	U	1	0.0349	304.66	0.9	Yes	
Trialuminum sodium tetra decahydrogenoctaorthophosphate (dihydrate)	15136-87-5	No	No	Inorganics			4.86E+01	U	1	0.001	887.89584	0.8	Yes	
Triasulfuron	82097-50-5	No	No	Organics			1.00E-02	U	1	0.0000469	401.83	1	Yes	
Triaziquone	68-76-8	No	No	Organics					1	0.0000101	231.26	1	Yes	
Tribromobenzene, 1,2,4-	615-54-3	No	Yes	Organics			5.00E-03	U	1	0.0337	314.8	0.9	Yes	
Tribromochloromethane	594-15-0	No	Yes	Organics					1	0.00243	287.18	1	Yes	
Tribromodiphenyl Ether	49690-94-0	No	Yes	Organics					1	0.0659	406.9	0.7	Yes	
Tribromophenol, 2,4,6-	118-79-6	No	No	Organics					1	0.0121	330.8	0.9	Yes	
Tributyl Phosphate	126-73-8	No	No	Organics	9.00E-03	U	1.00E-02	U	1	0.0228	266.32	0.9	Yes	1.5641261
Tributyltin	56573-85-4	No	Yes	Organics					1	0.034	325.51	0.8	Yes	
Tributyltin Compounds	NA	No	No	Organics			3.00E-04	U	1				No	
Tributyltin Oxide	56-35-9	No	No	Organics			3.00E-04	U	1	0.000252	596.12	1	Yes	
Tributyltin chloride	1461-22-9	No	Yes	Organics					1	0.034	325.51	0.8	Yes	
Tributyltin fluoride	1983-10-4	No	Yes	Organics					1	0.0238	309.06	0.9	Yes	
Tributyltin linoleate	24124-25-2	No	Yes	Organics					1	12.2	569.51	0	No	
Tributyltin methacrylate	2155-70-6	No	Yes	Organics					1	0.00693	375.14	0.9	Yes	
Tributyltin naphthenate	85409-17-2	No	No	Organics					1				No	
Tricaine Methanesulfonate	886-86-2	No	No	Organics					1	0.0029	165.19	1	Yes	
Tricalcium phosphate	7758-87-4	No	No	Inorganics			4.86E+01	U	1	0.001	310.18	1	Yes	
Trichloro-1,2,2-trifluoroethane, 1,1,2-	76-13-1	No	Yes	Organics			3.00E+01	U	1	0.0175	187.38	1	Yes	
Trichloro-2'-hydroxydiphenylether	3380-34-5	No	No	Organics					1	0.0541	289.55	0.9	Yes	
Trichloroacetic Acid	76-03-9	No	No	Organics	7.00E-02	U	2.00E-02	U	1	0.00145	163.39	1	Yes	0.2011019
Trichloroaniline HCl, 2,4,6-	33663-50-2	No	No	Organics	2.90E-02	U			1	0.0000276	232.93	1	Yes	0.4854184
Trichloroaniline, 2,4,5-	636-30-6	No	No	Organics					1	0.0243	196.46	1	Yes	
Trichloroaniline, 2,4,6-	634-93-5	No	No	Organics	7.00E-03	U	3.00E-05	U	1	0.027	196.46	1	Yes	2.0110193
Trichlorobenzene	12002-48-1	No	Yes	Organics					1	0.0915	181.45	1	Yes	

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Chemical	CAS Number	DAeventnc	DAeventna	Ingestion SL TR=1.0E-6 (µg/L)	Dermal SL TR=1.0E-6 (µg/L)	Carcinogenic SL TR=1.0E-6 (µg/L)	Ingestion SL (Child) HQ=1 (µg/L)	Dermal SL (Child) HQ=1 (µg/L)	Noncarcinogenic SL (Child) HQ=1 µ(g/L)	Ingestion SL (Adult) HQ=1 (µg/L)	Dermal SL (Adult) HQ=1 (µg/L)	Noncarcinogenic SL (Adult) HQ=1 (µg/L)	Screening Level (µg/L)
Toluene	108-88-3		16.088154							3.89E+06	2.02E+05	1.92E+05	1.92E+05 nc
Toluene-2,5-diamine	95-70-5		0.0402204	1.77E+04	6.33E+04	1.39E+04				9.73E+03	3.25E+04	7.49E+03	7.49E+03 nc
Toluenediamine, 2,3-	2687-25-4												
Toluenediamine, 3,4-	496-72-0												
Toluidine, p-	106-49-0		0.8044077	1.06E+05	5.05E+04	3.43E+04				1.95E+05	8.66E+04	5.99E+04	3.43E+04 ca**
Total Petroleum Hydrocarbons (Aliphatic High)	NA									1.46E+08		1.46E+08	1.46E+08 nc
Total Petroleum Hydrocarbons (Aliphatic Low)	NA												
Total Petroleum Hydrocarbons (Aliphatic Medium)	NA									4.87E+05		4.87E+05	4.87E+05 nc
Total Petroleum Hydrocarbons (Aromatic High)	NA									1.95E+06		1.95E+06	1.95E+06 nc
Total Petroleum Hydrocarbons (Aromatic Low)	NA		0.8044077							1.95E+05	2.15E+04	1.94E+04	1.94E+04 nc
Total Petroleum Hydrocarbons (Aromatic Medium)	NA		0.8044077							1.95E+05	3.77E+03	3.70E+03	3.70E+03 nc
Toxaphene	8001-35-2			2.90E+03	1.69E+01	1.68E+01							1.68E+01 ca
Tralomethrin	66841-25-6									3.65E+05		3.65E+05	3.65E+05 nc
Tri-n-butyltin	688-73-3		0.0603306							1.46E+04	4.20E+02	4.08E+02	4.08E+02 nc
Triacetin	102-76-1		16088.154							3.89E+09	2.27E+10	3.32E+09	3.32E+09 nc
Triallate	2303-17-5		2.6143251							6.33E+05	9.21E+03	9.08E+03	9.08E+03 nc
Trialuminum sodium tetra decahydrogenoctaorthophosphate (dihydrate)	15136-87-5		9773.5537							2.37E+09	4.89E+09	1.59E+09	1.59E+09 nc
Triasulfuron	82097-50-5		2.0110193							4.87E+05	2.54E+06	4.08E+05	4.08E+05 nc
Triaziquone	68-76-8												
Tribromobenzene, 1,2,4-	615-54-3		1.0055096							2.43E+05	3.44E+03	3.39E+03	3.39E+03 nc
Tribromochloromethane	594-15-0												
Tribromodiphenyl Ether	49690-94-0												
Tribromophenol, 2,4,6-	118-79-6												
Tributyl Phosphate	126-73-8		2.0110193	3.55E+05	1.08E+04	1.05E+04				4.87E+05	1.39E+04	1.35E+04	1.05E+04 ca**
Tributyltin	56573-85-4												
Tributyltin Compounds	NA									1.46E+04		1.46E+04	1.46E+04 nc
Tributyltin Oxide	56-35-9		0.0603306							1.46E+04	4.05E+03	3.17E+03	3.17E+03 nc
Tributyltin chloride	1461-22-9												
Tributyltin fluoride	1983-10-4												
Tributyltin linoleate	24124-25-2												
Tributyltin methacrylate	2155-70-6												
Tributyltin naphthenate	85409-17-2												
Tricaine Methanesulfonate	886-86-2												
Tricalcium phosphate	7758-87-4		9773.5537							2.37E+09	4.89E+09	1.59E+09	1.59E+09 nc
Trichloro-1,2,2-trifluoroethane, 1,1,2-	76-13-1		6033.0579							1.46E+09	8.13E+07	7.70E+07	7.70E+07 nc
Trichloro-2'-hydroxydiphenylether	3380-34-5												
Trichloroacetic Acid	76-03-9		4.0220386	4.56E+04	3.82E+04	2.08E+04				9.73E+05	7.63E+05	4.28E+05	2.08E+04 ca*
Trichloroaniline HCl, 2,4,6-	33663-50-2			1.10E+05	3.09E+06	1.06E+05							1.06E+05 ca
Trichloroaniline, 2,4,5-	636-30-6												
Trichloroaniline, 2,4,6-	634-93-5		0.0060331	4.56E+05	1.66E+04	1.60E+04				1.46E+03	4.97E+01	4.80E+01	4.80E+01 nc
Trichlorobenzene	12002-48-1												

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Chemical	CAS Number	Mutagen?	VOC?	Chemical Type	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	RAGSe GIABS (unitless)	K_p (cm/hr)	MW	fa	In EPD?	DAeventc
Trichlorobenzene, 1,2,3-	87-61-6	No	Yes	Organics			8.00E-04	U	1	0.0738	181.45	1	Yes	
Trichlorobenzene, 1,2,4-	120-82-1	No	Yes	Organics	2.90E-02	U	1.00E-02	U	1	0.0705	181.45	1	Yes	0.4854184
Trichloroethane, 1,1,1-	71-55-6	No	Yes	Organics			2.00E+00	U	1	0.0126	133.41	1	Yes	
Trichloroethane, 1,1,2-	79-00-5	No	Yes	Organics	5.70E-02	U	4.00E-03	U	1	0.00504	133.41	1	Yes	0.2469673
Trichloroethylene	79-01-6	Yes	Yes	Organics	4.60E-02	U	5.00E-04	U	1	0.0116	131.39	1	Yes	0.3041995
Trichlorofluoromethane	75-69-4	No	Yes	Organics			3.00E-01	U	1	0.0127	137.37	1	Yes	
Trichlorophenol, 2,4,5-	95-95-4	No	No	Organics			1.00E-01	U	1	0.0362	197.45	1	Yes	
Trichlorophenol, 2,4,6-	88-06-2	No	No	Organics	1.10E-02	U	1.00E-03	U	1	0.0346	197.45	1	Yes	1.2797395
Trichlorophenoxyacetic Acid, 2,4,5-	93-76-5	No	No	Organics			1.00E-02	U	1	0.00914	255.49	0.9	Yes	
Trichlorophenoxyacetic acid, 2,4,5- Amine Salts, PARENT (2,4,5-T)	NA	No	No	Organics					1				No	
Trichlorophenoxypropionic acid, -2,4,5	93-72-1	No	No	Organics			8.00E-03	U	1	0.0161	269.51	0.9	Yes	
Trichloropropane, 1,1,2-	598-77-6	No	Yes	Organics			5.00E-03	U	1	0.0096	147.43	1	Yes	
Trichloropropane, 1,2,3-	96-18-4	Yes	Yes	Organics	3.00E+01	U	4.00E-03	U	1	0.00752	147.43	1	Yes	0.0004692
Trichloropropene, 1,2,3-	96-19-5	No	Yes	Organics			3.00E-03	U	1	0.0169	145.42	1	Yes	
Trichlorotoluene, 2,3,6-	2077-46-5	No	Yes	Organics					1	0.118	195.48	1	Yes	
Trichlorotoluene, alpha 2,6-	2014-83-7	No	Yes	Organics					1	0.0648	195.48	1	Yes	
Triclorophenols (total)	NA	No	No	Organics					1				No	
Tricresyl Phosphate (TCP)	1330-78-5	No	No	Organics			2.00E-02	U	1	0.0334	368.37	0.8	Yes	
Tridiphane	58138-08-2	No	No	Organics			3.00E-03	U	1	0.0689	320.43	0.8	Yes	
Tridymite	15468-32-3	Yes	No	Inorganics					1	0.001			Yes	
Triethyl Lead	5224-23-7	No	Yes	Organics					1	0.0125	294.39	0.9	Yes	
Triethyl phosphorothioate [O,O,O-]	126-68-1	No	Yes	Organics					1	0.00684	198.22	1	Yes	
Triethylamine	121-44-8	No	Yes	Organics					1	0.0039	101.19	1	Yes	
Triethylene Glycol	112-27-6	No	No	Organics			2.00E+00	U	1	0.0000155	150.18	1	Yes	
Trifluralin	1582-09-8	No	Yes	Organics	7.70E-03	U	7.50E-03	U	1	0.0728	335.29	0.8	Yes	1.8281993
Trimagnesium phosphate	7757-87-1	No	No	Inorganics			4.86E+01	U	1	0.001	262.86	1	Yes	
Trimethyl Lead	7442-13-9	No	Yes	Organics					1	0.00226	252.31	1	Yes	
Trimethyl Phosphate	512-56-1	No	No	Organics	2.00E-02	U	1.00E-02	U	1	0.0000948	140.08	1	Yes	0.7038567
Trimethyl-4-Propenylnaphthalene, 1,2,3-	26137-53-1	No	Yes	Organics					1	1.22	210.32	1	No	
Trimethylbenzene, 1,2,3-	526-73-8	No	Yes	Organics					1	0.0897	120.2	1	Yes	
Trimethylbenzene, 1,2,4-	95-63-6	No	Yes	Organics					1	0.0857	120.2	1	Yes	
Trimethylbenzene, 1,3,5-	108-67-8	No	Yes	Organics			1.00E-02	U	1	0.0621	120.2	1	Yes	
Trimethylethyl Lead	1762-26-1	No	Yes	Organics					1	0.0157	281.37	0.9	Yes	
Trimethylpentane, 2,2,4-	540-84-1	No	Yes	Organics					1	0.186	114.23	1	Yes	
Trinitrobenzene, 1,3,5-	99-35-4	No	No	Organics			3.00E-02	U	1	0.000607	213.11	1	Yes	
Trinitrotoluene, 2,4,6-	118-96-7	No	No	Organics	3.00E-02	U	5.00E-04	U	1	0.000963	227.13	1	Yes	0.4692378
Triphenylphosphine Oxide	791-28-6	No	No	Organics			2.00E-02	U	1	0.00327	278.29	1	Yes	
Triphenyltin	668-34-8	No	Yes	Organics					1	0.00356	351.04	0.9	Yes	
Tripotassium phosphate	7778-53-2	No	No	Inorganics			4.86E+01	U	1	0.001	212.27	1	Yes	
Tripropyl Lead	6618-03-7	No	Yes	Organics					1	0.0693	336.47	0.8	Yes	
Tris(1,3-Dichloro-2-propyl) Phosphate	13674-87-8	No	No	Organics			2.00E-02	U	1	0.00159	430.91	0.9	Yes	
Tris(1-chloro-2-propyl)phosphate	13674-84-5	No	No	Organics			1.00E-02	U	1	0.0012	327.57	1	Yes	
Tris(2,3-dibromopropyl)phosphate	126-72-7	No	Yes	Organics	2.30E+00	U			1	0.000135	697.62	1	No	

Site-specific

Recreator Screening Levels (RSL) for Surface Water - Modified for Utility Worker Exposure to Groundwater
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	DAeventnc	DAeventna	Ingestion SL TR=1.0E-6 (µg/L)	Dermal SL TR=1.0E-6 (µg/L)	Carcinogenic SL TR=1.0E-6 (µg/L)	Ingestion SL (Child) HQ=1 (µg/L)	Dermal SL (Child) HQ=1 (µg/L)	Noncarcinogenic SL (Child) HQ=1 µ(g/L)	Ingestion SL (Adult) HQ=1 (µg/L)	Dermal SL (Adult) HQ=1 (µg/L)	Noncarcinogenic SL (Adult) HQ=1 (µg/L)	Screening Level (µg/L)
Trichlorobenzene, 1,2,3-	87-61-6		0.1608815							3.89E+04	5.34E+02	5.27E+02	5.27E+02 nc
Trichlorobenzene, 1,2,4-	120-82-1		2.0110193	1.10E+05	1.69E+03	1.66E+03				4.87E+05	6.99E+03	6.89E+03	1.66E+03 ca**
Trichloroethane, 1,1,1-	71-55-6		402.20386							9.73E+07	1.02E+07	9.22E+06	9.22E+06 nc
Trichloroethane, 1,1,2-	79-00-5		0.8044077	5.60E+04	1.55E+04	1.22E+04				1.95E+05	5.06E+04	4.01E+04	1.22E+04 ca**
Trichloroethylene	79-01-6		0.100551	6.90E+04	8.44E+03	7.52E+03				2.43E+04	2.79E+03	2.50E+03	2.50E+03 nc
Trichlorofluoromethane	75-69-4		60.330579							1.46E+07	1.49E+06	1.35E+06	1.35E+06 nc
Trichlorophenol, 2,4,5-	95-95-4		20.110193							4.87E+06	1.23E+05	1.20E+05	1.20E+05 nc
Trichlorophenol, 2,4,6-	88-06-2		0.2011019	2.90E+05	8.17E+03	7.95E+03				4.87E+04	1.28E+03	1.25E+03	1.25E+03 nc
Trichlorophenoxyacetic Acid, 2,4,5-	93-76-5		2.0110193							4.87E+05	3.71E+04	3.45E+04	3.45E+04 nc
Trichlorophenoxyacetic acid, 2,4,5- Amine Salts, PARENT (2,4,5-T)	NA												
Trichlorophenoxypropionic acid, -2,4,5	93-72-1		1.6088154							3.89E+05	1.54E+04	1.48E+04	1.48E+04 nc
Trichloropropane, 1,1,2-	598-77-6		1.0055096							2.43E+05	3.09E+04	2.75E+04	2.75E+04 nc
Trichloropropane, 1,2,3-	96-18-4		0.8044077	1.06E+02	1.84E+01	1.57E+01				1.95E+05	3.16E+04	2.72E+04	1.57E+01 ca
Trichloropropene, 1,2,3-	96-19-5		0.6033058							1.46E+05	1.07E+04	9.98E+03	9.98E+03 nc
Trichlorotoluene, 2,3,6-	2077-46-5												
Trichlorotoluene, alpha 2,6-	2014-83-7												
Triclorophenols (total)	NA												
Tricresyl Phosphate (TCP)	1330-78-5		4.0220386							9.73E+05	1.10E+04	1.09E+04	1.09E+04 nc
Tridiphane	58138-08-2		0.6033058							1.46E+05	1.09E+03	1.09E+03	1.09E+03 nc
Tridymite	15468-32-3												
Triethyl Lead	5224-23-7												
Triethyl phosphorothioate [O,O,O-]	126-68-1												
Triethylamine	121-44-8												
Triethylene Glycol	112-27-6		402.20386							9.73E+07	7.50E+09	9.61E+07	9.61E+07 nc
Trifluralin	1582-09-8		1.5082645	4.15E+05	2.85E+03	2.83E+03				3.65E+05	2.35E+03	2.34E+03	2.34E+03 nc
Trimagnesium phosphate	7757-87-1		9773.5537							2.37E+09	4.89E+09	1.59E+09	1.59E+09 nc
Trimethyl Lead	7442-13-9												
Trimethyl Phosphate	512-56-1		2.0110193	1.60E+05	2.26E+06	1.49E+05				4.87E+05	6.47E+06	4.53E+05	1.49E+05 ca**
Trimethyl-4-Propenylnaphthalene, 1,2,3-	26137-53-1												
Trimethylbenzene, 1,2,3-	526-73-8												
Trimethylbenzene, 1,2,4-	95-63-6												
Trimethylbenzene, 1,3,5-	108-67-8		2.0110193							4.87E+05	1.15E+04	1.12E+04	1.12E+04 nc
Trimethylethyl Lead	1762-26-1												
Trimethylpentane, 2,2,4-	540-84-1												
Trinitrobenzene, 1,3,5-	99-35-4		6.0330579							1.46E+06	1.98E+06	8.41E+05	8.41E+05 nc
Trinitrotoluene, 2,4,6-	118-96-7		0.100551	1.06E+05	8.89E+04	4.84E+04				2.43E+04	1.90E+04	1.07E+04	1.07E+04 nc
Triphenylphosphine Oxide	791-28-6		4.0220386							9.73E+05	1.61E+05	1.38E+05	1.38E+05 nc
Triphenyltin	668-34-8												
Tripotassium phosphate	7778-53-2		9773.5537							2.37E+09	4.89E+09	1.59E+09	1.59E+09 nc
Tripropyl Lead	6618-03-7												
Tris(1,3-Dichloro-2-propyl) Phosphate	13674-87-8		4.0220386							9.73E+05	1.38E+05	1.21E+05	1.21E+05 nc
Tris(1-chloro-2-propyl)phosphate	13674-84-5		2.0110193							4.87E+05	1.60E+05	1.20E+05	1.20E+05 nc
Tris(2,3-dibromopropyl)phosphate	126-72-7			1.39E+03		1.39E+03							1.39E+03 ca

Site-specific

Recreator Screening Levels (RSL) for Surface Water - Modified for Utility Worker Exposure to Groundwater
ca=Cancer, nc=Noncancer, ca* (Where nc SL < 100 x ca SL),
ca** (Where nc SL < 10 x ca SL), max=SL exceeds ceiling limit (see User's Guide), sat=SL exceeds csat,
Smax=Soil SL exceeds ceiling limit and has been substituted with the max value (see User's Guide),
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	Mutagen?	VOC?	Chemical Type	Ingestion SF $(mg/kg\text{-}day)^{-1}$	SFO Ref	Chronic RfD (mg/kg-day)	Chronic RfD Ref	RAGSe GIABS (unitless)	K_p (cm/hr)	MW	fa	In EPD?	DAeventc
Tris(2-chloroethyl)phosphate	115-96-8	No	No	Organics	2.00E-02	U	7.00E-03	U	1	0.000355	285.49	1	Yes	0.7038567
Tris(2-ethylhexyl)phosphate	78-42-2	No	No	Organics	3.20E-03	U	1.00E-01	U	1	11.6	434.65	0	No	
Trisbutoxyethyl Phosphate	78-51-3	No	No	Organics					1	0.00282	398.48	0.9	Yes	
Trisodium phosphate	7601-54-9	No	No	Inorganics			4.86E+01	U	1	0.001	163.94	1	Yes	
Trithion	786-19-6	No	No	Organics					1	0.065	342.86	0.8	Yes	
Tungsten	7440-33-7	No	No	Inorganics					1	0.001	183.84	1	Yes	
Uranium (Soluble Salts)	NA	No	No	Inorganics			3.00E-03	U	1	0.001	238.03	1	Yes	
Urea	57-13-6	No	No	Organics					1	0.0000286	60.06	1	No	
Urethane	51-79-6	Yes	No	Organics	1.00E+00	U			1	0.000394	89.09	1	Yes	0.0140771
Vanadium Pentoxide	1314-62-1	No	No	Inorganics			9.00E-03	U	0.026	0.001	181.88	1	Yes	
Vanadium Sulfate	36907-42-3	No	No	Inorganics					0.026	0.001	273.111	1	Yes	
Vanadium and Compounds	7440-62-2	No	No	Inorganics			5.04E-03	U	0.026	0.001	50.94	1	Yes	
Vanadyl Sulfate	27774-13-6	No	No	Inorganics					1	0.001	164.01	1	Yes	
Vernolate	1929-77-7	No	Yes	Organics			1.00E-03	U	1	0.0403	203.35	1	Yes	
Vinclozolin	50471-44-8	No	No	Organics			2.50E-02	U	1	0.00446	286.12	0.9	Yes	
Vinyl Acetate	108-05-4	No	Yes	Organics			1.00E+00	U	1	0.00157	86.09	1	Yes	
Vinyl Bromide	593-60-2	No	Yes	Organics					1	0.00435	106.95	1	Yes	
Vinyl Chloride	75-01-4	Yes	Yes	Organics	7.20E-01	U	3.00E-03	U	1	0.00838	62.5	1	Yes	0.0195516
Warfarin	81-81-2	No	No	Organics			3.00E-04	U	1	0.00182	308.34	1	Yes	
Xylene, P-	106-42-3	No	Yes	Organics			2.00E-01	U	1	0.0493	106.17	1	Yes	
Xylene, m-	108-38-3	No	Yes	Organics			2.00E-01	U	1	0.0532	106.17	1	Yes	
Xylene, o-	95-47-6	No	Yes	Organics			2.00E-01	U	1	0.0471	106.17	1	Yes	
Xylenes	1330-20-7	No	Yes	Organics			2.00E-01	U	1	0.05	106.17	1	Yes	
Ytterbium	7440-64-4	No	No	Inorganics					1	0.001	173.04	1	Yes	
Yttrium	7440-65-5	No	No	Inorganics					1	0.001	88.91	1	Yes	
Zinc Cyanide	557-21-1	No	No	Inorganics			5.00E-02	U	1	0.0006	117.43	1	Yes	
Zinc Phosphide	1314-84-7	No	No	Inorganics			3.00E-04	U	1	0.0006	258.175	1	Yes	
Zinc and Compounds	7440-66-6	No	No	Inorganics			3.00E-01	U	1	0.0006	65.38	1	Yes	
Zineb	12122-67-7	No	No	Organics			5.00E-02	U	1	0.000325	275.74	1	Yes	
Zirconium	7440-67-7	No	No	Inorganics			8.00E-05	U	1	0.001	91.22	1	Yes	

Site-specific

Recreator Screening Levels (RSL) for Surface Water - Modified for Utility Worker Exposure to Groundwater
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Smax=Soil SL exceeds ceiling limit and has been substituted with the max value
Ssat=Soil inhalation SL exceeds csat and has been substituted with the csat

Chemical	CAS Number	DAeventnc	DAeventna	Ingestion SL TR=1.0E-6 (µg/L)	Dermal SL TR=1.0E-6 (µg/L)	Carcinogenic SL TR=1.0E-6 (µg/L)	Ingestion SL (Child) HQ=1 (µg/L)	Dermal SL (Child) HQ=1 (µg/L)	Noncarcinogenic SL (Child) HQ=1 µ(g/L)	Ingestion SL (Adult) HQ=1 (µg/L)	Dermal SL (Adult) HQ=1 (µg/L)	Noncarcinogenic SL (Adult) HQ=1 (µg/L)	Screening Level (µg/L)
Tris(2-chloroethyl)phosphate	115-96-8		1.4077135	1.60E+05	2.48E+05	9.72E+04				3.41E+05	4.97E+05	2.02E+05	9.72E+04 ca**
Tris(2-ethylhexyl)phosphate	78-42-2			9.98E+05		9.98E+05				4.87E+06		4.87E+06	9.98E+05 ca**
Trisbutoxyethyl Phosphate	78-51-3												
Trisodium phosphate	7601-54-9		9773.5537							2.37E+09	4.89E+09	1.59E+09	1.59E+09 nc
Trithion	786-19-6												
Tungsten	7440-33-7												
Uranium (Soluble Salts)	NA		0.6033058							1.46E+05	3.02E+05	9.84E+04	9.84E+04 nc
Urea	57-13-6												
Urethane	51-79-6			3.19E+03	1.34E+04	2.58E+03							2.58E+03 ca
Vanadium Pentoxide	1314-62-1		0.0470579							4.38E+05	2.35E+04	2.23E+04	2.23E+04 nc
Vanadium Sulfate	36907-42-3												
Vanadium and Compounds	7440-62-2		0.0263524							2.45E+05	1.32E+04	1.25E+04	1.25E+04 nc
Vanadyl Sulfate	27774-13-6												
Vernolate	1929-77-7		0.2011019							4.87E+04	1.06E+03	1.04E+03	1.04E+03 nc
Vinclozolin	50471-44-8		5.0275482							1.22E+06	1.56E+05	1.38E+05	1.38E+05 nc
Vinyl Acetate	108-05-4		201.10193							4.87E+07	4.87E+07	2.43E+07	2.43E+07 nc
Vinyl Bromide	593-60-2												
Vinyl Chloride	75-01-4		0.6033058		9.59E+02	9.59E+02				1.46E+05	2.96E+04	2.46E+04	9.59E+02 ca*
Warfarin	81-81-2		0.0603306							1.46E+04	3.58E+03	2.88E+03	2.88E+03 nc
Xylene, P-	106-42-3		40.220386							9.73E+06	3.07E+05	2.98E+05	2.98E+05 nc
Xylene, m-	108-38-3		40.220386							9.73E+06	2.86E+05	2.77E+05	2.77E+05 nc
Xylene, o-	95-47-6		40.220386							9.73E+06	3.21E+05	3.10E+05	3.10E+05 nc
Xylenes	1330-20-7		40.220386							9.73E+06	3.03E+05	2.94E+05	2.94E+05 nc
Ytterbium	7440-64-4												
Yttrium	7440-65-5												
Zinc Cyanide	557-21-1		10.055096							2.43E+06	8.38E+06	1.89E+06	1.89E+06 nc
Zinc Phosphide	1314-84-7		0.0603306							1.46E+04	5.03E+04	1.13E+04	1.13E+04 nc
Zinc and Compounds	7440-66-6		60.330579							1.46E+07	5.03E+07	1.13E+07	1.13E+07 nc
Zineb	12122-67-7		10.055096							2.43E+06	4.13E+06	1.53E+06	1.53E+06 nc
Zirconium	7440-67-7		0.0160882							3.89E+03	8.04E+03	2.62E+03	2.62E+03 nc

Calculations of Preliminary Remediation Goals (PRGs)

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee

Version date 6/21/09 **EDIT RED CELLS**

Variable	Description of Variable	Units	GSDi and PbBo from Analysis of NHANES 1999-2004	GSDi and PbBo from Analysis of NHANES III (Phases 1&2)
$PbB_{fetal,\ 0.95}$	95th percentile PbB in fetus	ug/dL	10	10
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9	0.9
BKSF	Biokinetic Slope Factor	ug/dL per ug/day	0.4	0.4
GSD_i	Geometric standard deviation PbB	--	1.8	2.1
PbB_0	Baseline PbB	ug/dL	1.0	1.5
IR_S	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.330	0.330
$AF_{S,\ D}$	Absorption fraction (same for soil and dust)	--	0.12	0.12
$EF_{S,\ D}$	Exposure frequency (same for soil and dust)	days/yr	30	30
$AT_{S,\ D}$	Averaging time (same for soil and dust)	days/yr	365	365
PRG		**ppm**	**2,477**	**1,366**

Calculations of Preliminary Remediation Goals (PRGs)

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee

Version date 6/21/09 **EDIT RED CELLS**

Variable	Description of Variable	Units	GSDi and PbBo from Analysis of NHANES 1999-2004	GSDi and PbBo from Analysis of NHANES III (Phases 1&2)
$PbB_{fetal,\ 0.95}$	95th percentile PbB in fetus	ug/dL	10	10
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9	0.9
BKSF	Biokinetic Slope Factor	ug/dL per ug/day	0.4	0.4
GSD_i	Geometric standard deviation PbB	--	1.8	2.1
PbB_0	Baseline PbB	ug/dL	1.0	1.5
IR_S	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.050	0.050
$AF_{S,\ D}$	Absorption fraction (same for soil and dust)	--	0.12	0.12
$EF_{S,\ D}$	Exposure frequency (same for soil and dust)	days/yr	50	50
$AT_{S,\ D}$	Averaging time (same for soil and dust)	days/yr	365	365
PRG		**ppm**	**9,810**	**5,410**

Calculations of Preliminary Remediation Goals (PRGs)

U.S. EPA Technical Review Workgroup for Lead, Adult Lead Committee

Version date 6/21/09 **EDIT RED CELLS**

Variable	Description of Variable	Units	GSDi and PbBo from Analysis of NHANES 1999-2004	GSDi and PbBo from Analysis of NHANES III (Phases 1&2)
$PbB_{fetal,\ 0.95}$	95th percentile PbB in fetus	ug/dL	10	10
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9	0.9
BKSF	Biokinetic Slope Factor	ug/dL per ug/day	0.4	0.4
GSD_i	Geometric standard deviation PbB	--	1.8	2.1
PbB_0	Baseline PbB	ug/dL	1.0	1.5
IR_S	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.100	0.100
$AF_{S,\ D}$	Absorption fraction (same for soil and dust)	--	0.12	0.12
$EF_{S,\ D}$	Exposure frequency (same for soil and dust)	days/yr	50	50
$AT_{S,\ D}$	Averaging time (same for soil and dust)	days/yr	365	365
PRG		**ppm**	**4,905**	**2,705**

APPENDIX C
COST ESTIMATE

APPENDIX C
COST ESTIMATE
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Table of Contents

C.1A Cost Summary
C.1B Response Actions Cost Summary
C.2 ICs: Cost Breakdown
C.3 ICs: Present Value
C.4 Attachments for ICs
C.5 Landfill Cover
C.6 Attachments for Landfill Cover

TABLE C.1A
COST SUMMARY
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Description	Capital Cost	Annual Operations and Maintenance Cost [a/]	Periodic Cost [b/]	Non-Discounted Constant Dollar Cost [c/]	TPV at 1.9% Discount Rate [d/]
Landfill Cover, Ics	**$804,000**	**$4,000**	**$180,000**	**$1,021,000**	**$1,131,000**

NOTES

[a/] Highest annual operations and maintenance (O&M) costs for remedial alternatives shown. Some costs decrease after a period of operation.

[b/] Highest annual periodic costs for remedial alternatives shown. Periodic costs may be less during a specific year.

[c/] Non-discounted constant dollar cost provided to show impact of discount rate on total present value (TPV).

[d/] TPV cost estimates are considered accurate to within -30% to +50% of actual costs. Discount rate and calculation is shown below.

Other Notes/Assumptions

1. Design and construction contingencies have been added to capital and O&M costs based on USEPA (2000) and professional judgment.
   USEPA. 2000. *A Guide to Developing and Documenting Cost Estimates During the Feasibility Study*. USEPA 540-R-00-002. July.

		Source
Discount Rate (see calculation below)	1.90%	30-Year, Real Discount Rate from White House Office of Management and Budget, Circular A-94 Appendix C, Revised December 2013

TABLE C.1B
SPECIFIC ACTIONS COST SUMMARY
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Element Description	Capital Cost	Annual Operations and Maintenance Cost [a/]	Periodic Cost [b/]	Non-Discounted Constant Dollar Cost [c/]	TPV at 1.9% Discount Rate [d/]
ICs (30 Year Duration)	$63,000	$4,000	$180,000	$280,000	$390,000
Landfill Cover	$741,000	$0	$0	$741,000	$741,000

NOTES

[a/] Highest annual operations and maintenance (O&M) costs for remedial alternatives shown. Some costs decrease after a period of operation.

[b/] Highest annual periodic costs for remedial alternatives shown. Periodic costs may be less during a specific year.

[c/] Non-discounted constant dollar cost provided to show impact of discount rate on total present value (TPV).

[d/] TPV cost estimates are considered accurate to within -30% to +50% of actual costs.

Other Notes/Assumptions

1. Design and construction contingencies have been added to capital and O&M costs based on USEPA (2000) and professional judgment.

		Source
Discount Rate (see calculation below)	1.90%	30-Year, Real Discount Rate from White House Office of Management and Budget, Circular A-94 Appendix C, Revised December 2013

TABLE C.2
LAND USE CONTROLS
COST BREAKDOWN
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Item	Units		Unit Cost	Extended	
Capital					
Implementation of Land Use Controls (See Table C.4, Attachment 1)	1	Lump Sum	$ 50,000	$ 50,000	
			Sub-Total	$ 50,000	
Contingency (design + construction)	25%			$ 12,500	
			Capital Total	**$ 62,500**	
Annual Operation and Maintenance					
Land Use Controls (30 Years)	1	each	$ 3,200	$ 3,200	#
Contingency	25%			$ 800	#
			Annual Total	**$ 4,000**	#
					#
Periodic Costs					#
groundwater sampling, 6 wells, with QA/QC Samples - Table C.4, Attachment 2)	10	1	$ 866	$ 8,664	#
Annual Reporting (Table C.4, Attachment 3)	1	1	$ 9,360	$ 9,360	

Assumptions:
1) A 30-year duration is assumed for costs.
2) Groundwater will be sampled for 30 years.
3) Four samples can be collected each day.
4) Wells will be sampled biannually funtil the 29th year, and then twice that year.

TABLE C.3
LAND USE CONTROLS
PRESENT VALUE
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Year	Capital Cost ($)	Annual O&M ($) (LUCs)	Periodic Costs ($)	Total Cost	Discount Factor at 1.9%	Present Value at 1.9%
Annual Cost forAnticipated 30-Year Duration						
0	$ 62,500	$ -	$ -	$ 62,500	1.000	$ 62,500
1	$ -	$ 4,000	$ 18,024	$ 22,024	0.981	$ 21,614
2	$ -	$ 4,000	$ 18,024	$ 22,024	0.963	$ 21,211
3	$ -	$ 4,000	$ 18,024	$ 22,024	0.945	$ 20,815
4	$ -	$ 4,000	$ 18,024	$ 22,024	0.927	$ 20,427
5	$ -	$ 4,000	$ 18,024	$ 22,024	0.910	$ 20,046
6	$ -	$ 4,000	$ 18,024	$ 22,024	0.893	$ 19,673
7	$ -	$ 4,000	$ 18,024	$ 22,024	0.877	$ 19,306
8	$ -	$ 4,000	$ 18,024	$ 22,024	0.860	$ 18,946
9	$ -	$ 4,000	$ 18,024	$ 22,024	0.844	$ 18,593
10	$ -	$ 4,000	$ 18,024	$ 22,024	0.828	$ 18,246
11	$ -	$ 4,000	$ -	$ 4,000	0.813	$ 3,252
12	$ -	$ 4,000	$ -	$ 4,000	0.798	$ 3,192
13	$ -	$ 4,000	$ 18,024	$ 22,024	0.783	$ 17,244
14	$ -	$ 4,000	$ -	$ 4,000	0.768	$ 3,074
15	$ -	$ 4,000	$ -	$ 4,000	0.754	$ 3,017
16	$ -	$ 4,000	$ 18,024	$ 22,024	0.740	$ 16,298
17	$ -	$ 4,000	$ -	$ 4,000	0.726	$ 2,905
18	$ -	$ 4,000	$ -	$ 4,000	0.713	$ 2,851
19	$ -	$ 4,000	$ 18,024	$ 22,024	0.699	$ 15,403
20	$ -	$ 4,000	$ -	$ 4,000	0.686	$ 2,746
21	$ -	$ 4,000	$ -	$ 4,000	0.674	$ 2,695
22	$ -	$ 4,000	$ 18,024	$ 22,024	0.661	$ 14,557
23	$ -	$ 4,000	$ -	$ 4,000	0.649	$ 2,595
24	$ -	$ 4,000	$ -	$ 4,000	0.637	$ 2,547
25	$ -	$ 4,000	$ 18,024	$ 22,024	0.625	$ 13,758
26	$ -	$ 4,000	$ -	$ 4,000	0.613	$ 2,453
27	$ -	$ 4,000	$ -	$ 4,000	0.602	$ 2,407
28	$ -	$ 4,000	$ 18,024	$ 22,024	0.590	$ 13,003
29	$ -	$ 4,000	$ -	$ 4,000	0.579	$ 2,318
30	$ -	$ 4,000	$ -	$ 4,000	0.569	$ 2,275
TOTALS	**$ 62,500**	**$ 40,000**	**$ 180,240**	**$ 282,800**		**$ 390,000**

TABLE C.4
ATTACHMENTS FOR Ics
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Attachment 1 - Implementation of Land Use Controls					
Subtask Description, Labor	**Quantity**	**Unit**	**Unit Cost**	**Cost**	**Source**
LUC Implementation Plan (inc sampling plan for GW)	1	Lump Sum	$ 25,000	$ 25,000	Prof. Judgement
Delineate Area onto Master Planning Maps/GIS	1	Lump Sum	$ 25,000	$ 25,000	Prof. Judgement
			Total	**$ 50,000**	

Attachment 2 - Groundwater Monitoring, Sample Collection, and Analysis (per well)					
Equipment / Laboratory / Rentals	**Quantity**	**Unit**	**Unit Cost**	**Cost**	**Source**
Pickup Truck	0.25	Day	$ 109	$ 27	Vendor Pricing
Water Level meter	0.25	Day	$ 31	$ 8	Vendor Pricing
Groundwater Pump	0.25	Day	$ 18	$ 5	Vendor Pricing
Groundwater Quality Meter	0.25	Day	$ 60	$ 15	Vendor Pricing
Turbidity Meter	0.25	Day	$ 16	$ 4	Vendor Pricing
Laboratory Analyses (includes 10% QC Samples)					
VOC Analysis (SW8260B)	1	Sample	$ 85	$ 85	Lab Pricing
Metals Analysis (6020)	1	Sample	$ 135	$ 135	Lab Pricing
Pump	1	Sample	$ 8	$ 8	Vendor Pricing
Water Disposal (non-hazardous)	1	Drum	$ 125	$ 125	Vendor Pricing
Tubing	15	Feet	$ 1	$ 15	Vendor Pricing
Sample Shipping	0.25	Cooler	$ 200	$ 50	Vendor Pricing
Labor					
Env. Tech 1	3	Hour	$ 55	$ 165	Estimated
Env. Tech 2	3	Hour	$ 75	$ 225	Estimated
			Total	**$ 866**	

Attachment 3 - Reporting - Annual					
Labor	**Quantity**	**Unit**	**Unit Cost**	**Cost**	**Source**
Project Manager	4	Hour	$ 130	$ 520	Estimated
Engineer/Geologist	60	Hour	$ 110	$ 6,600	Estimated
CADD/GIS	8	Hour	$ 80	$ 640	Estimated
Chemist, Senior	16	Hour	$ 100	$ 1,600	Estimated
			Total	**$ 9,360**	

TABLE C.5
LANDFILL COVER
COST BREAKDOWN
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Item		Units		Unit Cost		Extended
Capital						
Soil Cover Installation						
(see Table C.6, Attachment 1)	1	Lump Sum	$	587,000	$	587,000
Geotechnical Borings						
(see Table C.6, Attachment 2)	1	Lump Sum	$	5,765	$	5,765
				Sub-Total	$	592,765
Contingency (design + construction)	25%				$	148,200
				Capital Total	**$**	**740,966**

TABLE C.6
ATTACHMENT FOR LANDFILL COVER DESIGN AND INSTALLATION
SITE FTMM-05
FORT MONMOUTH, NEW JERSEY

Attachment 1 - Landfill Cover					
Item	Quantity	Units	Unit Cost	Extended	Comments
Capital					
Landfill Soil Cover Installation					
Mobilization and site preparation	1	Lump Sum	$ 1,500.00	$ 1,500	Contractor Quote
Clearing and grubbing	3.2	acre	$ 2,900.00	$ 9,280	Contractor Quote
Subgrad preparation and compaction	3.2	acre	$ 4,250.00	$ 13,600	Contractor Quote
Soil Cover material	3.2	acre	$ 54,511	$ 174,435	Contractor Quote
Placement of soil cover material	3.2	acre	$ 10,865	$ 34,768	Contractor Quote
Placement of vegetative layer material	3.2	acre	$ 3,802	$ 12,166	Contractor Quote
Seeding of soil caps	3.2	acre	$ 4,845	$ 15,504	Contractor Quote
Temporary erosion and sediment controls	400	LF	$7	$ 2,800	Contractor Quote
Permanent stormwater features	400	LF	$ 31	$ 12,400	Contractor Quote
Demobilization	1	Lump Sum	$ 1,500	$ 1,500	Contractor Quote
Subgrade material	6465	tons	$ 14	$ 90,505	Contractor Quote
Placement of Subgrade material	6465	tons	$ 6	$ 38,788	Contractor Quote
			Sub-Total	**$ 407,247**	
Design & Construction Oversite					
Labor					
Design & Construction Oversite Labor	2000	Hour	$ 90	$ 180,000	Prof. Judgement
				$ 180,000	
		Subtotal: Landfill Soil Cap Installation		**$ 587,000**	

Attachment 2 - Geotechnical Borings					
	Quantity	**Unit**	**Unit Cost**	**Extended Cost**	**Notes**
Capital					
Geotechnical Borings -					
Mobilization	1	LS	$ 611.11	$ 611	Contractor Quote
hand clearing	2	/boring	$ 50.00	$ 100	Contractor Quote
HAS Drilling	1	/rig/day	$ 1,850.00	$ 1,850	Contractor Quote
Geoprobe Drilling (Soil Boring)	1	/rig/day	$ 1,859.00	$ 1,859	Contractor Quote
Boring Abandonment	100	per foot	$ 3.00	$ 300	Contractor Quote
Drums	13	/drum	$ 65.00	$ 845	Contractor Quote
Shelby tube	2	each	100	$ 200	Contractor Quote
	Subtotal - Geotechnical borings:			**$5,765**	

Assumptions:
1) Area extent of impacted material is 3.2 acres.
2) Area to reseed is 3.2 acres.
3) Two geotechnical borings will be advanced at the site.
4) Soil cover is 2' in thickness (18" soil with 6" vegetative layer).